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August 31, 2015

Ms. Ruby Potter
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Health Facilities Coordination Officer
Maryland Health Care Commission
4160 Patterson Avenue
Baltimore, Maryland 21215

VIA EMAIL and HAND DELIVERY

Re: Certificate of Need Application—Intermediate Care Facilities
Recovery Centers of America – Earleville
314 Grove Neck Road OPCO, LLC
Matter No. 15-07-2363

Dear Ms. Potter:

Enclosed are six copies of the "Response to Additional Information Questions Dated July 17, 2015" with respect to the above-referenced CON application. Also enclosed is a CD containing searchable PDF files of the responses and exhibits, a WORD version of the responses, and native Excel spreadsheets of the tables and projections.

I also enclose Exhibit 32, which is a revised set of tables supporting the Applicant's bed need analysis.

We submit these responses on International Overdose Awareness Day. The Applicant feels very strongly that this project is needed urgently to help address the epidemic of deaths in Maryland and the surrounding region caused by heroin and other addictive substances. The enclosed newspaper headlines reflect recent news coverage of this critical problem. Today's news unfortunately brings yet another story of an apparent heroin-related death of a worker at the Maryland State Fair.

I hereby certify that a copy of this submission has also been forwarded to the appropriate local health planning agency as noted below.

Please sign and return to our waiting messenger the enclosed acknowledgment of receipt. Thank you for your assistance.

Sincerely,

Thomas C. Dame

TCD:blr
Enclosures

#537222
013522-0004

cc: Kevin McDonald, Chief, Certificate of Need
Paul Parker, Director, Center for Health Care Facilities Planning & Development, MHCC
Joel Riklin, Program Manager
William Chan, Health Policy Analyst, HSP&P/CON
Suellen Wideman, Esq., Assistant Attorney General, MHCC
Stephanie Garrity, Health Officer, Cecil County (w/ enclosures)
JP Christen, Chief Operating Officer, Recovery Centers of America
Edmund J. Campbell, Jr., Esq.
Andrew L. Solberg, A.L.S. Healthcare Consultant Services
Ella R. Aiken, Esq.

THE BALTIMORE SUN
LIGHT FOR ALL

Heroin deaths continuing to rise

"We have to recognize it's not random people who have addiction — they're our friends, our family members, our neighbors," Wen said. "We would never say, 'Get your dialysis across town.'"

-Dr. Leana S. Wen, Commissioner of Health, Baltimore City

The Washington Post

Heroin deaths spike in Maryland

"Overdose is a public-health crisis in Maryland, as it is in many states, and we are bringing everything we can to bear against this challenge."

-Joshua Sharfstein, Former Maryland Secretary of Health & Mental Hygiene

the fix

addiction and recovery, straight up

Baltimore: The Heroin Capital of the U.S.

"Every state on the East Coast has declared a state of emergency except Maryland — and Maryland has the worst problem."

-Gov. Larry Hogan

Anne Arundel County executive declares heroin public health emergency

"While we will not win this war overnight, we must act now by taking steps to turn the tide of heroin abuse in our county. By declaring this county in the midst of a heroin public health emergency, our county departments can shift their resources to address this mounting crisis."

-Steve Schuh, County Executive of Anne Arundel County

THE DIAMONDBACK

Maryland's hidden epidemic

"I know the devastation it can cause for families and communities," said Hogan, who lost a cousin to a heroin overdose, at a press conference in February. "Everywhere we went, we were saddened by stories of how just under the surface of every community, heroin was destroying lives."

-Gov. Larry Hogan

The Washington Post

Overdose deaths from heroin galvanizing leaders in Maryland and Virginia

"It's impacting every aspect of our society. It's going to continue to get worse unless we get a handle on it."

-Gov. Larry Hogan

Governor calls Maryland's heroin crisis an emergency

"We are going to attack this problem from every direction using everything we've got."

-Gov. Larry Hogan

Recovery Centers of America—Earleville
314 Grove Neck Road OPCO, LLC
Establishment of Alcohol and Drug Abuse
Intermediate Care Facility in Cecil County, Maryland
Matter No. 15-07-2363

Responses to Additional Information Questions Dated July 17, 2015

Part I- Project Identification and General Information

1. **Identify all individuals that have, or will have, at least five percent ownership share in the applicant and any related parent entities.**

Applicant Response

No natural person directly owns more than 5% of 314 Grove Neck Rd OPCO LLC ("Applicant") or its parent, TRC-OC LLC. A limited liability company, Deerfield Private Design Fund III, L.P. (a fund sponsored by Deerfield Management Company), family trusts, and others own the holding company Recovery Centers of America Holdings LLC. Please see the Modified Application, Exhibit 3, for a chart depicting the ownership structure.

Applicant is not privy to the investment structure of the entities that own Recovery Centers of America Holdings LLC. However, with the exception of J. Brian O'Neill, no individual will have the ability to make operational or clinical decisions for the proposed project as a result of having an ownership interest in any parent entity on the organizational chart attached as Exhibit 3 to the Modified Application.

Applicant acknowledges that COMAR § 10.24.01.07 requires Applicant to "submit a formal application for Certificate of Need, in the form and manner prescribed by the Executive Director." However, Applicant respectfully requests that the Commission limit this question and Question 2 in the Application to the Applicant and Owner. Ownership in a parent entity is not a legal equivalent to ownership in a subsidiary. Furthermore, a requirement that an applicant submit the requested information could not be enforced uniformly for all applicants. For example, the Commission has approved CON applications for subsidiaries of Genesis Healthcare, a publicly traded company (NYSE:GEN) with a number of long term care facilities in Maryland. As worded, the question would require any subsidiary of Genesis Healthcare to identify not only any person and/or entity with a 5% ownership interest in Genesis Healthcare ("Shareholders"), but also any person that holds a 5% interest in those Shareholders – information that Genesis Healthcare may not know, and that could change daily.

Applicant is not aware of any statute that would authorize the Commission to impose greater disclosure requirements on non-publicly traded companies, or to condition docketing of a CON application on information that is not required by the regulatory standards or review criteria. Accordingly, Applicant respectfully requests that the Commission accept the above disclosure, and that contained in Exhibit 3 to the Modified Application, as a complete response to this question.

Part III – Consistency with General Review Criteria at COMAR 10.24.01.08G(3)

A) State Health Plan: COMAR 10.24.14 STATE HEALTH PLAN FOR FACILITIES AND SERVICES: ALCOHOL AND DRUG ABUSE TREATMENT SERVICES STANDARDS

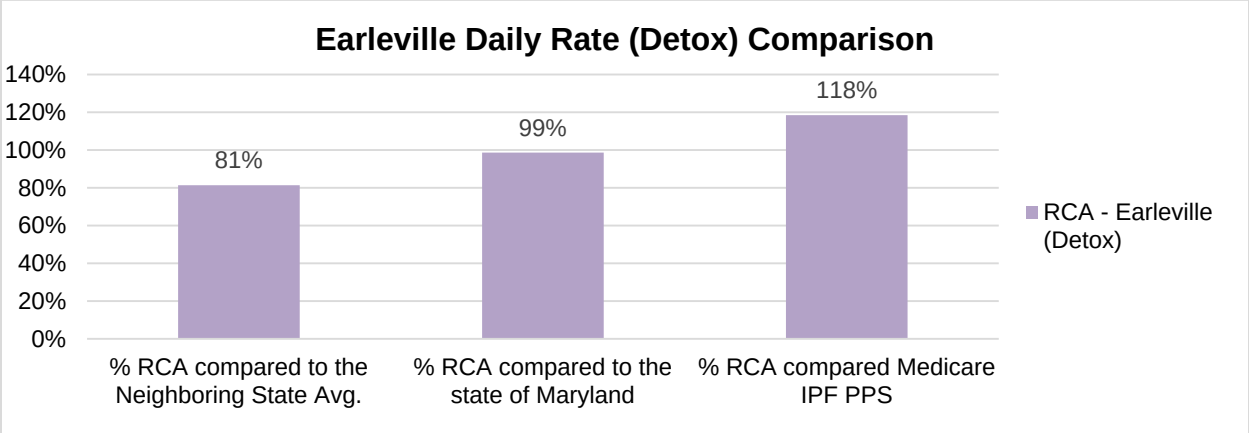
Information Regarding Charges

2. Limited staff research reveals that the proposed charges for Inpatient Detoxification and Inpatient Rehabilitation are significantly higher than those charged by other facilities. Provide information that shows the viability of the proposed charges that you have relied upon in developing those daily charges; have they been "tested" with insurance carriers?

Applicant Response

RCA's Detoxification and Inpatient Rehabilitation reimbursement is not significantly higher than those of other facilities. RCA conducted extensive research based on various external resources in determining its standard billing rates. The rates discussed in the Modified Application are standard rates from insurance carriers. The following analysis displays three data points: The applicant's average detox rate compared against neighboring states, the State of Maryland, and Medicare.

Table 13
RCA – Earleville Daily Rate Comparison
Maryland Facilities



Source: Medicare IPF PPS data gathered from CMS and TruVen Health Analytics

Table 14
RCA - Earleville Daily Rate Comparison
Neighboring States

Rhode Island (2013)	$1,326
Massachusetts (2013)	$1,128
New Jersey (2013)	$1,001
Pennsylvania (2013)	$956
Maryland (2013)	$872
Neighboring State Avg (2013)	$1,057
RCA – I/P Residential	$724
RCA - Melwood & Billingsley (Detox Rate)	$860
RCA - Earleville (Detox Rate)	$860

Source: TruVen Health Analytics

RCA daily rate of $860 for Earleville compares favorably to the Neighboring State Average of $1,057. As shown in Exhibit 27, the RCA Model Average daily rate for Earleville is 99% of rates observed in the State of Maryland. RCA expects to obtain rates 118% higher than Medicare rates. As this table displays, these rates are not uncommon in the health care market.

Medivance Billing Service specializes in offering comprehensive substance abuse billing, collections and revenue cycle management services to substance abuse rehab facilities. Medivance calculated a residential average daily payment – that includes over 50+ insurance providers – of $1,135. Comparatively, RCA will charge $724 for residential serices, which is 36.2% lower than the Medivance average. (Modified Application, Statement of Assumptions for Financial projections, page 2)

Identification of Intermediate Care Facility Alcohol and Drug Abuse Bed Need

3. **Describe the source used by ESRI Geographic Information Systems to construct demographic projections. The application attempted to answer this question with Exhibit 9; the exhibit was not legible/intelligible so please respond in your own words.**

Applicant Response

Exhibit 9 to the Modified Application is a news release available on the ESRI website that reports a study ranked ESRI US Demographic data as the most accurate among surveyed data sources. It also describes how the study was conducted, and discusses the ESRI team and accuracy of its data. The release is available at ESRI's website.[1]

ESRI is a business analytics online software package offering an array of data sources for defined geographical areas. In connection with this Application, RCA relied upon the demographics data provided by the software. The ESRI software provides both current year demographic data for defined geographical areas, and also forecasts a 5-year projection

utilizing complex algorithms that ESRI constantly refines to provide the most accurate data. ESRI states that it utilizes data provided by the most recent US Census (2010) and the American Community Survey (ACS). An ESRI White Paper on the American Community Survey found ESRI US Demographic Data Most Accurate.[1]

1. ESRI. "Study Ranks ESRI US Demographic Data Most Accurate." <http://www.esri.com/news/arcnews/summer12articles/study-ranks- esri-us- demographic-data-most-accurate.html> (last visited August 14, 2015).

Provision of Service to Indigent and Gray Area Patients

4. **Application states (p.43) that many states have expanded Medicaid to cover adults with incomes up to 133% of the Federal poverty level, and that the benefits must include mental health and substance abuse services, changes that "are a major catalyst for transformation of substance abuse service coverage and delivery in Medicaid." If people covered by Medicaid will indeed have coverage for substance abuse services, why does this proposed project exclude that population?**

Applicant Response

Applicant acknowledges the concern of this question. RCA would like to serve Medicaid beneficiaries. However, the low level of Medicaid reimbursement precludes RCA from serving this population at this time.

Moreover, Medicaid does not currently cover the services that RCA seeks to provide to facilities with more than 16 beds. The federal Institutions for Mental Disease (IMD) Exclusion prohibits Medicaid reimbursement for adults between the ages of 21 and 64 who are receiving services provided in "a hospital, nursing facility, or other institution of more than 16 beds that is primarily engaged in providing diagnosis, treatment, or care of persons with mental diseases, including medical attention, nursing care and treatment of individuals with mental diseases."[1] Due to this rule, Medicaid will not be reimbursing services as RCA's total beds exceed 16 beds in each location.

Although RCA's facilities will not accept Medicaid reimbursement, RCA will offer other services that will benefit this population. RCA will raise addiction awareness and implement a referral program as executed through 24/7 call center and awareness efforts. Through these programs, RCA will also increase referrals to existing Maryland providers that accept Medicaid patients.

1. The Department of Mental Hygiene. Maryland Medicaid Seeks IMD Exclusion Waiver (July 28 2015). Web.http://dhmh.maryland.gov/newsroom1/Pages/Maryland-Medicaid-seeks-IMD-Exclusion-waiver.aspx

5. **The standard requires an applicant to commit that it will provide 15 percent or more of its proposed annual adult intermediate care facility bed days to indigent or gray area patients. In proposing a lower percentage, the applicant cites a previous MHCC decision in the review of an application from Father Martin's Ashley (FMA) that accepted a lower commitment to provision of services to**

indigent and gray area patients (6.3% of patient-days was the accepted commitment). However, the main driver of the Commission's decision on this aspect of FMA's application was the fact that higher levels of charity care would lead to unsustainable losses. The projections shown by RCA tell a much different story; Exhibit 2, which models financial performance at that higher percentage of indigent or gray area patients, shows a healthy profit margin, with a profit of $3.4M on total expenses of $10.9M in year 2, and profits of $3.39M on expenses of $10.9M in year 3. In light of those numbers, why should MHCC consider deviating from the guidance of this standard?

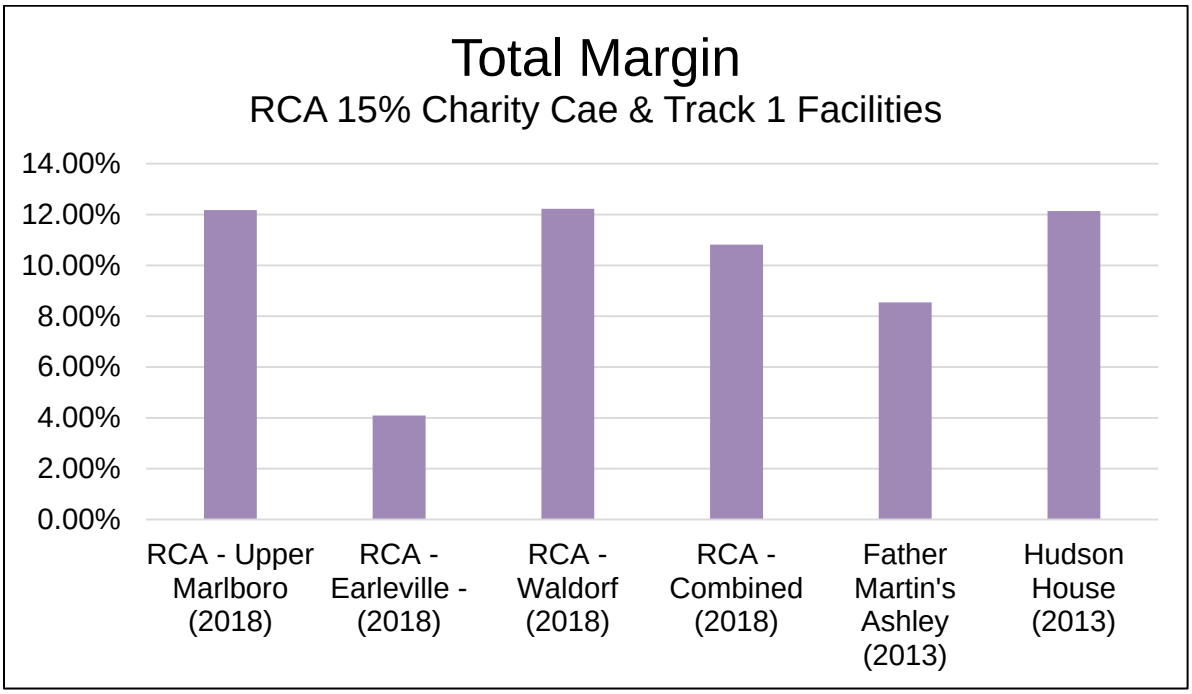
Applicant Response

In connection with the Commission's 2013 approval of the expansion of the Father Martin's Ashley facility, the Commission staff stated that "it's possible that the State Health Plan requirement [for Gray Area care] is somewhat high." Transcript of September 19, 2013 Proceedings of the Commission at 7 (Exhibit 14 to Modified Application). In suggesting an alternative measure, Joel Riklin, then the Commission's Acting Chief of CON, suggested that one possible comparison (although "not strictly apples-to-apples") would be to look to the charity care provided by Maryland hospitals, which he described as having a median of 3.5% ratio of charity care to operating expenses in FY 2012. Id. On that basis, RCA's proposal is much more generous than the charity care provided by Maryland hospitals. As a percentage of operating expenses, RCA's projected charity care commitment will be approximately 25% (for 2017 and 2018). See Table G (Charity Care divided by Total Operating Expenses).

Also, when considering RCA's ability to provide service to Gray Area patients, it is important to consider RCA's status as a for-profit health care entity. RCA's financial model for the three Maryland facilities would be unsustainable if charity care were expanded from 6.15% to 15% of bed days. Although the Applicant's financial projections appear to show a higher margin than other Track 1 facilities, these projections do not include federal income tax or state taxes. By including estimated taxes in the financial analysis, the Applicant's total estimated expenses would increase by more than $1.6M. This reflects a new projected total margin for the Applicant of 13.7% in 2018. In addition, the applicant is projecting $139,323 in property taxes in 2018, and various projected State taxes of $307,029. With these considerations, RCA's Maryland facilities will incur an estimated combined total of $10,081,984 additional expenses in total estimated taxes in 2018, which reduces RCA's combined profit margin from 27.6% to 15.6%.

If RCA were to provide 15% of its annual adult intermediate care facility bed days to Indigent or Gray Area patients at Earleville, the total profit margin would decrease to 4.1%. The decrease in total margin for Earleville is far below other Track 1 facilities, which are afforded the provision to accept an amount lower than 15% of its proposed annual intermediate care facility bed days to Indigent or Gray Area patients.

Table 15



Source: *Data gathered from RCA Certificate of Need application
*Track 1 Facilities data gathered from Hudson House and Father Martin's Ashley IRS 990 Forms[1,2]

Table 16
Financial Analysis 6.15% Charity Care

	Financial Analysis - 6.15% Charity Care		Track 1 Facilites	
	RCA Earleville (2018)	RCA - Combined (2018)	Father Martin's Ashley (2013)	Hudson House (2013)
Net Revenue	$ 15,792,174	$ 84,059,616	$ 24,206,028	$ 3,457,205
Total Expenses	11,954,315	60,882,640	22,137,496	3,037,489
Net Operating Income	$ 3,837,859	$ 23,176,976	$ 2,068,532	$ 419,716
Estimated Tax Expense	$ 1,669,469	$ 10,081,985		
Total Margin	13.7%	15.6%	8.5%	12.1%

Source: *Data gathered from RCA Certificate of Need application
*Track 1 Facilities data gathered from Hudson House and Father Martin's Ashley IRS 990 Forms[1,2]

Table 17
Financial Analysis 15% Charity Care

Financial Analysis - 15% Charity Care			Track 1 Facilites	
	RCA Earlevile (2018)	RCA - Combined (2018)	Father Martin's Ashley (2013)	Hudson House (2013)
Net Revenue	$ 35,197,224	$ 75,302,859	$ 24,206,028	$ 3,457,205
Total Expenses	27,578,268	60,882,640	22,137,496	3,037,489
Net Operating Income	$ 7,618,956	$ 14,420,219	$ 2,068,532	$ 419,716
Estimated Tax Expense	$ 406,475	$ 6,272,795		
Total Margin	4.1%	10.8%	8.5%	12.1%

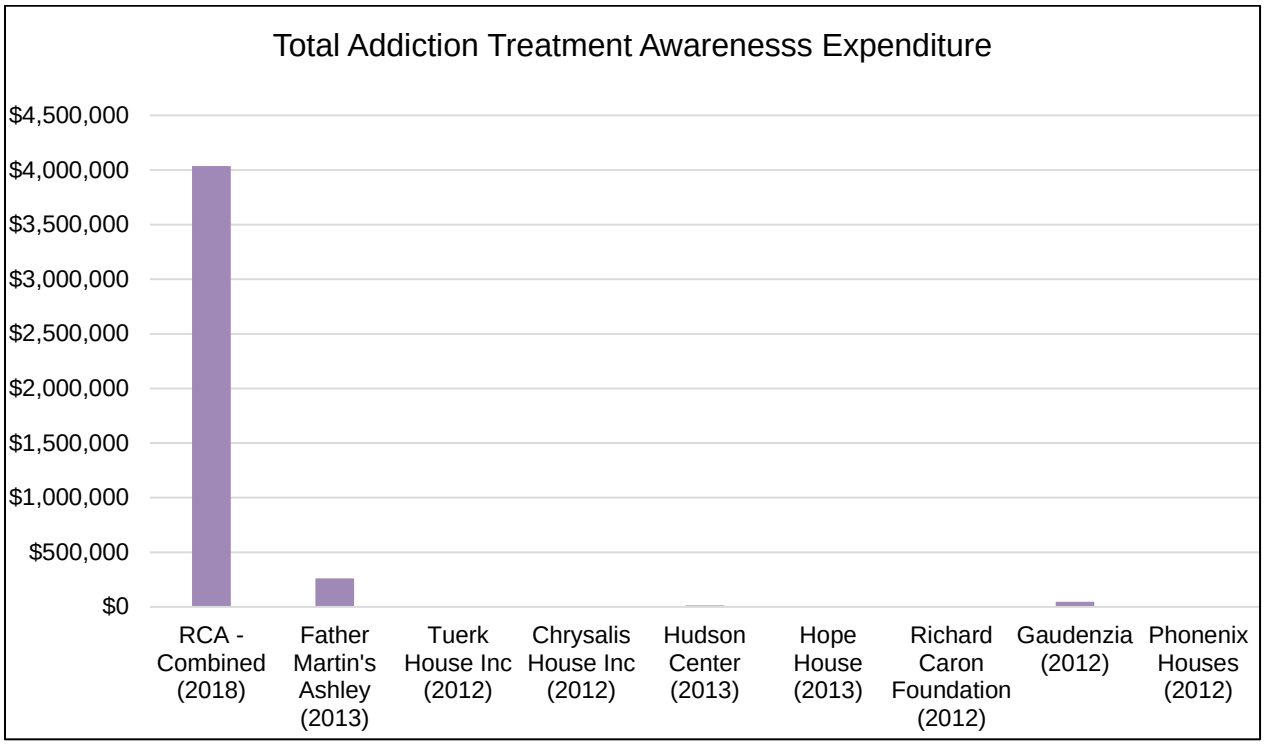
Source: *Data gathered from RCA Certificate of Need application
*Track 1 Facilities data gathered from Hudson House and Father Martin's Ashley IRS 990 Forms[1,2]

Since the original 15% Gray Area Population standard was developed and instituted, the landscape of health care has changed. The Patient Protection and Affordable Care Act of 2010 dramatically changed the health care landscape with respect to individuals who did not have health insurance. Since the passage of the Patient Protection and Affordable Care Act large segments of this uninsured population now has health insurance. RCA has estimated that 6.15% of its patient days are from the Gray Area Population. This percentage is derived from the statistic provided by the Kaiser Family Foundation that 41% of adults in the state of Maryland were not eligible for insurance coverage[3] (41% of 15% provides the value of 6.15%). These statistics are meant to demonstrate the increasing volume of insured adults, and RCA's subsequent calculation of the proportional need to provide care for this patient population. "Father Martin's Ashley shall provide a minimum of 6.3% of patient days of care to indigent and gray area patients, as defined in the State Health Plan, commencing with the first full year of operation following completion of the approved project."[4]

RCA will have the largest addiction treatment awareness budget within the State of Maryland. The projections state that RCA will spend more than $4M (for all three proposed facilities) in awareness throughout the State of Maryland, specifically $506,024 for the Earleville location. See Exhibit 1, Table G, Line 2.m, Modified CON Application. This effort will increase awareness, promote treatment, and inform the entire State outreach efforts. With RCA's allocated awareness budget, RCA will outspend other detox centers which are not spending nearly as much, if any amount at all, on their respective awareness campaigns. After an analysis of other Maryland not-for-profit detox centers, RCA will spend 90% more than all the not-for-profits combined on addiction treatment awareness.

Beyond RCA's plan to serve Maryland's Gray Area Population in its Maryland facilities, RCA is planning a 24/7 coverage call center that will receive calls through its increased awareness efforts for patient seeking care. The call center will refer patients to both RCA facilities and other substance abuse treatment programs as appropriate.

Table 18



Source: *Data gathered from RCA Certificate of Need application
*Other facility data gathered from IRS 990 Forms

1. Hudson Health Services Inc. (2014) Form 990 Return of Organization Exempt From Income Tax. DLN: 93493024006015. Web. <www.guidestar.org>
2. Father Martin's Ashley. (2014) Form 990 Return of Organization Exempt From Income Tax. DLN: 93493047011375. Web.<www.guidestar.org>
3. The Henry J. Kaiser Family Foundation. (2014). How Will the Uninsured in Maryland Fare Under the Affordable Care Act? Retrieved July 24, 2015. <http://kff.org/health-reform/fact-sheet/state-profiles-uninsured-under-aca-maryland/>
4. Steffen, Ben. Tanio, Craig. Maryland Health Care Commission. "Commissioners Docket No. 13-12-2340" November 20 2014. Web. <http://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_con/documents/2014_decisions/con_father_martin_decision_20141120.pdf>

Transfer and Referral Agreements

6. Please provide an executed transfer and referral agreement with each of the organizations and entities listed in your response to this standard. (Note: the replacement application included one executed agreement; please forward the remaining if/when received.)

Applicant Response

Applicant included various executed referral agreements in Exhibit 17 to the Modified Application. In addition, Exhibit 28 is an agreement for the exchange of information and patients

as clinically needed between Hope House and the Maryland RCA facilities. RCA is continuing to discuss referral agreements with other providers.

Applicant will forward any additional agreements and letters of support as received to the Commission.

Sources of Referral

7. **The application did not list potential referral sources. Please do so, and for the immediate purposes of this review, assume that 15% of the facility's annual patient days required by Regulation .08 of this Chapter will be incurred by the indigent or gray area populations, including days paid under a contract with the Behavioral Health Administration (formerly the Alcohol and Drug Abuse Administration), or a jurisdictional alcohol or drug abuse authority, or the Medical Assistance program, as the standard specifies.**

Applicant Response

RCA has begun its referral network relationship on behalf of Applicant. To date, RCA has a signed agreements with Hope House, Community and Behavioral Health, Homecoming Project, Inc., Union Hospital, and UM Harford Memorial Hospital. See Exhibits 17 and 28.

Beyond these formal referral agreements, RCA has established contact with local Maryland community mental health centers and acute care facilities. In an attempt to further expand referral agreements, RCA has compiled a list of hospitals in the 30 mile radius in which it will contact in order to develop referral agreements among the healthcare facilities.

In addition, RCA will have a dedicated call center which will act as a point of service for individuals and families with contact information for facilities to provide recovery treatment. If an uninsured patient contacts RCA's call center and private financial resources are not available to cover the cost of care, applicable State-funded programs will be located by using the Substance Abuse and Mental Health Services Administration's (SAMHSA) treatment locator website and these patients will be provided a listing and contact information for these programs. RCA will also refer uninsured Maryland residents to the respective jurisdiction's county substance abuse/addiction program.

Statistical Projections

8. **The original set of three CON applications filed by RCA each showed a distinctly different mix and ratio of detox and residential patients, as shown in the table immediately below (value is the average # of annual discharges taken from the respective Tables F of the original applications). To summarize, Grove Neck had a far higher ratio of detox; Billingsley had a higher ratio of residential; while at Melwood the ratios were identical (see table below).**

Facility	Discharges			
	Residential	Detox	Total	Ratio of Detox to Residential
314 Grove Neck Rd	363	965	1328	2.66 - 1
4620 Melwood Rd	1002	1002	2004	1 - 1
11100 Billingsley Rd	1534	1111	2645	0.72 - 1

The replacement applications showed a different picture, with all facilities showing an equal number of detox and residential.

a. Please explain the differing ratios in the initial application.

Applicant Response

Part A and B will be answered together below.

b. Why did the projections change in the replacement application? How did you determine that congruity between detox and residential client volume is the best assumption to make for all these facilities? How did you reach this conclusion, and what evidence did you review and rely on?

Applicant Response

To better support an explanation of this ratio, RCA researched national and state wide discharge data for detox and residential beds. SAMHSA published discharge data for both detox and residential beds for the State of Maryland. These data concluded a detox to residential discharge ratio of 1 – 2.55.[1] RCA's methodology is based upon a combination of Maryland discharge data and the differing physical characteristics of each site.

Detox is more complicated because many patients are using multiple drugs, among them alcohol and benzos, already a longer detox. RCA's Utilization Management Team also will pursue the Acute Inpatient Rehabilitation (IR) level of care with MCOs to address patients who are actively receiving treatment that RCA is managing for both addictions and acute medical illness.

Scientific literature shows that 90 days of treatment provides the best chance for a patient to achieve long term sobriety.[1] However, length of treatment and length of stay will vary for each individual. Considering this, RCA used information from Cigna which provided a range of 13-30 days for the average length of stay for chemical dependency residential treatment. [3] The RCA value of 16 days falls on the Cigna range.

1. Substance Abuse and Mental Health Services Administration, *Treatment Episode Data Set (TEDS): 2011. Discharges from Substance Abuse Treatment Services.* BHSIS Series S-70, HHS Publication No. (SMA) 14-4846. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2014
2. Principles of Drug Addiction Treatment: A Research Based Guide (Third Edition). National Institute of Drug Abuse. "How long does drug addiction treatment usually last?" (December 2012). Web. Retrieved August 16, 2015. http://www.drugabuse.gov/publications/principles-

drug-addiction-treatment-research-based-guide-third-edition/frequently-asked-questions/how-long-does-drug-addiction-treatment

3. Clarifying the difference between Inpatient and Residential Chemical Dependency Treatment.(2010).RetrievedAugust28,2015. <http://www.cignabehavioral.com/web/basicsite/provider/newsAndLearning/newsletter/newsletter2011Quarter3/pages/inpatientVsResidential.html>

c. Would it not be prudent to assume some drop-out rate between detox and residential? Conversely, do you anticipate enrolling anyone in residential treatment who either did not require detox or has been through that phase at another facility?

Applicant Response

There will be some patients who do drop-out between detox and residential treatment, but RCA will attempt to limit the amount of drop-out through the services model listed on pages 9-10 of the Modified Application. RCA's research shows a large need for the planned services at the facilities and due to the large need for recovery services, RCA believes the impact of drop-outs will be negligible.

To the extent that patients do drop out of treatment, RCA expects to be able to fill any empty beds with patients seeking residential treatment only. The description of the referral agreement with Hope House in the Earleville response indicates there will be some transfer of residents following detox as defined by ASAM criteria.

Viability of the Proposal

9. The application asks an applicant to provide:

> *Audited financial statements for the past two years should be provided by all* ***applicant entities and parent companies*** *to demonstrate the financial condition of the entities involved and the availability of the equity contribution. If audited financial statements are not available for the entity or individuals that will provide the equity contribution, submit documentation of the financial condition of the entities and/or individuals providing the funds and the availability of such funds. Acceptable documentation is a letter signed by an independent Certified Public Accountant. Such letter shall detail the financial information considered by the CPA in reaching the conclusion that adequate funds are available.*

An SEC form ADV – not financial statements -- was provided for Deerfield Management Company (listed in Exhibit 3 as an investor with no role in operations), but nothing was submitted for the other 3 parent companies or for the applicant. Please remedy this oversight.

Applicant Response

Financial statements are not available for the Mary Margaret Trust and Recovery LLC. Furthermore, the financial condition of such investors is not relevant to the application as all funds to be invested by these entities have been received and expended at this time. All future equity investment and debt proceeds will be received from the Deerfield Private Design

Fund III, L.P., a fund affiliated with Deerfield Management Company ("Deerfield"). The financial condition of the fund providing the financing has been provided in the SEC form ADV in Exhibit 25 on the Modified Earleville Application.

10. **Provide documentation of the commitment of the equity partner, and provide documentation re: the bank that has been selected, and the terms of the loan. The citation in your cover letter refers us to p. 58, but provides no evidence that any commitments have been received.**

Applicant Response

The total financing for the projects has been committed by Deerfield. The loan documents associated with such financing are confidential documents. However, attached as Exhibit 29 is a letter prepared and executed by the executive management of Deerfield Management Company, which reflects that financing is committed for the Maryland projects.

Impact on Existing Providers

11. **Please explain how the applicant's proposed establishment of three ICF-CDs not enrolled in the Medicaid program will not have an adverse financial impact on existing residential treatment centers who participate and serve the Medicaid enrolled population and who provide charity care commitments that exceed the 6.15% offered by RCA.**

Applicant Response

RCA projects no adverse impact on the existing residential treatment centers due to the demand for beds in Maryland described in the bed need analysis Modified Application, Tables 9-10. The State's Bed Need Projection Methodology in COMAR 10.24.14, available public discourse, and RCA's analysis demonstrate that there is a clear rise in substance abuse related deaths and a subsequent need for addiction treatment options. Due to the need for beds in Maryland, the potential impact of establishing these three recovery centers would be positive by providing care for the individuals in need and contributing to the stated goals of Maryland and Governor Hogan of reducing the heroin and opioid epidemic.

Governor Hogan has tasked the Lt. Governor Boyd K. Rutherford to "bring together all of the stakeholders in order to come up with a plan to tackle this emergency." The following observations regarding the need for additional services and capacity were provided in Lt. Governor Boyd K. Rutherford's "Maryland Emergency Task Force on Heroin and Opioid – Interim Report":

- A strong recurring theme in the testimony delivered at the summits was the lack of sufficient resources to address the heroin and opioid epidemic and the serious issues Marylanders face as they try to access care
- Stakeholders across the State reported a critical shortage of qualified treatment professionals and insufficient capacity at both inpatient and outpatient treatment facilities
- The need to realign and secure additional funding and launch efforts to expand the capacity and collaboration of the treatment system
- Overwhelming inability to access treatment immediately

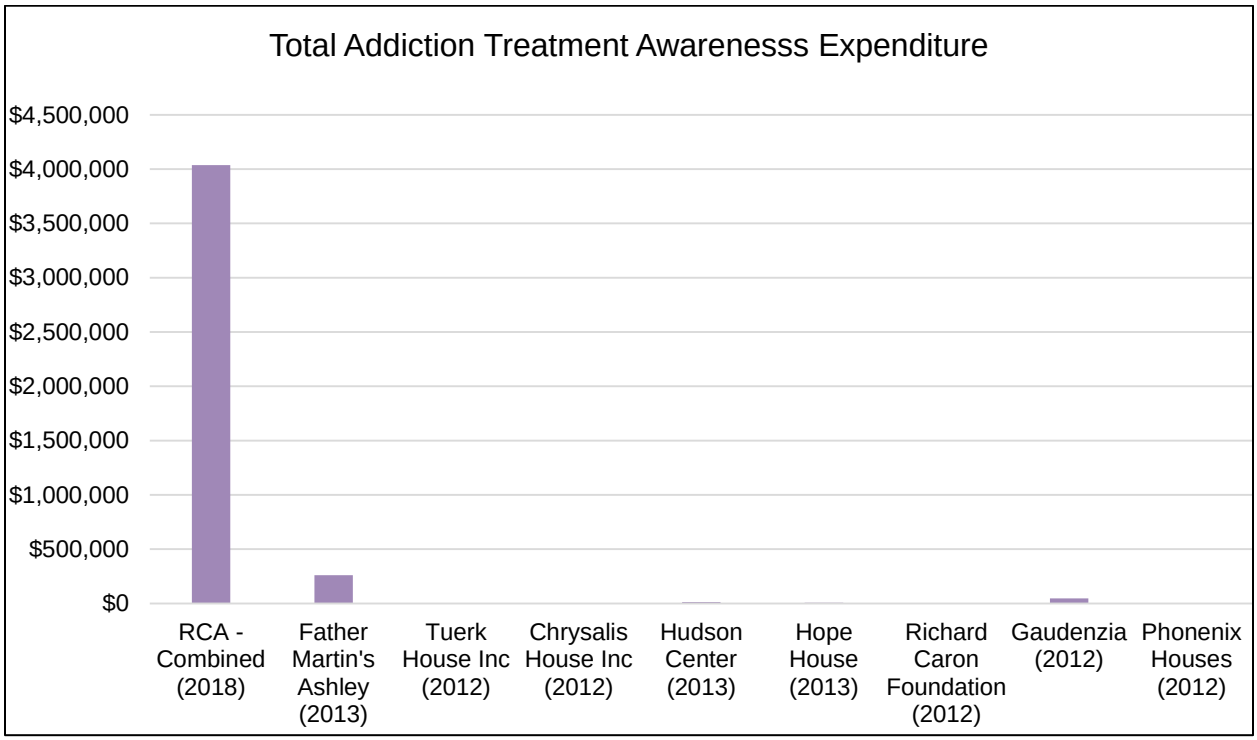
- Lack of appropriate levels of care in their respective county or region
- Health department and other county officials reported a shortage of long-term residential treatment options
- Data provided by the Department of Health and Mental Hygiene indicates that serious deficiencies exist in the treatment system that prevent an individual from accessing the full range of care settings and levels of care
- The admission data for fiscal year 2014 by level of care indicates inconsistent use and lack of availability of the full continuum of care in each part of the State
- With the exception of Baltimore City, every county has significant gaps in services
- Counties located in Western Maryland and on the Eastern Shore provide the majority of their services in outpatient settings, possess very limited access to residential services, and lack other services across the continuum of care
- Queen Anne's County, heroin is the driving force behind car thefts, thefts from autos, and burglaries

A copy of the Interim Report of the Governor's Heroin and Opioid Emergency Task Force is attached as Exhibit 30.

In addition, please see the compilation of news articles and other materials in Exhibit 31, which demonstrate the magnitude of the substance abuse epidemic.

Based on the RCA bed need analysis, there will be excess capacity of beds after taking RCA's requested volume into consideration; therefore, RCA will not harm other substance abuse treatment providers. It is clear that current addiction treatment awareness programs are not meeting the increasing demand for treatment for individuals in need. RCA is willing to invest in the State of Maryland to provide this needed service.

Table 20



Source: *Data gathered from RCA Certificate of Need application
*Other facility data gathered from IRS 990 Forms

Furthermore, as discussed in response to the question concerning the Gray Area Population, RCA's commitment for spending on addiction treatment awareness and the Call Center that RCA will launch will provide a service to both the individuals in need as well as the Maryland Track 2 providers. RCA's call center service will include a referral program to provide patients in need with information and access to other recovery centers in the surrounding area, increasing overall access to recovery statewide. Also, RCA will be a tax paying entity contributing to the State of Maryland. Additionally, RCA will be an active participant within Substance Abuse Management Information Systems (SAMIS) data collection for the State of Maryland. RCA's inclusion in this data submission program will help to improve quality and treatment of persons with substance abuse problems in the State of Maryland.

For the State of Maryland, there is a calculated need of 449 to 602 detox beds by 2019. See Table 21, below, and Modified Application, Table 7. RCA requests 21 detox beds for the Eastern Shore Maryland marketplace, while the calculated need for that region is 25 to 66 detox beds by 2019. These 21 detox beds will service the local regional areas as well as the State of Maryland's growing need for available beds. Based on the experience of other providers, RCA expects that only available 7 of these 21 beds will be used to treat Maryland residents, while the remaining 14 beds will be used by out of state patients. Modified Application, Table 8.

The need for these beds is further evidenced by Governor Hogan's Heroin and Opioid Emergency Taskforce. The Taskforce has noted that "Heroin and opioid drug dependency has more than doubled in Maryland over the last decade. The number of deaths in Maryland

related to heroin and opioid drug dependency has increased by more than 100 percent in the last five years."[1]

Table 21
Summary of Bed Need Analysis (2019)

Location	All ICF Bed Need	Projected Population (18+)	RCA Requested (Total / # for MD Residents)	Remaining Capacity after RCA Beds for MD Residents
Eastern Shore	25-81	418,847	21 / 6	19-75
Maryland	449-602	4,793,500	140 / 61	388-541

Source: RCA calculation using 2019 estimated ESRI population data. See Exhibit 32; Modified Application, Tables 6 and 8; Modified Applications for Upper Marlboro and Waldorf, Tables 6 and 8.

Lastly, as mentioned in response to Question 4, Medicaid does not currently cover the services that RCA seeks to provide to with non-hospital facilities with more than 16 beds. The federal Institutions for Mental Disease (IMD) Exclusion prohibits Medicaid reimbursement for adults between the ages of 21 and 64 who are receiving services provided in "a hospital, nursing facility, or other institution of more than 16 beds that is primarily engaged in providing diagnosis, treatment, or care of persons with mental diseases, including medical attention, nursing care and treatment of individuals with mental diseases."[2] Due to this rule, Medicaid will not be reimbursing the ICF stays as RCA's detox beds count exceeds 16 beds in each location.

1. Office of Lt. Governor Boyd Rutherford. Maryland.gov. "Maryland's Heroin and Opioid Emergency Task Force." (2015). Web. Retrieved August 16, 2015. <http://governor.maryland.gov/ltgovernor /home/heroin-and-opioid-emergency-task-force/heroin-facts/>
2. The Department of Mental Hygiene. Maryland Medicaid Seeks IMD Exclusion Waiver (July 28 2015). Web. http://dhmh.maryland.gov/newsroom1/Pages/Maryland-Medicaid-seeks-IMD-Exclusion-waiver.aspx

Table of Exhibits

Table of Tables

I hereby declare and affirm under the penalties of perjury that the facts stated in this Response to Completeness Questions Dated July 17, 2015 and its attachments are true and correct to the best of my knowledge, information, and belief.

August 31, 2015
Date

J.P. Christen
Chief Operating Officer
Recovery Centers of America

#537072
013522-0001

I hereby declare and affirm under the penalties of perjury that the facts stated in this Response to Completeness Questions Dated July 17, 2015 and its attachments are true and correct to the best of my knowledge, information, and belief.

August 31, 2015
Date

Deni Carise
Chief Clinical Officer
Recovery Centers of America

I hereby declare and affirm under the penalties of perjury that the facts stated in this Response to Completeness Questions Dated July 17, 2015 and its attachments are true and correct to the best of my knowledge, information, and belief.

August 31, 2015
Date

Kevin McClure
Chief Financial Officer
Recovery Centers of America

I hereby declare and affirm under the penalties of perjury that the facts stated in this Response to Completeness Questions Dated July 17, 2015 and its attachments are true and correct to the best of my knowledge, information, and belief.

August 31, 2015
Date

Deanna Telese
Corporate Controller
Recovery Centers of America

#537073
013522-0001

I hereby declare and affirm under the penalties of perjury that the facts stated in this Response to Completeness Questions Dated July 17, 2015 and its attachments are true and correct to the best of my knowledge, information, and belief.

August 31, 2015
Date

Bryan Kennedy
Junior Financial Analyst
Recovery Centers of America

#537077
013522-0001

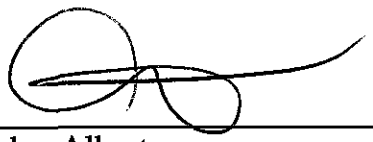
I hereby declare and affirm under the penalties of perjury that the facts stated in this Response to Completeness Questions Dated July 17, 2015 and its attachments are true and correct to the best of my knowledge, information, and belief.

August 31, 2015
Date

John Evans
Facilities Manager
Recovery Centers of America

I hereby declare and affirm under the penalties of perjury that the facts stated in this Response to Completeness Questions Dated July 17, 2015 and its attachments are true and correct to the best of my knowledge, information, and belief.

August 31, 2015
Date



Ashley Alberta
Director of Training
Recovery Centers of America

I hereby declare and affirm under the penalties of perjury that the facts stated in this Response to Completeness Questions Dated July 17, 2015 and its attachments are true and correct to the best of my knowledge, information, and belief.

August 31, 2015

Date

David Tyler
Principal
Healthcare Advisory Services
Grant Thornton LLP

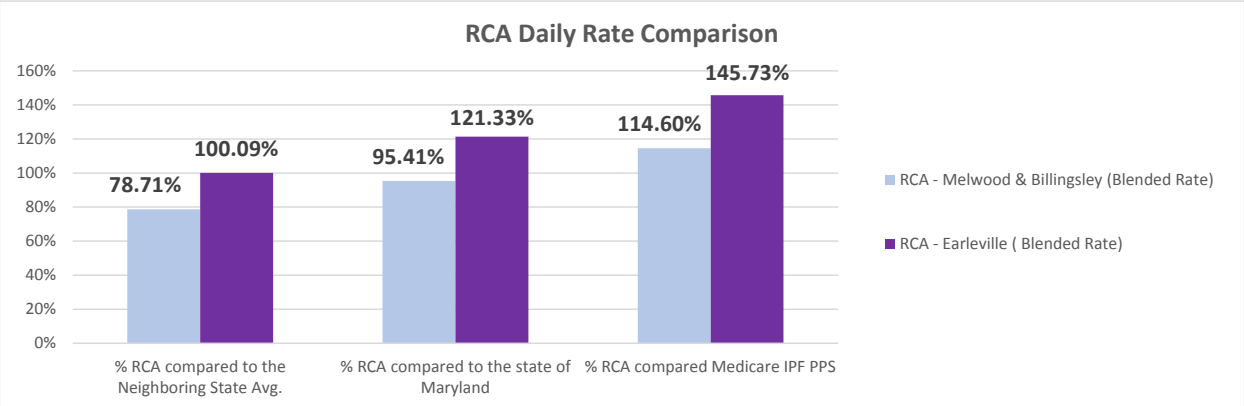
#537079
013522-0001

EXHIBIT 27

RCA Daily Rate Comparison				
	RCA Model Average Daily Rate	**% RCA compared to the Neighboring State Avg.**	**% RCA compared to the state of Maryland**	**% RCA compared Medicare IPF PPS**
RCA - I/P	$724	68%	83%	100%
RCA - Melwood & Billingsley (Blended Rate)	$832	79%	95%	115%
RCA - Earleville (Blended Rate)	$1,058	100%	121%	146%
Neighboring States				
Rhode Island (2013)	$1,326			
Pennsylvania (2013)	$956			
New Jersey (2013)	$1,001			
Massachusetts (2013)	$1,128			
Maryland (2013)	$872			
Neighboring State Avg (2013)	$1,057			
Medicare IPF PPS (2015)	$726			

State Data = Truven Health

Medicare IPF PPS Data = CMS



Points of Note

RCA compares well with the state of Maryland, falling within 5% of the daily rate at Melwood and Billingsley and over 21% at Earleville (larger self-pay population)

RCA compares higher than the Medicare daily rates by 15% in Melwood & Billingsley and 46% in Earleville, which is expected as commercial payors will have higher reimbursement than governmental payors

RCA compares reasonably with the Neighboring State Avg. falling exactly in the daily rate for Earleville and 21% within the Melwood & Billingsley markets

EXHIBIT 28

RECOVERY CENTERS OF AMERICA
610.239.6100
2701 Renaissance Boulevard, Fourth Floor
King of Prussia, Pennsylvania 19406

REFERRAL AGREEMENT

The undersigned acknowledges that a reciprocal agreement has been established between Recovery Centers of America (RCA) and ***Addictions Recovery Inc., d/b/a Hope House***. ***Hope House*** agrees to receive referrals from RCA for detoxification services. In addition both parties agree to refer patients to the other if there is a clinical, administrative or geographic need.
This agreement is for all RCA program locations that are checked below.

Recovery Centers of America
314 Grove Neck Rd
Earleville, MD 21919

Recovery Centers of America
11100 Billingsley Road
Waldorf, MD 20602

Recovery Centers of America
4620 Melwood Road
Upper Marlboro MD 20772

RCA provides comprehensive addiction treatment and dual diagnosis services. RCA programs provide inpatient rehabilitation, partial hospitalization and outpatient services.

Both Parties agree to refer appropriate patients in accordance with program policy and procedures and to abide by federal, state and county standards dealing with the confidentiality of patient information. Any information needed for continuity of care will be furnished upon request provided that all confidentiality requirements have been met. In addition, it is understood that patients appropriate for admission shall be treated without regard to race, religion, sex, sexual preference, national origin, or physical disability.

Nothing in this agreement shall be construed as limiting the rights of either party to enter into similar agreements with any other facility. This agreement may be terminated by either party within 30 days of written notice to the other. This agreement becomes effective on the date signed below and will remain in effect for two years unless terminated in writing by either party.

RCA	REFERRAL AGENCY
SIGNATURE	SIGNATURE
COO	CEO
TITLE	TITLE
DATE 8/3/15	DATE Aug. 3, 15

EXHIBIT 29

DEERFIELD

780 Third Avenue
37th floor
New York, NY 10017

T: 212-551-1600
www.deerfield.com

Jonathan Isler
Chief Financial Officer
Deerfield Management Company, L.P.
780 Third Ave, 37th Floor
New York, NY 10017

August 21, 2015 **CONFIDNENTIAL TREATMENT REQUESTED**

Mr. Ben Steffen
Health Facilities Coordination Officer
Maryland Health Care Commission
4160 Patterson A venue
Baltimore, Maryland 21215

Re: *$231.5 million financing*

Dear Mr. Steffen

At the request of our partner, Recovery Centers of America, we would like to confirm to the Commission that Deerfield Management entered into a financing transaction with Recovery Centers of America on May 12, 2015. Pursuant to this transaction, Deerfield Private Design Fund III, L.P. has agreed to provide Recovery Centers of America with up to $231.5 million in financing. Such amount includes over $48 million dollars specifically earmarked for the acquisition and construction of the three subject properties in Maryland. We look forward to helping address what we believe to be a shortage of addiction treatment beds within the state of Maryland. Please feel free to reach out to one of our partners, Leslie Henshaw (212.922.1345), who is managing this investment on the firm's behalf should you require further clarification.

Sincerely,

DEERFIELD MANAGEMENT COMPANY, L.P. (Series C)
By: Flynn Management LLC, its General Partner

Name: Jonathan Isler
Title: Authorized Signatory

EXHIBIT 30

INTERIM REPORT

HEROIN & OPIOID EMERGENCY TASK FORCE

Lieutenant Governor Boyd K. Rutherford, Chair

AUGUST 24, 2015

Table of Contents

August 24, 2015

Larry Hogan
Governor, State of Maryland
100 State Circle
Annapolis, MD 21401

Dear Governor Hogan:

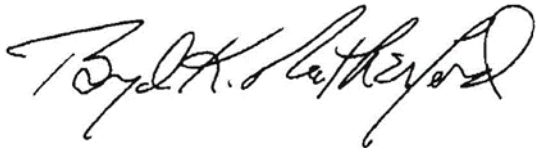
Through our travels during the 2014 gubernatorial campaign, we heard stories from families, law enforcement, and healthcare professionals of the devastation heroin and opioid abuse has wreaked on communities. As a candidate, you stood alone in publicly recognizing the crisis that has engulfed our State.

I applaud your leadership in creating the Heroin and Opioid Emergency Task Force and thank you for appointing me as Chair. Over the past six months, the Task Force has brought together hundreds of stakeholders in order to develop a plan to tackle this emergency and provide you with holistic and comprehensive recommendations.

Enclosed is our Interim Report, which includes our findings and Task Force workgroup updates. Though final recommendations are not due until later this year, the Interim Report includes 10 recommendations, which can be implemented by the relevant state agency within a few weeks. It also includes 10 funding announcements: seven Department of Health and Mental Hygiene allocations to improve access to treatment and quality of care and three Governor's Office of Crime, Control, and Prevention grants to support law enforcement efforts.

Thank you for your continued leadership and support. We look forward to submitting our Final Report on December 1, 2015.

Sincerely,



Boyd K. Rutherford
Lieutenant Governor, State of Maryland
Chair, Heroin and Opioid Emergency Task Force

I. EXECUTIVE SUMMARY

On February 24, 2015, Governor Hogan issued Executive Order 01.01.2015.12, which created the Heroin and Opioid Emergency Task Force. The Task Force is composed of 11 members with expertise in addiction treatment, law enforcement, education, and prevention. Lieutenant Governor Boyd K. Rutherford serves as the Chair. The Task Force was charged with advising and assisting Governor Hogan in establishing a coordinated statewide and multi-jurisdictional effort to prevent, treat, and significantly reduce heroin and opioid abuse.

In addition, the Task Force must provide recommendations for policy, regulations, or legislation to address the following:

a) Improvement in access to heroin and opioid drug addiction treatment and recovery services across the State, including in our detention and correctional facilities, as well as development of specific metrics to track progress;
b) Improvement and standardization of the quality of care for heroin and opioid drug addiction treatment and recovery services across the State, as well as development of specific metrics to track progress;
c) Improvement in federal, state, and local law enforcement coordination to address the trafficking and distribution of heroin and opioids throughout the State;
d) Improvement of coordination between federal, state, county, and municipal agencies to more effectively share public health information and reduce duplicative research and reporting;
e) Help for parents, educators, community groups, and others to prevent youth and adolescent use of heroin and opioids;
f) Development of alternatives to incarceration for nonviolent offenders whose crimes are driven primarily by their drug addiction; and
g) Increased public awareness of the heroin and opioid abuse crisis, including ways to remove prejudices associated with persons suffering from substance use disorders.

This Interim Report details the Task Force's findings from the regional field summits relating to the impact of heroin and opioid drug use on public health, law enforcement, addiction treatment professionals, families, and communities at large. It is divided into four major sections: Summit Findings, Workgroup Areas of Further Study, Preliminary Recommendations, and Approved Resource Allocations.

The Summit Findings section reflects information provided by the hundreds of stakeholders who testified at the regional summits and in subsequent stakeholder conversations with members of the

Task Force. There are five subsections: a) Access to Treatment; b) Quality of Care; c) Law Enforcement; d) Drug Courts and Reentry; and e) Education and Prevention. Major themes reflected in this section include: insufficient federal, state, and local funding; a critical shortage of residential and outpatient treatment options; inconsistent quality of care standards; an increase in heroin- and opioid-related criminal activity; the promising preliminary outcomes of day reporting centers and jail-based Vivitrol (*i.e.* naltrexone) programs; and the need to raise public awareness and reach young people earlier in more innovative ways.

The Task Force subdivided into five workgroups, which mirrored the five major categories of information provided to the Task Force at the regional summits and through electronic submissions: a) Access to Treatment and Overdose Prevention; b) Quality of Care and Workforce Development; c) Intergovernmental Law Enforcement Coordination; d) Drug Courts and Reentry; and e) Education, Public Awareness, and Prevention. The Workgroup Areas of Further Study section details the objectives, guiding principles, and specific issues under consideration by each workgroup.

The Preliminary Recommendations section details 10 recommendations that can be implemented within a few weeks at little or nominal cost to the relevant state agency. Five recommendations relate to improving prevention and education efforts for youth and adolescents, two relate to law enforcement and the jail-based population, one relates to quality of care in hospital emergency rooms, another relates to highlighting and leveraging faith-based resources, and the last relates to an immediate weeklong public awareness push.

The Approved Resource Allocations section details how $2,000,000 in additional treatment and prevention funding, released by Governor Hogan for fiscal 2016, will be spent. Generally, funds will be spent on naloxone training and distribution to local health departments and local detention centers, overdose survivor outreach programs in hospital emergency departments, prescriber education to improve quality of care, recovery housing for women with children, detoxification services for women with children, and to increase bed capacity at the A.F. Whitsitt Center, a state-operated residential treatment facility on the Eastern Shore. It also details how $189,000 in Governor's Office of Crime Control and Prevention grant funding to local law enforcement will be spent for overtime pay, gang and heroin disruption efforts, and license plate reader technology.

The final report is due on December 1, 2015, and will contain further recommendations.

II. SYNOPSIS OF PRELIMINARY RECOMMENDATIONS

Below are synopses of the Heroin and Opioid Task Force's preliminary recommendations to Governor Hogan that can be implemented within weeks upon authorization.

1. **Earlier and Broader Incorporation of Heroin and Opioid Prevention into the Health Curriculum**

   The Task Force recommends that the Maryland State Department of Education's Division of Curriculum, Assessment, and Accountability develop age-appropriate lessons and resources on heroin and opioid use in support of the Maryland Comprehensive Health Curriculum.

2. **Infusion of Heroin and Opioid Prevention into Additional Disciplines**

   The Task Force recommends that MSDE's Division of Curriculum, Assessment, and Accountability develop Disciplinary Literacy lessons integrating education on heroin and opioid use with College and Career-Ready Standards.

3. **Heroin and Opioid Addiction Integrated into Service Learning Projects**

   The Task Force recommends that MSDE's Service-Learning Office create service learning curriculum-based projects that engage students in addressing the heroin and opioid public health crisis.

4. **Student-based Heroin and Opioid Prevention Campaign**

   The Task Force recommends that MSDE partner with the Office of the Governor and state agencies on a coordinated, multi-tiered public education campaign that discourages students from using heroin or abusing opioids.

5. **Video PSA Campaign**

   The Task Force recommends the recruitment of university film students to develop and produce Public Service Announcements (PSA) to be distributed for broadcast and State social media platforms.

6. **Maryland Emergency Department Opioid Prescribing Guidelines**

   The Task Force recommends that each acute care hospital work with its Emergency Department personnel to implement, as medically appropriate, the opioid prescribing guidelines developed by the Maryland Hospital Association.

7. **Maryland State Police Training on the Good Samaritan Law**

   The Task Force recommends that the Maryland State Police provide training to field and investigative personnel on the legal requirements of the Good Samaritan Law.

8. **Maryland State Police Help Cards and Health Care Follow-Up Unit**

   The Task Force recommends that the Maryland State Police provide heroin and opioid "Help Cards" to all MSP troopers and develop, in conjunction with the Department of Health and Mental Hygiene, a healthcare follow-up unit.

9. **Faith-based Addiction Treatment Database**

   The Task Force recommends that the Governor's Office of Community Initiatives' Interfaith Coordinator develop a comprehensive database of faith-based organizations that provide addiction treatment services.

10. **Overdose Awareness Week**

    The Task Force recommends that the first week of September be declared Maryland Overdose Awareness Week, which will include a conference for Overdose Response Program (ORP) entities and other local events to raise awareness of the addiction and overdose problem.

III. SYNOPSIS OF APPROVED RESOURCE ALLOCATIONS

Below are synopses of approved resource allocations that Governor Hogan, in consultation with the Heroin and Opioid Emergency Task Force, has prioritized in the effort to combat the heroin and opioid public health crisis.

1. **Restoring the A.F. Whitsitt Center to a 40-bed Capacity**
   Governor Hogan will allocate an additional $800,000 in fiscal 2016 to the A.F. Whitsitt Center to restore capacity to 40 beds, allowing an additional 240 patients to receive treatment each year.

2. **Providing Community-Based Naloxone Training and Distribution**
   Governor Hogan has directed $500,000 in supplemental grant awards to Local Health Departments (LHD) to support ORP trainings.

3. **Piloting Overdose Survivor Outreach Program in Hospital Emergency Departments**
   Governor Hogan has directed the Behavioral Health Administration (BHA) to allocate $300,000 towards establishing a pilot Overdose Survivor Outreach Program (OSOP) in Baltimore City.

4. **Piloting Naloxone Distribution to Individuals Screened Positive for Opioid Use Disorder at Release from Local Detention Centers**
   Governor Hogan has directed BHA to provide $150,000 through supplemental awards to three Southern Maryland LHDs - Calvert, Charles, and St. Mary's Counties - to implement overdose education and naloxone distribution programs for individuals released from local detention centers.

5. **Expanding Supportive Recovery Housing for Women with Children**
   Governor Hogan has directed BHA to allocate $100,000 for recovery housing, prioritizing those jurisdictions that currently do not have recovery housing for women with children and those with a significant waiting list.

6. **Supporting Detoxification Services for Women with Children**
   Governor Hogan has directed BHA to make an additional $50,000 available to residential detoxification services with childcare services on site in Baltimore City.

7. **Targeted Outreach and Education to Aberrant/High-Risk Opioid and Other Controlled Substance Prescribers**

   Governor Hogan has directed BHA to allocate $100,000 to conduct targeted outreach and education for practitioners identified as engaging in high-risk prescribing practices.

8. **Overtime for Dorchester County Law Enforcement**

   Governor Hogan, through the Office of Crime Control and Prevention (GOCCP), will provide Dorchester County with $24,700 to provide overtime for law enforcement to address the opioid and heroin epidemic.

9. **Maryland State Police Gang/Heroin Disruption Project**

   Governor Hogan, through GOCCP, will provide Maryland State Police (MSP) with $40,000 to support MSP's Gang/Heroin Disruption Project.

10. **License Plate Reader Technology**

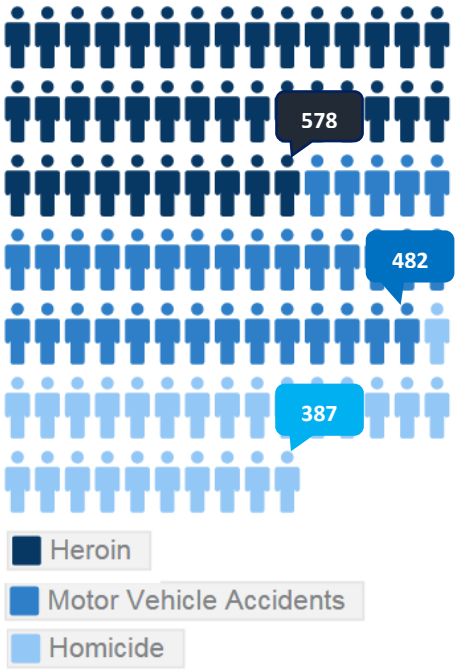
    Governor Hogan, through GOCCP, will provide the Ocean City Police Department with $124,635 to fund license plate reader (LPR) technology at the northern end of Ocean City to target heroin entering Maryland across state lines.

HEROIN & OPIOID EMERGENCY TASK FORCE

INTERIM REPORT

IV. INTRODUCTION

Throughout the 2014 gubernatorial campaign, then-candidates Larry Hogan and Boyd K. Rutherford visited every corner of the State and everywhere they traveled, heard the same tragic stories of how the heroin and opioid epidemic was destroying families and communities. It was clear that it was a public health crisis affecting Marylanders of all walks of life, regardless of socio-economic status, race, religion, education, or any other demographic. The State's prior response focused almost entirely on overdose prevention. Such efforts are important given that fatal overdoses from heroin outpaced the State's homicide rate and deaths from automobile accidents.[1] However, this administration is taking a comprehensive approach through education, treatment, quality of care, law enforcement, alternatives to incarceration, and overdose prevention.



DATA SOURCE: MARYLAND DEPARTMENT OF HEALTH AND MENTAL HYGIENE 2014 ANNUAL REPORT

On February 24, 2015, after only a month in office, Governor Hogan issued Executive Order 01.01.2015.12, formally creating the Heroin and Opioid Emergency Task Force. The Task Force was authorized to employ every resource available to take a holistic approach to address this public health emergency.

[1] In 2014, there were 578 heroin overdose deaths versus 421 homicides and 511 motor vehicle fatalities. *See* DHMH: Drug- and Alcohol-Related Intoxication Deaths in Maryland, 2014, and DHMH Vital Statistics Administration, Unpublished data, 2015. In 2013, there were 464 heroin overdose deaths versus 387 homicides and 482 motor vehicle fatalities. *See* DHMH: Drug- and Alcohol-Related Intoxication Deaths in Maryland, 2013, and DHMH: Maryland Vital Statistics Annual Report, 2013.

Task Force members include:

- Lieutenant Governor Boyd K. Rutherford, Chair
- Circuit Court Judge Julie S. Solt, Frederick County
- Sheriff Timothy Cameron, St. Mary's County
- Senator Katherine Klausmeier, District 8, Baltimore County
- Delegate Brett Wilson, District 2B, Washington County
- Nancy Wittier Dudley, President, Resilient Soul Services, Inc.
- Elizabeth Embry, Chief of the Criminal Division, Office of the Attorney General
- Dr. Michael B. Finegan, Peninsula Mental Health Services
- Dr. Bankole Johnson, Psychiatry Department Chair, UMD School of Medicine
- Tracey Myers-Preston, Executive Director, MD Addiction Directors Council
- Linda Williams, Executive Director, Addiction Connections Resource, Inc.

Pursuant to the Executive Order, the Task Force is required to submit recommendations on ways to improve public awareness, access to treatment, quality of care, alternatives to incarceration for non-violent drug abusers, and law enforcement coordination. The Task Force held six regional summits throughout the State to hear testimony from persons with substance use disorders, family members, educators, faith leaders, elected officials, law enforcement, addiction treatment professionals, and other stakeholders. The summits were held in Elkton, Baltimore City, Prince Frederick, Hagerstown, Salisbury, and Silver Spring. Participants offered unique perspectives into this public health crisis. An approximate total of 223 people testified before the Task Force—21 elected officials, 31 law enforcement officials, 78 addiction treatment professionals, and 93 members of the general public. In addition, dozens of people submitted written testimony, suggestions, and comments to the Task Force through its Web portal and email address.

> ***"As I travel throughout our State, I hear the devastating stories from our families and friends who hurt from the devastation heroin has wreaked on our communities."***
>
> *–Governor Larry Hogan*

This interim report reflects the Task Force's findings, the ongoing efforts of its workgroups, preliminary recommendations, and approved resource allocations with the understanding that a final report with further recommendations will be submitted to Governor Hogan on December 1, 2015.

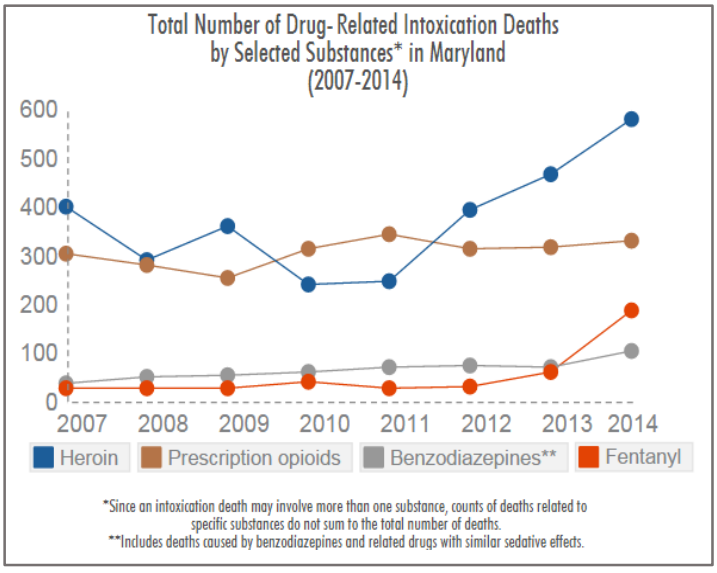
V. SUMMIT FINDINGS

The Heroin and Opioid Emergency Task Force held six regional summits to solicit input and guidance from a wide variety of sources. Testimony delivered at the summits can broadly be categorized into five areas: a) Access to Treatment; b) Quality of Care; c) Law Enforcement; d) Drug Courts and Reentry; and e) Education and Prevention. Below is a summary of the findings from the regional summits.

a. Access to Treatment

A strong recurring theme in the testimony delivered at the summits was the lack of sufficient resources to address the heroin and opioid epidemic and the serious issues Marylanders face as they try to access care. Stakeholders across the State reported a critical shortage of qualified treatment professionals and insufficient capacity at both inpatient and outpatient treatment facilities. The problem is acute in rural counties, where it is difficult to attract and retain treatment professionals. These challenges, among others, highlighted the need to realign and secure additional funding and launch efforts to expand the capacity and collaboration of the treatment system.

At each summit, there was compelling testimony that addressed the overwhelming inability to access treatment immediately. Families consistently reported experiencing multiple and repeated barriers, such as excessively long waiting periods, high deductibles and co-pays, delayed insurance authorization challenges, lack of appropriate levels of care in their respective county or region, among others. Such delays can result in serious consequences including death.



DATA SOURCE: MARYLAND DEPARTMENT OF HEALTH AND MENTAL HYGIENE 2014 ANNUAL REPORT

Health department and other county officials reported a shortage of long-term residential treatment options, though long-term rehabilitation is not always essential or necessary for every patient. Relatedly, testimony delivered to the Task Force highlighted the need to improve the transition of care for patients when they move from high-intensity residential

treatment to lower-intensity outpatient treatment to ensure high-quality and seamless continuity of patient care.

Stakeholders offered a variety of opinions about the most appropriate treatment needed in the community. Many cited limited or no availability of treatment that includes medication and advocated for the need for additional resources to utilize medication as an important component of treatment. On the other hand, some local parent coalitions were disturbed that medication usage during treatment has seemingly emerged as the sole option to address heroin and opioid dependency and that long-term abstinence-based residential treatment appears to have largely vanished as a valuable treatment option. The testimony also highlighted competing views in the community between those that would like to increase capacity and local treatment options and those that have voiced resistance to new or expanding programs in their communities.

b. Quality of Care

Individuals, families, community groups, and others from the private sector expressed deep concern regarding the increased challenges of providing effective substance use disorder treatment for heroin and opioid dependency. Established standards of care for addiction medicine and practice are not applied at all treatment facilities, resulting in inconsistent quality of care across providers in the State. Currently, notions of quality of care are often based on diagnoses, availability of services, and provider comfort rather than an evidence-based, outcome-driven approach. Additionally, person-centered care is often missing in Maryland's approach to behavioral health, which highlights the active involvement of patients and their families in the design of new care models and in decision-making about individual options for treatment.

Testimony from the public, including parents of children who overdosed and/or died, raised concerns with questionable prescribing practices of some physicians and dentists as well as the quality of some substance use disorder treatment programs, which were not diligent in monitoring the prescribing of opioid replacement medications and providing inadequate medication-only care. At the same time, there appeared to be some confusion by the public as to realistic expectations of the substance use disorder treatment system and what kinds of treatments are best for whom. Finally, there was great dissatisfaction regarding standards of care generally, gaps in communication and collaboration between health care services and law enforcement, and lack of accountability for outcomes.

A broad range of opinions were expressed regarding the use of medications to treat opioid dependency. There was general consensus on the value of Vivitrol (*i.e.* naltrexone), an opioid

antagonist, when dispensed in the context of a comprehensive treatment program. Yet there is concern that the public might be led to believe that naltrexone is a cure-all, which is not yet borne out by sufficient data. Opinions were decidedly mixed regarding opioid replacement interventions, such as methadone and buprenorphine. For example, these medications were described as "an essential component in the long-term treatment of opioid dependency"; "helpful for short-term use only"; "destructive to the patient seeking long-term recovery"; "useful as a 'stabilizing agent' only to prepare the patient to receive treatment"; and "extremely problematic to the operation of treatment programs and other community-based programs since the replacement medications are so often sold by patients for cash to then purchase heroin." A number of people stressed that a key component for addiction treatment and successful recovery is the assumption of personal responsibility. They go on to argue that many patients enter treatment as passive recipients and many treatment regimens involving medication-assisted drug treatment programs fail to promote the theme of personal responsibility.

Nevertheless, there is data on the effectiveness of opioid replacement in the treatment of opioid addiction from decades of research and endorsed by government agencies, including the federal Substance Abuse and Mental Health Services Administration (SAMHSA). According to SAMHSA, opioid replacement therapies have been shown to increase treatment retention while decreasing mortality, criminality, and risk of infectious disease.

Incidents of abuse by both prescribers and patients were reported in most counties. Some recurring concerns that point to the potential for medication diversion or abuse include: the worker's compensation system where medications are reimbursed at 100 percent with no co-pay; in physicians' offices, where medications are marked up at a rate of 500-600 percent; and in some medication-assisted drug treatment programs that maintain patients at higher doses and for a longer period of time than may be medically necessary.

c. Law Enforcement

Though it is evident that we cannot arrest our way out of the State's heroin and opioid problem, law enforcement still plays a very important role in combating this public health crisis. The scale of the heroin and opioid crisis is swamping law enforcement and depleting their resources, leaving local law enforcement ill-equipped to respond to the magnitude of the heroin and opioid problem in Maryland. Sheriffs and police chiefs across the State explained that they are devoting more and more of their resources to fighting heroin trafficking and related crime. In Kent County, 75-80 percent of drug enforcement activity

> ***"We can't arrest our way out of this problem."***
>
> *–St. Mary's County Sheriff Tim Cameron*

focuses on stemming the flow of heroin into the county. In St. Mary's County, 34 percent of all arrests are opioid-related. In Queen Anne's County, heroin is the driving force behind car thefts, thefts from autos, and burglaries. In Calvert County, more than half of all burglaries, sexual assaults, and homicides are related to heroin and opiates. In Allegany County, open-air drug markets are now common. To combat this problem, local jurisdictions have increased the numbers of sheriffs and prosecutors and created new intervention teams.

One of the key strategies presented at the summits is inter-agency collaboration. In Carroll County, prosecutors, sheriffs, members of the health department, and others have formed an overdose response team that focuses on prevention and education, prosecution of repeat drug trafficking offenders, and early intervention for those with minor offenses (treatment and education). They are also adding five detectives to the sheriff's office. Anne Arundel County has a similar collaboration and works closely with Anne Arundel County police and the United States Drug Enforcement Administration to bring cases against distributors and interrupt supply networks. In Caroline County, the Maryland State Police, collaborating with five local police departments, built a 25 co-defendant case. Cecil County has increased funding for their forensic lab. These collaborations were widely praised, but a common theme emerged that additional help is needed with heroin trafficking across State borders.

Some law enforcement officials suggested initiating a criminal investigation in response to every heroin or opioid overdose to identify whether the person who supplied the drugs should be criminally charged and to learn more about the supply network. In the meantime, some counties are referring every fatal overdose to federal authorities for prosecution of the supplier for homicide, since Maryland does not have an equivalent statute that would allow for a homicide charge. On the legislative front, many sheriffs and prosecutors were in favor of a change to Maryland statute to allow for prosecution of suppliers in the case of a fatal overdose and expressed concern about the decriminalization of small amounts of marijuana. The mandatory minimum sentencing laws for repeat offenders were met with mixed reactions. Some wanted stricter mandatory minimums while others praised the General Assembly for relaxing the mandatory minimum sentencing laws. Advocates also praised legislation signed by Governor Hogan that shields certain criminal records to help people obtain housing and employment, and legislation that created the Justice Reinvestment Council.

d. Drug Courts and Reentry

While many of the stakeholders who testified at the summits agreed that incarcerating an offender is not the appropriate way to solve the heroin and opioid epidemic, the criminal justice system does offer an interface to intervene and connect the individual with the resources needed for recovery. Drug courts represent one such opportunity for an offender to

connect with substance use disorder services. Drug court eligibility requirements vary in each jurisdiction, as do the available resources. These programs include needs assessments on arrest, diversion, jail-based substance use disorder treatment, and reentry programs.

Circuit Court Judge Nelson Rupp testified about the extensive conditions for completing the Montgomery County Drug Court program. This program highlighted the value of rapid communication and decisive action by the court and treatment program to deal with non-compliance. The program requires a minimum 30 days in a pre-release center, attending night court weekly, counseling two to three times a week, obtaining a job before moving into a sober home, living in a sober home, and getting slips signed by a sponsor and human services partner. A probation agent also makes periodic home checks. The program takes about two years to complete. Since its inception in 2004, approximately 163 participants have graduated from the Montgomery County Drug Court.

According to Retired Circuit Court Judge Ellen Heller, the Baltimore City Drug Court program includes addiction and mental health treatment, job training, housing, and education. She emphasized the cost savings for treating offenders instead of incarcerating them, but noted that the availability of quality programs, delays in accessing treatment, and the prevalence of co-occurring disorders remain prominent challenges for drug courts. She also identified other alternatives to incarceration for addicted offenders, including pre-charge and pre-booking programs in other jurisdictions.

Howard County State's Attorney Dario Broccolino testified that his county has both a drug court and a reentry program through the Howard County Detention Center. While the reentry program is new, it features drug treatment referral and occupational therapy. Baltimore County State's Attorney Scott Shellenberger identified diversion programs that are being expanded to include offenses other than marijuana. Calvert County State's Attorney Laura Martin noted the sizeable increase in addicted offenders in her county. Calvert County has a drug court; however, it has less than 30 participants. Calvert County is interested in increasing the number of participants because the success of the program makes the community safer. Sheriff Evans from Calvert County noted that forcing addicts into treatment through the criminal justice system is effective.

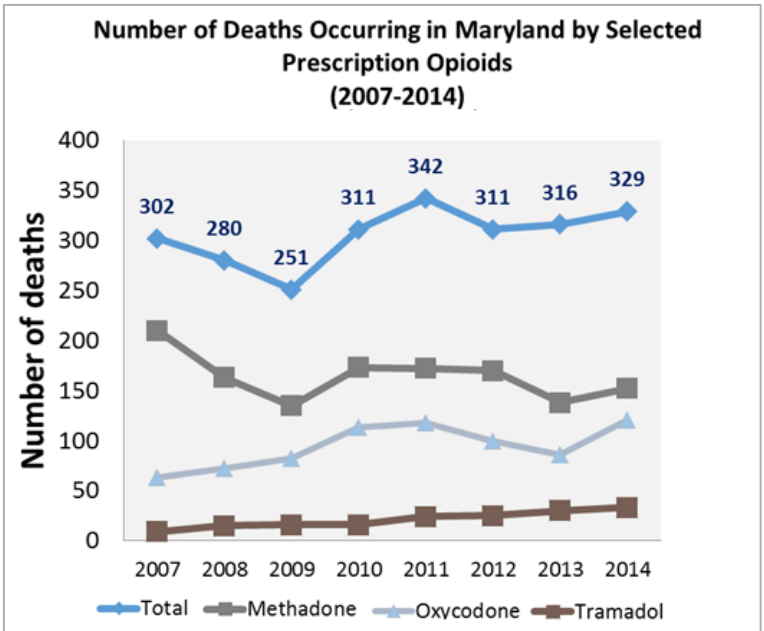
Testimony delivered at the Western Maryland summit discussed the use of Vivitrol (*i.e.* naltrexone) as part of law enforcement treatment options, particularly in Washington County where the Vivitrol pilot program has resulted in zero recidivism or failed tests thus far. Washington County has also been exploring a day reporting center to assist with wraparound services, such as drug and mental health treatment, job training, drug testing, life

skills, and other services, outside of the jail. Frederick County recently received a grant from the Governor's Office of Crime Control and Prevention to include Vivitrol as part of the detention center treatment options. It is important to note, however, that use of extended-release naltrexone in opioid addiction treatment is relatively novel when compared to opioid replacement therapy, and therefore less research exists to describe its effectiveness.

Other stakeholders recommended increased decriminalization efforts, reducing mandatory sentencing, expanding expungement availability, and enhancing reentry services for incarcerated inmates with sentences longer than 18 months. These services include mental health and substance use disorder treatment, housing, and other community benefits. It was also noted that individuals in recovery often have an added hurdle of criminal records to further frustrate employment and housing challenges.

e. Education and Prevention

At each regional summit, people expressed the need to start educating children at a younger age about the dangers of prescription medications, heroin, and other opioids. It was pointed out that there has been a growing problem of young people stealing prescription medications from family members and distributing them at parties (*i.e.* pill parties), with no idea of the medication's prescribed use or effect. Relatedly, it was suggested that parents need to become educated on heroin and opioid abuse, specifically how to talk with their children about drugs and what signs to look for that may indicate drug abuse. Similarly, teachers, law enforcement, judges, and even health care professionals need additional training to more effectively identify substance use disorders.



SOURCE: MARYLAND DEPARTMENT OF HEALTH AND MENTAL HYGIENE 2014 ANNUAL REPORT

Stakeholders recommended that the State undertake a large-scale, coordinated media campaign employing all forms of media in order to educate the public and reduce the stigma associated with substance use disorders and addiction treatment. A number of creative ideas

were discussed to involve young people in the development of media campaigns in order to reach target populations. Others suggested that the State should publicize how to safely store and dispose of unused prescription medications.

Earlier this year, Governor Hogan signed legislation to extend civil immunity under the Good Samaritan Act to rescue and emergency care personnel administering medications or treatment in response to an apparent drug overdose. Despite the expanded protections, stakeholders suggested that additional education is needed to clarify the law for the public so that there is no resistance to offer help to a person overdosing on illicit drugs.

Summit participants urged the expansion of peer recovery coaches, resource centers, and naloxone training. It was also recommended that the State do a better job of reaching out to faith-based community organizations because they reach diverse communities and provide counseling services. Such services can be critically important for individuals that are trying to maintain recovery.

VI. WORKGROUP AREAS OF FURTHER STUDY

Following the regional summits, the Task Force subdivided into five workgroups to further study the main areas of concern raised during the summits: a) Access to Treatment and Overdose Prevention; b) Quality of Care and Workforce Development; c) Intergovernmental Law Enforcement Coordination; d) Drug Courts and Reentry; and e) Education, Public Awareness, and Prevention. The policy areas to be studied by each workgroup reflect the duties assigned to the Task Force in the underlying Executive Order. Each workgroup is co-chaired by two Task Force members who solicited the participation of stakeholders interested in the particular subject area. Below are specific issues under consideration by each respective workgroup.

Task Force Workgroups

a) Access to Treatment and Overdose Prevention Workgroup

b) Quality of Care and Workforce Development Workgroup

c) Intergovernmental Law Enforcement Coordination Workgroup

d) Drug Courts and Reentry Workgroup

e) Education, Public Awareness, and Prevention Workgroup

a. Access to Treatment and Overdose Prevention Workgroup

Task Force members Dr. Michael Finegan and Tracey Myers-Preston serve as co-chairs of the Access to Treatment and Overdose Prevention Workgroup. The workgroup is supported by staff from the Department of Health and Mental Hygiene, Department of Human Resources, Maryland Insurance Administration, Department of Juvenile Services, Governor's Office of Crime Control and Prevention, and the Governor's Office of Children. The workgroup is focusing on the challenges individuals and families face with regard to accessing treatment, financial barriers to accessing treatment, and identifying and prioritizing target populations, such as adolescents, pregnant women, and the justice-involved population. Currently, individuals and families lack sufficient information regarding how to access treatment and how best to navigate the treatment system. Further compounding this problem is insufficient access to outpatient and residential treatment, especially for youth and adolescents.

Data provided by the Department of Health and Mental Hygiene indicates that serious deficiencies exist in the treatment system that prevent an individual from accessing the full range of care settings and levels of care. The admission data for fiscal year 2014 by level of care indicates inconsistent use and lack of availability of the full continuum of care in each

part of the State. With the exception of Baltimore City, every county has significant gaps in services. Counties located in Western Maryland and on the Eastern Shore provide the majority of their services in outpatient settings, possess very limited access to residential services, and lack other services across the continuum of care. Furthermore, across the State, there is concern related to transportation, childcare, care for aging parents, and maintaining employment while in treatment.

Another important area of study that the workgroup will examine is the extent to which jurisdictions are funding intervention, assessment, referral, and treatment services beyond traditional business hours, as best practices consistently support the theory that treatment must be readily available. Given the fact that individuals may be uncertain about entering treatment, the system must be positioned to take advantage of any opportunity when an individual expresses a readiness to enter treatment. Treatment must be immediately available and readily accessible. Some facilities have implemented a "no wrong door" approach that includes a 24-hour phone-based hotline, emergency room diversion, screening and referral for treatment, and same-day access to services via walk-in appointments.

The workgroup will identify which programs in the State are offering treatment on demand and providing after-hours services, and will explore methods to incentivize treatment providers to similarly establish urgent care. The workgroup will also determine what technical assistance the State can provide that would allow treatment providers to offer assessments and referrals to treatment beyond traditional business hours.

Care should be individualized, clinically driven, patient-directed, and outcome-informed. Matching the treatment setting, intervention, and services to each individual is critical to achieving positive outcomes. Patients should be afforded the opportunity to receive care at the appropriate level and step up or down in services based on the individual's response to treatment. With this in mind, the workgroup will explore whether the use of outpatient services rather than residential service is truly the result of clinical need or is instead based on availability. Funding clinically inappropriate services is a waste of precious resources, as recovery will not likely be achieved and the patient will continue to cycle in and out of the healthcare system, or worse. The workgroup will also examine whether public dollars are being spent on higher levels of service than what is assessed. For example, a judge could order residential treatment for individuals based upon criminal justice or housing concerns rather than clinical need.

b. Quality of Care and Workforce Development Workgroup

Task Force members Dr. Bankole Johnson and Nancy Dudley serve as co-chairs of the Quality of Care and Workforce Development Workgroup. The workgroup is supported by staff from the Department of Health and Mental Hygiene and Department of Human Resources and will examine a number of factors affecting quality, outcomes, and workforce development.

Standardized quality of care at treatment centers across the State is critically important to ensure that patients have access to evidence-based care. Testimony delivered at the regional summits highlighted inconsistencies across the State. As a result, the workgroup will address inconsistencies in the quality of care across treatment centers and recommend strategies to standardize and enhance quality of care in order to produce the best outcomes for patients. Patient satisfaction surveys and outcome measures will also be explored to ensure patients are treated with the highest quality of care and that patients and their families are actively involved in their treatment plan. The workgroup will also consider ways to bridge the gap in care for individuals with comorbidities, such as chronic pain, psychiatric disorders, and pregnancy. Finally, an adequate supply of treatment professionals is critical to handle the demand demonstrated across the State. As part of its work, the workgroup will identify strategies to cultivate sufficient numbers of qualified, trained, diverse, and competent treatment professionals.

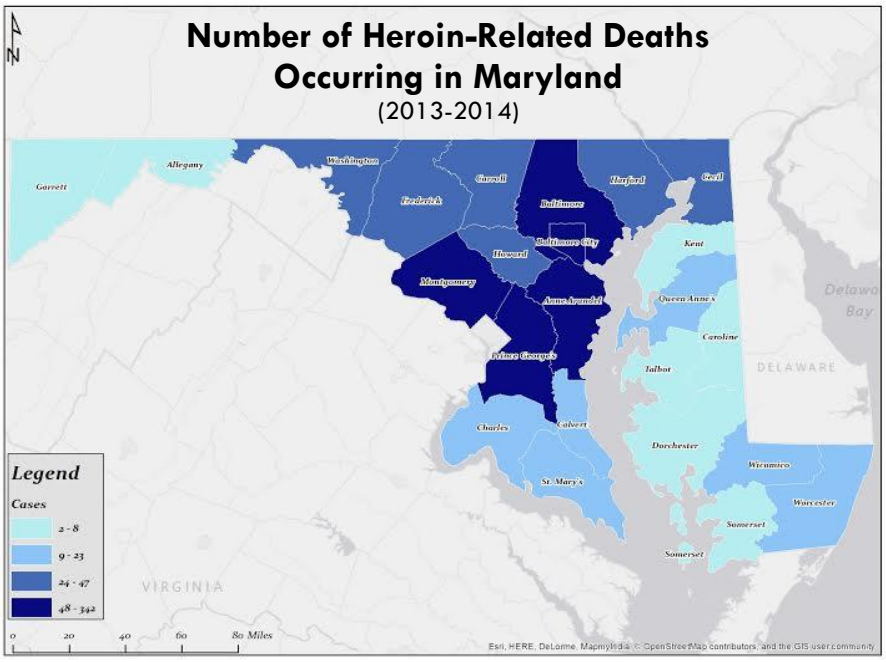
During the course of the regional summits, the workgroup noted deep confusion by the public as to what constitutes effective treatment for heroin and opioid dependency. Effective treatment of individuals with opioid use disorder should be evidence-based, outcome-driven, continuous, comprehensive, compassionate, and based upon integrating both the medical and psychosocial needs of the individual. There is also significant evidence for the efficacy, safety, and life-saving role of medications in the treatment of opioid use disorder. Decisions regarding medication-assisted treatment should be made in collaboration between a patient and a knowledgeable and trained healthcare practitioner. As a corollary, healthcare professionals should provide information to patients about all the different medication options, their pros and cons, and discuss with patients the role of medications as part of individualized treatment planning. Patients should be encouraged to play an active role in their treatment for it to have optimal efficacy and achieve optimal outcomes, including long-term recovery. In short, patients who participate actively in their own treatment have the best outcomes.

c. Intergovernmental Law Enforcement Workgroup

Task Force members Sheriff Tim Cameron and Elizabeth Embry serve as co-chairs of the Intergovernmental Law Enforcement Workgroup. The workgroup is supported by staff from the Governor's Office of Crime Control and Prevention, Maryland State Police, Department of

Human Resources, and Maryland State Department of Education. The workgroup is developing recommendations to improve federal, state, and local law enforcement coordination to address heroin and opioid trafficking across the State. To reach this broad objective, the workgroup developed a work plan covering five core areas: data sharing, intelligence gathering and methods of real-time dissemination, heroin interdiction strategies, prescription drug enforcement and monitoring, and possible legislation that will enable law enforcement to combat the heroin epidemic more effectively.

Improved data sharing among local, state, and federal law enforcement concerning heroin-related enforcement activity is vital for coordinated law enforcement efforts against heroin traffickers in Maryland. While there are structures in place, there are gaps and technological hurdles that need to be addressed. The workgroup will produce specific recommendations to develop a fully functioning, centralized, statewide system used by all local, state, and federal law enforcement to capture data on heroin-related crime.



Similar to the sharing of data, the collection and dissemination of intelligence on heroin trafficking from debriefings, confidential informants, social media, cell phones, and investigations into overdoses occurs inconsistently and may be delayed by protocols designed to protect sensitive information. The workgroup will create recommendations to eliminate unnecessary barriers to the sharing of intelligence among law enforcement agencies and disseminate the best available guidance on how to allocate the responsibility of sharing that information within an agency.

In addition to existing strategies for interdiction, the workgroup will look at allocating additional resources to methods that are underutilized. Partnerships with law enforcement in neighboring states are piecemeal and should be expanded and standardized. The workgroup will develop these recommendations based on proven strategies. Criminal

enforcement of doctors and pharmacies responsible for illegally prescribing or dispensing opiates has been sparse. This is due, in part, to the fact that the transactions occur in private, and in part to the lack of prescription data accessible to law enforcement. The workgroup will explore expanding the usefulness of the Maryland Prescription Drug Monitoring Program (PDMP) to law enforcement through mandatory registration and querying and dedicating investigative and prosecutorial resources to enforcement. Many members of local law enforcement have developed partnerships with local pharmacies so that they are alerted if there is suspicious behavior. In some cases, these initiatives could be replicated and the workgroup will evaluate the feasibility of expanding those partnerships statewide.

Lastly, the workgroup will examine the challenges drug addiction creates in maintaining safety inside correctional facilities. Inmates come up with inventive ways to smuggle contraband drugs inside the facilities. Contraband can be treated as a form of currency, incite violence, and derail an inmate's substance use treatment program. During fiscal year 2015, the Department of Public Safety and Correctional Services (DPSCS) confiscated 187 opiates and approximately 3,350 forms of Suboxone. One of the primary means by which inmates attempt to smuggle contraband is by having their friends and acquaintances conceal it in letters and in the folds of greeting cards. In order to minimize opportunities for introduction of contraband into the facility by mail, especially contraband available in forms visually undetectable, the workgroup will evaluate measures to disrupt smuggling of drugs through inmate personal correspondence mail.

d. Drug Courts and Reentry Workgroup

Task Force members Judge Julie Solt and Delegate Brett Wilson serve as co-chairs of the Drug Courts and Reentry Workgroup. The workgroup is supported by staff from the Department of Public Safety and Correctional Services, Department of Juvenile Services, Governor's Office of Crime Control and Prevention, Department of Human Resources, Maryland State Department of Education, and the Governor's Office of Children. Due to the close correlation between addiction and criminal activity, the criminal justice system, via drug courts and reentry programs, is frequently a gateway to treating heroin- and opioid-addicted offenders.

The workgroup is exploring opportunities with diversion programs, drug courts, day reporting centers, Health General Placements (*i.e.* 8-505/8-507 programs[2]), and reentry programs. The workgroup is currently working with the Maryland State's Attorneys' Association to collect

[2] 8-505/8-507 programs refer to programs created to give effect to powers granted to the judiciary under MD. CODE ANN., HEALTH–GEN. §8-505 and §8-507 to evaluate a defendant to determine whether, by reason of drug or alcohol abuse, the defendant is in need of and may benefit from treatment and is willing to participate in treatment.

data on which jurisdictions have diversion programs, whether treatment is required where the offender is identified as being heroin- or opioid-addicted, and the recidivism rate for diverted offenders. The workgroup will be exploring recommendations on best practices for successful diversion programs for heroin- and opioid-dependent offenders.

With respect to drug courts, the workgroup is researching how existing programs differ in each jurisdiction. The workgroup will determine whether there is a way to create some uniformity across the various drug court programs with respect to core functions and program requirements. The workgroup has also been in contact with the judiciary regarding the 8-505/8-507 process. It has received information and concerns relating to manipulation of the program to reduce incarceration length, funding issues, delays in treatment, and the appropriate length of treatment.

In addition, the workgroup is examining the merits of day reporting centers, which are designed to operate through the home detention programs available in all Maryland jurisdictions. These centers provide the types of services often needed by addicted offenders, such as drug and mental health treatment, job training, drug testing, life skills, and other services all located under one roof. The workgroup will develop recommendations on how to implement day reporting centers, particularly in areas of the state with fewer local resources. Lastly, the workgroup is gathering data on various reentry programs with the goal of identifying what works, why it works, and which can be duplicated across the state.

e. Education, Public Awareness, and Prevention Workgroup

Task Force members Senator Katherine Klausmeier and Linda Williams serve as co-chairs of the Education, Public Awareness, and Prevention Workgroup. The workgroup is supported by staff from the Maryland State Department of Education, Department of Health and Mental Hygiene, Department of Human Resources, Governor's Office of Community Initiatives, and the Governor's Office of Children. The workgroup is developing recommendations to address ways to engage youth and adolescents, prevention strategies, relapse prevention, overdose death prevention, and the reduction of stigma. Any recommendations will reflect the importance of messaging for specific audiences, including children, parents, families, educators, public health officials, law enforcement, addiction treatment professionals, community groups, and other stakeholders.

> ***"From preventing our kids from using heroin in the first place to increasing and improving access to treatment services for those in recovery, this task force will employ every resource available to take a holistic approach to address this public health emergency."***
>
> *–Governor Larry Hogan*

The workgroup will be studying environmental factors including the broader physical, social, cultural, and institutional forces that contribute to illicit drug use and addiction. It will begin with strategies to stop heroin and opioid abuse before it has a chance to occur. This level of prevention involves education in schools, including use of research-informed curriculum in elementary, middle, and high schools as well as community-based youth services and other nonprofit organizations with a history of providing effective drug education. It also includes the education or re-education of health care professionals about the disease of addiction, the use of screening tools, and problems that can arise from overprescribing opioids.

Next, the workgroup will explore strategies targeted toward those most at risk for problems with heroin or opioids. The workgroup will develop recommendations related to intensive substance abuse education for at-risk and high-risk individuals such as those charged with drug-related offenses or children of addicted parents.[3] In addition, the workgroup will consider the use of social workers or licensed counselors in middle and high schools to provide support as well as screenings, brief intervention, and referrals to treatment (*i.e.* SBIRTs).

The workgroup will pursue strategies to reduce heroin and opioid abuse and support the recovery efforts of people with substance use disorders. The workgroup is exploring ways to provide more supportive environments for young people, such as recovery clubs, recovery high schools, and collegiate recovery centers. It is also developing recommendations for increased naloxone training. The workgroup is focusing on ways to reduce the stigma associated with addiction, including educating the public on the brain science of addiction to clarify that it is a disease rather than a moral weakness. It also agrees that the State should employ a large-scale, coordinated media campaign to educate the public on heroin and opioid abuse.

The Centers for Disease Control and Prevention states that 45 percent of heroin addicts were also addicted to prescription painkillers. The Drug Enforcement Agency has stated that at least 70 percent of new heroin users started with prescription painkillers. Accordingly, the Task Force will explore reintroducing legislation similar to House Bill 3 of 2015 introduced by then-Delegate Kelly Schulz, which will require a prescriber and a dispenser to query the Prescription Drug Monitoring Program (PDMP) to review a patient's prescription monitoring data before prescribing or dispensing a monitored prescription drug. The PDMP was established in 2011 and is housed within the Department of Health and Mental Hygiene (DHMH) to support healthcare providers and their patients in the safe and effective use of prescription drugs. The PDMP collects and stores information on drugs that contain controlled

[3] The workgroup has identified the need for law enforcement, corrections, parole, and probation officers to learn about the disease of addiction and appropriate responses to relapse.

dangerous substances and are dispensed to patients in Maryland. The PDMP also assists in investigations of illegal or inappropriate prescribing, misuse, diversion, or other prescription drug abuse.

Currently, the law does not require prescribers or dispensers to query their patients' PDMP data when prescribing or dispensing controlled substances. As such, the Task Force will explore requiring a prescriber and a dispenser to query the PDMP to review a patient's prescription monitoring data before prescribing or dispensing a monitored prescription drug. Requiring prescribers and dispensers to access PDMP prior to prescribing or dispensing a controlled prescription drug will increase the number of registered PDMP users and the number of inquiries. If legislation is pursued, the Task Force envisions extensive outreach to stakeholders to reach consensus on which healthcare professionals should be required to register and query the PDMP, and under what circumstances. DHMH will also need to increase the technical capabilities of the PDMP to support additional users and increased queries.

In furtherance of its efforts to stem the pipeline of new users, the Task Force will explore possible strengthening of prescriber and pharmacist disclosures. Prescription opioid medications are among the most widely prescribed drugs for the management of moderate to severe chronic pain. The potential for misuse, abuse, or diversion should be concerning for both prescribers and dispensers of opioid prescription medication. There is a role that both prescribers and dispensers can play to ensure the safe use of opioid pain management therapy. Pharmacists are a central point of contact for patients when they fill prescriptions and present an opportunity to further inform patients of any potential adverse side-effects.

The Task Force will explore whether additional, verbal counseling should be required when prescribing or dispensing an opioid prescription drug to patients in Maryland. Prescribers have a responsibility to counsel patients about the specific details of the drugs they are prescribing. They also have a responsibility to monitor patient use, abuse, or diversion of drugs. The Task Force will explore whether prescribers should verbally counsel their patients on how to secure and properly dispose of opioid prescription drugs, as well as the risks of misuse or abuse of opioid prescription drugs. The Task Force will examine the role pharmacists play to ensure that patients understand the risks and benefits of the opioid prescription drugs and whether face-to-face verbal counseling is practical.

VII. PRELIMINARY RECOMMENDATIONS

Though the Task Force is working diligently to develop final recommendations for the December 1, 2015 final report, this interim report includes 10 recommendations with a heavy emphasis on education and prevention strategies targeted toward youth and adolescents.

1. **Earlier and Broader Incorporation of Heroin and Opioid Prevention into the Health Curriculum**

   The Task Force heard extensive testimony relating to improving the education of children and adolescents on heroin and opioids at earlier ages. As such, the Task Force recommends that the Maryland State Department of Education's Division of Curriculum, Assessment, and Accountability develop age-appropriate lessons and resources on heroin and opioid use in support of the Maryland Comprehensive Health Curriculum by the MSDE Educational Specialist in Health and Physical Education (PE), Local Education Agency (LEA) Health/PE Coordinators, and Master Teachers. In addition, the Task Force recommends that corresponding professional development and training for school personnel will ensure effective implementation of the materials that are created.

Recommendation Overview

1. Earlier and Broader Incorporation of Heroin and Opioid Prevention into the Health Curriculum
2. Infusion of Heroin and Opioid Prevention into Additional Disciplines
3. Heroin and Opioid Addiction Integrated into Service-Learning Projects
4. Student-based Heroin and Opioid Prevention Campaign
5. Video PSA Campaign
6. Maryland Emergency Department Opioid Prescribing Guidelines
7. Maryland State Police Training on the Good Samaritan Law
8. Maryland State Police Help Cards and Healthcare Follow-Up Unit
9. Faith-based Addiction Treatment Database
10. Overdose Awareness Week

Due to the variety of delivery formats for comprehensive health education amongst the LEAs, lessons and resources will be developed for the traditional focused health classroom as well as cross-curricular resources that can be used by teachers throughout a school. Lessons and resources will be written with consideration given to the age and prior learning of students. Lessons and resources will look at the physical and mental effect heroin and opioid abuse has on a person. In addition, focus will be given to the larger consequence of heroin and opioid

abuse within families and communities. These lessons are ready for dissemination for the 2015-2016 school year.

2. Infusion of Heroin and Opioid Prevention into Additional Disciplines

For students to be fully prepared for the challenges and expectations of college and career, it is critical that they develop literacy skills in all content areas. As a part of Maryland's College and Career-Ready Standards, it is critical that educators in all science, technical subjects, and history/social studies classrooms incorporate content-specific literacy into their instruction. As such, the Task Force recommends that MSDE's Division of Curriculum, Assessment, and Accountability develop Disciplinary Literacy lessons integrating education on heroin and opioid use with College and Career-Ready Standards (English Language Arts and mathematics) through the collaborative efforts of MSDE staff, LEA Content Coordinators, and Master Teachers.

> ***"Virtually every 3rd grader can tell you that cigarettes are bad for you, but most don't know that taking someone else's prescription drugs is harmful."***
>
> *–Lt. Governor Boyd K. Rutherford*

The use of the heroin and opioid topic as a central theme in social studies, science, fine arts, and other subjects supports the importance of introducing related college and career-ready standards to other disciplines. Since the standards emphasize research skills and the development of point of view related to these skills, this topic will generate interesting and pertinent classroom discussion and assignments in all content areas. The desire to incorporate a disciplinary literacy theme as part of standards-based education requires all subjects and disciplines to align their work with the theme chosen: heroin and opioid addiction. These lessons will be planned for dissemination during the 2015-2016 school year.

3. Heroin and Opioid Addiction Integrated into Service-Learning Projects

Service-learning is a teaching method that combines meaningful service to the community with curriculum-based learning. Through service-learning, students improve their academic, social, and civic skills by applying what they learn in school to the real world. When meaningful reflection is added, students can use the experience to reinforce the link between their service and their learning. All 24 local school systems in Maryland implement service-learning graduation requirements. Each implements the requirements slightly differently because they tailor the specifics of their program to their local community.

The Task Force recommends that MSDE's Service-Learning Office create service-learning curriculum-based projects that engage students in addressing the heroin and opioid public health crisis. The goal is to provide educators with rigorous and meaningful service-learning

curriculum models and guidance on how to re-engage students in the fight against heroin and opioid abuse. This curriculum will be aligned to newly developed heroin and opioid prevention education infused into course curriculum. To accomplish this task, MSDE's service-learning specialist will conduct meetings with Service-Learning Coordinators in the 24 LEAs. Staff will then work with curriculum specialists to understand relevant areas where these service-learning projects could be best infused. Staff will create the projects and share them at coordinator meetings and via MSDE's website.

4. Student-based Heroin and Opioid Prevention Campaign

The Task Force recommends that MSDE partner with the Office of the Governor and State agencies on a coordinated, multi-tiered public education campaign that discourages students from using heroin or abusing opioids. The campaign will focus on educating students and parents on how to identify and respond to signs of addiction and informing students, parents, and communities on how to access support services. To foster participation at the local level, the campaign will partner with all 24 school systems and youth-serving organizations throughout Maryland to communicate with students and adults during in-school and after-school activities. Target audiences will include students, parents, school personnel, and community and faith-based leaders.

Activities will include the following:

a) Pre- and post-campaign surveys/research to gauge public awareness and success;

b) Fall events at schools with multiple state leaders highlighting a success story or successful local overdose prevention plan that includes the LEA;

c) A student-led contest to design a campaign name, logo, and slogan to support Governor Hogan's overall statewide strategy;

d) Web pages to share key messages and resources, including communication toolkits, downloadable posters, and links to federal, state, and local campaigns, information, and contacts;

e) Focus groups with parents and students to discuss and gain knowledge of prevention and support needs and partner with DHMH and other agencies on health risk communication;

f) Social media campaign by youth to engage youth, led by the student member of the State Board of Education, the Maryland Association of Student Councils, and others; and

g) MSDE and State agencies will pursue earned media focused on prevention, what parents and students are saying, and school services that address the specific needs identified by parents and students.

5. Video PSA Campaign

Though the Education, Public Awareness, and Prevention Workgroup is developing the outlines of a large-scale, coordinated media campaign employing all forms of media, the Task Force recommends the immediate launch of video public service announcements via broadcast and social media throughout Maryland. The Department of Business and Economic Development's Division of Tourism, Film, and the Arts and the Maryland Higher Education Commission will seek students from local higher education institutions to develop and produce 30-second public service announcements. The best PSAs will be featured on State social media platforms and submitted to local broadcast stations for airing. The Governor's Communications Office will direct distribution of approved PSAs.

6. Maryland Emergency Department Opioid Prescribing Guidelines

According to the Centers for Disease Control and Prevention, the strongest risk factor for heroin addiction is addiction to prescription opioid painkillers. As such, hospitals can play an important preventive role in the fight to reduce opioid misuse and abuse. Earlier this summer, the Maryland Hospital Association developed standardized opioid prescribing guidelines for hospital emergency departments.[4] The guidelines are informed by a patient-focused brochure developed by the Maryland Chapter of the American College of Emergency Physicians (MDACEP) that was released in 2014. They were crafted to allow emergency medicine physicians flexibility in prescribing opioids when medically necessary while encouraging best practices in an effort to reduce the risk of opioid addiction. These guidelines, which are endorsed by MDACEP, promote:

> ***"There are some steps that could be taken to better inform doctors, dentists, pharmacists ... about the effects of prescription medications."***
>
> *–Lt. Governor Boyd K. Rutherford*

a) Screening and patient education to help detect and treat existing substance misuse conditions and safeguard patients against unnecessary risks of developing such conditions;
b) Enhanced information sharing among providers using existing tools like the State's health information exchange (CRISP) and the state's prescription drug monitoring program; and

[4] See Appendix B.

c) Standardized prescribing practices to reduce unnecessary prescriptions (and the amount of pills prescribed) to diminish inadvertent or purposeful misuse of opioids.

The Task Force recommends that each acute care hospital work with its Emergency Department personnel to implement, as medically appropriate, these guidelines and provide the Maryland Hospital Association with periodic updates on the progress of the implementation.

7. Maryland State Police Training on the Good Samaritan Law

The Task Force recommends that the Maryland State Police (MSP) provide training to field and investigative personnel on the legal requirements of the Good Samaritan Law. It is apparent that some confusion exists among law enforcement agencies on what actions they can and cannot take when confronted with a police response that falls under the protection of this law. Unless efforts are taken to remove confusion, valuable intelligence and opportunities to combat this issue could be lost. It is recommended that the State's Attorneys' Association be included in this training, as conformance to this law should be consistent statewide.

8. Maryland State Police Help Cards and Healthcare Follow-Up Unit

The Task Force recommends that the Maryland State Police provide heroin and opioid "Help Cards" to all MSP troopers, with the distribution of the cards beginning in the Western Maryland barracks. The cards should contain health department, treatment, and financial assistance resource information. The cards should be distributed by troopers when encountering heroin- or opioid-related arrests or other encounters. They also can be provided to family members who contact MSP facilities seeking assistance or guidance for addicted family members, friends, or colleagues.

The Task Force also recommends that the Department of Health and Mental Hygiene assist the MSP in developing a healthcare follow-up unit that would be responsive to law enforcement, school personnel, and citizen referrals of persons involved in or at risk of being involved in heroin and opioid use. Often when these contacts occur, persons with substance use disorders are at their most vulnerable state, and quick treatment interaction may be the difference between recovery and continued abuse.

9. Faith-based Addiction Treatment Database

There is a groundswell of passion and commitment among faith groups to help combat the heroin and opioid health crisis. A number of representatives from the faith community, including pastors and members of congregations, stepped forward in support of individuals, families, and programs that are battling heroin and opioid dependency. Such faith-based groups are offering numerous forms of support, including space for 12-step meetings; outreach to individuals and families in crisis due to drug abuse; and non-clinical case

management support for drug dependent individuals who are either waiting to enter treatment, need support during treatment, or who require post-treatment support in order to enter into long-term recovery. Unfortunately, many people with substance use disorders and their families are unaware of the addiction treatment services faith-based organizations in their communities provide. As such, the Task Force recommends that the Governor's Office of Community Initiatives' (GOCI) Interfaith Coordinator develop a comprehensive database of faith-based organizations that provide such services and include contact information, hours of operation, and types of services. The database should be made accessible via GOCI's website and easily navigable by the general public.

10. Overdose Awareness Week

August 31 is International Overdose Awareness Day and September is the SAMHSA-sponsored National Recovery Month. The Task Force recommends that the first week of September be declared Maryland Overdose Awareness Week, which will include a conference for Overdose Response Program (ORP) entities, vigils, and other local events to raise awareness of the addiction and overdose problem.

VIII. APPROVED RESOURCE ALLOCATIONS

In May 2015, Governor Hogan authorized $2 million in additional funding for fiscal year 2016 to combat the heroin and opioid health crisis in Maryland. Over the last six months, the Task Force has had the opportunity to solicit input from well over 300 people on how to best utilize scarce resources to address this public health epidemic. Among the top suggestions received were requests for increased overdose prevention and addiction treatment funding, particularly for the Eastern Shore, ex-offenders, and women with children. Based on the work of the Task Force and the input provided by stakeholders, below are the initial funding announcements approved and authorized by Governor Hogan.

Resource Allocations Overview

1. **Restoring the A.F. Whitsitt Center to a 40-bed Capacity**
2. **Providing Community-Based Naloxone Training and Distribution**
3. **Piloting Overdose Survivor Outreach Program in Hospital Emergency Departments**
4. **Piloting Naloxone Distribution to Individuals Screened Positive for Opioid Use Disorder at Release from Local Detention Centers**
5. **Expanding Supportive Recovery Housing for Women with Children**
6. **Supporting Detoxification Services for Women with Children**
7. **Targeted Outreach and Education to Aberrant/High-Risk Opioid and Other Controlled Substance Prescribers**
8. **Overtime for Dorchester County Law Enforcement**
9. **Maryland State Police Gang/Heroin Disruption Project**
10. **License Plate Reader Technology**

1. Restoring the A.F. Whitsitt Center to a 40-bed Capacity

Established in 1993, the A.F. Whitsitt Center is a 24-hour, seven-day-a-week residential treatment facility for adults suffering from chemical dependency and co-occurring disorders. It also offers a medically monitored detoxification for alcohol-, opiate-, and benzodiazepine-dependent individuals. As a Commission on Accreditation of Rehabilitation Facilities (CARF) accredited residential treatment facility, it offers a wide variety of treatment levels including Level 0.5 early intervention, Level 1 outpatient, Level 2.1 intensive outpatient, Level 3, and 3.7D residential treatment services. Upon completion of the residential program, individuals are connected to a care coordinator through whom they have access to referral and linkage to community-based clinical and recovery support services.

The Center is located in Kent County on the grounds of the former Upper Shore Community Mental Health Center. The catchment area encompasses the entire Eastern Shore of

Maryland. Demographically, Cecil County residents represents 53 percent of the patients, Talbot County represents 10 percent, Queen Anne's County represents 10 percent, Kent County represents 10 percent, Caroline and Dorchester Counties represent 9 precent, and the remaining Lower Shore counties represent 3 percent.

Although individuals can be referred by a physician, the primary source of referrals comes from county detention centers in the Center's catchment area. Judges from the Kent County Circuit and District Court send referrals as well. It treats just under 600 patients annually, prioritizing treatment toward low-income patients and patients requiring medical assistance. These patients tend to have failed outpatient treatment and are high-risk for fatal overdose.

Originally funded for 40 beds with average stay of 30 days, budget cuts in fiscal year 2012 resulted in reduced capacity, shorter lengths of stay, and a longer wait list. Today, the capacity is only 26 beds with an average length of stay of 21 days and an average wait time of four weeks for admission. Due to extraordinary demand and the fact that the Center is the only health department-operated 3.7D residential facility on the Eastern Shore, Governor Hogan has allocated $800,000 in fiscal year 2016 to restore capacity to 40 beds allowing an additional 240 patients to receive treatment each year.

2. Providing Community-Based Naloxone Training and Distribution

The Overdose Response Program (ORP) is the State's primary vehicle for training community members on opioid overdose recognition and response and equipping them with naloxone. Although the ORP law only requires the Department of Health and Mental Hygiene to exercise regulatory oversight over local-level entities that conduct naloxone training and distribution, the Behavioral Health Administration (BHA) has historically provided funding to local health departments (LHDs) to promote and expand ORP trainings. Responses to a DHMH survey of ORP training entities conducted in early 2015 showed that many would cease or significantly curtail training and distribution if state funding was not available. As such, Governor Hogan directed $500,000 in supplemental grant awards to LHDs to support ORP trainings. The funding may support the purchase of naloxone and related supplies, personnel time, and promoting and implementing training events.

Applicants will be asked to maximize naloxone funding opportunities from other sources and take advantage of new legal authorities to facilitate wider distribution. BHA will prioritize funding for applications that propose to use standing orders for naloxone prescribing and dispensing as authorized by Chapter 356 of 2015, legislation introduced by Senator Klausmeier to improve the State's ORP program. Standing orders remove the requirement that a healthcare practitioner, such as a doctor or nurse, be physically present for prescribing

and dispensing to occur, which will allow for broader and more efficient naloxone distribution to those most likely to experience, or be in a position to respond to, an opioid overdose. This was a major barrier identified by ORP training entities. In addition, BHA will prioritize funding to LHDs that partner with community-based organizations to expand the number of available trainings. Community-based ORP entities often include highly motivated volunteers with direct connections to high-risk individuals, their families, and friends.

3. Piloting Overdose Survivor Outreach Program in Hospital Emergency Departments

In 2014, DHMH issued a report showing that nearly 60 percent of all overdose decedents in 2013 had previously been treated for an overdose at a Maryland hospital in the year prior to death, with almost 10 percent having been treated for overdose five or more times. This indicates an urgent need to improve coordination between hospitals and public health authorities to target the provision of behavioral health treatment, recovery, and harm reduction services for opioid overdose survivors. In response, DHMH announced a new initiative in December 2014 to work with hospitals, local health departments, and behavioral health/addictions authorities to improve information sharing with hospitals and establish effective outreach and care coordination collaborations.

To further these efforts, Governor Hogan has directed BHA to allocate $300,000 toward establishing a pilot Overdose Survivor Outreach Program (OSOP) in Baltimore City. The goal of OSOP will be to coordinate and supplement programs that identify and intervene with addicted individuals in hospital emergency departments to ensure ongoing, in-community follow-up and engagement with overdose survivors after discharge. OSOP will seek to implement peer support services for overdose survivors at multiple points in the continuum of care, including emergency medical services, treatment referral, care coordination, and while enrolled in a treatment program. Overdose education and naloxone distribution services will be incorporated and targeted for opioid overdose survivors. OSOP will also seek to identify and support additional hospitals in Baltimore City and neighboring jurisdictions interested in implementing screening, intervention, and referral protocols and partnering with the local addictions authority to improve care coordination services. Lessons learned from the pilot will inform the State's strategy to expand ED-based interventions to other hospitals throughout the State and be incorporated into technical assistance materials to support implementation.

Funding may be used to support hiring and training peer recovery support specialists, expanding the capacity of Behavioral Health Systems Baltimore (BHSB) to conduct outreach services, training hospital staff, and other necessary services. Importantly, funding will be coordinated to maximize the impact of other existing grant programs, including those focused on implementing Screening, Brief Intervention and Referral to Treatment (SBIRT) in hospitals

and community health centers and expanding access to recovery support services in medication-assisted treatment programs. Other existing funding streams will be leveraged, as available, to provide ongoing recovery support services, including Maryland Recovery Net, a fee-for-service recovery support system overseen by BHA and managed by Value Options that provides access to transportation, housing, peer support, and other services. BHA will work with BHSB and other State and local partners to improve data collection and analysis on survivors receiving services.

4. **Piloting Naloxone Distribution to Individuals Screened Positive for Opioid Use Disorder at Release from Local Detention Centers**

In 2014, the DHMH Vital Statistics Administration (VSA) worked with the Department of Public Safety and Correctional Services to match medical examiner records of overdose deaths with corrections data. Findings from the analysis supported existing research showing that opioid-addicted individuals are at increased risk of overdose immediately following release from incarceration. These findings indicate that targeting overdose education and naloxone distribution to high-risk individuals at the time of release may be an effective strategy for reducing overdose deaths. Models supporting these strategies currently exist across the country. For example, the New York State prison system has recently launched a program to dispense naloxone at the time of release. The Baltimore City Health Department has conducted overdose education trainings in the Baltimore City Detention Center.

Seeking solutions to these challenges, Governor Hogan directed BHA to provide $150,000 through supplemental awards to three Southern Maryland LHDs - Calvert, Charles, and St. Mary's Counties - to implement overdose education and naloxone distribution programs for individuals released from those counties' local detention centers. Focusing the pilot in one region of the state will help maximize impact and evaluation in these three counties that collectively experienced an 88 percent increase in overdose deaths between 2013 and 2014. Historically, these counties have also had limited naloxone distribution through ORPs and there were no opioid treatment programs that received a supply of the Evzio naloxone auto-injector donation. There is an urgent need to target distribution to high-risk individuals in these counties. BHA will work with the LHDs to ensure that those being released are screened for opioid use disorder and that naloxone distribution is targeted accordingly. Detention centers and LHDs will be required to collect and report to BHA information on the individuals served by the program to evaluate impact and estimate the feasibility of expanding the program statewide.

5. Expanding Supportive Recovery Housing for Women with Children

Research shows that parental substance use is associated with numerous negative outcomes for children. Parental substance use has been shown to increase the likelihood that a family will experience financial problems, shifting of adult roles onto children, child abuse and neglect, violence, disrupted environments, and inconsistent parenting. Research also shows that a complex and harmful cycle exists in which a history of child abuse and neglect increases a person's risk of substance use later in life and that individuals with substance use disorders are more likely to abuse or neglect their children in turn. In addition, children of parents with substance use disorders are known to have a heightened risk for developing substance use problems themselves. Women, the traditional caregivers, face many obstacles and challenges in engaging in treatment and recovery services that could prevent these negative outcomes. Those obstacles include a lack of collaboration among social service systems, limited options for women who are pregnant, lack of culturally congruent programming, few resources for women with children, fear of loss of child custody, and the stigma of substance use.

In 2012, BHA initiated a series of focus groups to explore substance use among women with children at every women and children's residential treatment program and at several co-ed, intensive outpatient programs. The results were universal: the overarching need identified for women with dependent children was recovery housing that would allow a mother to bring all of her children into recovery with her. Since 2013, BHA has funded recovery houses in Baltimore City and Anne Arundel County. There are currently nine vendors: six in Baltimore City with 11 houses and three in Anne Arundel County with four houses. The houses are in constant demand with waiting lists, as treatment providers are often looking for options similar to these homes when women are ready to be discharged from more intensive treatment.

> ***"We are going to attack this problem from every direction using everything we've got."***
>
> *–Governor Larry Hogan*

As such, Governor Hogan directed BHA to allocate an additional $100,000 for recovery housing, prioritizing those jurisdictions that currently do not have recovery housing for women with children and those with a significant waiting list. The funding will support the lease/rent of a house, furnishing for the building, and a peer house manager to reside in the facility with the families.

6. Supporting Detoxification Services for Women with Children

Detoxification is an important, but resource-intensive process. Clients require 24-hour monitoring for assessment and ongoing monitoring of sub-acute biomedical and behavioral conditions related to opioid and alcohol withdrawal. A comprehensive nursing assessment

including client and family history; vital signs; and medication, psychiatric, medical, and substance use history are all provided upon admission to the treatment. Because women historically do better in treatment with their children than without their children, BHA utilizes a model of residential detoxification services with childcare services on site in Baltimore City. This allows mothers to detox in a safe environment and children can receive appropriate wraparound services. These services include, but are not limited to, pediatric and mental health referrals, after-school programming, and recreational activities that are age appropriate.

As such, Governor Hogan will direct BHA to make an additional $50,000 available to continue operation of this program. Treatment programs will have an opportunity to submit a request for the funding and will identify the best practices that they will utilize to move the women into long-term residential treatment or intensive outpatient treatment. BHA will require a yearly report that documents how the program used the funding and the outcomes associated with the funding.

7. Targeted Outreach and Education to Aberrant/High-Risk Opioid and Other Controlled Substance Prescribers

The widespread overprescribing of opioid analgesics for the treatment of pain has been identified as a major driver of the opioid addiction and overdose epidemic. Increased opioid prescribing has refocused the medical community on the lack of strong evidence for the safety and efficacy of long-term opioid therapy for chronic non-cancer pain. However, many providers, including both primary care and pain specialists, may continue to prescribe inappropriately based on outdated or erroneous information about the risks and benefits of opioids for most patients. High-risk prescribing practices, including maintaining patients at high opioid doses, rapid dose escalation, and co-prescribing opioids, benzodiazepines, and other controlled substances, may be common among a relatively small subset of practitioners. This small group may be disproportionately contributing to new cases of addiction, overdose, and diversion.

Aberrant prescribers are at high risk for disciplinary actions by licensing boards and criminal enforcement actions by public safety authorities. These actions can create other unintended consequences when the prescriber's patients are abruptly cut off from their prescriptions. These patients often have multiple co-occurring somatic and behavioral health issues, and a large influx of patients with complex needs can quickly overwhelm a local healthcare system in medically underserved areas.

DHMH has promoted continuing medical education (CME) courses on opioid prescribing provided by MedChi and the Maryland Society of Addiction Medicine and is organizing a live CME training for physicians, nurses, and pharmacists to take place in Maryland in October 2015. The Maryland Board of Physicians has also required a one-hour CME credit on appropriate opioid prescribing as part of its licensing process for all physicians starting in 2015. However, to date there have been no clinical education initiatives narrowly targeted at high-risk prescribers.

As such, Governor Hogan has directed DHMH to allocate $100,000 to conduct targeted outreach and education for practitioners identified as engaging in high-risk prescribing practices. DHMH will develop clinical tools and deploy appropriate personnel to provide direct consultation and support services to improve the quality of treatment provided to patients with chronic pain that are receiving opioid prescriptions. Educational content may also include information on use of the PDMP and CRISP, screening and referral for substance use disorders, buprenorphine, naloxone, and other overdose prevention priorities for the Department. In collaboration with academic partners, practitioner organizations and other stakeholders, DHMH will also investigate establishing an inter-disciplinary pain and addiction medicine collaborative that can provide ongoing clinical consultation to primary care providers across the state.

High-risk practices will be identified by DHMH through analyses of Medicaid claims data, pharmacy inspections/surveys, medical examiner records, and other intra-departmental data sources. DHMH will also conduct an analysis of the PDMP law and regulations to determine whether PDMP data and legal authorities could be used to identify providers or as a means of outreach and education.

8. Overtime for Dorchester County Law Enforcement

Governor Hogan, through the Office of Crime Control and Prevention (GOCCP), will provide Dorchester County with $24,700 to provide overtime for law enforcement to address the opioid and heroin epidemic. Overtime will be used to gather intelligence in conjunction with numerous regional law enforcement agencies to examine the point of origin of the heroin and locations from which drugs are entering Dorchester County. This information will enable law enforcement to target efforts in regards to control and enforcement and will be valuable in prosecuting heroin trafficking cases.

9. Maryland State Police Gang/Heroin Disruption Project

Governor Hogan, through GOCCP, will provide Maryland State Police (MSP) with $40,000 to support MSP's Gang/Heroin Disruption Project. The funds will provide overtime to members

of the MSP Gang Enforcement Unit to conduct home visits with parole and probation officers to Violence Prevention Initiative (VPI) offenders, work beyond scheduled shifts to further heroin investigations, conduct surveillance, and serve arrest warrants. These inter-jurisdictional efforts will help law enforcement arrest street-level drug dealers and those transporting heroin into Maryland.

10. License Plate Reader Technology

Governor Hogan, through GOCCP, will provide the Ocean City Police Department with $124,635 to fund license plate reader (LPR) technology at the northern end of Ocean City. The LPR will allow law enforcement to target heroin coming into the State and will be linked into the Maryland Coordination and Analysis Center (MCAC) database.

IX. CONCLUSION

The Heroin and Opioid Emergency Task Force has worked diligently to determine the scale of Maryland's heroin and opioid problem, investigate areas of specific concern and opportunity, and gather a broad coalition of stakeholders to assist in finding solutions. The Interim Report's 10 recommendations and 10 funding disbursements represent the input of hundreds of contributors and will have an immediate positive effect in combating this public health crisis. Even so, the work of the Task Force and its workgroups is nowhere near complete. Over the next four months, the Task Force will continue to leverage all available resources to produce additional recommendations for the Final Report that will span areas ranging from education and prevention to insurance coverage to alternatives to incarceration.

X. ACKNOWLEDGEMENTS

The Task Force is tremendously grateful for the outpouring of support and expertise provided by hundreds of people to help the State combat the heroin and opioid epidemic.

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APPENDICES

EXHIBIT 31

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Announce More Than $815,000 In Federal Funds To Treat Drug Addiction In Maryland

...announced that HHS has awarded the Maryland Department of Health and Mental Hygiene $815,745 in federal funds per year, for up to three years (depending on the availability of funds).

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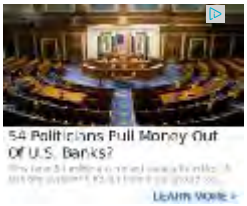

WASHINGTON – U.S. Senators Ben Cardin and Barbara A. Mikulski, together with U.S. Representative Elijah E. Cummings (all D-Md.) announced that the U.S. Department of Health and Human Services has awarded the Maryland Department of Health and Mental Hygiene $815,745 in federal funds per year, for up to three years (depending on the availability of funds).

The grant will support medication-assisted treatment (MAT) for 271 patients with high-risk prescription drug or opioid addiction per year. The treatment will be available in two communities, Baltimore City and Anne Arundel County, which have had especially high rates of opioid-related emergency room visits. Maryland is one of 11 states receiving this federal funding.

“Opioid addiction – including heroin and prescription painkillers – and the deaths resulting from overdoses are devastating families and communities in every corner of Maryland,” said Senator Cardin. “We must use all available tools to help individuals with substance abuse disorders recover and begin to lead healthy, productive lives.”

“The crisis of increased heroin use in Maryland and across America is destroying families and ravaging communities. It cuts across classes, races and ages,” Senator Mikulski said. “I’m fighting to address the heroin problem head on. While we need to crack down on dealers, we also know that we can’t simply enforce our way out of this crisis. We have to help drug users break the cycle of addiction, get healthy and stay clean. That’s what these funds will do.”

“Heroin abuse has become a true epidemic in Maryland, particularly in Baltimore,” Congressman Cummings said. “This grant will provide the Maryland Department of Health and Mental Hygiene with needed resources to support those struggling with addiction so they can break the cycle and stay clean.”

MAT is a comprehensive approach to address substance use disorders that combines the use of medication with counseling and behavioral therapies. According to a recent study published in the American Journal of Public Health, the need for MAT significantly exceeds capacity, and

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increased access to the treatment is critical in fully addressing the epidemic of opioid abuse and dependence in United States.

According to the Maryland Department of Health & Mental Hygiene, in 2014 there were 578 heroin-related deaths in the state, 25 percent higher than previous year and more than double the total in 2010. Only 11 percent of heroin addicts who need treatment receive it according to National Institute of Drug Abuse.

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By Lisa Robinson
BIO

Federal funds could help recovering heroin addicts

Local proponents discuss resources

Published 6:46 PM EDT Aug 17, 2015

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BALTIMORE — Last year, there were 587 heroin-related deaths in the state and according to the National Institute of Drug Abuse, only 11 percent of addicts who need treatment get it. Some experts said that's where the money needs to go.

Larry Yinger is from Pasadena, but Baltimore is his home now. The 40-year-old ended up there after his addiction to opioids spiraled out of control.

"I had knee surgery a while back, about 15 years ago and that started me on Percocet's and when I ran out of money for prescription drugs, Baltimore City has the heroin, which is cheaper," Yinger said.

As a result, Yinger lost his job and family.

"I have a daughter that I barely have ever seen so it's a bad epidemic, and something needs to be done about it," Yinger said.

Yinger is living at west Baltimore's Tuerk House where he is undergoing treatment.

On Monday, the White House announced it is expanding its community-based efforts to prevent heroin and opioid abuse, pursue smart-on-crime approaches to drug enforcement, increase access to

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treatment, work to reduce overdose deaths and support the millions of Americans in recovery. Five million dollars is going to that effort.

"I would like to see the emphasis more on treatment than on policing. I think that we have a really good treatment sand getting better and better at treatments for addiction," said John Herron, executive director of Tuerk House.

Herron said the focus needs to be on stopping the demand for heroin and helping addicts put their lives back together not just throwing medication, like methadone, at them and sending them on their way.

"We get maybe three or four a day coming in, and if we have a grant-funded bed, we can take them in. Right now our grant-funded beds are full, so we wind up having to turn people away," Herron said.

"Programs like this one are needed and I believe we need more of them. I do believe it's saving my life," Yinger said.

Yinger has been clean for six months.

In addition to attending programs at Tuerk House, The 300 Men March invited him and other residents to their core program, which uses martial arts to promote mind and body healing.

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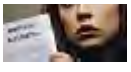

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Maryland overdose deaths increase 21 percent as state, city eye solutions

May 19, 2015, 2:02pm EDT

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Baltimore Business Journal

Opioid

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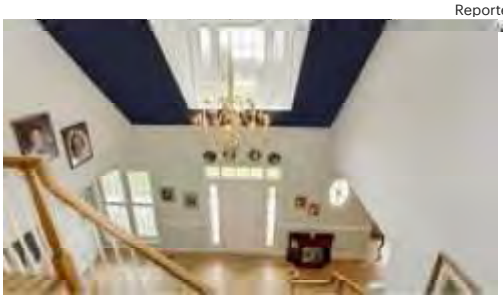

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MARK WRAGG
Addicted to Drugs

overdose deaths increased 21 percent in Maryland in 2014, adding momentum to a dangerous trend as state leaders try to put on the breaks.

Heroin, fentanyl and prescription opioids killed 887 people in 2014, up from 729 a year before. Forty percent of those deaths occurred in Baltimore, according to an annual report

on drug- and alcohol-related deaths released Tuesday by the state health department.

An alarming rise in overdose deaths over the past five years has thrust heroin and opioid addiction into the national spotlight. State and local leaders said the newly released data adds urgency to efforts under way in Maryland to reduce overdose deaths and get help to communities struggling with addiction.

“We cannot afford to lose more lives to drug use,” Baltimore City Health Commissioner Dr. Leana Wen said in a statement. “This report demonstrates the urgency of our overdose efforts. We cannot build a stronger, healthier OneBaltimore unless we tackle the underlying problem of substance use.”

Baltimore’s health department recently launched an overdose prevention and response plan, on recommendation from a taskforce created last year by Mayor Stephanie Rawlings-Blake. The plan calls for the city to train more first responders, friends and family to administer naloxone, an overdose-reversing drug; to organize peer recovery networks; and to use “hot-spotting” techniques to target residents at high risk of overdosing.

Gov. Larry Hogan has named addressing addiction a top priority for his administration and charged Lt. Gov. Boyd Rutherfurd with leading a taskforce to develop a state strategy. The governor's office and state health department are expanding access to naloxone and working to bring to Maryland more of the medication, which is increasing in price as demand grows. Maryland Attorney General Brian Frosh is working with law enforcement agencies in neighboring states to control a drug pipeline that runs along the I-95 corridor.

A total of 1,039 people died of a drug or alcohol overdose last year, a 21 percent increase from 2013. Opioids accounted for the vast majority – 86 percent – of those deaths and are the driving force behind the state’s rising overdose death toll.

Heroin deaths increased 25 percent last year; fatal overdoses from fentanyl, a powerful pain medication, increased 58 percent.

Meanwhile deaths related to alcohol and cocaine, the two other leading causes fatal overdoses, remained steady.

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Heroin continues to destroy lives, families

Charles County · 08/15/2015 · By Joseph Norris

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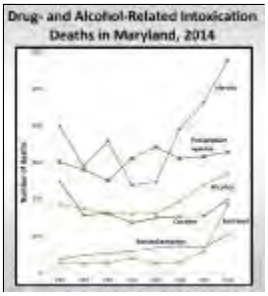

Charles County, MD - It's often been called the monkey on your back. And the monkey can kill you.

Heroin has reached a new epoch in the drug community. More and more cases sift through the Charles County court system each year.

Those who aren't placed in treatment or refuse to go can face a punishment far greater through abuse than the courts can ever impose: In the past four years, the number of deaths in the state of Maryland attributed to opiate abuse—especially heroin—have more than doubled.

A case in point is the sad story of a local 36-year-old man who passed away last month due to a heroin overdose.

In the past several years the man fell into Oxycodone abuse. Then, when he couldn't get the pills anymore he began stealing, from first one parent, then the other. He robbed a liquor store.

More than once the young man was court ordered into treatment and each time upon his release, reverted back to opiate abuse.

His father, who was on serious pain meds for a severe medical condition, would find his medicine missing. The family believed the son came by when his father was asleep and stole his entire month's supply of pills. While the father suffered withdrawal and debilitating pain, his son was getting high at his expense.

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On one occasion the son had a friend pick up his father's prescriptions from the pharmacy, again, not only denying his father the medication he desperately needed, but selfishly used himself, while turning a profit at his father's expense. The father sadly told his son he was not allowed in his house,

When the son could no longer get the pills, he turned to heroin.

His father died this past March of heart complications. The son followed in July, overdosing on heroin.

"We always have heroin as a high increase," said Jude House Executive Director Mary Lynn Logsdon. "It's always been high."

She said since the residential treatment center opened 26 years ago, opiates make up 80 percent of their case load.

"What's different now is, we're seeing patients coming from prescription pills going to heroin because it's so cheap," Logsdon said. "Before, only 30 percent were straight heroin users. Then they started with prescription opiates and moved to heroin. They couldn't get the pills anymore, their prescription ran out or they couldn't afford them."

She said a recent policy decision by the medical community to move away from the rampant dispensation of pain medications into pain management has helped fuel the fire. Even if they can get their prescription filled, patients have to go through insurance, they have to be monitored every 30 days, it becomes easier to turn to alternatives, even though they are illegal, she noted.

"After they've been on them so long, chronic pain users plateau at every level with pain killers," Logsdon stated. "You have to follow that up with pain management. It's more time, more effort to be in the program. It's easier to swap to heroin.

"The flip side is, you have people getting 10,000 pills at one time with no oversight," she added.

"In the previous decades, we've gone through different drugs," explained Bill Leebel, public information officer for the Charles County Health Department. "We went through the 70s with cocaine, the 80s with crack. It kind of took a break, but in the past 10 years or so, it started with the prescription pain killers, where the kids would raid the grandparent's medicine cabinets to find Percocet. That's highly addictive.

"That's the first drug of choice, even today," he said.

"Along with that, you have people who have leg pain, who are in a pain-control situation, looking for different types of alternatives. Heroin started to get cheaper than buying the prescription drugs legally," Leebel stated.

About 10 years ago, the Maryland Department of Health and Mental Hygiene required that health departments adopt an opiate overdose and addiction plan.

"We now have that," he said. "Each county has that. I know Calvert and St. Mary's do."

University of Maryland Charles Regional Medical Center Emergency Director Rich Ferrano said at a July 27 event in La Plata with United States Senator Ben Cardin that opiate addiction has become an issue of extreme concern.

"The opiate addiction is partially created by the medical community," he said. "The majority is from prescription medication use."

Cardin agreed, calling the issue "a national crisis."


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"It's such an epidemic," Logsdon noted, adding the Jude House averages about 400 patients a year who are addicted to opiates.

"It certainly has increased significantly," said Charles County State's Attorney Tony Covington.

At the July 27 event with Cardin, Covington told the senator, "The state's attorney's office has come to realize folks who are non-violent who are involved in opiates, it's a health issue, not necessarily a law enforcement issue."

The state walks a razor edge with drug abuse in the courtroom, he noted.

"Look, if somebody presents as the user and is addicted, the best thing for them and best thing for the community is to help them get straight," Covington stated. "If they're just pretending, we really can't help them. If folks are working, we're trying to work with them."

In a recent court case, a defendant told the judge, "If you hadn't ordered me to get treatment, I probably would be dead."

"I've heard that many times over the years," Covington stressed. "The criminal justice system has a role to play," he added. "Until we get the resources for a robust recovery system, not just through Charles County, but everywhere, all we can do is prosecute, especially if there is another crime involved.

"In the final analysis, it comes down to the person to get clean, and until that person makes that decision, sometimes, you can't really help them," he admitted.

"Everybody is a little different that's ever been addicted to heroin," Logsdon said. "We had one patient who had been through treatment and successfully finished the program. He had to get knee surgery and was prescribed Percocet. As soon as he couldn't get that opiate, he went right back to heroin. Fortunately, he did the right thing and put himself back in treatment.

"It's a vicious cycle," she added. "When you're in such chronic pain, there are not too many choices that don't lead to addiction. Once you've had no pain on opiates, it's very hard to teach your body to manage pain without them. Some turn to acupuncture and massage. It is possible, even with the worst heroin addict, but it takes a lot of hard work."

The Jude House's major problem is space, she said. They currently have 52 beds, 40 for men and 12 for women. She said they are hoping to expand to 80 beds in the next year.

Those ordered into treatment by the court system are often placed on a waiting list until a bed opens up. When asked what happens to them if they can't get in the program, she responded, "They wait in jail for a bed to open."

"It's one of those things that is not going to go away easily," Leebel noted. "It's a process, and especially with substance abuse, a lot of it is the environment you came from. Once you clean up, if you go back to the same neighborhood, chances are you're going to fall right back into the same old routine. With opiates, it almost requires a change of lifestyle for the person."

That was exactly how it was for Kiera Ashley Brien, 29 of Waldorf, who faced sentencing in Charles County Circuit Court July 7 for a theft charge stemming from when she was addicted to heroin.

Brien told Judge H. James West, "I don't know if I would be here if you had not held me on bond. I had to throw a lot of people out of my life."

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Charles County Assistant Public Defender Courtney Dixon told the court, “She has gone through the worst of the worst. She lost her kids, but she has moved into the second phase of recovery. She is doing better. At the time of her arrest, she was not. She was out doing things to hurt people, just feeding her addiction.”

Logsdon stressed that while heroin is a difficult addiction to overcome, through hope and programs like Carol Porto Center in Calvert and the Jude House in Bel Alton, patients can achieve miracles.

“We have a 98 percent success rate,” Logsdon said.

Contact Joseph Norris at joe.norris@thebaynet.com (http://joe.norris@thebaynet.com)

Chart courtesy of Maryland Department of Health and Mental Hygiene

(http://www.toyotaofwaldorf.com/)

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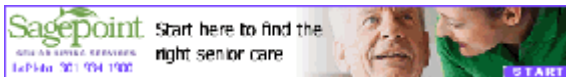

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No easy fix for heroin problem [Editorial]

By Editorial from The Aegis

AUGUST 15, 2015, 9:26 AM

Harford County securing a grant of $120,000 to expand local efforts to fight heroin addiction is welcome news, but it's not going to fix the problem.

For a little perspective, The New York Times reported in 2001 that the wholesale price heroin dealers in England were paying was in the range of $15,000 to $20,000 per kilogram, with a kilogram being about 2.2 pounds. In other words, eight to 10 kilograms of heroin — a major amount to be sure, but certainly not a truckload — would more than cover the cost of the program for which Harford is receiving a grant.

It's also worth pointing out that the price of the drug is reported to have dropped over the past several years as production in Afghanistan has increased substantially since the beginning of U.S.-involved hostilities there a decade and a half ago.

More importantly, however, is the reality that spending money on prevention and addiction treatment programs has a certain hit and miss quality to it. While there are people who don't know the dangers of the drug — regarded as among the most addictive there is — many people are fully aware and try it anyway. Likewise, treatment involves a lot more than sending someone to a center for 30 days and hoping for the best.

It is encouraging, however, that the efforts to be funded with the grant will lean heavily in the direction of public health efforts rather than increased law enforcement.

Various incarnations of the American law enforcement war on drugs have demonstrated time and again the harsh reality that it is all but impossible to cut off the supply of any drug as a way of controlling its use and abuse. Prohibition proved this with alcohol and efforts over the past half century to end marijuana use have had, if anything, the opposite effect of people increasingly being in favor of some form of legalization.

Abuse of chemicals, be they legal substances like nicotine in cigarettes, caffeine in coffee and alcohol in wine, or illegal ones like heroin, marijuana or meth, is an issue that needs to be addressed on a very personal level to be effective.

Even then, effectiveness depends on the willingness of the user to be treated. Given the need for substance abusers and potential substance abusers to be willing participants in treatment and prevention makes it virtually assured no public health program will be 100 percent effective.

The reality, however, is such efforts are likely to have a good deal more effect per dollar spent than seizure, eradication and imprisonment efforts.

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Maryland seeks to expand access to drug, mental health treatment in the community

By Meredith Cohn
The Baltimore Sun

JULY 28, 2015, 6:49 PM

Maryland health officials are seeking permission to use federal dollars to pay for Medicaid patients to get substance-abuse and mental-health treatment outside the state's general hospitals.

Lifting the ban on such spending would expand the options for people seeking care, allowing them to use community treatment facilities that specialize in those services and tend to be less costly than hospitals, said officials from the state Department of Health and Mental Hygiene.

A waiver from the U.S. Centers for Medicare and Medicaid Services would also give state officials another tool to use against the heroin epidemic, which has led to a doubling in overdose deaths from 2010 to 2014, said Shannon McMahon, Maryland's deputy secretary for health care financing.

The funding exclusion "is creating a barrier in our ability to pay for treatment outside of acute-care general hospitals," McMahon said Tuesday. "That's really what this application is seeking, the flexibility to pay for care in the most appropriate setting for individuals that need treatment."

The decades-old ban was created before the proliferation of such treatment facilities, and Maryland and other states have received permission off and on since 1997 to use federal dollars for adults on Medicaid. Money began to phase out in 2006. A pilot program slated to end in December allows Maryland, 10 other states and Washington, D.C., to use Medicaid funds for psychiatric care only in these treatment centers.

Maryland has added about 300,000 people to its Medicaid rolls since the adoption of the Affordable Care Act, expanding the population covered to about 1.3 million. McMahon said they have a higher prevalence of substance-abuse and behavioral health issues.

State officials held a series of public meetings and said the effort has received a lot of support, including from the Sheppard Pratt Health System, which would be limited in its funding without the federal waiver.

"The notion that Medicaid adults should not have access to the same community-based settings for treatment of either psychiatric or addiction conditions as adults covered by other payors is discriminatory and outdated," said Bonnie Katz, vice president of business development and support operations at Sheppard Pratt.

The Maryland Hospital Association, under pressure to reduce health care costs, also supports a waiver that would reduce the burden on its emergency departments and medical units.

"Maryland's hospitals are working to improve the health of communities, and key to this effort is making sure Marylanders have access to the behavioral health services they need in both institutional and community-based settings," said Jim Reiter, an association spokesman. "This waiver can be a critical part of the state's broad-based population health improvement strategy."

There is no timeline for federal officials to act on Maryland's request for a waiver. McMahon said there could be a funding gap and the state would have to decide if it would pay or use other grants to provide care in community facilities, as it has done in the past.

McMahon couldn't say how many more people would enter treatment through busy emergency rooms — or how many would forgo treatment — without an available treatment bed. "We think we are well positioned to make the case" to federal officials to pay, she added.

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Heroin addiction continues to be a growing concern in Maryland

BY: WMAR Staff
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BEL AIR, Md. - Heroin is taking many suburban counties by storm.

Harford County is seeing a troubling rise in drug-exposed newborns.

One recovering addict is sharing her story to spread awareness of the serious issue and hopefully save infants from being born addicted to drugs and alcohol.

Kristan Barnard admits she was using drugs and alcohol when she was pregnant with her daughter. Now, five years sober she wants to inspire others to seek help.

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“There may be moms out there that are struggling with getting clean while they're pregnant or have already had their baby and they're going through it,” Barnard said. “And like me, when I had her, I didn't know that there was a way out. I didn't know that I had options and recovery was a choice."

Barnard’s story is becoming all-too-common in Maryland, including in suburban areas like Harford County. According to health officials, Harford County along experienced a 45 percent increase in the amount of newborns exposed to drugs/alcohol between 2012 and 2013.

Heroin has become the drug of choice for many now. Its use has spread so much in recent years that Gov. Larry Hogan has declared a state of emergency in Maryland on heroin.

RELATED: Gov. Hogan creates heroin task force (http://www.abc2news.com/news/breaking-news/live-hogan-to-make-announcement-about-heroin-task-force-council)

Overall, overdose deaths related to heroin have doubled since 2010 and emergency room visits related to the drug within the same time period have tripled, according Maryland Attorney General Brian Frosh.

In an effort to confront this crisis, Maryland has joined New York, Pennsylvania, Massachusetts and New Jersey as part of the Northeast and Mid-Atlantic heroin taskforce. Maine is also joining this taskforce.

RELATED: Maryland joins multi-state heroin task force (http://www.abc2news.com/news/breaking-news/live-heroin-initiative-announcement-expected)

Being part of the taskforce means being in the loop on relevant heroin investigations in other jurisdictions as well as making state boundaries less of an obstacle in pursuing heroin cases.

Also, many jurisdictions, including Anne Arundel and Baltimore counties are finding ways to utilize stock Naloxone – commonly known by its brand name Narcan – a drug used to combat heroin overdoses.

For example, in Baltimore County, the Department of Health and Human Services has offered classes to teach families how to use the drug. (http://www.abc2news.com/news/health/baltimore-county-offers-training-for-heroin-overdose-antidote-narcan)

In Anne Arundel County, the police department has armed its officers with Narcan to combat the surge of overdoses there. (http://www.abc2news.com/news/region/anne-arundel-county/anne-arundel-county-police-to-carry-narcan-drug-that-reverses-effects-of-heroin-overdose)

Also, this past December, the state Department of Health and Mental Hygiene announced a partnership with Walgreens, CVS Health, Safeway and other pharmacies to stock Naloxone in stores across Maryland and to train their pharmacists on Naloxone administration.

RELATED: State health department partners with pharmacies to stock overdose-reversing Narcan (http://www.abc2news.com/news/health/state-health-department-partners-with-pharmacies-to-stock-overdose-reversing-naloxone)

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Governor calls Maryland's heroin crisis an emergency

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ANNAPOLIS, Md. — Maryland Gov. Larry Hogan has declared war on what he considers to be a statewide heroin epidemic.

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The governor declared heroin a statewide crisis that needs immediate attention. He outlined plans Tuesday to combat the problem on several fronts.

For Hogan, Maryland's heroin problem is personal.

"I lost my first cousin to a heroin overdose just a couple of years ago, so I know the kind of devastation it can cause families and communities," Hogan said.

Hogan signed two executive orders, one that establishes the Inter-Agency Heroin and Opioid Coordinating Council that will pave the way for multiple departments to combine resources and coordinate responses.

The council will include the following state agencies:
- Department of Health and Mental Hygiene
- Maryland State Police
- Department of Public Safety and Correctional Services

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The goal is to address heroin and opioid addiction.

"We are going to attack this problem from every direction using everything we've got," Hogan said.

His second executive order creates the Heroin and Opioid Emergency Task Force. In addition to his appointees, State House presiding officers will name two members and the state attorney general will choose one member. The panel is charged with coming up with a holistic approach to the problem by Dec. 1.

"Let's be very clear, addiction is a disease and we will not be able to just arrest our way out of this crisis," Hogan said.

"We are now faced with a situation where deaths from heroin overdoses are outpacing the murder rate," said Lt. Gov. Boyd Rutherford, who will lead the state effort.

The members of the Heroin and Opioid Emergency Task Force are:

- Frederick County Circuit Court Judge Julie S. Solt
- Delegate Brett Wilson, R-Washington County
- St. Mary's County Sheriff Timothy Cameron
- Tracey Myers-Preston, Maryland Addiction Directors Council
- Dr. Bankole Johnson, University of Maryland School of Medicine, Psychiatry Department chair
- Michael B. Finegan, Peninsula Mental Health Services
- Dr. Marc Fishman, Johns Hopkins School of Medicine
- Elizabeth Embry, Attorney General's Office, Chief of the Criminal Division

In 2013, there were 464 heroin-related overdose deaths, which outnumbered 387 homicides, representing a 95 percent increase in heroin-related overdose deaths since 2010. Preliminary findings for 2014 show overall heroin-related overdose deaths have continued to rise and will outpace those in 2013 by about 20 percent.

Baltimore City Mayor Stephanie Rawlings-Blake and Health Commissioner Dr. Leana Wen applauded the governor's efforts. There were 246 deaths related to drugs and alcohol in Baltimore City in 2013, with 150 of those due to heroin. In 2014, Baltimore recorded 226 drug- and alcohol-related deaths between January and September, 143 of which were heroin related.

"While this is an issue facing communities nationwide, we know that heroin use has plagued our neighborhoods across the city for years," Rawlings-Blake said. "Heroin doesn't discriminate. It affects us all -- white, Latino, or black; rich, middle class or poor."

"As an emergency physician, I have treated thousands of patients with substance addiction and have seen how closely tied it is to poverty, crime and health disparities," Wen said. "Tackling opioid abuse is critical to making Baltimore safer and healthier."

On the campaign trail, Hogan pledged that he would immediately declare a state of emergency against heroin upon taking office. It turned out that although they still consider it an emergency, state law won't let him declare a state of emergency.

"It doesn't really fit for a legal standpoint, plus states of emergency are temporary," Rutherford said.

The state got a donation of 5,000 Evzio kits, each containing two doses of Naloxone, which neutralizes the effects of a heroin overdose. It's an auto injector the Food and Drug Administration has approved for civilian use, similar to an epipen. Where it will be distributed remains under discussion. Naloxone is widely used by law enforcement, first responders and emergency rooms to treat opiate overdoses and has been credited with saving numerous lives in just the past year.

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"The question, at the end of the day, and we will find out is what works, is what is the best approach? Nothing is completely off the table," Rutherford said.

At least one member of the task force has personal experience with drugs and alcohol. Danny Brennen said he began abusing alcohol when he was 10. He only went as far as fifth grade in school and became addicted to heroin and sent to prison five times.

"Maryland needs treatment resources for addicts, early intervention, support for families, education for prevention for our young people, enforcement of state laws, alternatives to prison," Brennan said.

Another part of the governor's strategy will be to use $500,000 in federal funding to expand re-entry programs for inmates.

The governor is seeking practical solutions to keep heroin out of the hands of young people, increase access to care and exploring alternatives to jail.

"Dealing with this problem is an emergency which we simply must address," Hogan said.

Other Maryland officials also are working to address the problem.

Attorney General Brian Frosh this month announced a task force that will leverage the resources of several northeast and mid-Atlantic states to battle the cross-border distribution of heroin. Deaths from heroin overdoses have been rising in other states as people who had been abusing painkillers have moved from high-priced pills to more affordable heroin.

Maryland lawmakers also have introduced legislation this session aimed at fighting the problem. One measure would make it easier for patients to get "abuse-deterrent drugs." Another would create a consortium of experts to work on a long-term plan to reduce heroin addiction.

PHOTOS: GENERAL ASSEMBLY SESSION 2015

1 of 75 **WBAL-TV\David Collins**

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Jon Banister | Senior staff writer

Published on May 8, 2015

First, she empties the gel capsule into a metal spoon. With her other hand, she grabs a water-filled syringe and squirts it into a mix on the spoon. Using a lighter, Lilly heats up the concoction until it stops bubbling.

She then picks up a small cotton ball from beneath the candy wrappers covering the bedside table and sticks it into the syringe to use as a filter.

Then she fills the syringe with the heroin from the spoon.

She hands the syringe to her boyfriend, sitting beside her on the bed. She still gets too squeamish with needles to do it herself. While she wraps an iPod cable around her arm as a makeshift tourniquet, her boyfriend sticks the needle into a vein just below her elbow. He pushes down the syringe and the heroin rushes into her veins.

Lilly, a senior public health major whose name has been changed to protect her identity, shoots up every day after getting back from class, often driving 45 minutes to Baltimore in the afternoon to score.

Heroin addiction among people like Lilly has skyrocketed in this state in recent years, and record-high overdose deaths prompted Gov. Larry Hogan to create a statewide task force in February.

DEADLY DOSES

Heroin-related deaths have grown steadily every year since 2010. In 2013, the 464 people who died from heroin in this state outnumbered homicide deaths by more than 75.

In Prince George's County, heroin deaths have doubled in the past four years. The 26 deaths between January and September of 2014, the last reported time frame, matched the county's highest death rate for any full year in the last decade. Heroin-related emergency room visits have more than tripled since 2010, with 1,200 statewide.

During his campaign, Hogan vowed to declare a state of emergency after learning how widespread heroin addiction had become across the state.

"I know the devastation it can cause for families and communities," said Hogan, who lost a cousin to a heroin overdose, at a press conference in February. "Everywhere we went, we were saddened by stories of how just under the surface of every community, heroin was destroying lives."

Laura Place, coordinator of substance use intervention and treatment programs at the University Health Center, runs the Recovery Support Group on the campus and said she noticed an uptick in heroin users over the last few years. She said 13 opioid users have come to her group this year, but those seeking treatment only represent a small percentage of regular users.

University Police spokesman Maj. Marc Limansky said he cannot recall any heroin overdoses occurring on the campus in his 26 years with University Police, but because of the statewide increase, they are preparing their response in case an overdose does occur.

"We're concerned about the use of opiates or heroin," Limansky said. "We're not immune from that, certainly, and I don't think it's a matter of if we're going to see one occur here, whether it comes off the campus or on campus, we need to be able to help an individual suffering from an overdose."

Lilly said she has come close to overdosing before. Her friends say her eyes have rolled back in her head and she has vomited right after shooting up, which happens far more often than it should, she said.

"If you have a high tolerance, sometimes you'll be like, 'Oh let's do a little bit extra,' and sometimes it doesn't make a difference, but sometimes it does and you end up doing too much," she said.

But even after experiencing close calls, hearing devastating stories and seeing statistics on overdose deaths, Lilly said she still can't shake the habit she developed last summer.

FROM PILLS TO NEEDLES

It started with painkillers during summer 2013. Lilly's friend had a prescription, and she enjoyed the euphoric high she got from opiates.

An occasional pill turned into a daily habit, and she moved from swallowing pills to crushing them up and snorting the powder. Eventually it became more cost-effective to shoot up, at only about $10 a dose, so last summer she moved on to heroin.

At first, the drug gave her a euphoric sensation — "better than any food or sex or anything," Lilly said.

But since shooting up became an everyday occurrence, she says she rarely gets high anymore and only uses heroin to get rid of her daily sickness, which ranges from nausea to vomiting and diarrhea, and get herself out of bed.

“If you are really used to it, you sort of end up just feeling normal from it,” Lilly said as she puffed on a cigarette and looked out over McKeldin Mall. “Instead of feeling all depressed and s—- you feel how you imagine other people are feeling all the time. It’s pretty awful, actually.”

Lilly’s shift from popping pills to injecting heroin is becoming increasingly common among drug users at this university, Place said.

“There really is not a line, except for socially, between using Oxy and using heroin,” Place said. “A lot of people that I’ve spoke with who end up using heroin switch to shooting up instead just because it’s cheaper.”

The heroin epidemic has spread in large part due to the state’s crackdown on prescription drug abuse, said St. Mary’s County Sheriff Timothy Cameron, a member of the state task force. As stricter enforcement limited access to pills and drove up prices, he said, drug users chose heroin as an alternative.

“Perhaps we’re a victim of our own success in that regard,” Cameron said. “Not that there’s not still opiate pill abuse going on, but heroin is plentiful and cheap.”

Place said heroin, in its pure form, is no more dangerous than prescription opiates such as Oxycontin, but street drugs are more likely to be tainted, and injecting with dirty needles can spread disease or infection.

Lilly said she used to take more precautions when she started shooting up, but as her addiction grew, she became more careless.

“I said I would never share needles. I did that,” Lilly said. “I said I would never share water. You’re not supposed to share anything, cotton or anything like that. I’ve shared everything.”

BATTLING ADDICTION

Using heroin every day for close to a year has taken a toll on Lilly. She usually feels too sick to get out of the bed in the morning and has to take Zubsolv, a prescribed medication for dealing with opiate withdrawal, after waking up or throughout the day.

She has no appetite, so her diet consists mostly of candy. Her only free time outside of her 16-credit course load is spent shooting up or driving to Baltimore to pick up from her dealer. Because she doesn't have a job, she uses the food money her parents give her to buy drugs.

"The hardest part is managing when I can go to Baltimore and pick up," she said. "The idea is you go before rush hour, because after rush hour it gets dark, and if you have a taillight out you're definitely going to get pulled over. Money's really hard, also. I could easily spend $50 a day just on myself."

The only people who know about her addiction are the three friends she uses with, who she says are graduate students, and some of her close friends from high school. She once mentioned using heroin to a friend from class this year she was smoking weed with, but Lilly said the friend became judgmental, and they soon drifted apart.

As she walks around campus, she says she feels like a normal, functioning student and doesn't think anyone would guess her secret. But she's afraid to wear short sleeves for fear of people seeing her scars.

Lilly said her doctor told her that because she surrounds herself with people who also use heroin, the only realistic way for her to quit is to stay at an in-patient rehabilitation center.

Kathleen O'Brien, CEO of Walden Sierra, a rehab center in Southern Maryland, said the most dramatic surge of addicts they've seen in recent years has been 18- to 24-year-olds, especially young women.

"It's much more common than we would ever think to imagine," O'Brien said. "There are many people both in colleges and in the workplace that are addicted to opiates, some to prescription opiates and others to heroin."

O'Brien, who testified in front of the state task force at the Southern Maryland Regional Summit last week, said heroin addiction needs to be viewed as a public health crisis rather than a criminal issue.

"We're not going to be able to incarcerate our way out of this issue," she said. "The first thing we have to do is understand that it's a brain disease and it's a chronic disease, so we're not going to have a quick fix."

BREAKING FREE

Graduation scares Lilly.

Skipping lectures and the occasional lab is one thing, she said, but a job would force her to be present and productive every day, no matter how sick she feels. She fears she might not have time to drive to Baltimore to pick up the drug, and she worries about managing her money without help from her parents.

"One thing I've been discussing with my friends is, like, once I graduate, it's not going to be so cute anymore to be a college student doing drugs," she said. "Then it's like you're an adult and you're a drug addict. That's not fun."

Place, the health center addiction counselor, said a new treatment method called opiate replacement therapy — such as the Zubsolv pills Lilly is prescribed — has been effective in preventing withdrawal and waning addicts off the drug.

But addiction can't be cured with medicine alone, she said.

"Obviously, there's a lot more going on in someone's life once they've developed addiction to a substance than just the substance," Place said. "Usually their support networks are not necessarily as strong as when they first

started. Often some other things in life have not been going so well, and dealing with those stressors can be difficult."

The governor's task force is holding regional summits to learn more about the heroin epidemic before developing a strategy to combat the problem. The group is tasked with submitting recommendations by the end of the year.

O'Brien recommended a five-pillar approach to combating heroin addiction: community-based education and prevention services, harm-reduction strategies, law-enforcement practices that focus on alternatives to incarceration, more funding for treatment infrastructure and drug-free workplace policies.

"It's partnering primary care and behavioral health and substance-abuse people with law enforcement, with courts and with education," O'Brien said. "It's going to take the entire community to wrap around this issue to make any change."

Lilly has tried to quit before.

Last month, she had to have minor surgery to remove an abscess on her forearm where she injects the needle. The hospital visit was painful and scary, she said. She kept clean for two or three weeks, but eventually fell back into the habit.

"When you're in withdrawal and feel really s—- about yourself and everything, it's not even the physical effects as much as the mental effects," she said. "You start feeling really bad about yourself and using and you say, 'Well, I'm a f—- junkie anyway, so why not keep using? At least I'll be happier for one more day.'"

Jon Banister is a senior staff writer at The Diamondback. He can be reached at ***jbanisterdbk@gmail.com****, and you can follow him on Twitter at* ***@J_Banister*** ***(http://twitter.com/J_Banister)*** *.*

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The Washington Post

Maryland Politics

Overdose deaths from heroin galvanizing leaders in Maryland and Virginia

By Jenna Johnson and Rachel Weiner January 24

Political leaders in Annapolis and Richmond are searching for ways to combat a wave of heroin overdoses that is killing dozens of their constituents each month — in inner-city neighborhoods, suburbs and rural enclaves.

Maryland Gov. Larry Hogan (R) has declared reducing heroin use a priority and put his lieutenant governor in charge of finding solutions. Virginia Gov. Terry McAuliffe (D) introduced a package of heroin-related bills in the past week that would, among other provisions, increase criminal penalties for drug dealers who supply lethal doses and reduce penalties for drug users who seek help for friends who have overdosed.

The governors' actions reflect mounting concern among public officials up and down the East Coast about the escalation in overdoses, which some say has become a public health epidemic. Despite a sense of urgency to pass legislation, however, experts say there is no simple or inexpensive cure for heroin addiction — and there are differing views on which approach to try first.

"This is one of those things no one likes to talk about, but it's gone too far," said Cecil County Executive Tari Moore (R), who pushed to make heroin one of the top four legislative priorities of the Maryland Association of Counties. "We can't hide from it anymore. . . . We have to own it. We have to do something."

As the number of deaths related to heroin has spiked in the past three years, governors have scrambled to increase awareness and equip first-responders with medication that can reverse an opioid overdose. A few have declared an "emergency" to illustrate the gravity of the situation. Vermont Gov. Peter Shumlin (D) focused his 2014 State of the State address on the topic.

Opioid abuse often begins with an addiction to prescription pills such as oxycodone and Percocet. Federal officials have cracked down on the illicit use of prescription drugs in recent years, driving up their price

on the black market — and making heroin a cheaper alternative in hardscrabble communities where it has long been a problem and in higher-income areas where heroin addiction used to be rare. Heroin often sells for less than $5 for a bag containing enough for one dose, making it cheaper than a pack of cigarettes, according to addiction specialists. Sometimes it is laced with fentanyl, a painkiller that can make the drug even more lethal.

“People are kind of migrating from prescription opiates — they’re expensive and we have a very well-functioning prescription-monitoring program, and physicians are tending to be more cautious about their prescription of opiates — to heroin,” said Mellie Randall, who oversees substance abuse services at the Virginia Department of Behavioral Health and Developmental Services.

Former Maryland governor Martin O’Malley (D), whose tenure ended Wednesday, worked hard to reduce the number of overdose deaths during his eight years in office. For a while, the state made progress, but then came an influx of cheap heroin. Overdose deaths from heroin spiked from 247 in 2011 to 392 in 2012, a nearly 60 percent increase. The number climbed to 464 in 2013, and there were 296 overdose deaths in the first six months of 2014.

The largest number of deaths has consistently been in Baltimore, but some of the highest per-capita rates have been in rural counties, such as Cecil and Wicomico.

In 2013, Maryland lawmakers passed legislation that allowed medics and other first responders to administer naloxone, a medication that can reverse an opioid overdose. More than 30 states and the District have done the same, according to the National Conference of State Legislatures; Virginia lawmakers will consider a similar law this session.

Last year, Maryland joined about 20 other states and the District by passing a good Samaritan bill that gives drug users some criminal immunity if they summon help for someone who has overdosed. A good Samaritan bill is also part of Virginia’s legislative package, but the Virginia version is far more limited, mostly because of pushback from law enforcement. In Virginia, a drug user who calls 911 to get help for an overdosing friend could cite the good Samaritan provision only as a defense if prosecuted; the measure would not grant immunity.

Hogan, who succeeded O’Malley on Wednesday, said he learned about the pervasiveness of heroin as he campaigned across Maryland, especially while visiting volunteer fire departments that have been encountering the problem in rural counties.

"It's impacting every aspect of our society," Hogan said last month. "It's going to continue to get worse unless we get a handle on it."

Hogan has pledged to find more funding for treatment and to convene a summit of experts and activists to advise him. His spokeswoman said Friday that he and Lt. Gov. Boyd K. Rutherford (R), who will lead the effort, plan an announcement with state leaders "very soon."

Far fewer heroin overdose deaths have occurred in Virginia than in Maryland, although Virginia's population is much larger. But the number of heroin overdose deaths in Virginia more than doubled between 2011 and 2013. The state recorded 213 fatal heroin overdoses in 2013 and an estimated 210 in 2014. (The 2014 total was extrapolated from figures for the first six months of the year.) The rates are higher in rural Southwest Virginia, while Fairfax and Prince William counties have seen the highest overall numbers.

The commonwealth also has a serious problem with overdoses from prescription opioids; 468 people died of prescription opioid overdoses in 2013, compared with the 213 fatal heroin overdoses. (In Maryland, prescription overdose deaths have typically trailed the number of heroin-related deaths.)

McAuliffe convened a task force late last year with the goal of reducing deaths in the next five years. The governor has endorsed six bills this legislative session that arose from the task force's work. Four more bills came out of the work of Virginia Attorney General Mark R. Herring (D), who has made heroin and prescription drug prosecutions a priority. In addition to the good Samaritan measure and one to expand the use of naloxone, there is a bill that would make delivering a fatal dose of any illegal drug second-degree murder, a charge that right now can only be brought at the federal level. Three more would tighten and encourage use of the state's prescription-monitoring program.

But expanding treatment and support options remains a difficult sell. Some Maryland addiction programs have had difficulty sustaining their state funding, let alone getting more. In Virginia, lawmakers and activists say there wasn't time to prepare legislation this year that would create more help for addicts. Even relatively minor proposals, such as creating a state Web site to address addiction, have triggered concerns about cost.

At the same time, the increasing death toll has produced a new generation of parent activists, many of them well-connected professionals with the means to lobby those in positions of power. They are telling lawmakers that addiction is an illness needing humane intervention and sustained treatment, not just

heavy-handed legal action. Advocates say the argument has become easier to make as heroin has become more prevalent in wealthier suburban communities.

“If you went to the local shopping center and asked 10 people ‘What’s the difference between an opioid and a trapezoid?’ few of them could answer that question,” said Don Flattery of Fairfax, whose 26-year-old son died of an overdose after becoming addicted to painkillers. The elder Flattery serves on the Virginia task force.

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“Heroin is the great big boogeyman,” he said. “It scares the willies out of people that live in the suburbs.”

Herring recalled being approached at a dinner by a woman whose daughter had overdosed on heroin. “She looked at me right in the eye and said, ‘Please don’t let this happen to another child in Virginia.’ ” He is trying to build law enforcement support for McAuliffe’s opiate-related bills and is encouraging prosecutors to make heroin and prescription drug crimes a priority.

In Maryland, Sen. Katherine A. Klausmeier (D-Baltimore County) said she had difficulty sympathizing a few years ago with a couple she met whose son had died from a heroin overdose. Then a friend’s daughter overdosed.

Klausmeier ended up introducing the naloxone legislation in the state Senate.

“At that point, I thought, ‘You know what? It’s hitting everybody. It’s time to start acting on it,’ ” Klausmeier said.

Jenna Johnson is a political reporter who is covering the 2016 presidential campaign.

Rachel Weiner covers local politics for The Washington Post.

PROMOTED STORIES

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Baltimore: The Heroin Capital of the U.S.

By Julia Beatty (/content/julia-beatty) 03/30/15

The gritty city that was the real star of *The Wire* is now being plagued anew.


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As the largest independent city in America, Baltimore, Maryland, has a lot of peculiarities and a lot of history. From the Battle of Baltimore during the War of 1812 that prompted Francis Scott Key to write the National Anthem, to the odd way in which the locals

pronounce the “O” (“Owe say can you see…”) Baltimore has always been an engaging city. Edgar Allan Poe rests peacefully there as his woeful poetry lingers on, but the current state of Poe’s beloved Baltimore would disturb even him.

> *“One of the reasons for an increase of overdoses in Baltimore is that the drugs are of a much purer quality than the national average, according to the DEA.*

Though once nicknamed “Charm City” for the artsy and vibrant culture, Baltimore’s eclectic neighborhoods are now peppered with vacant and burned-out houses. Gritty portrayals of the city, like in HBO’s *The Wire* are all-too-accurate as they depict drive-by shootings and gangs running the neighborhoods. No one is refuting Baltimore’s dangerous reputation. “Bodymore, Murdaland” had the fifth highest murder rate (http://www.baltimoresun.com/news/maryland/crime/blog/bal-new-fbi-statistics-baltimore-no-5-in-murder-rate-20141110-story.html)in the nation as of last year, but it is now being plagued by a very different epidemic: heroin.

With an estimated 60,000 addicts (http://abcnews.go.com/US/story?id=92699) among its streets, the city of Baltimore is being consumed by a devastating drug known for destroying the lives of its users, and those left to pick up the pieces. This number suggests that one in 10 Baltimore residents are addicted to heroin, a statistic that reflects Americans’ overwhelming shift from prescription drugs to the cheaper alternative.

While some remember the '90s as being "heroin chic," this drug was then considered much too unorthodox for some, and too impractical for others. Instead, opiates like OxyContin and Percocet were an especially popular choice for people in rural areas of the United States to get high. Known as “hillbilly heroin,” these pills were easy to acquire, and prices were fairly manageable for working class Americans who suffered from addiction problems. Today, however, these pills typically sell within the $50-60 range (http://www.thefix.com/content/single-oxy-tab-fetches-50-60-or-more) and many users, unable to afford the surge in prices, turn to heroin.

As prescription drug addiction continues to rise in America, where patients are routinely overprescribed narcotics, (http://www.thefix.com/content/unintended-consequences%C2%A0are-we-inadvertently-increasing-heroin-overdose-deaths) opiate dependency has led many to try heroin and even adopt it as their drug of choice. Buying a $20 bag of "dope" (sometimes of a relatively pure consistency) makes a lot more sense to drug users who often spend three times as much per pill.

And with the number of both heroin consumers and dealers growing every year, lower income neighborhoods, like many found in Baltimore, are particularly vulnerable to high drug activity. The city's overall poverty rate is just above 25%, leading a large amount of its citizens to enter the heroin business and cash in on this new trend.

By sitting firmly in the middle of the East Coast, the geography of Maryland itself makes the state an easy target—a quick stop for drug dealers shipping their product up and down the coast. Most of Baltimore's heroin enters the city this way, but the famous Port of Baltimore serves as a particularly convenient pathway for international drug smuggling.

The Port of Baltimore was established in 1706 as a port of entry for the tobacco trade with England. It was originally designed to accommodate the largest of shipping vessels, but today these are often stuffed with massive loads of illegal narcotics. For instance, in 2013, custom agents seized 128 pounds of cocaine that was shipped to the Baltimore port from Panama and China.

Fresh off the boat, these drugs are funneled right onto city streets by the thousands of dealers eager to make a profit, and the city's war on heroin rages on.

As Baltimore's addict population continues to grow, the media has taken notice.

The National Geographic documentary series *Drugs Inc*. recently aired an episode entitled, "The High Wire" that highlights Baltimore's heroin problem. Showing junkies shooting up on the streets in broad daylight and drug dealers peddling at Lexington Market just a few feet from police, this show emphasizes the fact that a greater police presence does not seem to offer much of a solution.

Some, however, say that the National Geographic program sensationalizes the issue and does not accurately reflect Baltimore's problems with drugs. In a *Baltimore Sun* article, David Zurawik disagrees with the number

"60,000" (http://articles.baltimoresun.com/2014-08-29/entertainment/bal-heroin-national-geographic-baltimore-high-wire20140829_1_national-geographic-channel-heroin-capital-cable) saying:

"Second, the 60,000 number has never come close to being confirmed. The *Sun* tried to do so twice—in 2005 and, again, in July—and concluded that 'it likely emerged from a blend of best guesses and misunderstandings' dating back to at least 1986."

However, a report by the Drug Enforcement Agency in the year 2000 stated that Baltimore had the highest per capita rate for heroin use in the entire country, and 15 years later, this still rings true.

With statewide overdose deaths attributed to heroin increasing by 88%, Governor Larry Hogan labeled it a "State of Emergency" in response, saying:

"Every state on the East Coast has declared a state of emergency except Maryland — and Maryland has the worst problem," (http://www.washingtonpost.com/local/md-politics/in-maryland-hogan-says-he-will-declare-heroin-emergency-once-sworn-in-as-governor/2014/12/06/5f2ce320-7cc7-11e4-84d4-7c896b90abdc_story.html) Hogan said.

To date, Maryland has not yet declared a "State of Emergency" and it is not clear why. Massachusetts and New Jersey have already done so, with Governor Christie organizing a special task force to address the problem.

In the meantime, Hogan's speech has drawn a lot of public attention to the issue, and the state has followed Christie's lead on assembling a special task force, to be led by Maryland Lieutenant Governor Boyd Rutherford. Additionally, recent efforts to prevent heroin distribution in Maryland include joining a six-state coalition to target a supply line of the drug along the East Coast, as New York and New Jersey provide nearly a quarter of the heroin found in Baltimore.

Many of the proposed solutions, including attempts to arrest more dealers, center around the idea of prevention. Lately, however, the bigger concern is the shocking number of overdose deaths in Maryland, and Baltimore, in particular. In 2013 alone, the city experienced over 300 fatal heroin overdoses, and an even higher number of emergency room visits.

One of the reasons for an increase of overdoses in Baltimore is that the drugs, most commonly originating from South America, are of a much purer quality than the national average, according to the DEA. Buyers consider themselves lucky to be given “raw” clean dope and reputable dealers make a point to cut the drugs with very little else, if at all.

Some dealers, however, maximize their profits by cutting the powder with substances like Fentanyl—a synthetic opiate that is approximately 15 times more potent than heroin. Users have no way of knowing what they are snorting, smoking or shooting into their arms, and many suffer the fatal consequences.

Thankfully, though, Maryland police have recently been required to carry the lifesaving medication, naloxone—a drug that can reverse the effects of an overdose. Quincy, Massachusetts was the first place in the United States to carry naloxone and it reportedly saved 230 lives in just four years.

Yet, even with the newly implemented law requiring this tool, many addicts fear being arrested more than the idea of death itself and are therefore reluctant to call for help. Although ingesting a substance is not necessarily cause for arrest, many know from personal experience that anything resembling heroin paraphernalia or drug residue means serious trouble in the eyes of the law. The much debated War on Drugs is not inspiring people to seek help for their addictions or even save their own lives as America has been conditioned to view addicts as criminals first and disease sufferers second.

One medicine that is far more commonly given to heroin users is the controversial drug methadone, and some clinics in Baltimore hand it out to scores of addicts amidst their personal horrors of withdrawal. As opiate-addicted patients eagerly wait for their medicine, their dependence on heroin lessens as their dependence on methadone increases. While the severity of addiction prevents a lot of these recipients from ever weaning off of opiates entirely, methadone has proven extremely beneficial, just in terms of harm reduction. Addicts that were previously nodding out at work and subsequently fired can suddenly find themselves able to live something resembling a normal life. Suburban women, now considered the "new face of heroin," can come one step closer to overcoming their addiction, and stop having to smuggle Baltimore street drugs in their minivans.

Other substitutions for heroin like Suboxone, the orange strips that dissolve synthetic opiates into your bloodstream, are also considered beneficial in treating heroin addiction. Baltimore physicians are prescribing more Suboxone than ever

before, and many drug abuse clinics report on the success that this treatment can provide for struggling patients. Still, a large percentage of people are unable to ever quit these alternative drugs, and clinics administering them are routinely questioned—often leaving these facilities short on necessary funding.

Aside from the chemical dependency aspect of addiction, researchers are also focusing on improving mental health care for addicts. Treatment centers like Baltimore's Glass Health Programs describe therapy as an essential tool for recovery, in addition to offering medication assistance.

Whereas Maryland was once able to rely on organizations like AA and NA to provide recovering addicts with this type of service, the state's current crisis reflects the growing need for more mental health centers focusing on substance abuse and recovery. Although Maryland's task force plans to address the problem as a state-wide concern, Baltimore still remains the biggest obstacle in fighting Maryland's heroin epidemic. As public opinion remains divided on how to aid the heroin capital of the United States, many are left wondering: what more can be done?

Julia Beatty is a student and freelance writer in NYC. You can follow her on Twitter @juliabeatty1 (https://twitter.com/juliabeatty1).

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Heroin deaths continuing to rise in Maryland

By Jean Marbella
The Baltimore Sun

MAY 20, 2015, 10:47 AM

Bonnie Mooney's son struggled for several years with a heroin addiction, but after stints in rehab and prison had recovered to the point that he could work again as an electrician.

"His first paycheck did him in," said Mooney, 57, of Carney.

Able to buy heroin again, Adam Isaacs, 28, died of an overdose Sept. 20, making him one of 578 people to succumb to the drug last year in Maryland, according to a report released Tuesday by the state Department of Health and Mental Hygiene.

The department's annual tally of drug- and alcohol-related deaths shows heroin's toll continuing a steep rise that began several years ago. The number of heroin-related deaths in 2014 was 25 percent higher than the previous year, and more than double the total in 2010.

"I don't doubt it," said Mooney, who knows several friends of her son's who have used the drug.

"My son used to say, 'Mom, it gets ahold of you,'" she said. "It was a long, hard road. People don't know where to send their kids. You don't know what to do. You're blind. And it costs money."

State and local officials have been grappling with the issue in recent years. Gov. Larry Hogan and Mayor Stephanie Rawlings-Blake have appointed heroin task forces to study the problem and develop plans to combat it.

On Monday, the state task force led by Lt. Gov. Boyd K. Rutherford met in Hagerstown, the fourth of six planned summit meetings in which members take testimony from law enforcement officials, doctors, addiction specialists and community members. The group will report on its findings at the end of the year.

The Baltimore task force is scheduled to issue its recommendations to Rawlings-Blake in July. Dr. Leana S. Wen, the city health commissioner, said the new state statistics confirm what she calls a "public health crisis" — but a preventable one.

The number of heroin-related deaths in Baltimore rose from 150 in 2013 to 192 last year, according to the report.

Wen said of the latest statistics, "They're disappointing, but they're also a call to action for us."

She said the continuing rise in heroin fatalities has prompted the city Health Department to start implementing some task force recommendations even before forwarding them to Rawlings-Blake this summer.

Among the initiatives are expanding the availability of the overdose-reversing drug naloxone; refining data collection so health practitioners can target addicts where they are, whether it is in jail or in a neighborhood shooting alley; and improving access to substance abuse and mental health programs, Wen said.

"We are not even close to having enough treatment capacity in Baltimore City or anywhere," she said.

Citing an estimate by the National Institute of Drug Abuse that just 11 percent of addicts who need treatment receive it, Wen said such a low rate would be unacceptable for cancer, diabetes or any other ailment.

"We don't recognize mental health and substance abuse as the chronic, life-threatening medical conditions that they are," she said. "There is such a stigma."

That stigma can prevent users from receiving medication, such as Suboxone or methadone, that can treat their addiction, or keep treatment facilities from locating in neighborhoods because of residents' opposition, she said.

"We have to recognize it's not random people who have addiction — they're our friends, our family members, our neighbors," Wen said. "We would never say, 'Get your dialysis across town.'"

The report issued Tuesday shows that of the 1,039 drug- and alcohol-related intoxication deaths in the state last year, almost 56 percent were attributed to heroin.

Maryland health secretary Van Mitchell said those figures reflect "the toll that addiction has exacted on our state.

"We are resolute in our efforts to curb the epidemic that is claiming the lives of Marylanders," he said in a statement.

Christopher Garrett, a spokesman for the state agency, said the report shows a continuing problem with fentanyl, a powerful prescription painkiller that increasingly is being mixed into heroin and makes an overdose even more likely. Deaths related to the painkiller, increasingly manufactured illicitly for street use, more than tripled, from 58 in 2013 to 185 last year.

Garrett said the state is continuing efforts to expand the use of naloxone to reverse overdoses. Police increasingly are trained and equipped with the drug — previously limited to medical personnel — as are family and friends of heroin addicts, and even the users themselves.

But naloxone alone is just one tool, doctors say. Wen, a former emergency room physician, said she has used naloxone hundreds if not thousands of times, sometimes on the same person on multiple occasions.

"That's not good," she said. "But in the short term, I have to save their lives."

Wen said the key is to provide links to substance abuse treatment. "We have to use that moment, right there and then, to connect them to treatment," she said.

That is something Mike Shetterly wishes had happened with his son, Matthew, 23, who died of a heroin overdose April 18, 2014.

In a common pathway, Matthew Shetterly had first become addicted to prescription pills, then switched to cheaper heroin, his father said.

"It was just so available," said Shetterly, 53, of Essex.

Matthew had recently returned home from serving time on a drug charge. "We were so proud of him," Shetterly said. "He came out drug-free."

But addiction specialists say that is when users are most vulnerable — their tolerance has gone down, and using the same amount as before can lead to an overdose. And indeed, Matthew overdosed, but paramedics were able to revive him with naloxone, his father said.

"He came home from the hospital and shot [up] right back," Shetterly said. That time, his son was not found, collapsed in his bedroom, until it was too late, he said.

Now, Shetterly thinks addicts who are released from jail or the hospital should be sent to a halfway house to ease their transition.

"He's left me with a platform," said Shetterly, who tries to persuade Matthew's friends who are still using to quit.

He saw one such friend in the months after Matthew's death, and called out to him.

"Come over here, I want to talk to you," Shetterly remembered saying. "You look terrible. You have to stop."

But that young man, Shetterly said sadly, has since died of an overdose.

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ABC NEWS

Part I: Baltimore Is the U.S. Heroin Capital

One in 10 Residents of Baltimore Addicted

By Carter M. Yang

B A L T I M O R E, March 14

Baltimore is the heroin capital of the United States.

Government agencies estimate that as many as one in 10 of the city's residents are addicted to the drug. Wanda, 42, was one of them.

"I did tricks, I stole, I robbed, I did whatever I had to do to get it," she says of her $50-a-day heroin habit. "The drug was taking control of my life."

Wanda, who asked that her last name not be used, says she began using heroin at the age of 18. Now she is in a treatment program at the Center for Addiction Medicine in downtown Baltimore. She has been drug-free for more than two months.

'I Wanted to Die'

A 27-year-old woman who asked to be identified only as "T" is also undergoing treatment. She says her heroin addiction turned her from a ballet student into an exotic dancer.

"I went from dancing at the Peabody [Institute] to dancing in a strip club ??? that's how I paid for that habit," she says. "[Heroin] will make you do things you wouldn't expect yourself to do."

Jonathan, 18, says he contemplated suicide before he quit using the drug only last Friday.

"I wanted to die," he explains. "I just wanted to shoot up until it killed me because I'd lost my feeling of self-worth."

Jonathan, who says he spent as much as $140 per day on the drug, is being treated with buprenorphine ??? a prescribed "substitute drug."

The U.S. Drug Enforcement Agency says the city has the highest per capita heroin addiction rate in the country. Estimates of the total number of addicts in the city vary, but experts agree it's staggering.

In a city of 645,000, the Baltimore Department of Health estimates there are 60,000 drug addicts, with as many as 48,000 of them hooked on heroin. A federal report released last month puts the number of heroin addicts alone at 60,000.

The problem in the city is so acute that the federal government has designated Baltimore part of what it calls a High Intensity Drug Trafficking Area, making it eligible for special federal assistance to local police.

Tom Carr, the director of the Washington/Baltimore HIDTA program ??? a joint federal, state and local effort ??? says the heroin epidemic in Baltimore dates back to the 1950s and is now an engrained part of the city's culture.

"It's an old 'heroin town,'" says Carr. "There is an appetite for heroin in Baltimore ??? It's accepted by all too many people down there as something that's normal behavior."

"It's almost a rite of passage for some," he adds, noting that heroin habits are often passed down from generation to generation.

Purer, Stronger, More Deadly

The narcotic white powder that, according to a February report by the HIDTA, one in every 10 residents of the city snorts, smokes or, more commonly, heats and then injects with needles is significantly more potent than the heroin sold in many other areas of the country.

In the mid-1990s, Baltimore became a key East Coast distribution point for high purity South American heroin. Smuggled into the United States from Colombia, South American heroin is substantially more potent than its East Asian and Mexican counterparts, making it more addictive and more deadly. Last year, there were 304 fatal heroin-related overdoses in Baltimore and a similar number of heroin-related hospital emergencies.

The higher potency, combined with an increased availability and a reduced street price ??? now pegged at $100 to $120 per gram ??? is fueling the city's scourge of addiction by helping to draw in new users.

"People think because it's pure, you can smoke it, snort it ??? that it's safer," explains Drug Enforcement Agency Special Agent Bill Hocker.

Recovering addicts say anyone thinking about trying heroin should think again.

"They might as well put a gun to their head and kill themselves," says Wanda, forming the shape of a gun with her fingers and pointing it at her forehead. "It's suicide."

"I wouldn't let my worst enemy do it," adds "T." "Once you learn how it feels, you're on that track and there's not much that's gonna help you."

The Washington/Baltimore HIDTA predicted in its February situation report, "The number of heroin addicts in [Baltimore] will continue to rise."

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More deadly doses of heroin flood market

By Elisha Sauers
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JULY 12, 2015

Blue Magic, a name given to some heroin, started circulating in the area last summer.

Charles "Buck" Hedrick, who manages a U.S. Drug Enforcement Administration intelligence program in Baltimore, said drug dealers didn't know what was in it, but knew it was powerful: Some of their customers were dying.

As a marketing strategy, dealers labeled the drugs with a blue marker so customers could recognize the extra-strength dope. And when it started getting a bad rap, sellers repackaged it with different names.

Blue Magic turned out to contain fentanyl, an opiate stronger than morphine typically administered to patients in extreme pain or recovering from surgery.

"People in your county died because of that drug," said Hedrick, speaking to about 200 health professionals at the Anne Arundel County Opioid Misuse and Overdose Symposium in April.

Throughout the state, overdose deaths involving fentanyl, a painkiller 30 to 50 times more potent than heroin, are spiking. Last year there were 185 fentanyl-related deaths, up from 58 in 2013.

Last year Baltimore City led jurisdictions with 71 fentanyl-related deaths, followed by Baltimore County with 36. Anne Arundel County was third in Maryland with 23.

Statewide data showing a higher rate of fentanyl-related deaths between January and March spurred health officials to launch new campaigns; they're telling heroin users that what's on the street could have traces of a more lethal drug.

In the county, health officials have included discussions of fentanyl in their heroin warnings at middle and high schools. Since County Executive Steve Schuh declared heroin a public health emergency in January, local officials have promised to focus on the problem.

They're trying to prevent teens from becoming the latest victims.

Crystal Moulden, a 16-year-old from Glen Burnie, didn't survive her overdose involving fentanyl. Police found her on June 17 in a Baltimore alley and couldn't revive her.

"It's a buyer beware with heroin and fentanyl mixed in," said Dr. Jinlene Chan, county health officer. "There's no standardization."

Origins

A small portion of the heroin sold in Maryland comes from Southwest Asia. The drugs are shipped on boats to West Africa. Then "couriers" swallow the drug, double-wrapped in condoms, and fly to the United States, officials say.

But the majority of heroin in the state — perhaps seven out of 10 doses, Hedrick said — comes from poppies grown along the Andes Mountains in South America.

The drugs, he said, are processed in clandestine laboratories, usually in Mexico, and driven over the border.

The fentanyl often comes to Mexico from China.

Federal officials say heroin "chemists" add other white substances — drywall, baby laxatives, powdered milk or flour — to stretch their supply. But to ensure it still gets people high, they'll add fentanyl.

In 2005 the DEA dismantled a large lab in Toluca, Mexico, that was mixing fentanyl with heroin. Those drugs killed 1,000 people in different parts of the United States, according to the agency.

"When he was mixing this heroin in a lab, you see the fancy equipment he had," Hedrick said. "Sometimes he put the heroin on the table and mixed the fentanyl in with a kitchen spoon."

Those imprecise methods make it easy for parts of the supply to become "hot spots" — the term experts use to describe high concentrations of fentanyl found in heroin production.

This spring the DEA issued a nationwide alert on fentanyl as a public health threat. National forensics monitoring data showed that the amount of fentanyl evidence submitted by local and state labs in 2014, compared to the prior year, had tripled.

Anne Arundel County police lab submissions followed the same pattern. In all of 2012 and 2013, officers seized just one sample that tested positive for fentanyl. There were 43 last year and 20 more so far this year.

Federal officials said the recent outbreak includes not just fentanyl but other derivative chemicals with similar molecular structures. And compared to the fentanyl outbreak 10 years ago, it's spreading farther geographically.

The DEA has urged police who deal with drug evidence to be cautious, as fentanyl can be inhaled or absorbed through skin contact. Amounts as small as 0.25 milligrams can be fatal, according to the agency.

County police are trained to wear gloves while handling drug evidence. Lt. T.J. Smith, a police spokesman, said they cannot tell what chemicals have been cut into a drug just by looking at it.

"This is not TV. We're not going to dab it on our gum to see if it is what it really is," Smith said. "We know how dangerous it can be ... it's just another level of what our officers have to deal with."

Trends

From her office at the University of Maryland in College Park, Erin Artigiani is monitoring the emerging fentanyl trend.

She's an investigator for the National Drug Early Warning System, which helps health experts, researchers and residents respond quickly to outbreaks of illicit drugs.

While she has seen fentanyl surge in Maryland, her collaborators in 12 different areas nationwide are seeing similar patterns.

"Users are generally unaware of what they're getting," Artigiani said. "And it's something that's being done as sort of a marketing tool to increase the potency of lower-quality heroin."

Then there is the other trend she is watching: street opiates manufactured to look like prescription pills.

For example, Percocet lookalikes in Cincinnati were actually a cocktail of heroin, Oxycodone and fentanyl. In Seattle, Vicodin knockoffs tested as heroin, and in New Jersey, heroin has been disguised as Oxycodone pills.

"It could be that when faced with a decrease in the availability of pills, dealers tried to develop a cheaper alternative," Artigiani said. "Another suggestion I have heard is that there is less stigma attached to pills than to heroin."

But officials worry that even if they warn heroin addicts about the more deadly drugs on the streets, it might not stop them. In fact, it could entice them. Opiate addictions erode people's judgment.

"You might think that dying would be an incentive not to buy a product," Hedrick said. "Actually for an abuser, they will buy the heroin that just killed their friend."

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Getting help

Drug users in crisis can call the Anne Arundel County Mental Health Agency warmline at 410-768-5522.

For substance abuse treatment referrals, call the Anne Arundel County Department of Health at 410-222-0117.

The county's Adult Addiction Program offers free training on administering Narcan, a prescription medicine that counters the effects of an overdose of heroin or prescription pain medication. To register for upcoming training sessions, call 410-222-0100.

Maryland

In 2014, the interlock law was strengthened to require ignition interlocks for anyone convicted of drunk driving with a child passenger. MADD urges lawmakers to act in 2015 and require ignition interlocks for all offenders at a .08 BAC. With this move, Maryland could see a significant decline in DUI related deaths.

RECENT YEAR PAST 5 YEARS LAWS TAKE ACTION

Drunk Driving:

Drunk driving fatalities (.08 BAC or higher): 141 representing 30.3% of all total traffic deaths, a 13.5% decrease from last year.

Alcohol related crash injuries (.01 BAC or higher): Not Available

Alcohol related crashes (.01 BAC or higher): Not Available

DUI arrests: Not Available

DUI convictions: Not Available

DUI refusals: Not Available

Taxpayer subsidy of drunk driving fatalities: $747 million

3 time offenders: Not Available

5 time offenders: Not Available

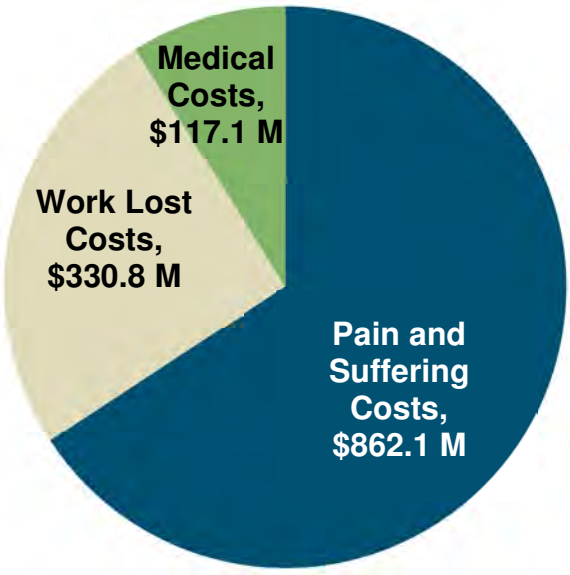
For more information on statistics, please contact MADD s Government Affairs department at policy@madd.org.

UNDERAGE DRINKING IN MARYLAND

The Facts

Tragic health, social, and economic problems result from the use of alcohol by youth. Underage drinking is a causal factor in a host of serious problems, including homicide, suicide, traumatic injury, drowning, burns, violent and property crime, high-risk sex, fetal alcohol syndrome, alcohol poisoning, and the need for treatment of alcohol abuse and dependence.

Costs of Underage Drinking Maryland, 2013 $



Total: $1.3 billion

Problems and Costs Associated with Underage Drinking in Maryland

In 2013, underage drinking cost the citizens of Maryland $1.3 billion. These costs include medical care, work loss, and pain and suffering associated with the multiple problems resulting from the use of alcohol by youth.[1] This translates to $2,380 per year for each youth in the state or $5.02 per drink consumed underage. Excluding pain and suffering from these costs, tangible costs of underage drinking including medical care, criminal justice, property damage, and loss of work in Maryland totaled $447.32 million each year or $1.71 per drink. In contrast, a drink in Maryland retails for $1.07.

Costs of Underage Drinking by Problem, Maryland, 2013 $

Problem	Total Costs (in millions)
Youth violence	$800.7
Youth traffic crashes	$203.9
High-risk sex, Ages 14–20 years	$56.2
Property and public order crime	$4.6
Youth injury	$57.2
Poisonings and psychoses	$14.1
Fetal alcohol syndrome among mothers aged 15–20 years	$23.2
Youth alcohol treatment	$52.0
Total	**$1,310.9 (e.g. $1.3 B)**

Youth violence (homicide, suicide, aggravated assault) and traffic crashes attributable to alcohol use by underage youth in Maryland represent the largest costs for the state. However, a host of other problems contribute substantially to the overall cost. Among teen mothers, fetal alcohol syndrome alone costs Maryland $23 million.

In 2012, 1,226 youth aged 12 to 20 years were admitted for alcohol treatment in Maryland, accounting for 6% of all treatment admissions for alcohol abuse in the state.[2] Young people who begin drinking before age 15 are four times more likely to develop alcohol dependence and are two and a half times more likely to become

abusers of alcohol than those who begin drinking at age 21.[3] We did not cost these adult problems.

Alcohol Consumption by Youth in Maryland

Underage drinking is widespread in Maryland. Approximately 187,000 underage customers drink each year in Maryland. In 2013, Maryland students in grades 9 to 12 reported the following:[4]

- 60.9% had at least one drink of alcohol on one or more days during their life.
- 19.3% had their first drink of alcohol, other than a few sips, before age 13.
- 31.2% had at least one drink of alcohol on one or more occasions in the past 30 days.
- 17.0% had five or more drinks of alcohol in a row (binge drinking) in the past 30 days.

In 2012, underage customers consumed 9.5% of all alcohol sold in Maryland, totaling $279 million in sales (in 2013 dollars). These sales provided profits of $137 million to the alcohol industry.[1] Ranking states based on the percentage of alcohol consumed underage, with 1 the highest, Maryland ranked number 25. This percentage is affected by both adult and youth drinking levels.

Annual sales of alcohol consumed by youth in Maryland averaged $1,492 per underage customer. Underage customers were heavier consumers than adults. They drank an average of 3.8 drinks per day; in contrast, legal customers consumed only 1.6.

Harm Associated with Underage Drinking in Maryland

Underage drinking in Maryland leads to substantial harm due to traffic crashes, violent crime, property crime, unintentional injury, and high-risk sex.

- During 2012, an estimated 16 traffic fatalities and 784 nonfatal traffic injuries were attributable to driving after underage drinking.
- In 2012, an estimated 24 homicides; 11,300 nonfatal violent crimes such as rape, robbery, and assault; 14,700 property crimes including burglary, larceny, and car theft; and 275,000 public order crimes including vandalism, disorderly conduct, loitering, and curfew violations were attributable to underage drinking.
- In 2011, an estimated 4 alcohol-involved fatal burns, drownings, and suicides were attributable to underage drinking.
- In 2013, an estimated 363 teen pregnancies and 10,438 teens having high-risk sex were attributable to underage drinking.

For comparison with other states, in U.S. rather than state prices, the harm from underage drinking per youth in Maryland averages $1,191. Such comparisons require caution. In part, they may reflect differences in crime and crash rates, problem-reporting to police, and co-occurring drug use.

Produced by the Pacific Institute for Research and Evaluation (PIRE) with funding from the Office of Juvenile Justice and Delinquency Prevention (OJJDP), March 2015.

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Officials announce anti-heroin campaign

CONTRIBUTED PHOTO

Talbot County Sheriff

JOE GAMBLE

Posted: Monday, July 20, 2015 10:30 am

By KATIE WILLIS kwillis@stardem.com

CHESTER — State and local officials announced "I Wish I Knew," a Mid-Shore opioid misuse prevention campaign, during a kickoff event July 1 at the Chesapeake Heritage Center, according to a news release for the campaign.

The campaign will run through Sept. 30 and is state funded through the Substance Abuse and Mental Health Services Administration and the Maryland Behavioral Health Administration.

Kelley Allen of Soul Candy Media, the campaign's coordinator, said state funds were allocated to the five Mid-Shore counties and prevention coordinators from each county decided to combine the funds available in order to pool resources and create a cohesive, regional message.

The campaign will focus on Caroline, Dorchester, Kent, Queen Anne's and Talbot counties, with the goal of raising awareness of heroin and prescription drug use.

Allen said the campaign hopes to encourage community dialog, as well as participation through social media and online at www.IWishIKnewMidShore.org by sharing individual stories related to opiate abuse. The idea is that personal stories will help to destigmatize addiction and help prevent the exposure to heroin and prescription opioids among those most at risk. the release states.

According to Allen, the community statements may help to reveal gaps in knowledge and faulty perceptions associated with heroin and prescription drug use and abuse.

OBITUARIES

Anthony Martin

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Those at the highest risk for addiction and overdose are "young, thrill-seeking men between the ages of 21 and 25," according to the July 1 launch presentation.

The presentation also included information that more than 7 percent of Mid-Shore high school students have tried heroin at least once; four out of five heroin users started with prescription painkillers; and more than half of those who abuse prescription pills get them from friends or family.

Talbot County Sheriff Joe Gamble spoke during the kickoff event. According to the release, he said he hopes the campaign will encourage the community to learn more about opiate abuse and that the platform will encourage sharing through social media.

In addition to online resources and social media conversations, Allen said the campaign will include outreach through television, local movie theaters, billboards, radio stations and print publications.

Advertising will include information on the warning signs of opiate abuse and overdose, provide information on how to avoid opioid misuse by using prescription medication properly and also include steps to assist someone during a suspected opiate overdose.

Allen said the campaign also will provide numbers for local treatment options, prescription drop-off locations, recovery support contact information, prescriber resources, a parent's hotline number, crisis hotline numbers and emergency room locations. She said that information will be widely distributed in Mid-Shore communities.

According to an annual report released by the Department of Health and Mental Hygiene, 85.7 percent of all intoxication deaths that took place in Maryland during 2014 were opioid related. Opioid-related deaths include deaths related to heroin, prescription opioids and nonpharmaceutical Fentanyl.

Since 2010, the number of opioid-related deaths has increased 76 percent, according to the DHMH report. Since 2013, the number of heroin-related deaths in Maryland has increased 25 percent; it has more than doubled in the state since 2010.

The report states that, of the 578 heroin-related deaths that took place in Maryland in 2014, 19 occurred on the Mid-Shore. Of those 578 heroin-related deaths, 14.4 percent were in combination with prescription opioids.

Of the 329 prescription opioid deaths that took place in Maryland in 2014, six took place on the Mid-Shore. Of those 329 deaths, 25.2 percent were in combination with heroin, according to the DHMH annual report.

According to the report, the number of heroin-related deaths has increased in all regions of the state, in both men and women, in both whites and African-Americans, and in all age groups.

According to the DHMH first quarter report for 2015, there have been 194 heroin-related deaths and 87 opioid-related deaths in Maryland, since the beginning of the year. Three of those heroin-related deaths took place on the Mid-Shore and two of those prescription-opioid deaths took place on the Mid-Shore.

For more information, visit www.IWishIKnew.org or www.soulcandymedia.com.

Josh Bollinger contributed to this report.

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Behind closed doors, special group reviews county heroin deaths

By Elisha Sauers
esauers@capgaznews.com

AUGUST 2, 2015

When someone in the county dies after injecting or snorting heroin, it's only a matter of time before a small group of people gathers to begin poring over the most personal details of his or her life.

They might look at how many times first responders resuscitated him during other close calls when he refused to go to a hospital.

They might see that time he had back surgery and needed medicine to cope with the pain.

Or they might notice the two-week delay she faced before starting a rehab program, only to realize she couldn't wait that long to get help.

What they hope they'll find among the autopsy reports, medical histories and criminal rap sheets are answers: How could we have prevented this?

Over the past nine months, officials from a number of Anne Arundel County agencies have met behind closed doors to probe deeply into local overdose deaths. Members of the group said they're trying to get to the root of the growing heroin problem, which caused 48 deaths last year and 16 more between January and April.

County health officials have said that on average one resident a week dies of an opiate overdose.

About 20 people representing local police, paramedics, hospitals, courts, jails, social services and other agencies make up the Overdose Fatality Review Team, a little-known board authorized by state law last year to share otherwise private information.

Anne Arundel County's team, established in November shortly after the law took effect, is one of 15 throughout Maryland.

Its members have signed contracts agreeing to keep the details of their work confidential — or else risk a fine of up to $500 and three months in jail.

Dr. Jinlene Chan, the county's health officer, is chairwoman of the local team.

"It's not a fact-finding, fault-finding kind of process," Chan said. "The perspective is what kind of lessons can we learn from this unfortunate case that might help us change our system."

The panel has used these meetings to look for patterns among fatal heroin overdoses and gaps in local services. Its findings could lead to policy changes.

So far the group has met three times to review 10 deaths from 2014.

What members have gleaned is the need for more widespread training on administering naloxone, commonly known as Narcan, which can reverse the effects of opiate overdoses. They've noticed that people who leave drug treatment programs often still need access to naloxone in case of a relapse.

The review team has also focused on the relationship between pain management and addiction.

After the members held a meeting in January, Chan sought a pain medicine expert from the Anne Arundel County Medical Society to consult with the team, according to emails obtained through a Public Information Act records request. Members wanted more insight into practice standards, she said.

"We had our first case review meeting last week, and there were pain management questions that arose," Chan wrote to Mary Morin, the society's executive director. "If helpful, we may consider inviting someone to be a standing member of the team."

Information about the county's team, or any of the others in the state, is hard to come by. The statute allowing counties to voluntarily launch the teams has safeguards to protect the people handling sensitive records. The confidentiality agreements are intended to prevent information leaks, officials said.

With certain exceptions, the minutes of the teams' meetings are not available to the public. They are also not admissible as evidence in civil lawsuits. The groups don't have to comply with Maryland's sunshine laws.

Jennifer Bevan-Dangel, executive director of Common Cause Maryland, cautions that the teams should not to use the statute to justify an overly broad blackout of information.

The groups should remain "publicly accountable" when they are discussing policy changes and trends, said Bevan-Dangel, whose nonpartisan organization lobbies for government transparency.

The statute, part of Maryland's health laws, requires the groups to make statistics and summary reports public so long as they don't contain names.

"Only the specifics of medical records should be kept private," Bevan-Dangel said.

Dr. Barbara Brookmyer, Frederick County's health officer, said the new law allowing her to organize a review team has been a boon.

Information about overdose deaths, Brookmyer said, had been limited to numbers and the types of drugs involved. Now she can sit across a table and talk with officials who aren't medical professionals but who may have helpful insights about particular victims.

"Prior to having that statutory authority, I couldn't talk to the hospital and law enforcement at the same time," Brookmyer said.

With then-Del. Kelly Schulz, Brookmyer in 2014 helped craft a bill to create local overdose fatality review boards.

Modeled after the legislation that created the existing child fatality review teams, the bill removed obstacles keeping law enforcement, health officials and other professionals from talking freely about drug-related casualties, she said.

At the same time, three jurisdictions — Baltimore City, Wicomico County and Cecil County — were participating in a federal grant-based pilot program to review drug overdose deaths. Their study of 50 cases and findings helped support the bill's passage.

Depending on the jurisdiction, teams may meet monthly or quarterly. Some have already investigated stacks of cases; others are just beginning to crack the surface.

Kathleen Rebbert-Franklin, the state's deputy director of population-based behavioral health, said the teams are taking the initiative on their own and have the right to tailor their own priorities.

Officials believe Maryland is the first state to enable multidisciplinary reviews of overdose deaths.

"We have asked whether other states have anything like this, and we've been told 'No,'" Rebbert-Franklin said.

Prior to the county's next meeting in October, each member will receive a list of cases up for review and will query databases for related information.

Then, when the time comes, they'll shut the door behind them and start talking.

"It's to put together pieces of information ... to better understand the picture of that person's life," Chan said. "And to see if we could have done better."

This story has been updated from an earlier version. Cecil County was one of three jurisdictions involved in a pilot program to study overdose deaths.

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The Washington Post

Local

Heroin deaths spike in Maryland

By Susan Svrluga June 27, 2014

Heroin-related deaths in Maryland spiked 88 percent from 2011 to 2013, according to figures released Friday by the state's Department of Health and Mental Hygiene, and intoxication overdoses of all types now outnumber homicides in the state.

"Overdose is a public-health crisis in Maryland, as it is in many states," said the agency's secretary, Joshua Sharfstein, "and we are bringing everything we can to bear against this challenge."

Cyndi Glass of Brookeville, whose son Jeremy died of a heroin overdose in 2008, gasped when she heard the statistics. "That is shocking. I knew it would increase, but I didn't know it would increase that much," she said.

Glass has been raising money for treatment, prevention and awareness programs because she had no idea, when her son was prescribed opioid painkillers after a football injury led to three knee surgeries, that it could possibly lead one day to a heroin addiction.

"He would have turned 26 yesterday," she said.

Heroin use has been surging across the country — often as people addicted to prescription opiates switch to a similar, but cheaper and more readily available, high — with fatalities rising along with it.

In Virginia, heroin-related deaths more than doubled from 2011 through 2013, for a total of 213. In 2013 in Maryland, which has a more comprehensive system for tracking deaths, there were 464 — an 18 percent increase from the previous year.

Both states began training programs this year to help family members or friends learn to administer naloxone, a drug that can sometimes prevent an overdose. In Maryland, 2,000 people have been trained already in addition to the first-responders, Sharfstein said, and by July 1 all ambulances will carry naloxone.

Maryland saw a dramatic jump in the number of deaths from heroin spiked with non-prescription fentanyl. Typically they had seen two or three a month, Sharfstein said, “but in October we started to see 10, 15, 20 a month . . . and that has persisted, to a certain extent, into this year. That is a huge increase. Fentanyl is highly potent and definitely dangerous in combination with heroin. That is a huge challenge.”

Gov. Martin O’Malley (D) created an interagency council to try to prevent overdose deaths, using some of the same techniques the state has used to understand and reduce the number of homicides.

One of his main goals has been to reduce intoxication deaths by 20 percent by the end of next year. (A graphic of a meter on a state Web site shows negative 7.4 percent progress toward that goal, since all intoxication deaths increased from 799 to 858 in 2013.)

Heroin-related deaths increased in western and central Maryland and on the Eastern Shore. And they more than doubled in Frederick County, from 10 in 2012 to 21 in 2013.

Over the past five to 10 years, heroin, once mainly associated with urban centers such as Baltimore, has spread throughout the state, Sharfstein said. (Baltimore had a large increase in heroin deaths from 2012 to 2013, as well.)

The state has launched a public-information campaign to counter opioid overdoses, trying to erase stigmas about treatment such as methadone and looping in the 211 call centers so that people can ask where to find help.

Officials hope to provide everyone leaving detention centers with information warning about overdose deaths: Former inmates can easily overdose after being off the drug if they go back to their original dose once they're freed from incarceration because of lost tolerance. And officials will study cases, looking for common factors (such as certain doctors, in the case of prescription-drug overdoses), recent release from prison and so on.

The governor is also asking the boards that oversee prescribers to require all practitioners to take continuing education in two areas: Appropriate opioid prescribing and addiction treatment.

“It may be that we’re making some progress,” Sharfstein said. “It’s just hard to say, given the enormous increases affecting the East Coast right now. Everything we’re doing is really not enough to turn the corner.”

Sunday, August 23rd, 2015

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Local Addiction Center Sees Spike In Heroin Use

Contributed by Cody Griffin on July 9, 2015 at 2:37 pm

The Centers for Disease Control and Prevention has carried out the release of this report that is based on annual face-to-face surveys of about 67,000 Americans.

Officers with the Huntsville Police Department say they are seeing a major increase this year.

Deaths caused by heroin overdoses almost quadrupled between 2002 and 2013, claiming 8,257 lives in 2013.

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Growing heroin use is also leading to an increase in the number of babies born addicted to the drug and an increase in overdoses.

“It’s about community involvement, and getting the word out to everyone about the problem that we are having”, Sgt.

Experts say a lot of people have turned to heroin because prescription opiod painkillers like Vicodin and Oxycontin are becoming more expensive and tougher to get. Many people switch to heroin because it’s cheaper, Frieden said.

Increasing heroin dependence is closely tied to prescription pain reliever abuse, said Dr Jay Unick, associate professor at the University of Maryland School of Social Work and author of a 2013 study on trends in heroin- and opioid-related overdoses. “More people are primed for heroin addiction because they are addicted to prescription opiates, which are, after all, essentially the same chemical with the same impact on the brain”. Heroin use grew by 62.5% among those with private insurance, an indication that the users are employed and more financially secure. That rise in injection drug use has fueled a new set of public health problems, including an HIV outbreak in rural Indiana and a resurgence of hepatitis C nationwide, Frieden said.

Lander, who has been treating addiction for three decades, sees the heroin boom as the latest in a series of waves of drug abuse that regularly sweep across the United States. “These things are feeding on each other”, Unick said.

A January 2015 analysis in the New England Journal of Medicine showed that deaths from opioid addiction leveled off from 2006 to 2008 and then decreased slightly from 2009 thru 2013.

Wen also recommends that more communities should educate people on naloxone. “We have the medications and we have the know-how. But I think we could deal with this pretty effectively”. The increase of supply also led to a decline in price and an increase in purity. The CDC urged states to make prescription-monitoring programs easier for doctors and pharmacists to use.

The DEA’s acting administrator, Chuck Rosenberg, said in a statement that the agency will continue to work with the CDC. About 12 million have used prescription opioids. “Our best information suggests two main reasons”, CDC director Dr. Thomas Frieden told CNN.

New Treatments for Surging Number of Inmates Addicted to Heroin Tried in Maryland

By Scott MacFarlane

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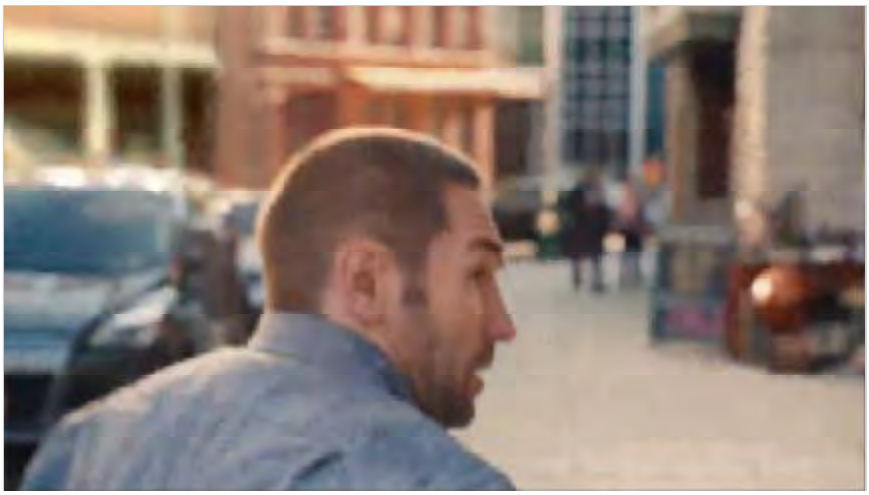

Local jails are trying to figure out how to deal with a growing number of inmates who are addicted to heroin. Scott MacFarlane reports. (Published Thursday, Aug. 6, 2015)

Updated at 1:41 PM EDT on Thursday, Aug 6, 2015

Maryland jails and prisons are attempting a series of new treatments for inmates who enter the facilities addicted to heroin.

A review by the News4 I-Team shows state and local correctional officials administering acupuncture, methadone and a new medicine called Vivitrol to cope with a surging number of heroin-addicted inmates.

The wide variety of techniques and treatments indicate a lack of a universal plan for reducing withdrawal sicknesses in drug addicted offenders but also include a series of success stories, according to jail administrators who spoke with the I-Team.

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Heroin overdoses have tripled in Maryland since 2008, according to state records. Jail officials and inmates told the I-Team they've seen a growing number of heroin withdrawal cases among offenders behind bars. Harry King, an inmate in the Frederick County Jail, said drug withdrawal is so common it has been nicknamed "dope sickness." King said it includes many of the same symptoms of influenza, King said. "(Inmates) look like zombies," he said. "They can't even get out of bed. They can't sleep."

Washington County Sheriff Douglas Mullendore is among the first jail officials in the nation to dispense Vivitrol, a medicine designed to limit cravings or desire for drugs by impacting the brain. Vivitrol, which Mullendore said costs $1,500 per dosage per inmate, is administered by county employees in the jail in Hagerstown. Inmates must be clean for at least seven days to qualify for the treatment, Mullendore said. "The addiction is so great," he said. "The normal lay person doesn't understand that. It almost calls them immediately."

Counseling alone is not sufficient to handle the severe withdrawal symptoms of heroin addicts, Mullendore said.

Maryland state prison officials offer acupuncture treatments to drug-addicted inmates. The program, launched in the 1990s, has become increasingly important amid the surge in heroin addiction and overdoses.

The acupuncture treatment is effective for many inmates, a state correctional official said. "The treatment benefit is immediate, tangible and apparent even to the person who has entered the treatment center for the first time, and can be provided as an initial treatment intervention before this person has to establish a bonding relationship of confidence and trust with the counseling staff, he said."

"Heroin is a very, very strong addiction," state correctional administrator Nicole Jackson said. "It's not something that you can just take a pill for, a medication for, and it goes away. It stays with you. You need to get constant, constant treatment for it."

The state prison in Baltimore also offers methadone treatments for inmates, to help reduce withdrawal. The methadone dosages are dispensed at 5 a.m. some mornings inside the prison. I-Team cameras captured images of inmates lining up for treatments.

Robert Schwartz, medical director of the Friends Research Institute, said heroin withdrawal is severe. "It's basically like a really horrible case of the flu," Schwartz said. "People are sweating. They're nauseous. They can have vomiting. The pupils are dilated, and bones ache."

Frederick County Sheriff Chuck Jenkins said his county is at the epicenter of the state's growing heroin epidemic. Though the sheriff's department is considering dispensing Vivitrol to inmates later this year, it has not yet begun the use of any medical treatments to help inmates cope with heroin withdrawal.

The county offers a series of counseling and behavioral health services but has not approved methadone treatments, Jenkins said. "When the door slams shut, everybody wants their mama and finds Jesus," he said. "It's time to fish or cut bait. It's on (the inmates) to clean up. You're forced to clean up in here."

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Gov. Larry Hogan approved $500,000 in grant money for local jails to use for the purchase of Vivitrol. The jails would be permitted to make Vivitrol available for monthly dosages to a limited number of inmates, he said. “Addressing Maryland’s heroin crisis and helping to break the cycle of crime and re-incarceration associated with addiction requires us to offer those reentering society with the tools to live sober, healthy and productive lives,” he said.

Published at 6:56 PM EDT on Aug 5, 2015

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The article is indicative of the lack of understanding that is pervasive today.
1 - The physical addiction is only a small part. The true "addiction" is a psychological state. No amount of "interfering" medication will correct this. The "sick" will last approximately a week with the first 4 days being the worst. The sleep problems will take much longer but the body is naturally trying to find statis and will correct itself as best as it can.
2 - Vivitrol and Methadone are NOT treatment. MAT (Medicinally Assisted Treatment) requires there be a treatment component. When use... See More

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Who the hell wants vivitrol for withdrawal symptons? It does nothing to alleviate heroin withdrawal and there are a couple of medications that work to ease the horrific state of the withdrawing inmate. What B.S. article.

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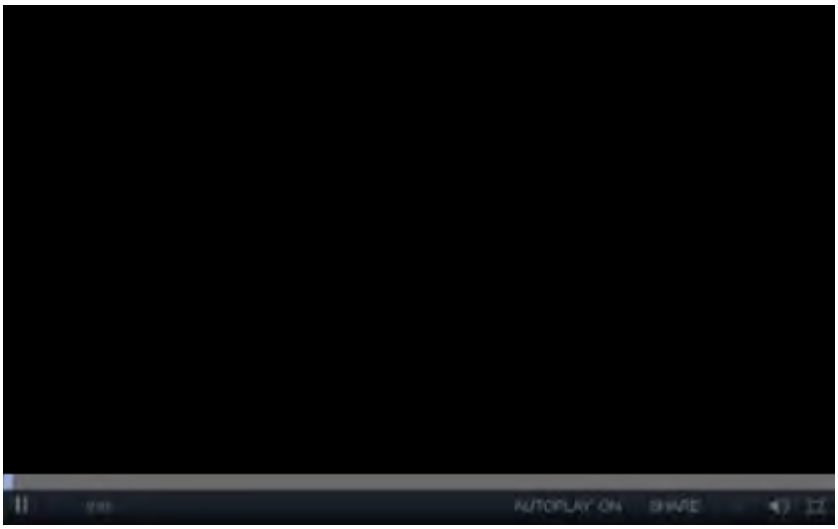

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By **DENNIS THOMPSON** / **HEALTHDAY** / *July 7, 2015, 5:43 PM*

Heroin use rising among women and wealthy

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Last Updated Jul 8, 2015 9:54 AM EDT

The face of heroin addiction in the United States is changing, as well-off abusers of prescription painkillers switch to illicit narcotics to feed their habit, federal officials reported Tuesday.

Heroin use increased 63 percent over the past decade. From 2002 to 2004, the annual rate of heroin use was 1.6 per 1,000 persons aged 12 or older. By 2011 to 2013, that rate was 2.6 per 1,000 people, officials from the U.S. Centers for Disease Control and Prevention said.

Correspondingly, there has been a rapid increase in heroin overdose deaths. The number of heroin overdose deaths nearly doubled between 2011 and 2013, and in 2013 more than 8,200 people died from the narcotic. Overdoses have nearly quadrupled since 2002, the officials said.

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Heroin use increasing among women in the U.S.

The findings were published in the July 7 issue of the CDC's Morbidity and Mortality Weekly Report.

CDC Director Dr. Tom Frieden said heroin use is increasing at an alarming rate in many parts of society. And the problem is being driven by both the prescription opioid epidemic and cheaper, more available heroin, he said.

"It's really a one-two punch," Frieden said during a media briefing. "Those two factors are driving the increase, and will drive the strategies we need to pursue to turn this around."

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The people most at risk for heroin addiction include whites, males, 18- to 25-year-olds, people making less than $20,000 a year, Medicaid recipients and the uninsured, the CDC report found.

But the biggest increases in heroin use in recent years were found in groups that typically aren't expected to go near the drug, including women, people with private insurance and higher-income individuals, the report said.

The gaps in heroin use between men and women, people on Medicaid or with private insurance, and those with low or high incomes have all narrowed during the past decade, the CDC said.

Frieden said the narrowing gaps in heroin abuse are occurring due to across-the-board increases, causing a "leveling" of heroin use. "We're seeing an increase throughout many segments of society," he added.

This expansion of heroin abuse can be largely chalked up to an earlier wave of prescription opioid drug abuse -- including such drugs as Vicodin, OxyContin and Percocet -- and government efforts to counter that trend, said Brad Lander, an addiction medicine specialist at the Ohio State University Wexner Medical Center.

Play **VIDEO**

Hooked on heroin in the suburbs

"We've seen an explosion of heroin use here in Ohio," Lander said. "They thought by shutting down the pill mills, they thought they were shutting down the addiction problem. Instead, people just shifted over to heroin, which is easier to get and cheaper."

The CDC's new report bears this out. About 45 percent of people who used heroin also were addicted to prescription narcotics from 2011 to 2013, researchers found. That's more than double the rate from 2002 to 2004, the report revealed.

Prescription drug abuse is "the strongest risk factor for heroin abuse or dependence," Frieden said, adding that prescription narcotics are "essentially the same chemical, with the same effect on the brain" as heroin.

People addicted to prescription painkillers are 40 times more likely to abuse heroin, according to the CDC's report. By comparison, cocaine users are 15 times more likely to use heroin and marijuana users are just three times more likely to use heroin, the CDC noted.

Nearly all people who reported heroin use also reported using at least one other drug in the past year, and nearly two-thirds had used at least three other drugs, the CDC reported.

Lander, who has been treating addiction for three decades, sees the heroin boom as the latest in a series of waves of drug abuse that regularly sweep across the United States.

"These things go in cycles," he said. "I really think it's just going to run its course. I think as people see how dangerous this is, it will disappear over time -- at least, that's what I've seen in my experience."

In the meantime, addiction treatment -- rather than law enforcement or new legislation -- will be the best way to minimize the harm from heroin abuse, Lander said.

"We do have the ability to deal with it on a treatment level," he said. "We have the medications and we have the know-how. We just don't have the resources. But I think we could deal with this pretty effectively."

CDC officials agreed that states also can play a leading role in reversing the heroin epidemic, by increasing access to substance-abuse treatment services. The CDC urged states to make prescription-monitoring programs easier for doctors and

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pharmacists to use. States also should review their Medicaid and workers' compensation programs to identify trends of inappropriate prescribing, the CDC said.

In addition, the federal government is working on prescribing guidelines for treating chronic pain that are expected to help limit prescription abuse, Frieden said. In the meantime, regulators are urging doctors to be more judicious in prescribing addictive drugs for pain management.

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National Institute on Drug Abuse
The Science of Drug Abuse & Addiction

DrugFacts: Heroin

Print

Revised October 2014

Heroin is an opioid drug that is synthesized from morphine, a naturally occurring substance extracted from the seed pod of the Asian opium poppy plant. Heroin usually appears as a white or brown powder or as a black sticky substance, known as "black tar heroin."

In 2011, 4.2 million Americans aged 12 or older (or 1.6 percent) had used heroin at least once in their lives. It is estimated that about 23 percent of individuals who use heroin become dependent on it.

How Is Heroin Used?

Heroin can be injected, inhaled by snorting or sniffing, or smoked. All three routes of administration deliver the drug to the brain very rapidly, which contributes to its health risks and to its high risk for addiction, which is a chronic relapsing disease caused by changes in the brain and characterized by uncontrollable drug-seeking no matter the consequences.

How Does Heroin Affect the Brain?

Prescription Opioid Abuse: A First Step to Heroin Use?

Prescription opioid pain medications such as Oxycontin and Vicodin can have effects similar to heroin when taken in doses or in ways other than prescribed, and they are currently among the most commonly abused drugs in the United States. Research now suggests that abuse of these drugs may open the door to heroin abuse.

Nearly half of young people who inject heroin surveyed in three recent studies reported abusing prescription opioids before starting to use heroin. Some individuals reported taking up heroin because it is cheaper and easier to obtain than prescription opioids.

Many of these young people also report that crushing prescription

opioid pills to snort or inject the powder provided their initiation into these methods of drug administration.

When it enters the brain, heroin is converted back into morphine, which binds to molecules on cells known as opioid receptors. These receptors are located in many areas of the brain (and in the body), especially those involved in the perception of pain and in reward. Opioid receptors are also located in the brain stem, which controls automatic processes critical for life, such as blood pressure, arousal, and respiration.

Heroin overdoses frequently involve a suppression of breathing. This can affect the amount of oxygen that reaches the brain, a condition called hypoxia. Hypoxia can have short- and long-term psychological and neurological effects, including coma and permanent brain damage.

After an intravenous injection of heroin, users report feeling a surge of euphoria ("rush") accompanied by dry mouth, a warm flushing of the skin, heaviness of the extremities, and clouded mental functioning. Following this initial euphoria, the user goes "on the nod," an alternately wakeful and drowsy state. Users who do not inject the drug may not experience the initial rush, but other effects are the same.

Researchers are also investigating the long-term effects of opioid addiction on the brain. One result is tolerance, in which more of the drug is needed to achieve the same intensity of effect. Another result is dependence, characterized by the need to continue use of the drug to avoid withdrawal symptoms. Studies have shown some deterioration of the brain's white matter due to heroin use, which may affect decision-making abilities, the ability to regulate behavior, and responses to stressful situations.

Injection Drug Use and HIV and HCV Infection

People who inject drugs are at high risk of contracting HIV and hepatitis C (HCV). This is because these diseases are transmitted through contact with blood or other bodily fluids, which can occur when sharing needles or other injection drug use equipment. (HCV is the most common blood-borne infection in the Unites States.) HIV (and less often HCV) can also be contracted during unprotected sex, which drug use makes more likely.

Because of the strong link between drug abuse and the spread of infectious disease, drug abuse treatment can be an effective way to prevent the latter. People in drug abuse treatment, which often includes risk reduction counseling, stop or reduce their drug use

and related risk behaviors, including risky injection practices and unsafe sex. (See box, "**Treating Heroin Addiction**.")

What Are the Other Health Effects of Heroin?

Heroin abuse is associated with a number of serious health conditions, including fatal overdose, spontaneous abortion, and infectious diseases like hepatitis and HIV (see box, "Injection Drug Use and HIV and HCV Infection"). Chronic users may develop collapsed veins, infection of the heart lining and valves, abscesses, constipation and gastrointestinal cramping, and liver or kidney disease. Pulmonary complications, including various types of pneumonia, may result from the poor health of the user as well as from heroin's effects on breathing.

In addition to the effects of the drug itself, street heroin often contains toxic contaminants or additives that can clog blood vessels leading to the lungs, liver, kidneys, or brain, causing permanent damage to vital organs.

Chronic use of heroin leads to physical dependence, a state in which the body has adapted to the presence of the drug. If a dependent user reduces or stops use of the drug abruptly, he or she may experience severe symptoms of withdrawal. These symptoms—which can begin as early as a few hours after the last drug administration—can include restlessness, muscle and bone pain, insomnia, diarrhea and vomiting, cold flashes with goose bumps ("cold turkey"), and kicking movements ("kicking the habit"). Users also experience severe craving for the drug during withdrawal, which can precipitate continued abuse and/or relapse.

Besides the risk of spontaneous abortion, heroin abuse during pregnancy (together with related factors like poor nutrition and inadequate prenatal care) is also associated with low birth weight, an important risk factor for later delays

Treating Heroin Addiction

A range of treatments including behavioral therapies and medications are effective at helping patients stop using heroin and return to stable and productive lives.

Medications include buprenorphine and methadone, both of which work by binding to the same cell receptors as heroin but more weakly, helping a person wean off the drug and reduce craving; and naltrexone, which blocks opioid receptors and prevents the drug from having an effect (patients sometimes have trouble complying with naltrexone treatment, but a new long-acting

in development. Additionally, if the mother is regularly abusing the drug, the infant may be born physically dependent on heroin and could suffer from neonatal abstinence syndrome (NAS), a drug withdrawal syndrome in infants that requires hospitalization. According to a recent study, treating opioid-addicted pregnant mothers with buprenorphine (a medication for opioid dependence) can reduce NAS symptoms in babies and shorten their hospital stays.

version given by injection in a doctor's office may increase this treatment's efficacy). Another drug called naloxone is sometimes used as an emergency treatment to counteract the effects of heroin overdose.

For more information, see NIDA's handbook, Principles of Drug Addiction Treatment.

Learn More

For additional information on heroin, please refer to the following sources on NIDA's Web site:

- Research Report Series - Heroin Abuse and Addiction
- NIDA Notes - Heroin
- NIDA Notes - Opioids
- Health Effects Chart

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BUSINESS INSIDER

One type of legal drug is killing far more people than heroin — and that's not the most disturbing part of the problem

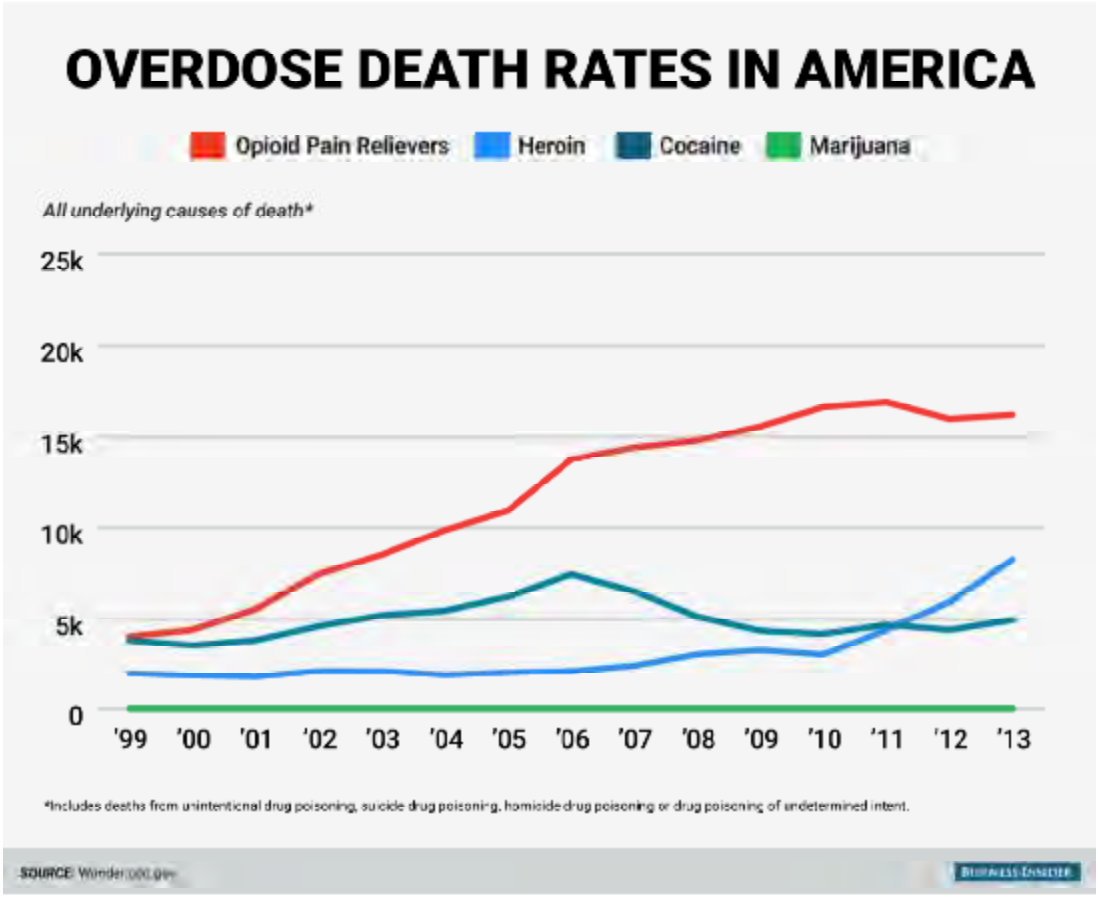
ERIN BRODWIN AND SKYE GOULD
JUL. 9, 2015, 5:01 PM

Heroin use in the US is skyrocketing. The number of people using this powerful, addictive drug has grown by nearly 300,000 in the past decade, and more and more people are dying from overdose.

But while tragic, these numbers are still outshadowed by another, equally disturbing statistic: The rise in deaths from people overdosing on powerful opiate painkillers such as Vicodin or OxyContin — the same drugs many experts have said may open the door to later heroin use.

Research suggests that one of the reasons that abusing opiates can make people more susceptible to future heroin abuse is because the drugs act similarly in the brain. A new CDC report released Tuesday found that people who abused opiate painkillers were 40 times as likely to abuse heroin.

Here's a chart looking at overdose deaths from opioid pain relievers and heroin, compared against overdose deaths from cocaine and marijuana. The latest data, revised in February, goes until 2013:



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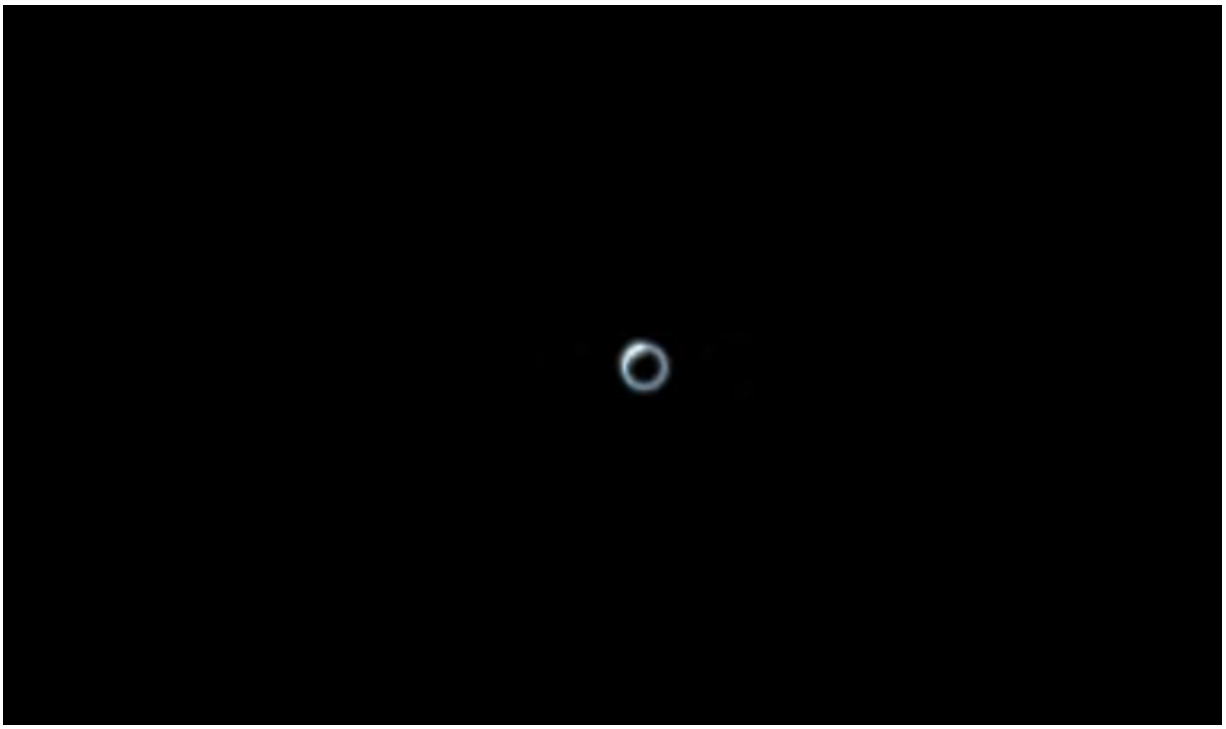

More: Health Heroin Cocaine Drugs

National Institute on Drug Abuse
The Science of Drug Abuse & Addiction

Prescription Drug Abuse

Print

How do opioids affect the brain and body?

Opioids act by attaching to specific proteins called opioid receptors, which are found in the brain, spinal cord, gastrointestinal tract, and other organs in the body. When these drugs attach to their receptors, they reduce the perception of pain. Opioids can also produce drowsiness, mental confusion, nausea, constipation, and, depending upon the amount of drug taken, can depress respiration. Some people experience a euphoric response to opioid medications, since these drugs also affect the brain regions involved in reward. Those who abuse opioids may seek to intensify their experience by taking the drug in ways other than those prescribed. For example, OxyContin is an oral medication used to treat moderate to severe pain through a slow, steady release of the opioid. People who abuse OxyContin may snort or inject it,[2] thereby increasing their risk for serious medical complications, including overdose.

Dependence vs. Addiction

Physical dependence occurs because of normal adaptations to chronic exposure to a drug and is not the same as addiction. Addiction, which can include physical dependence, is distinguished by compulsive drug seeking and use despite sometimes devastating consequences.

Someone who is physically dependent on a medication will experience withdrawal symptoms when use of the drug is abruptly reduced or stopped. These symptoms can be mild or severe (depending on the drug) and can usually be managed medically or avoided by using a slow drug taper.

Dependence is often accompanied by tolerance, or the need to take higher doses of a medication to get the same effect. When tolerance occurs, it can be difficult for a

physician to evaluate whether a patient is developing a drug problem, or has a real medical need for higher doses to control their symptoms. For this reason, physicians need to be vigilant and attentive to their patients' symptoms and level of functioning to treat them appropriately.

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2 Changing the route of administration also contributes to the abuse of other prescription medications, including stimulants, a practice that can lead to serious medical consequences.

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This page was last updated November 2014

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Morbidity and Mortality Weekly Report (*MMWR*)

Vital Signs: Demographic and Substance Use Trends Among Heroin Users — United States, 2002–2013

Weekly
July 10, 2015 / 64(26);719-725

On July 7, 2015, this report was posted as an MMWR *Early Release on the* MMWR *website (http://www.cdc.gov/mmwr).*

Christopher M. Jones, PharmD1; Joseph Logan, PhD2; R. Matthew Gladden, PhD3; Michele K. Bohm, MPH3 (Author affiliations at end of text)

Abstract

Background: Heroin use and overdose deaths have increased significantly in the United States. Assessing trends in heroin use among demographic and particular substance-using groups can inform prevention efforts.

Methods: FDA and CDC analyzed data from the National Survey on Drug Use and Health and National Vital Statistics System reported during 2002–2013. Trends in heroin use among demographic and substance using groups were compared for 2002–2004, 2005–2007, 2008–2010, and 2011–2013. A multivariable logistic regression model was used to identify characteristics associated with heroin abuse or dependence.

Results: Annual average rates of past-year heroin use increased from 1.6 per 1,000 persons aged ≥12 years in 2002–2004 to 2.6 per 1,000 in 2011–2013. Rates of heroin abuse or dependence were strongly positively correlated with rates of heroin-related overdose deaths over time. For the combined data years 2011–2013, the odds of past-year heroin abuse or dependence were highest among those with past-year cocaine or opioid pain reliever abuse or dependence.

Conclusions: Heroin use has increased significantly across most demographic groups. The increase in heroin abuse or dependence parallels the increase in heroin-related overdose deaths. Heroin use is occurring in the context of broader poly-substance use.

Implications for Public Health Practice: Further implementation of a comprehensive response that targets the wider range of demographic groups using heroin and addresses the key risk factors for heroin abuse and dependence is needed. Specific response needs include reducing inappropriate prescribing and use of opioids through early identification of persons demonstrating problematic use, stronger prescription drug monitoring programs, and other clinical measures; improving access to, and insurance coverage for, evidence-based substance abuse treatment, including medication-assisted treatment for opioid use disorders; and expanding overdose recognition and response training and access to naloxone to treat opioid pain reliever and heroin overdoses.

Introduction

During 2002–2013, heroin overdose death rates nearly quadrupled in the United States, from 0.7 deaths to 2.7 deaths per 100,000 population, with a near doubling of the rates from 2011–2013 (*1*). Data from the National Survey on Drug Use and Health (NSDUH) indicate heroin use, abuse, and dependence have increased in recent years. In 2013, an estimated 517,000 persons reported past-year heroin abuse or dependence, a nearly 150% increase since 2007 (*2*).

During 2002–2011, rates of heroin initiation were reported to be highest among males, persons aged 18–25 years, non-Hispanic whites, those with an annual household income <$20,000, and those residing in the Northeast (*3*). However, during this period heroin initiation rates generally increased across most demographic subgroups (*3*). Most heroin users have a history of nonmedical use of prescription opioid pain relievers (*3–5*), and an increase in the rate of heroin overdose deaths has occurred concurrently with an epidemic of prescription opioid overdoses.

Although it has been postulated that efforts to curb opioid prescribing, resulting in restricted prescription opioid access, have fueled heroin use and overdose, a recent analysis of 2010–2012 drug overdose deaths in 28 states found that decreases in prescription opioid death rates within a state were not associated with increases in heroin death rates; in fact, increases in heroin overdose death rates were associated with increases in prescription opioid overdose death rates (*6*). In addition, a study examining trends in opioid pain reliever overdose hospitalizations and heroin overdose hospitalizations between 1993 and 2009 found that increases in opioid pain reliever hospitalizations predicted an increase in heroin overdose hospitalizations in subsequent years (*7*). Thus, the changing patterns of heroin use and overdose deaths are most likely the result of multiple, and possibly interacting, factors. Moreover, there is a lack of research examining recent trends in the prevalence of other substance use among persons using heroin, especially among the high-risk population of heroin users who meet diagnostic criteria for heroin abuse or dependence.

To improve understanding of current heroin use, abuse, and dependence trends and to identify individual-level risk factors that could help tailor prevention efforts, the Food and Drug Administration (FDA) and CDC examined demographic and substance use, abuse, and dependence trends among heroin users in the United States during 2002–2013.

Methods

Substance use data are derived from the 2002–2013 NSDUH surveys. The NSDUH is conducted annually by the Substance Abuse and Mental Health Services Administration and provides national- and state-level estimates of the use of illicit drugs, including nonmedical use of certain prescription drugs, alcohol, and tobacco among the civilian, noninstitutionalized population aged ≥12 years (*2*). NSDUH employs a state-based design with an independent, multistage area probability sample within each state and the District of Columbia (*2*). For this study, the 2002–2013 NSDUH public use files were combined in four, 3-year time intervals: 1) 2002–2004; 2) 2005–2007; 3) 2008–2010; and 4) 2011–2013.

Past-year nonmedical use of prescription drugs is defined as using prescription drugs without having a prescription, or using prescription drugs only for the experience or feeling it causes, during the 12 months preceding the survey interview. Past-year use of marijuana, cocaine, or heroin is defined as use of the substance in the 12 months preceding the survey interview. Past-year abuse or dependence of specific substances (commonly referred to as addiction) was

based on diagnostic criteria contained in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*8*).

Mortality data from the 2002–2013 Multiple Cause of Death Files from the National Vital Statistics System were analyzed to identify heroin-related drug overdose deaths (*9*). Heroin-related drug overdose deaths were those assigned an underlying cause of death code of X40-X44 (unintentional), X60-X64 (suicide), X85 (homicide), or Y10-Y14 (undetermined intent) with a contributing cause of death ICD-10 code T40.1 (heroin poisoning) using the *International Classification of Diseases, Tenth Revision* (ICD-10).

First, to assess trends in heroin use in the United States, rates of past-year heroin use per 1,000 persons aged ≥12 years were calculated overall and stratified by sex, age, race/ethnicity, place of residence, annual household income, insurance coverage, and substance use (past-year use of marijuana, cocaine, opioid pain relievers, other psychotherapeutics [tranquilizers, sedatives, and stimulants], and past-month binge drinking) for each study time interval. In addition, the percentage of past-year heroin users who also used at least one other drug in the past year were calculated.

Second, to assess high-risk use of other substances among past-year heroin users, the percentages of past-year heroin users who met diagnostic criteria for past-year alcohol, marijuana, cocaine, or opioid pain reliever abuse or dependence were calculated. All rates are based on U.S Census Bureau population estimates. Two-sided t-tests were used to assess statistically significant differences between 2011–2013 rates and earlier survey year groups. To assess trends, bivariate logistic regression models were applied to test p-values of beta coefficients of the year variable.

Third, to identify individual-level risk factors associated with the subset of past-year heroin users who met diagnostic criteria for heroin abuse or dependence, a multivariable logistic regression model incorporating sex, age group, race/ethnicity group, place of residence, annual household income categories, insurance coverage, and the presence or absence of past-year alcohol, marijuana, cocaine, opioid pain relievers, or other psychotherapeutic abuse or dependence was estimated using the 2011–2013 NSDUH data. Associations were reported as adjusted odds ratios with 95% confidence intervals.

Finally, Pearson's correlation coefficient (r) was used to assess correlation between the trend in rates of heroin abuse or dependence and heroin-related drug overdose deaths during 2002–2013.

Results

The weighted interview response rate for the NSDUH during the study period (2002–2013) ranged from 72% to 79% each year. The annual average rate of past-year heroin use in 2011–2013 was 2.6 per 1,000 persons aged ≥12 years (Table 1). This rate was significantly higher than the rates for 2002–2004 (1.6) and 2005–2007 (1.8), and represents a 62.5% increase since 2002–2004. Similarly, the overall rate of people meeting diagnostic criteria for past-year heroin abuse or dependence increased significantly during the study period, from 1.0 per 1,000 to 1.9 per 1,000, which represents a 90.0% increase overall and a 35.7% increase since 2008–2010.

Rates of past-year heroin use were higher among men than women for all time intervals; the rate in 2011–2013 for men was 3.6 per 1,000 compared with 1.6 per 1,000 for women; the gap in rates between men and women narrowed between 2002–2004 and 2011–2013. Both men and women experienced significantly higher heroin use rates during 2011–2013 compared with

2002–2004 and 2005–2007. Among age groups, persons aged 18–25 years experienced the largest increase (108.6%) between 2002–2004 and 2011–2013.

The rate of past-year heroin use among non-Hispanic whites increased 114.3% from 1.4 per 1,000 in 2002–2004 to 3.0 per 1,000 in 2011–2013. Past-year heroin use increased across the three annual household income levels (<$20,000; $20,000–$49,000; ≥$50,000) between 2002–2004 and 2011–2013. Individuals with no health insurance as well as those with private or other insurance experienced statistically significant increases in heroin use rates between 2002–2004 and 2011–2013.

During 2002–2013, past-year heroin use increased among persons reporting past-year use of other substances. The highest rate was consistently found among users of cocaine; during 2011–2013, this rate was 91.5 per 1,000. During the study period, the largest percentage increase, 138.2%, occurred among nonmedical users of opioid pain relievers. In this group, the past-year heroin use rate increased from 17.8 per 1,000 to 42.4 per 1,000, but was still considerably lower than the rate among cocaine users.

Overall, 96% of past-year heroin users reported use of at least one other drug during the past year, and 61% reported using at least three different drugs. In addition, a significant percentage of heroin users met diagnostic criteria for past-year abuse of, or dependence on, other substances (Figure 1). The percentage of heroin users with past-year marijuana, cocaine, or alcohol abuse or dependence remained stable during most of the study periods. However, the percentage of heroin users with opioid pain reliever abuse or dependence more than doubled from 20.7% in 2002–2004 to 45.2% in 2011–2013. By 2011–2013, opioid pain reliever abuse or dependence was more common among heroin users than alcohol, marijuana, or cocaine abuse or dependence.

The rate of heroin-related drug overdose deaths was stable at approximately 0.7 per 100,000 during 2002–2006, and began to increase gradually through 2009, when the rate was 1.1 per 100,000. Beginning in 2011, the overdose death rate increased sharply, from 1.4 per 100,000 to 2.7 per 100,000 in 2013, a rate that represents a more than 286% increase since 2002 (Figure 2). There was a strong positive correlation ($r = 0.9$; $p<0.001$) between the rates of past-year heroin abuse or dependence and heroin-related drug overdose deaths over time.

The multivariable logistic regression model, adjusted for demographic and specific substance abuse or dependence variables (Table 2), indicates that the following characteristics were associated with higher odds of past-year heroin abuse or dependence: male sex; aged 18–25 years; non-Hispanic white race/ethnicity; residence in a large urban area (Core Based Statistical Area with >1 million persons); <$20,000 annual household income; having no health insurance or having Medicaid; and having past-year abuse or dependence on alcohol, marijuana, cocaine, or opioid pain relievers. Among those with other substance abuse or dependence, the largest adjusted odds ratio (aOR) for heroin abuse or dependence was found among persons with opioid pain reliever abuse or dependence (aOR = 40.0; 95% CI = 24.6–65.3), followed by persons with cocaine abuse or dependence (aOR = 14.7; 95% CI = 7.4–29.2), marijuana abuse or dependence (aOR = 2.6; 95% CI = 1.5–4.6), and alcohol abuse or dependence (aOR = 1.8; 95% CI = 1.2–2.9).

Conclusions and Comment

There was a significant increase in the rate of past-year heroin use in the United States between 2002–2004 and 2011–2013. Rates remained highest among males, persons aged 18–25 years, persons with annual household incomes <$20,000, persons living in urban areas,

and persons with no health insurance or with Medicaid. However, rates increased significantly across almost all study groups. The greatest increases in heroin use occurred in demographic groups that historically have had lower rates of heroin use: doubling among women and more than doubling among non-Hispanic whites. Of particular note is the near doubling in the rate of people with heroin abuse or dependence during the study period, with a 35.7% increase since 2008–2010 alone. This increase parallels the sharp increase in heroin-related overdose deaths reported since 2010.

This study also indicates that the problem of heroin abuse or dependence is not occurring in isolation. Past-year alcohol, marijuana, cocaine, and opioid pain reliever abuse or dependence were each significant risk factors for heroin abuse or dependence. Research has identified poly-substance use as a risk factor for overdose death; most overdose deaths involve multiple drugs (*10*,*11*). In 2013, 59% of the 8,257 heroin-related overdose deaths in the United States involved at least one other drug (*9*). Data presented here indicate the relationship between heroin and opioid pain relievers, as well as the relationship between heroin and cocaine, was particularly strong. In fact, abuse or dependence on opioid pain relievers was the strongest risk factor for heroin abuse or dependence. Taken together, these results underscore the significance of heroin use in the context of broader poly-substance use, a finding that should be considered when prevention policies are being developed and implemented.

The increased availability and lower price of heroin in the United States has been identified as a potential contributor to rising rates of heroin use (*12*). According to data from the Drug Enforcement Administration's National Seizure System, the amounts of heroin seized each year at the southwest border of the United States were approximately ≤500 kg during 2000–2008. This amount quadrupled to 2,196 kg in 2013 (*12*). Since 2010, increased availability of heroin has been accompanied by a decline in price and an increase in purity, which may contribute to its increased use in the United States (*13*). This increase in the amount of heroin seized, increased availability and purity, and decreased cost are temporally associated with the increases in heroin use, abuse and dependence, and mortality found in this study. Increasing availability points to the importance of public health and law enforcement partnering to comprehensively address this public health crisis.

This study is subject to several limitations. First, NSDUH data are self-reported, and their value depends on the truthfulness and accuracy of individual respondents; under- or over-reporting might occur. Second, because the survey is cross-sectional and different individuals were sampled each year, it is not possible to infer causality from the observed associations. Third, because NSDUH only captures noninstitutionalized civilians, it excludes active duty military personnel, homeless and incarcerated populations, and persons in residential substance abuse treatment programs. Therefore, the drug use estimates in this study might not be generalizable to the total U.S. population, particularly for estimates of uncommonly used drugs like heroin. Finally, the heroin mortality rate is underestimated in the Multiple Cause of Death Files, because the specific drug or drugs involved in the overdose is not specified in approximately 25% of death certificates where the cause of death is drug overdose (*14*).

These findings indicate significant increases in heroin use across a growing number of demographic groups, including women, the privately insured, and persons with higher incomes. In fact, the gaps in heroin use rates between groups such as men and women, persons with low and higher incomes, and Medicaid and private insurance beneficiaries have narrowed during the past decade. These findings are consistent with recent research documenting significant demographic shifts among people entering heroin addiction treatment over the last

40 to 50 years (*4*). In addition, persons using heroin are abusing multiple other substances, especially cocaine and opioid pain relievers.

A comprehensive response that targets the wider range of demographic groups using heroin and addresses the key risk factors for heroin abuse and dependence is needed. Specifically, a focus on reducing opioid pain reliever abuse is needed given the strong association between opioid pain relievers and heroin abuse and dependence seen in this study, and prior research indicating that the rate of heroin initiation among people with a history of nonmedical use of opioid pain relievers was approximately 19 times greater than those with no history of nonmedical use (*3*). Interventions such as prescription drug monitoring programs to reduce inappropriate prescribing of opioids and enable the early identification of persons demonstrating problematic use must be strengthened. The increases in the number of people with heroin abuse or dependence and those dying from heroin-related overdose, as well as the recent increases in hepatitis C virus (HCV) and human immunodeficiency virus (HIV) associated with injection drug use (*15*,*16*), underscore the critical importance of improving access to, and insurance coverage for, evidence-based substance abuse treatment. In particular, medication-assisted treatment for opioid use disorders has been shown to reduce opioid use and mortality, and to reduce risk behaviors that transmit HCV and HIV (*17*). The increases in abuse or dependence and overdose deaths also highlight the urgent need to expand overdose recognition and response training and broaden access to naloxone to treat opioid pain reliever and heroin overdoses.

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Key Points

- Heroin use in the United States increased 63% from 2002 through 2013. This increase occurred among a broad range of demographics, including men and women, most age groups, and all income levels.
- As heroin use, abuse, and dependence have increased, so have heroin-related overdose deaths. From 2002 through 2013, the rate of heroin-related overdose deaths nearly quadrupled.
- Persons often use heroin with other substances, including marijuana, cocaine, alcohol, and opioid pain relievers. This practice is especially dangerous.
- Groups with an increased risk for heroin abuse or dependence include men, persons aged 18–25 years, non-Hispanic whites, persons with annual household income less than $20,000, Medicaid recipients, and the uninsured.
- States play a key role in addressing heroin use, abuse, dependence, and overdose. States can implement strategies to reduce the abuse of opioid pain relievers, the strongest risk factor for heroin abuse or dependence. They can also improve access and insurance coverage for medication-assisted treatment for opioid use disorders and expand access and training for naloxone administration to reverse overdoses.

- Additional information is available at http://www.cdc.gov/vitalsigns.

TABLE 1. Annual average rates* of past-year heroin use† by demographic and substance use characteristics, by time period — United States, 2002–2013

Characteristic	Annual average rate								% change	
	2002–2004		2005–2007		2008–2010		2011–2013		2008–2010 to 2011–2013	2002–2004 to 2011–2013
	Rate	(95% CI)	Rate	(95% CI)	Rate	(95% CI)	Rate	(95% CI)		
Overall past-year heroin use	1.6§§§	(1.4–1.9)	1.8§§	(1.4–2.1)	2.3	(2.0–2.7)	2.6	(2.2–2.9)	13.0	62.5¶
Overall past-year heroin abuse or dependence	1.0§§§	(0.8–1.2)	1.0§§§	(0.8–1.3)	1.4§	(1.2–1.7)	1.9	(1.6–2.2)	35.7	90.0¶
Sex										
Male	2.4§§	(1.9–2.9)	2.6§	(2.0–3.2)	3.3	(2.6–4.1)	3.6	(3.0–4.3)	9.1	50.0¶
Female	0.8§§	(0.6–1.1)	1.0§	(0.8–1.3)	1.5	(1.2–1.9)	1.6	(1.2–1.9)	6.7	100.0¶
Age (yrs)										
12–17	1.8	(1.3–2.5)	1.3	(1.0–1.7)	1.4	(1.0–2.0)	1.6	(1.2–2.2)	14.3	-11.1
18–25	3.5§§§	(2.9–4.3)	4.9§§§	(4.0–5.9)	5.3§	(4.7–6.1)	7.3	(6.4–8.3)	37.7	108.6¶
≥26	1.2§	(1.0–1.6)	1.3	(0.9–1.8)	1.9	(1.6–2.4)	1.9	(1.4–2.4)	0.0	58.3¶
Race/Ethnicity										
Non-Hispanic white	1.4§§§	(1.2–1.7)	1.6§§§	(1.3–1.9)	2.6	(2.2–3.0)	3.0	(2.6–3.5)	15.4	114.3¶
Other	2.0	(1.4–2.9)	2.2	(1.5–3.2)	1.9	(1.3–2.7)	1.7	(1.3–2.2)	-10.5	-15.0
Place of residence										

CBSA with ≥1 million persons	1.8§§	(1.4 –2.2)	2.0§	(1.5 –2.6)	2.4	(2.0 –2.9)	3.0	(2.4 –3.6)	25.0	66.7¶
Other area	1.4§	(1.1 –1.8)	1.5§	(1.2 –1.9)	2.3	(1.8 –2.9)	2.1	(1.7 –2.5)	-8.7	50.0¶
Annual household income										
<$20,000	3.4§	(2.5 –4.6)	3.3§§	(2.4 –4.6)	4.4	(3.4 –5.7)	5.5	(4.5 –6.8)	25.0	61.8¶
$20,000 –$49,999	1.3§§	(1.0 –1.7)	1.9	(1.5 –2.5)	2.7	(2.0 –3.6)	2.3	(1.8 –3.0)	-17.4	76.9¶
≥$50,000	1.0§	(0.7 –1.4)	1.0	(0.6 –1.6)	1.4	(1.2 –1.7)	1.6	(1.3 –1.9)	14.3	60.0¶
Health insurance coverage										
None	4.2§	(3.0 –5.9)	4.8	(3.6 –6.4)	6.3	(4.9 –8.0)	6.7	(5.4 –8.2)	6.3	59.5¶
Medicaid	4.3	(3.0 –6.0)	4.7	(3.1 –7.0)	4.3	(3.3 –5.6)	4.7	(3.7 –5.9)	8.9	9.3
Private or other	0.8§§	(0.7 –1.0)	0.8§§	(0.6 –1.0)	1.3	(1.0 –1.6)	1.3	(1.1 –1.6)	0.0	62.5¶
Substance use										
Past-month binge drinking	3.7§§	(3.0 –4.5)	4.1§	(3.3 –5.1)	5.2	(4.3 –6.3)	5.8	(4.4 –6.4)	11.5	56.8¶
Past-year marijuana use	11.6§§	(9.5 –14.1)	13.2	(10.6 –16.4)	14.4	(12.6 –16.6)	16.9	(14.4 –19.8)	17.4	45.7¶
Past-year cocaine use	48.9§§§	(40.2 –59.3)	57.6§§§	(45.9 –72.2)	68.3§	(55.4 –83.9)	91.5	(78.2 –106.8)	34.0	87.1¶
Past-year opioid pain reliever nonmedical use	17.8§§§	(14.3 –22.0)	25.1§§§	(19.9 –31.7)	34.0§	(28.9 –39.8)	42.4	(36.6 –49.1)	24.7	138.2¶
Past-year other psychotherapeutic nonmedical use**	23.1§§§	(18.6 –28.7)	28.5§§§	(23.1 –35.1)	41.6	(33.8 –51.0)	45.6	(38.9 –53.4)	9.6	97.4¶

Abbreviations: CBSA = Core Based Statistical Area; CI = confidence interval.

* Rate is per 1,000 population of each analytic group.

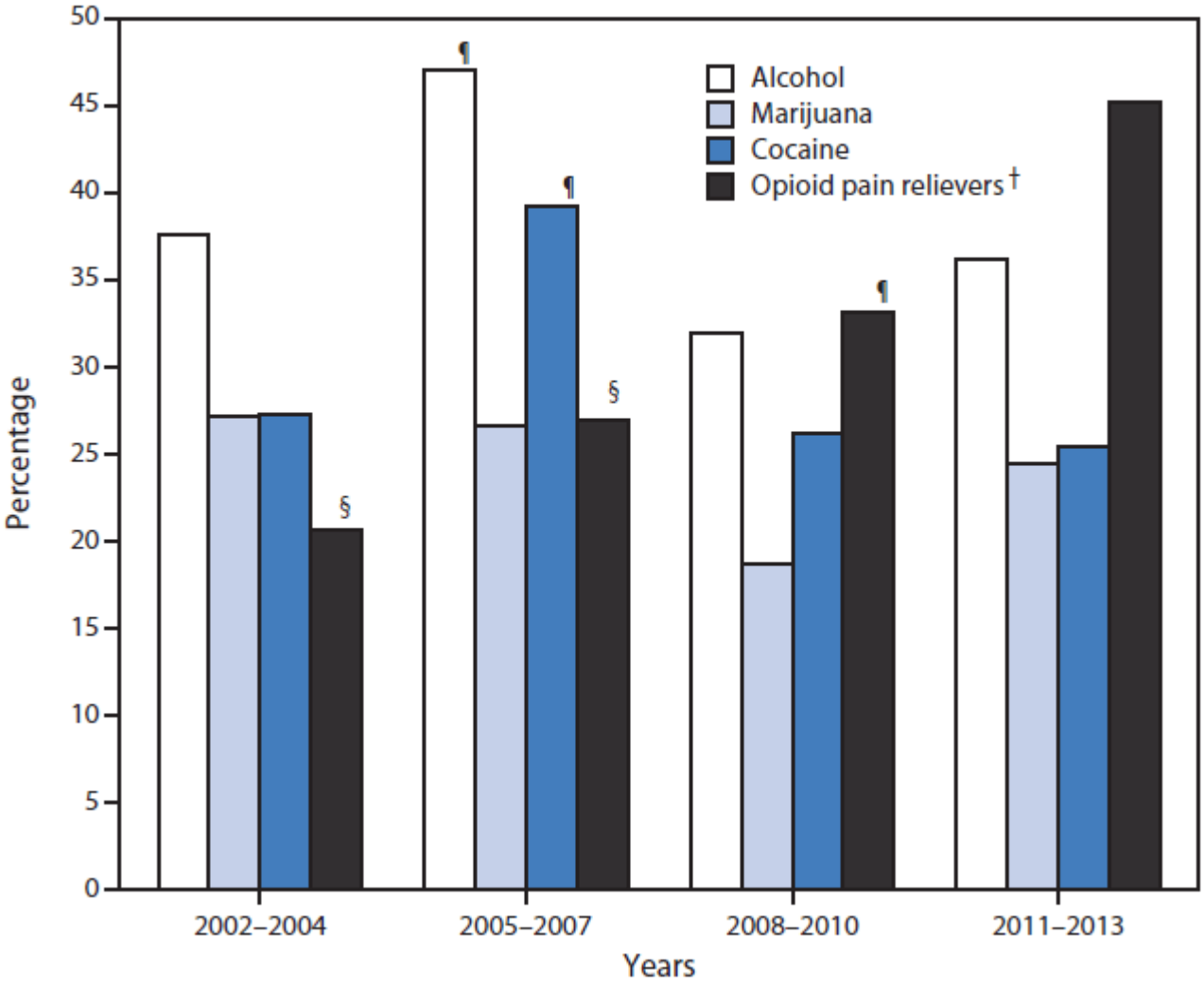
† Past-year heroin use is defined as any use of heroin in the 12 months preceding the National Survey on Drug Use and Health survey interview.

§ Rate is statistically significantly different from 2011–2013 rate; §p<0.05; §§p<0.01; §§§p<0.001.

¶ p-value for trend <0.05.

** Other psychotherapeutics includes tranquilizers, sedatives, and stimulants.

FIGURE 1. Annual average percentage of past-year heroin users* with past-year selected substance abuse or dependence, by time interval — United States, 2002–2013



* Past-year heroin use defined as any use of heroin in the 12 months preceding the National Survey on Drug Use and Health survey interview.

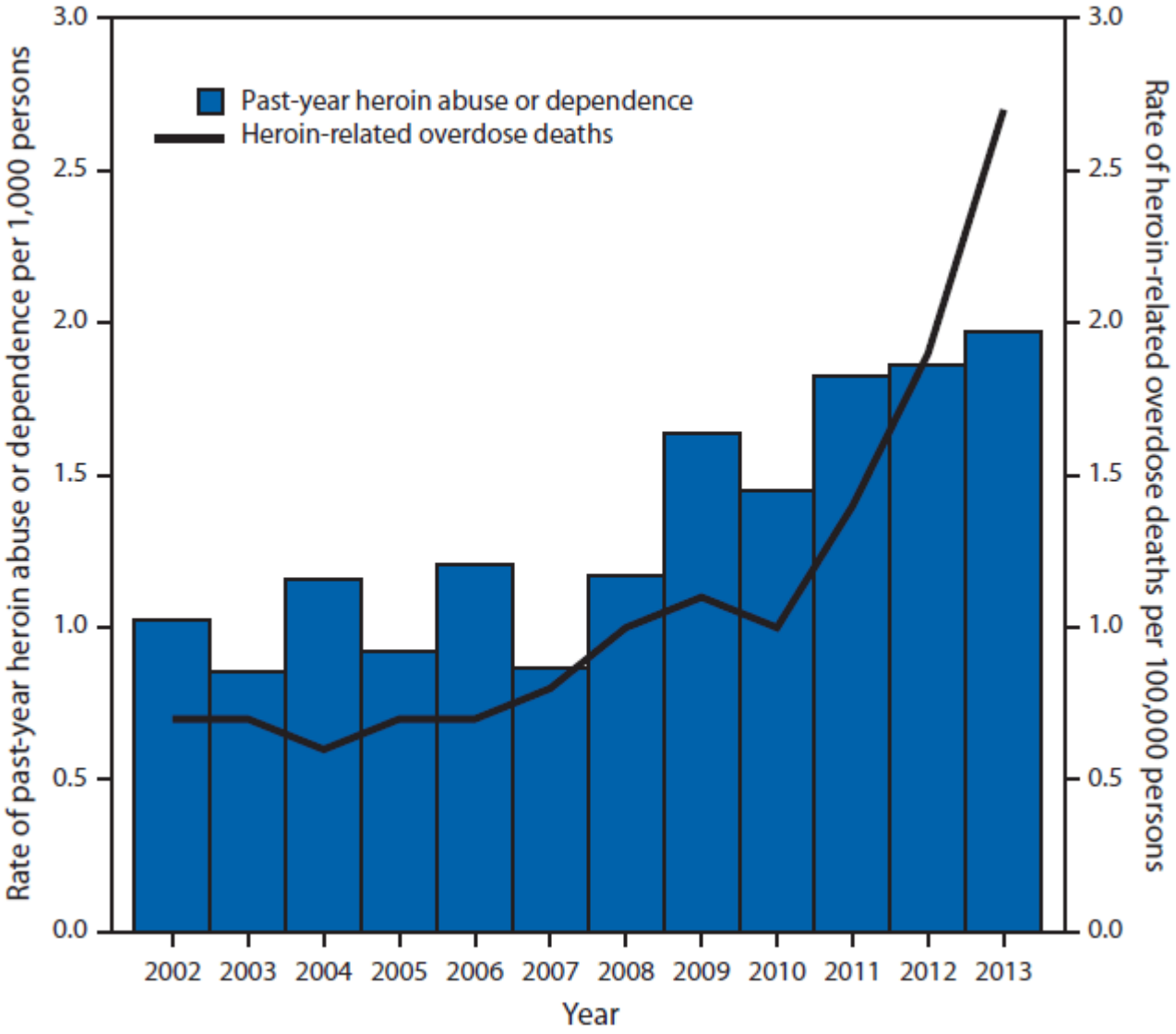
† p-value for trend <0.05.

§ Rate is statistically significantly different from 2011–2013 rate; p<0.001.

¶ Rate is statistically significantly different from 2011–2013 rate; p<0.05.

Alternate Text: The figure above is a bar graph showing the annual average percentage of past-year heroin users with past-year abuse dependence on alcohol, marijuana, cocaine, or opioid pain relievers, during four periods: 2002-2004; 2005-2007; 2008-2010; and 2011-2013, based on data from the National Survey on Drug Use and Health surveys during 2002-2013. The percentage of heroin users with opioid pain reliever abuse or dependence more than doubled, from 20.7% in 2002-2004 to 45.2% in 2011-2013.

FIGURE 2. Rates of past-year heroin abuse or dependence* and heroin-related overdose deaths — United States, 2002–2013



* Past-year heroin abuse or dependence is based on diagnostic criteria contained in the *Diagnostic and Statistical Manual of Mental Disorders, 4th Edition*.

Alternate Text: The figure above is a histogram comparing the rates of past-year heroin abuse or dependence and heroin-related overdose deaths in the United States, by year, during 2002-2013, which shows a strong positive correlation between the two. Heroin-related overdose deaths increased by 286% from 2002 to 2013.

TABLE 2. Multivariable logistic regression analysis of demographic and substance use characteristics associated with past-year heroin abuse or dependence* — United States, 2011–2013

Characteristic	Past-year heroin abuse or dependence	
	aOR	(95% CI)
Sex		
Male	2.1†††	(1.4–3.0)
Female	1.0	
Age (yrs)		
12–17	0.3††	(0.1–0.6)
18–25	1.0	
26	0.6††	(0.4–0.9)
Race/Ethnicity		
Non-Hispanic white	3.1†††	(1.8–5.1)
Other	1.0	
Geography		
Residing in CBSA with ≥1 million persons	2.4†††	(1.5–3.6)
Residing in other area	1.0	
Household income (annual)		
<20,000	1.0	
$20,000-$49,999	0.5††	(0.3–0.7)
≥$50,000 or more	0.6†	(0.3–0.9)
Insurance coverage		
None	3.1†††	(2.2–4.3)
Medicaid	3.2†††	(1.9–5.4)
Private or other	1.0	
Past-year substance abuse or dependence§		
Alcohol	1.8††	(1.2–2.9)

Marijuana	2.6††	(1.5–4.6)
Cocaine	14.7†††	(7.4–29.2)
Opioid pain relievers	40.0†††	(24.6–65.3)
Other psychotherapeutics¶	1.6	(0.8–3.2)

Abbreviations: aOR = adjusted odds ratio; CBSA = Core Based Statistical Area; CI = confidence interval.

* Past-year heroin abuse or dependence is based on diagnostic criteria contained in the *Diagnostic and Statistical Manual of Mental Disorders, 4th Edition*.

† Statistically significant finding; †p<0.05; ††p<0.01; †††p<0.001.

§ Referent group is no past-year abuse or dependence.

¶ Other psychotherapeutics includes tranquilizers, sedatives, and stimulants.

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PBS NEWSHOUR

HEALTH

Prescription Drug Abuse: Top 10 Things CDC Says You Should Know

BY JASON KANE *April 30, 2013 at 1:35 PM EDT*

Linebacker Austin Box of the Oklahoma Sooners takes a break during a game in 2010. Box died of an accidental prescription drug overdose the following year.

Austin Box “gutted through” pain. Even after a bad blow to his back that ruptured a disc, the linebacker for the University of Oklahoma Sooners played through the pain that lingered after rehab.

He was upbeat, alert and seemingly at the top of his physical game on a three-day trip to St. Louis with his father in 2011. But the day after they returned, Austin was found unconscious in a friend’s home. He died after being taken to the hospital, at age 22.

The toxicology report showed five different pain medications and an anti-anxiety drug in Austin’s system — a cocktail that ended up stopping his heart.

In the months that followed, Craig Box, Austin’s father, couldn’t help thinking back over their trip to St. Louis for signs of an addiction. “I saw nothing that gave me any indication that this was an issue,” he said — no sign that his “all-American” son was about to become part of an increasingly American statistic.

Overdose deaths from prescription painkillers have quadrupled nationwide in recent years, rising from 4,030 deaths in 1999 to 16,651 in 2010. According to Dr. Thomas Frieden, director of the Centers for Disease Control and Prevention, 125,000 lives were lost in the last 10 years to legal drugs like Vicodin, OxyContin and methadone.

In fact, deaths from prescription painkillers, or “opioids,” as they’re also known, now outpaces those attributed to heroin and cocaine combined.

But the problem runs deeper still. For every overdose death from prescription painkillers, the CDC estimates there are:

- 10 treatment admissions for abuse
- 32 emergency department visits for misuse or abuse
- 130 people who abuse or are dependent
- 825 people who take prescription painkillers for non-medical use

How did America's drug problem shift from the streets to the medicine cabinet so quickly?

On Tuesday's PBS NewsHour broadcast, health correspondent Betty Ann Bowser travels to Oklahoma — the No. 1 state for prescription painkiller abuse — to talk with the Box family about how Austin may have become hooked on prescription drugs and how he was able to hide the addiction from his family. She also sits down with the CDC's Frieden to hear more about the scope of the problem nationwide and what might be done about it.

In the meantime, the CDC has compiled a list of 10 things you should know about prescription drug abuse. Questions? Leave them in the comments section below, and a CDC official will try to answer them on the NewsHour's website in the days ahead.

Top 10 You Should Know About Prescription Drug Abuse, According to the CDC

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1. Drug overdoses now kill more Americans than motor vehicle crashes.

Drug overdoses killed more than 38,000 people in 2010; about 105 deaths per day. Of these deaths, prescription painkiller overdoses killed 16,500 people; about 45 deaths per day. "Prescription painkillers" refers to opioid or narcotic pain relievers, such as Vicodin (hydrocodone), OxyContin (oxycodone), Opana (oxymorphone), and methadone.

2. Enough painkillers were prescribed in 2010 to medicate each American adult every four hours for one month.

The amount of painkillers being prescribed is growing significantly. In fact, the quantity of prescription painkillers sold to pharmacies, hospitals, and doctors offices was four times higher in 2010 than in 1999.

3. Deaths from prescription painkillers have reached epidemic levels in the past decade.

The number of prescription painkiller overdose deaths is now greater than the number of deaths from heroin and cocaine combined. And the number of deaths from prescription painkillers is growing fast. The number of deaths from prescription painkillers increased from 4,030 deaths in 1999 to 16,651 deaths in 2010. This means that prescription painkiller overdoses killed four times as many people in 2010 than in 1999.

4. Roughly one in 20 people in the US reported using prescription painkillers for non-medical reasons in the past year.

A big part of the prescription drug overdose problem is non-medical use of prescription painkillers — using drugs without a prescription, or using drugs just for the "high." Most people using drugs without a prescription obtain them from people they know, who originally got them from doctors.

5. You can help prevent prescription drug overdoses.

Steps you can take include the following:

- Use prescription painkillers only as directed by a health care provider.
- Store prescriptions drugs in a secure place and dispose of them properly.
- Do not sell or share prescription painkillers with others.
- For people who think they have a prescription drug abuse problem, please contact 1-800-662-HELP to find treatment resources.

6. The prescription drug overdose epidemic can be stopped through effective public health interventions.

In addition to the things you can do at home to keep yourself and your family safe, there are also community and state-wide strategies that help prevent prescription painkiller overdoses. These include programs and policies used by health care providers, insurers, and states. Learn more about public health interventions.

7. States can start or improve prescription drug monitoring programs (PDMPs) and use Patient Review and Restriction (PRR) programs.

These programs can help stop this epidemic, improve the coordination of care for patients, and ensure appropriate care for high-risk patients. Find out more about PDMPS and PRR program.

8. States can enforce policies aimed at reducing drug diversion, abuse, and overdose.

States can pass, enforce and evaluate pill mill, doctor shopping and other laws to reduce prescription painkiller abuse. Learn more about which state policies show promise in reducing prescription drug abuse and overdose.

9. States and communities can enhance access to substance abuse treatment.

Effective, accessible substance abuse treatment can reduce overdoses among people struggling with dependence and addiction. Learn more about substance abuse treatment.

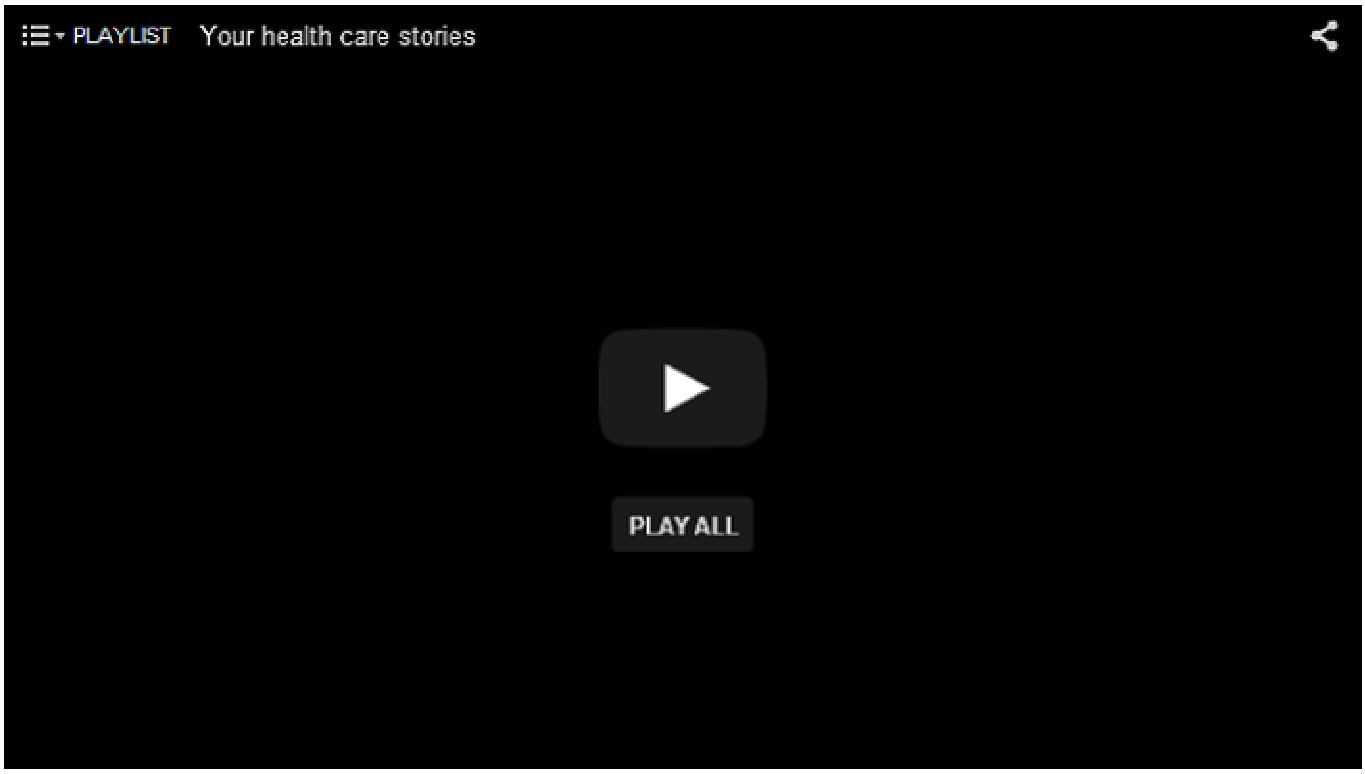
10. Health care providers should use evidence-based clinical guidelines and practices to promote safe and effective use of prescription painkillers.

The following guidelines can help:

- Screening and monitoring for substance abuse and mental health problems.
- Prescribing prescription painkillers only when other treatments have not been effective for pain.
- Prescribing only the quantity of prescription painkillers needed based on the expected length of pain.
- Using patient-provider agreements combined with urine drug tests for people using prescription painkillers long term.

- Talking with patients about safely using, storing and disposing of prescription painkillers.

Do you have questions about prescription drugs? Leave them in the comments section below, email them to us onlinehealth@newshour.org or send us a tweet @jasokane. A CDC official will try to answer your questions on the PBS NewsHour website in the days ahead.



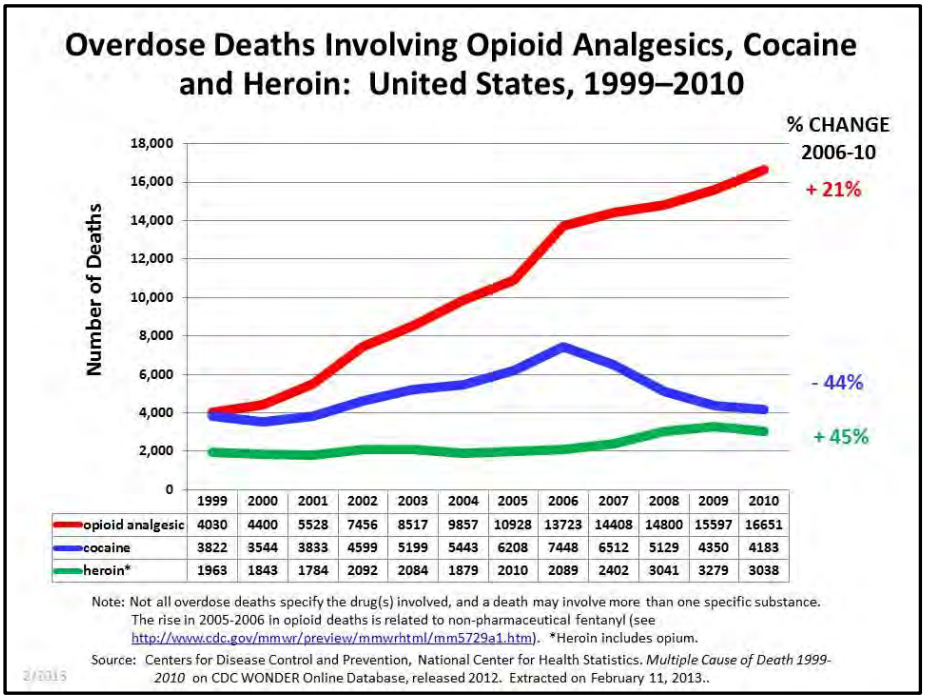
OFFICE OF NATIONAL DRUG CONTROL POLICY
Office of Public Affairs

February 11, 2014

FACT SHEET: OPIOID ABUSE IN THE UNITED STATES

"Heroin use and prescription drug abuse can have deadly consequences…while heroin use is still far less common than prescription drug abuse, we will continue to ensure that agencies across the Federal Government – in close coordination with state and local authorities – continue to respond quickly and effectively to this significant threat."

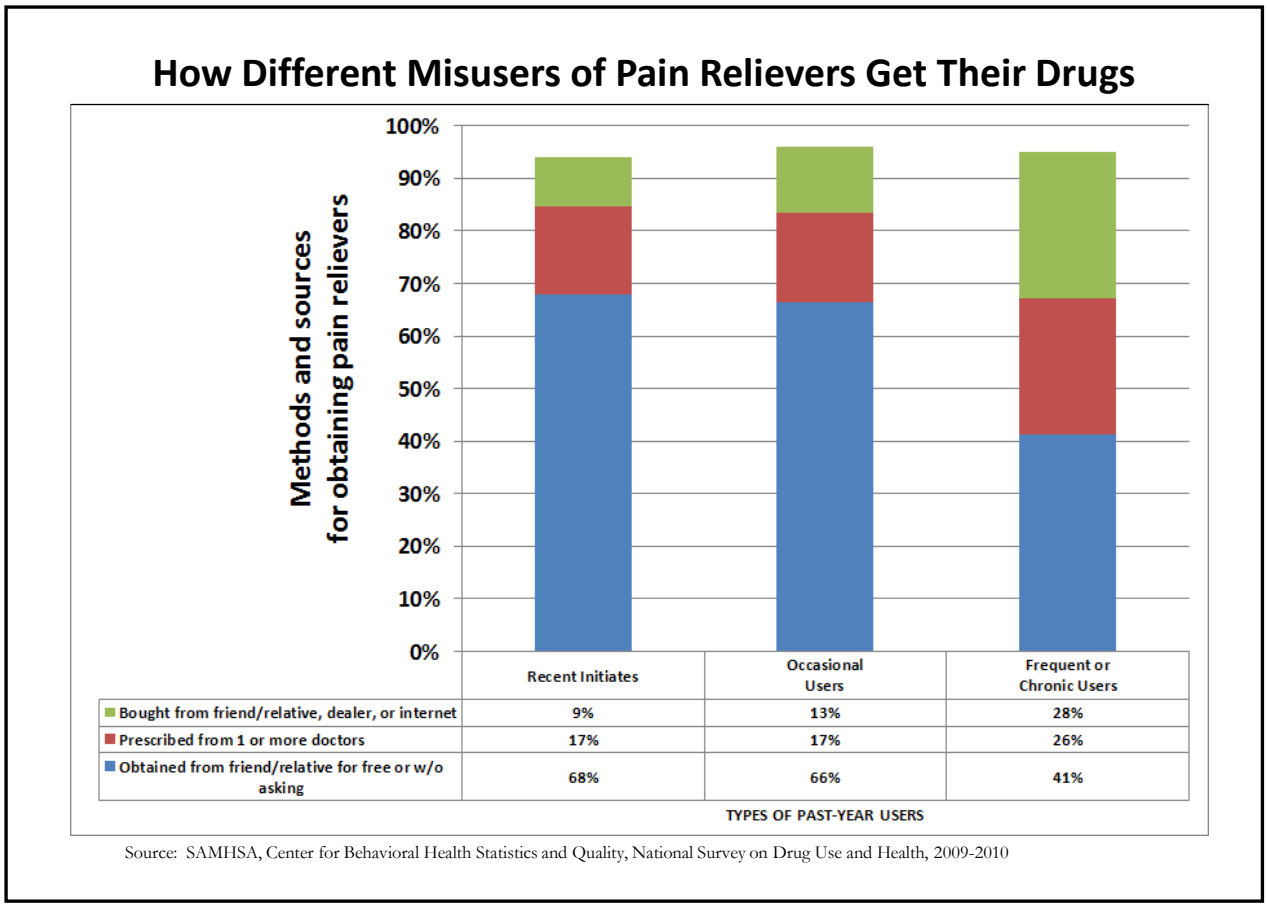
— Gil Kerlikowske, Director of National Drug Control Policy, September 2013



The abuse of opioids, a group of drugs that includes heroin and prescription painkillers, has a devastating impact on public health and safety in this country. According to the Centers for Disease Control and Prevention (CDC), approximately 100 Americans died from overdose every day in 2010.[1] Prescription drugs were involved in more than half of the 38,300 overdose deaths that year, and opioid pain relievers were involved in over 16,600 of these deaths (see figure, above).[2] There were about 3,000 drug poisoning deaths related to heroin. Drug overdose deaths even outnumbered deaths from gunshot wounds or motor vehicle crashes.[3]

The Disease of Addiction

As history has taught us, we cannot simply arrest our way out of the drug problem. While effective enforcement is essential to protecting our cities and neighborhoods from drug-related crime, reducing drug use requires a broader, multi-dimensional approach. Science clearly demonstrates that addiction is a progressive disease of the brain that can be prevented and treated, and from which people can recover. With this in mind, the Administration has crafted a policy that recognizes we must treat substance use and the disease of addiction as a public health issue, not just a criminal justice issue.



Research shows that many non-medical users obtain prescription medications from family and friends.

The Administration's Response

Since day one, the Obama Administration has deployed a comprehensive and evidence-based strategy to address the threat posed by opioid drugs. The Administration has significantly bolstered support for medication-assisted opioid treatment and overdose prevention, coordinated a government-wide response to the prescription drug abuse epidemic, and pursued action against criminal organizations trafficking in opioid drugs.

Key actions include:

- In *2010*, the Administration released its inaugural National Drug Control Strategy, which contains a wide array of actions and sets specific goals for reductions in drug use, including heroin. The *Strategy* noted overdoses from opioids as a "growing national crisis" and directed the Department of Health and Human Services (HSS) to assist health care providers and first responders with training on how to respond to overdose. Also, for the first time, it contained support for the overdose-reversal medication naloxone.

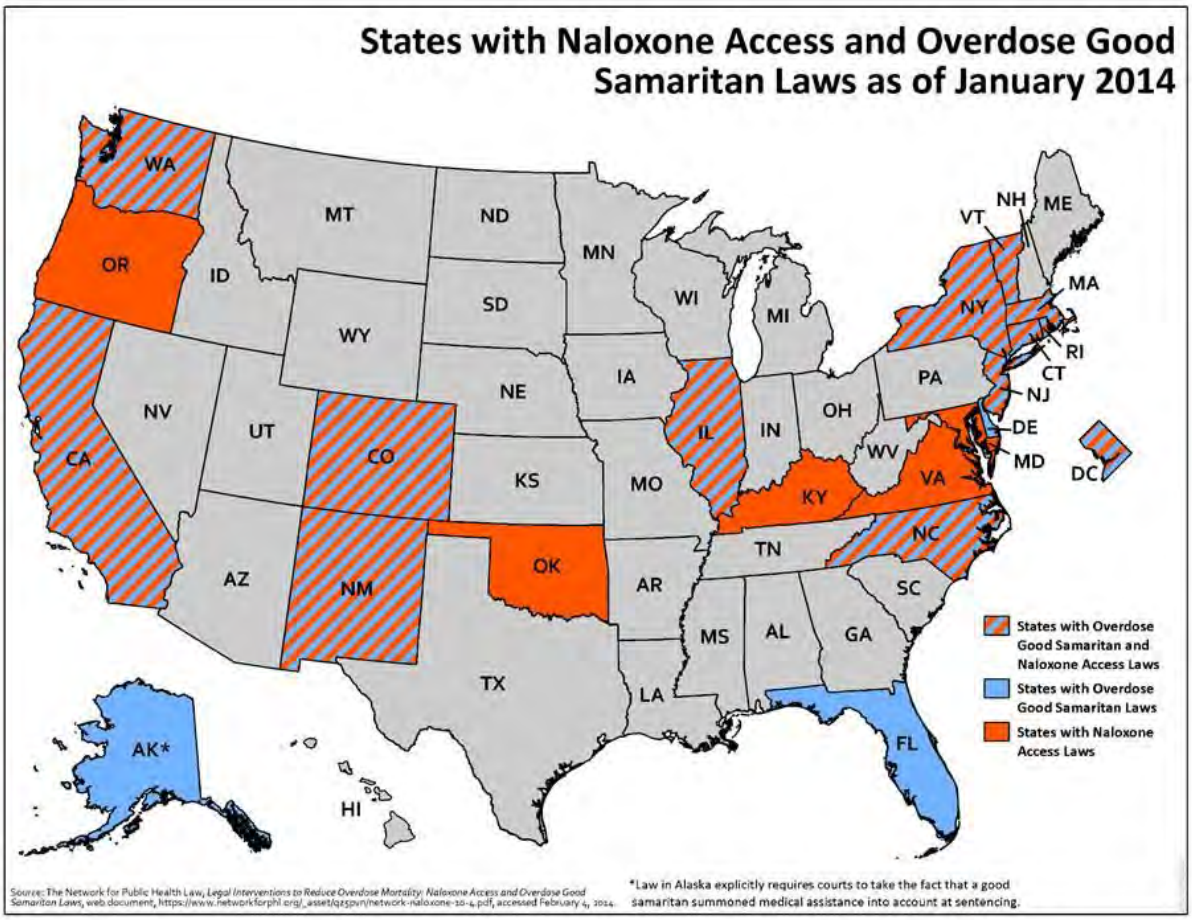
- In 2011, the Administration published a Prescription Drug Abuse Action Plan, which announced the goal of reducing overdose deaths involving opioids by 15 percent. The Plan supports the expansion of state-based prescription drug monitoring programs, more convenient and environmentally responsible disposal methods for removing

expired or unneeded medications from the home, training for health care providers in proper opioid prescribing and education of patients in consequences of prescription drug misuse, and reducing the prevalence of pill mills and doctor shopping through enforcement efforts.

In June 2012, ONDCP Director Kerlikowske convened top officials from HHS, the Department of Justice (DOJ), and the Department of Defense (DOD) to discuss the latest data regarding heroin trends in the United States and the Administration response. ONDCP directed Federal public health and safety officials to increase data sharing, identify trends in substitution between prescription painkiller misuse and heroin use, and coordinate a timely and evidence-based response to any emerging trends in the use of opioids.

- In August 2013, the Substance Abuse and Mental Health Services Administration released an Opioid Overdose Prevention Toolkit, which equips communities and local governments with material to develop policies and practices to help prevent opioid-related overdoses and deaths. The Toolkit addresses issues specific to first responders, treatment providers, and those recovering from opioid addiction.

Spotlight: Reversing Opioid Overdose with Naloxone



The Obama Administration is also encouraging first responders to carry the overdose-reversal drug naloxone. When administered quickly and effectively, naloxone immediately restores breathing to a victim in the throes of an opioid overdose. Because police are often the first on the scene of an overdose, the Administration strongly encourages local law enforcement agencies to train and equip their personnel in the use of this drug. Used in concert with "Good Samaritan" laws, which grant immunity from criminal prosecution to those seeking medical help for someone experiencing an overdose, naloxone can save lives. (See map of states with naloxone access and Good Samaritan laws as of January 2014, above.)

Responding in September 2012 to newly released data from the National Survey on Drug Use and Health, ONDCP Director Gil Kerlikowske underscored the Administration's support for naloxone. "We actively support programs that encourage the use of naloxone among first responders," he said. "We also applaud effective collaboration between law enforcement and public health groups who find common ground in overdose prevention."

Additional Resources

- The *Opioid Overdose Prevention Toolkit*, available from the Substance Abuse and Mental Health Services Administration (SAMHSA), provides material for developing policies and practices to help prevent opioid-related overdoses: http://store.samhsa.gov/product/Opioid-Overdose-Prevention-Toolkit/SMA13-4742
- SAMHSA's *Treatment Locator* can help you find a drug treatment facility in your state: http://findtreatment.samhsa.gov/TreatmentLocator/faces/quickSearch.jspx
- The American Society of Anesthesiologists teamed up with ONDCP to develop an Opioid Overdose Resuscitation Card with instructions for helping those suspected of an overdose: http://www.asahq.org/WhenSecondsCount/resources

For more information on Obama Administration efforts to reduce drug use and its consequences while implementing effective drug policy reform, visit www.wh.gov/drugpolicyreform

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Notes

[1] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 2000-2010 on CDC WONDER Online Database. Extracted December 12, 2012.
[2] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 2000-2010 on CDC WONDER Online Database. Extracted February 11, 2013.
[3] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 2000-2010 on CDC WONDER Online Database. Extracted December 12, 2012.

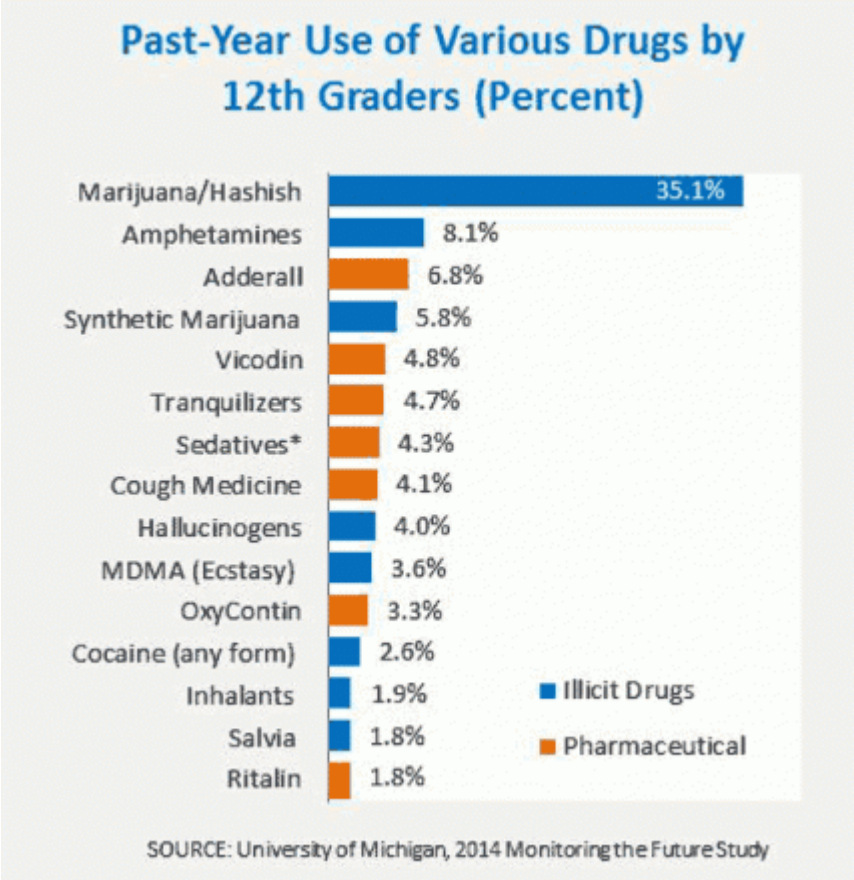
National Institute on Drug Abuse
The Science of Drug Abuse & Addiction

DrugFacts: Prescription and Over-the-Counter Medications

Print

Revised December 2014

Some medications have psychoactive (mind-altering) properties and, because of that, are sometimes abused—that is, taken for reasons or in ways or amounts not intended by a doctor, or taken by someone other than the person for whom they are prescribed. In fact, prescription and over-the-counter (OTC) drugs are, after marijuana (and alcohol), the most commonly abused substances by Americans 14 and older.



The classes of prescription drugs most commonly abused are: opioid pain relievers, such as Vicodin or Oxycontin; stimulants for treating Attention Deficit Hyperactivity Disorder (ADHD), such as Adderall, Concerta, or Ritalin; and central nervous system (CNS) depressants for relieving anxiety, such as Valium or Xanax.[1] The most commonly abused OTC drugs are cough and cold remedies containing dextromethorphan.

People often think that prescription and OTC drugs are safer than illicit drugs, but that's only true when they are taken exactly as prescribed and for the purpose intended. When abused, prescription and OTC drugs can be addictive and put abusers at risk for other adverse health effects, including overdose—especially when taken along with other drugs or alcohol.

How Are Prescription Drugs Abused?

Prescription and OTC drugs may be abused in one or more of the following ways:

Taking a medication that has been prescribed for somebody else. Unaware of the dangers of sharing medications, people often unknowingly contribute to this form of abuse by sharing their unused pain relievers with their family members.

Most teenagers who abuse prescription drugs are given them for free by a friend or relative.

Taking a drug in a higher quantity or in another manner than prescribed. Most prescription drugs are dispensed orally in tablets, but abusers sometimes crush the tablets and snort or inject the powder. This hastens the entry of the drug into the bloodstream and the brain and amplifies its effects.

Taking a drug for another purpose than prescribed. All of the drug types mentioned can produce pleasurable effects at sufficient quantities, so taking them for the purpose of getting high is one of the main reasons people abuse them.

ADHD drugs like Adderall are also often abused by students seeking to improve their academic performance. However, although they may boost alertness, there is little evidence they improve cognitive functioning for those without a medical condition.

How Do Prescription and OTC Drugs Affect the Brain?

Taken as intended, prescription and OTC drugs safely treat specific mental or physical symptoms. But when taken in different quantities or when such symptoms aren't present, they may affect the brain in ways very similar to illicit drugs.

For example, stimulants such as Ritalin achieve their effects by acting on the same neurotransmitter systems as cocaine. Opioid pain relievers such as OxyContin attach to the same cell receptors targeted by illegal opioids like heroin. Prescription depressants produce sedating or calming effects in the same manner as the club drugs GHB and rohypnol. And when taken in very high doses, dextromethorphan acts on the same cell receptors as PCP or ketamine, producing similar out-of-body experiences.

When abused, all of these classes of drugs directly or indirectly cause a pleasurable increase in the amount of dopamine in the brain's reward pathway. Repeatedly seeking to experience that feeling can lead to addiction.

What Are the Other Health Effects of Prescription and OTC Drugs?

Opioids can produce drowsiness, cause constipation, and—depending upon the amount taken—depress breathing. The latter effect makes opioids particularly dangerous, especially when they are snorted or injected or combined with other drugs or alcohol.

Opioids and Brain Damage

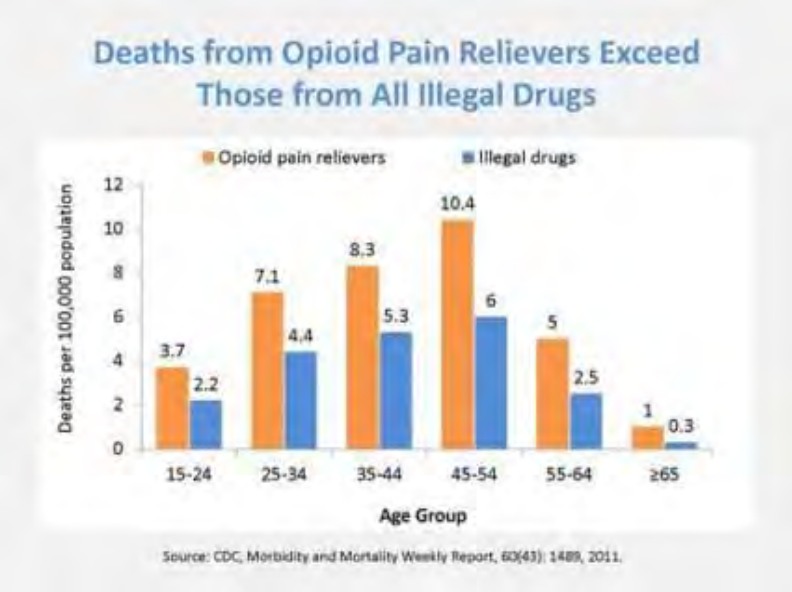
While the relationship between opioid overdose and depressed respiration (slowed breathing) has been confirmed, researchers are also studying the long-term effects on brain function. Depressed respiration can affect the amount of oxygen that reaches the brain, a condition called hypoxia. Hypoxia can have short- and long-term psychological and neurological effects, including coma and permanent brain damage.

Researchers are also investigating the long-term effects of opioid addiction on the brain. Studies have shown some deterioration of the brain's white matter due to heroin use, which may affect decision-making abilities, the ability to regulate behavior, and responses to stressful situations.

More people die from overdoses of prescription opioids than from all other drugs combined, including heroin and cocaine (see "The Prescription Opioid Abuse Epidemic" below).

The Prescription Opioid Abuse Epidemic

Over 2 million people in the United States suffer from substance use disorders related to prescription opioid pain relievers. The terrible consequences of this epidemic include overdose deaths, which have more than quadrupled in the past decade and a half. The causes are complex, but they include overprescription of pain medications. In 2013, 207 million prescriptions were written for prescription opioid pain medications.



Stimulants can have strong effects on the cardiovascular system. Taking high doses of a stimulant can dangerously raise body temperature and cause irregular heartbeat or even heart failure or seizures. Also, taking some stimulants in high doses or repeatedly can lead to hostility or feelings of paranoia.

CNS depressants slow down brain activity and can cause sleepiness and loss of coordination. Continued use can lead to physical dependence and withdrawal symptoms if discontinuing use.

Dextromethorphan can cause impaired motor function, numbness, nausea or vomiting, and increased heart rate and blood pressure. On rare occasions, hypoxic brain damage—caused by severe respiratory depression and a lack of oxygen to the brain—has occurred due to the combination of dextromethorphan with decongestants often found in the medication.

All of these drugs have the potential for addiction, and this risk is amplified when they are abused. Also, as with other drugs, abuse of prescription and OTC drugs can alter a person's

Prescription Opioid Abuse: A First Step to Heroin Use?

Prescription opioid pain medications such as Oxycontin and Vicodin can have effects similar to heroin when taken in doses or in ways other than prescribed, and research now suggests that abuse of these drugs may actually open the door to heroin abuse.

judgment and decision making, leading to dangerous behaviors such as unsafe sex and drugged driving.

Learn More

For more information on prescription and OTC drugs, please refer to the following sources on NIDA's Web site:

- Research Report: Prescription Drugs
- Prescription Stimulants (Abuse) Health Effects
- Prescription Sedatives, sleeping pills*, or anxiolytics (Abuse) Health Effects
- Prescription Opioids (Abuse) Health Effects

Nearly half of young people who inject heroin surveyed in three recent studies reported abusing prescription opioids before starting to use heroin. Some individuals reported taking up heroin because it is cheaper and easier to obtain than prescription opioids.

Many of these young people also report that crushing prescription opioid pills to snort or inject the powder provided their initiation into these methods of drug administration.

References

1. These are proprietary names of particular drug products. Generic versions may also exist.

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This page was last updated December 2014

Prescription Drug Abuse

The Centers for Disease Control and Prevention has classified prescription drug abuse as an epidemic. While there has been a marked decrease in the use of some illegal drugs like cocaine, data from the National Survey on Drug Use and Health (NSDUH) show that nearly one-third of people aged 12 and over who used drugs for the first time in 2009 began by using a prescription drug non-medically.

Some individuals who misuse prescription drugs, particularly teens, believe these substances are safer than illicit drugs because they are prescribed by a healthcare professional and dispensed by a pharmacist. Addressing the prescription drug abuse epidemic is not only a top priority for public health, it will also help build stronger communities and allow those with substance abuse disorders to lead healthier, more productive lives.

See our fact sheet on opioids and overdose.

ONDCP's Prescription Drug Abuse Prevention Plan

The 2011 Prescription Drug Abuse Prevention Plan expands upon the Obama Administration's *National Drug Control Strategy* and includes action in four major areas to reduce prescription drug abuse:

- **Education.** A crucial first step in tackling the problem of prescription drug abuse is to educate parents, youth, and patients about the dangers of abusing prescription drugs, while requiring prescribers to receive education on the appropriate and safe use, and proper storage and disposal of prescription drugs.
- **Monitoring.** Implement prescription drug monitoring programs (PDMPs) in every state to reduce “doctor shopping” and diversion, and enhance PDMPs to make sure they can share data across states and are used by healthcare providers.
- **Proper Medication Disposal.** Develop convenient and environmentally responsible prescription drug disposal programs to help decrease the supply of unused prescription drugs in the home.
- **Enforcement.** Provide law enforcement with the tools necessary to eliminate improper prescribing practices and stop pill mills.

Read the full plan: *Epidemic: Responding to America's Prescription Drug Abuse Crisis* and the related action items.

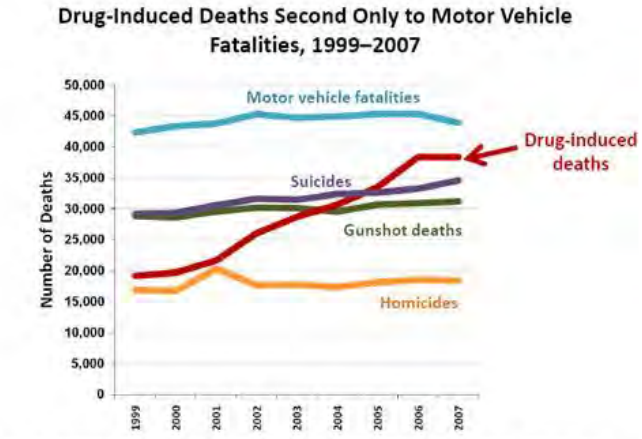
Watch a replay of the Prescription Drug Abuse Prevention Plan release event at the National Press Club.

Research

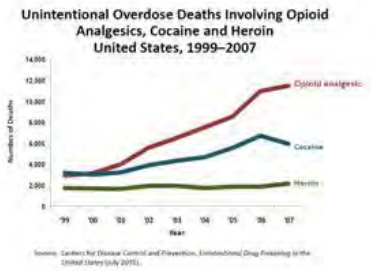
According to the recent Monitoring the Future study – the Nation's largest survey of drug use among young people – prescription drugs are the second-most abused category of drugs after marijuana. In addition, the latest National Survey on Drug Use and Health shows that over 70 percent of people who abused prescription pain relievers got them from friends or relatives, while approximately 5 percent got them from a drug dealer or over the Internet. Further, opiate overdoses, once almost always due to heroin use, are now increasingly due to abuse of prescription painkillers. In our military, illicit drug use increased from 5% to 12%

among active duty service members from 2005 to 2008, primarily due to non-medical use of prescription drugs.

The number of prescriptions filled for opioid pain relievers – some of the most powerful medications available – has increased dramatically in recent years. From 1997 to 2007, the milligram-per-person use of prescription opioids in the U.S. increased from 74 milligrams to 369 milligrams, an increase of 402%. In addition, in 2000, retail pharmacies dispensed 174 million prescriptions for opioids; by 2009, 257 million prescriptions were dispensed, an increase of 48%. As the chart below demonstrates, these increases mirror increases in prescription drug abuse.



Source: National Center for Health Statistics, Centers for Disease Control and Prevention. National Vital Statistics Reports *Deaths: Final Data* for the years 1999 to 2007 (2001 to 2010).



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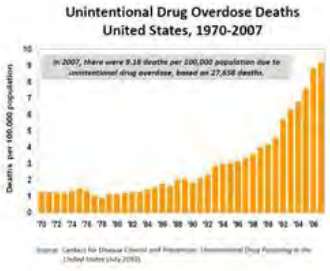

Click to enlarge.

For more research and data, visit: Centers for Disease Control and Prevention presentation on Prescription Drug Overdoses: An American Epidemic (Video).

What You Can Do

Because prescription drugs are legal, they are easily accessible. Parents, law enforcement, the medical community, and all levels of government have a role to play in reducing prescription drug abuse. Here are some things you can do to reduce the abuse of prescription drugs:

- **Follow disposal guidelines**: No matter who you are, you can help address this issue in your home. By following the guidelines, you reduce the risk of unintentional diversion or harm. Learn how to dispose of unused medicines, read the frequently asked questions about safe drug disposal, and get information on drug poisoning.
- **Talk to your kids**: It's important that our children learn about the use and abuse of prescription drugs. For tips on having conversations with kids, read Time to Talk for tools to talk to preschoolers and grade -schoolers, Teen Culture or tips with teens, and view sample conversation starters.
- **Take advantage of community take-back programs**: Call your city or county government's household trash and recycling service or your local police or sheriff's department to see if a take-back program is available in your community.
- **Seek treatment and support individuals in recovery**: If you or a loved one needs help with a substance use disorder, find a treatment center near you today. Thousands of individuals who have struggled with substance use now have healthy and happy lives with the help of treatment and recovery services.

Partner Programs

Successful substance-abuse prevention programs, combined with public education and penalties for those who fail to comply with the law, will continue to receive support in the effort to reduce prescription drug abuse. Here are some programs:

- Drug-Free Communities Support Program (DFC) - Funding hundreds of communities around the country, the DFC program helps communities identify and respond to local substance abuse issues.
- National Youth Anti-Drug Media Campaign - A campaign aimed at preventing and reducing youth drug use across the country by increasing teen exposure to anti-drug messages with a highly visible national media presence and on-the-ground activities, including a number of free online resources to help prevent teen prescription and over-the-counter (OTC) drug abuse.

Resources

- Fact Sheet: Prescription Drugs: A Response to the Epidemic of Prescription Drug Abuse (PDF)
- National Institute on Drug Abuse (NIDA): PEERx resource for teens
- National Institute on Drug Abuse (NIDA): Prescription Drugs: Abuse and Addiction
- Combating Misuse and Abuse of Prescription Drugs: Q&A with Michael Klein, Ph.D.
- Trends in Wyoming PMP Prescription History Reporting: Evidence for a Decrease in Doctor Shopping? (PDF)

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Is Opium Heroin?

A Breakdown of the Opium Class of Drugs

The terms opioid, opiate, opium and heroin are sometimes used interchangeably. This can be confusing for people because the terms are not the same things, instead some of the terms are sub groups of the other terms.

Below is a breakdown from top to bottom on the terminology for the opium drug class.

Opium: First is opium. Opium is the substance that is produced from the poppy plant that ALL of the opium drugs, such as heroin, opioids, and opiates, are made from. Basically opium is the starting point. In opium a person will find alkaloids like morphine and codeine.

Opiate: Opiate is the term that is used for ALL of the opium-derived drugs. So basically, drugs in the opium class, are not called opium drugs…they are called opiates. This includes heroin, morphine, codeine, and all of the prescription painkillers that are synthetic morphine.


Opium and heroin are not one and the same, but opium is used to make heroin.

Heroin: Heroin is a manmade drug because it is processed morphine (That comes from opium) that people illegally make. This is typically done by people adding other ingredients to morphine that dissolve slowly in a person's body to produce a longer acting high.

According to the National Institute on Drug Abuse, in the brain heroin is converted back to morphine, which then binds to molecules on cells known as opioid receptors. These opioid receptors are located in various areas of the brain, especially those involved in the perception of pain. Moreover, opioid receptors are also located in the brain stem, which controls automatic processes critical for life, such as respiration, blood pressure and arousal.

Opioids: Opioids are the term used to specifically refer to prescription painkillers, or synthetically made morphine or codeine. The term opioids refers to drugs such as OxyContin, Percodan, Percocet, and Vicodin.

Is Opium Heroin?

According to the National Institute on Drug Abuse, heroin is a powerful opioid drug that is synthesized from morphine. Morphine is a naturally occurring substance that is extracted from the seed pod of the Asian opium poppy plant. Heroin generally appears as a brown or white powder or as a black sticky substance, known as black tar heroin.

Heroin is made from opium, but opium is not the same thing as heroin. Opium contains various alkaloids, one of which is morphine, and morphine is what heroin is created from. Heroin is also an illicit manmade drug, whereas opium is a completely natural substance. These two drugs are not the same, but both are extremely powerful sedatives that can be fatal if a person takes too much of either one. In addition, both drugs are extremely addictive and will cause a person to form a dependency to them.

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Similarities Between Opium & Heroin

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There are many similarities between opium and heroin. Opium is an opiate that is derived from the poppy plant and commonly smoked to produce euphoric effects. Much like heroin, this drug produces relaxation and is a central nervous system depressant that can cause labored breathing, respiratory failure and even death if consumed in excess. Because both heroin and opium are both opiates, there are many similarities between the two drugs in the way that they affect the user, the side effects that occur from their use and the dangers associated with excessive use.

Effects of Opium & Heroin

Both heroin and opium cause an array of effects including:

- a relaxed state
- dry mouth or dehydration
- changes in behavior
- mood changes
- shortness of breath or labored breathing
- heavy limbs
- fatigue

The user may notice that when he or she smokes opium a deep sense of relaxation overcome him or her. Heroin will cause a similar sense of relaxation if it is smoked or injected. Generally, the effects of both heroin and opium last about the same amount of time—a few hours at most.

Side Effects of Heroin & Opium

Heroin and opium are both opiates that affect the brain's natural reward system in that they will cause the user to feel a lack of reward unless he or she is using the drug. What this means is that when a user becomes addicted to either heroin or to opium, the risk of feeling discontent or other serious side effects is substantially increased.


Heroin and opium are derived from the same plant – the poppy.

According to the National Institute on Drug Abuse, regular use of heroin will alter the functioning of the brain—similar effects are also likely with regular use of opium. Much like other drugs, both opium and heroin also have a high likelihood of causing addiction which includes withdrawal symptoms when the user attempts to quit using the drug. Withdrawal symptoms are difficult to cope with and they tend to be the primary reason for a user to continue taking a drug such as heroin or opium for a prolonged period of time.

Dangers of Both Drugs

The greatest danger of using heroin or opium is death by overdose, but other grave dangers may also occur as a result of one's decision to use either of these drugs. Both drugs can cause serious side effects and lasting complications for

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the user. Heroin use, especially when the drug is injected, may lead to disease or infection. If heroin is smoked, lung damage is likely. Likewise, opium use can lead to lung damage and other health problems.

Sustained use of heroin or opium is often accountable for addiction. People who become addicted to either of these drugs will have trouble quitting even when they decide that it's the best thing for them to do. Quitting becomes challenging because the user experiences withdrawal symptoms such as nausea, vomiting and diarrhea that render the individual all but comfortable.

Overdose from heroin is more likely than from opium but both of these drugs can result in serious overdose which may ultimately lead to fatal complications if left untreated. Opiates, whether heroin, prescription drugs or opium, are always dangerous and should never be abused as the result could prove to be deadly.

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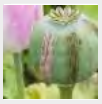
Understanding the Dangers of Opium Derivatives - Many of the prescription painkillers in the world today derive from opium, as do illicit drugs like heroin. These drugs all carry significant dangers, such as the high risk of death by overdose.


Opiate vs. Opioid – What's the Difference? - While it is common to use opioid and opiate interchangably, there are differences between the two. Determining opiate vs. opioid has to do with if the drug is natural or synthetic and what effects it has on the body.

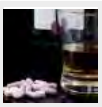

Are Vicodin Dangers Really that Serious? - Vicodin is a powerful opiate. Its effects can cause dependence, addiction, overdose and much more. If you are using Vicodin you should be aware of the risks and dangers.

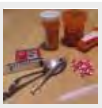

Top 5 Dangers of Vicodin You Need to Watch Out For - Vicodin is a powerful opiate. It can be overdosed on in too high of a dose, and it can cause addiction if its use is prolonged. The drug must be taken with great care.


Heroin Effects Are they Worse than Opium? - Heroin addiction and dependency will negatively impact a person's behavior, thought processes and physical health. The effects of heroin are very similar to the effects of opium, and both can be dangerous.


What are Examples of Opiates? - Opiates are substances that derive either naturally or synthetically from the opium poppy. Many of these substances are painkilling medications, while others are illicit drugs.


10 Medications that Are Opium Derivatives - Many of the current pain medications are derived from opium, which is one reason that they have their own addictive as well as narcotic properties.


Potential Dangers of Vicodin - Two of the main dangers Vicodin carries are addiction and overdose. It is important to take any Vicodin prescription carefully, and to never misuse it.


Opioid vs. Opiate: Is One More Dangerous? - In terms of overall effects and functioning in the brain, opioids and opiates are very similar. They are different, however, in the way that they are manufactured.

State Prescription Drug Monitoring Programs

Questions & Answers

Updated October 2011

Cases Against Doctors
Chemical Control Program
CMEA (Combat Meth Epidemic Act)
Controlled Substance Schedules
DATA Waived Physicians
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Title 21 Code of Federal Regulations
Title 21 USC Codified CSA

1. What is a prescription drug monitoring program (PDMP)?

According to the **National Alliance for Model State Drug Laws (NAMSDL)**, a PDMP is a ***statewide*** electronic database which collects designated data on substances dispensed in the state. The PDMP is housed by a specified statewide regulatory, administrative or law enforcement agency. The housing agency distributes data from the database to individuals who are authorized under state law to receive the information for purposes of their profession.

2. Does the Drug Enforcement Administration (DEA) oversee PDMPs?

The DEA is not involved with the administration of any state PDMP.

3. What are the benefits of having a PDMP?

The overview provided by NAMSDL clearly identifies the benefits of a PDMP: as a tool used by states to address prescription drug abuse, addiction and diversion, it may serve several purposes such as:

1. support access to legitimate medical use of controlled substances,
2. identify and deter or prevent drug abuse and diversion,
3. facilitate and encourage the identification, intervention with and treatment of persons addicted to prescription drugs,
4. inform public health initiatives through outlining of use and abuse trends, and
5. educate individuals about PDMPs and the use, abuse and diversion of and addiction to prescription drugs.

4. Which states currently have a PDMP?

According to the Alliance of States with Prescription Monitoring Programs, (www.pmpalliance.org) as of October 16, 2011, 37 states have operational PDMPs that have the capacity to receive and distribute controlled substance prescription information to authorized users. States with operational programs include:

Alabama, Arizona, California, Colorado, Connecticut, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Nevada, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, West Virginia, and Wyoming.

Eleven states (Alaska, Arkansas, Delaware, Georgia, Maryland, Montana, Nebraska, New Jersey, South Dakota, Washington, and Wisconsin) and one U.S. territory (Guam), have enacted legislation to establish a PDMP, but are not fully operational.

5. Are there other states that are planning to implement a PDMP?

At this time there is no pending legislation for the remaining states.

6. Who can I contact regarding a PDMP in a specific state?

Each state designates a state agency to oversee its PDMP, which may include health departments, pharmacy boards, or state law enforcement. The Alliance of States with Prescription Monitoring Programs (www.pmpalliance.org) maintains a list of state contacts.

7. Where can I find state laws pertaining to prescription drug monitoring?

The National Alliance for Model State Drug Laws (www.namsdl.org) provides links to each state's statutes and regulations regarding PDMPs.

8. Who can access the PDMP information collected?

Each state controls who will have access and for what purpose.

9. Is federal funding available for PDMPs?

The Harold Rogers Prescription Drug Monitoring Program (HRPDMP) is administered by the U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Assistance, to provide three types of grants: planning, implementation, and enhancement. Since inception of the grant program in FY 2002, grants have been awarded to 47 states and 1 U.S. territory. For FY 2011, HRPDMP funding is approximately $5.6 million. Additional information can be found at www.ojp.usdoj.gov/ BJA/ grant/ prescripdrugs.html

The National All Schedules Prescription Electronic Reporting Act (NASPER), enacted in 2005, created a U.S. Department of Health and Human Services grant program for states to implement or enhance prescription drug monitoring programs. In FY 2009 and FY 2010 NASPER received $2 million to support NASPER grants in 13 states. Information on NASPER can be found at www.samhsa.gov.

States can participate in both funding programs, but requirements and priorities for each program may vary.

10. What is the difference between HRPDMP and NASPER?

The purpose of the HRPDMP is to enhance the capacity of regulatory and law enforcement agencies as well as public health officials to collect and analyze controlled substance prescription data through a centralized database administered by an authorized state agency.

NASPER administers a grant program under the authority of HHS. The intent of the law was to foster the establishment or enhancement of PDMPs that would meet consistent national criteria and have the capacity for the interstate exchange of information.

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CMEA (Combat Meth Epidemic Act)
Controlled Substance Schedules
DATA Waived Physicians
Drug Disposal Information
Drug and Chemical Information
E-commerce Initiatives
Federal Agencies & Related Links
Federal Register Notices
National Take-Back Initiative
NFLIS
Publications & Manuals
Questions & Answers
Significant Guidance Documents
Title 21 Code of Federal Regulations
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Prescription Drug Monitoring Frequently Asked Questions (FAQ)

This FAQ is also available as a printable pdf.

What is a Prescription Drug Monitoring Program?

Prescription Drug Monitoring Programs (PDMPs) are highly effective tools utilized by government officials for reducing prescription drug abuse and diversion. PDMPs collect, monitor, and analyze electronically transmitted prescribing and dispensing data submitted by pharmacies and dispensing practitioners. The data are used to support states' efforts in education, research, enforcement and abuse prevention. PDMPs are managed under the auspices of a state, district, commonwealth, or territory of the United States.

States recognize the medical need for controlled substances and, therefore, PDMPs do not interfere with appropriate, medical use. Prescription data is provided only to entities authorized by state law to access the program, such as health care practitioners, pharmacists, regulatory boards and law enforcement agencies.

PDMPs are proactive in safeguarding public health and safety while supporting the legitimate use of controlled substances. PDMPs do not infringe on the legitimate prescribing of a controlled substance by a practitioner acting in good faith and in the course of a professional practice.

How many states have a PDMP?

Currently, 49 states, the District of Columbia and one U.S. territory (Guam) have legislation authorizing the creation and operation of a PDMP. Forty-nine states and one U.S. territory (Guam) currently have a PDMP that is operational (meaning collecting data from dispensers and reporting information from the database to authorized users). For more information, visit the PDMP TTAC website at www.pdmpassist.org where you can view our PDMP Program Status Map or PDMP Program Status Table. To learn more about a specific state PDMP, please also visit our State Profiles section.

How do I find state laws and rules that govern a PDMP in my state?

The State Profiles have a link to each state's laws and rules governing their PDMPs on our website at www.pdmpassist.org.

What agency administers the PDMP in each state?

A variety of state agencies administer the PDMP:

Agency Type	Number
Consumer Protection	1
Other	1
Substance Abuse	3
Law Enforcement	7
Professional Licensing	6
Departments of Health	13
Boards of Pharmacy	20
TOTAL	**51**

Information about which agency is responsible for the PDMP in a specific state is available on our website at www.pdmpassist.org on our State Profiles. You may also view our state agency map for a

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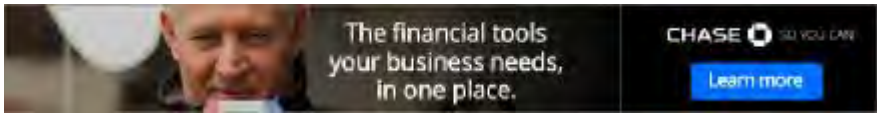

Asia

Afghanistan opium harvest at record high - UNODC

13 November 2013 | Asia

The report said police had tripled their effectiveness at seizing drugs

Afghan opium cultivation has reached a record level, with more than 200,000 hectares planted with the poppy for the first time, the United Nations says.

The UNODC report said the harvest was 36% up on last year, and if fully realised would outstrip global demand.

Most of the rise was in Helmand province, where British troops are preparing to withdraw.

One of the main reasons the UK sent troops to Helmand was to cut opium production.

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Features & Analysis

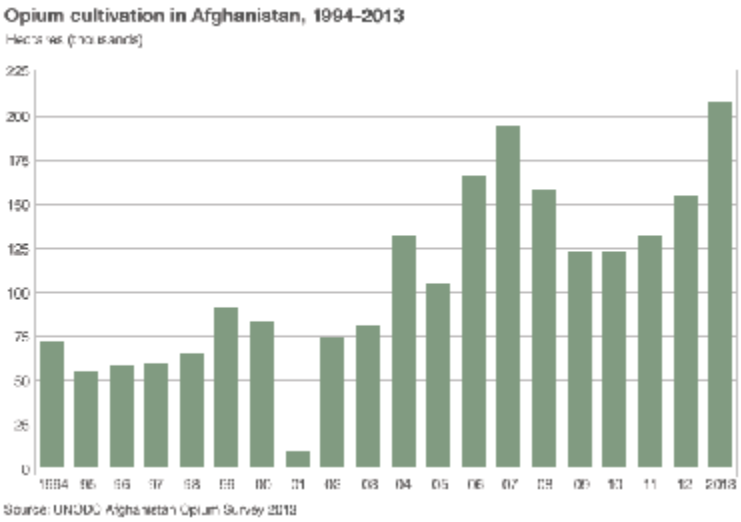
David Loyn reports from the village where Afghans have been buried after being executed for trying to smuggle opium into Iran

The head of the UN office for Drugs and Crime (UNODC) in Kabul, Jean-Luc Lemahieu, said that production was likely to rise again next year, amid uncertainty over the withdrawal of most foreign troops and the presidential election.

He said that the illegal economy was taking over in importance from legitimate business, and that prices remained high since there was a ready availability of cash in Afghanistan because of aid.

"As long as we think that we can have short-term, fast solutions for the counter-narcotics, we are continued to be doomed to fail," he added.

Mr Lemahieu said there had been some recent successes, including the arrest of leading figures in the drugs industry, but it could take 10-15 years to deal with Afghanistan's opium crisis, even if policies improved.



The report said the total area planted with poppies rose from 154,000 to 209,000 hectares, while potential production rose by 49% to 5,500 tonnes, more than the current global demand.

Half of the cultivation area is in Helmand province.

Meanwhile two northern provinces which had previously been declared poppy-free - Faryab and Balkh - lost that status.

The report called for an integrated, comprehensive response to the problem.

"If the drug problem is not taken more seriously by aid, development and security actors, the virus of opium will further reduce the resistance of its host, already suffering from dangerously low immune levels due to fragmentation, conflict, patronage, corruption and impunity," it said.

But the report said there were some encouraging signs, with police tripling their effectiveness to capture "well over 10%" of production and a growth in services set up to tackle addiction.

The findings of the latest report reverse a decline in production last year attributed to bad weather and disease.

Analysis

By David LoynBBC News, Islam Qala, near Afghan-Iran border

The consequences of Afghanistan's huge opium production have had an effect across society here. There are believed to be more than a million opium and heroin addicts - one of the largest levels in the world - taking advantage of plentiful supplies.

The amount of land given over to opium in 2013 was 209,000 hectares. The

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However, cultivation has been rising yearly since 2010 despite government efforts to eradicate the crop.

More farmers have been trying to grow the poppy as the price of opium has been rising.

Afghanistan produces more than 90% of the world's opium.

potential production from that is estimated to be more than annual global demand, according to the head of the UN office for Drugs and Crime in Kabul, Jean-Luc Lemahieu.

After rising sharply in the years after the Taliban successfully stopped production, the harvest last peaked in 2007 and is expected to continue rising.

Mr Lemahieu said that the rise since 2010 was caused principally by what he called a "hot political market" - uncertainty over the process of transition from US control. That uncertainty will continue with the end of foreign combat operations and the presidential election next year.

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Development

Narcotics Anonymous sprang from the Alcoholics Anonymous Program of the late 1940s, with NA meetings first emerging in the Los Angeles area of California, USA, in the early 1950s. The NA program started as a small US organization that has grown into one of the world's oldest and largest international organizations of its type. For many years, NA grew very slowly, spreading from Los Angeles to other major North American cities and Australia in the early 1970s. Within a few years, groups had formed in Brazil, Colombia, Germany, India, Ireland, Japan, New Zealand, and Great Britain. In 1983, Narcotics Anonymous published its self-titled Basic Text book, which contributed to NA's tremendous growth; by year's end, NA had grown to have a presence in more than a dozen countries and had 2,966 meetings worldwide.

Today, Narcotics Anonymous is well established throughout much of North and South America, Europe, Australia, the Middle East, New Zealand, and Russia. Groups and NA communities continue to grow and evolve throughout the Indian subcontinent, Africa, and Asia. Today the organization is truly a worldwide multilingual, multicultural fellowship with more than 63,000 weekly meetings in 132 countries. Narcotics Anonymous books and information pamphlets are currently available in 45 languages, with translations in process for 16 languages.*

Program

NA's earliest self-titled pamphlet, known among members as "The White Booklet," describes Narcotics Anonymous this way:

"NA is a nonprofit fellowship or society of men and women for whom drugs had become a major problem. We . . . meet regularly to help each other stay clean. ... We are not interested in what or how much you used ... but only in what you want to do about your problem and how we can help."

*As of May 2014

Membership is open to all drug addicts, regardless of the particular drug or combination of drugs used. When adapting AA's First Step, the word "addiction" was substituted for "alcohol," thus removing drug-specific language and reflecting the "disease concept" of addiction. Narcotics Anonymous provides a recovery process and peer support network that are linked together. One of the keys to NA's success is the therapeutic value of addicts working with other addicts. Members share their successes and challenges in overcoming active addiction and living drug-free, productive lives through the application of the principles contained within the Twelve Steps and Twelve Traditions of NA. These principles are the core of the Narcotics Anonymous recovery program. Narcotics Anonymous itself is a non-religious program of recovery; each member is encouraged to cultivate an individual understanding—religious or not—of the spiritual principles and apply these principles to everyday life.

There are no social, religious, economic, racial, ethnic, national, gender, or class-status membership restrictions. There are no dues or fees for membership; most members regularly contribute in meetings to help cover the expenses incurred for the rent of facility space.

Narcotics Anonymous is not affiliated with other organizations, including other twelve step programs, treatment centers, or correctional facilities. As an organization, NA does not employ professional counselors or therapists nor does it provide residential facilities or clinics. Additionally, the fellowship does not offer vocational, legal, financial, psychiatric, or medical services. NA has only one mission: to provide an environment in which addicts can help one another stop using drugs and find a new way to live.

In Narcotics Anonymous, membership is based on a desire to stop using drugs including alcohol and has as a foundation, the principle of complete abstinence. It has been the experience of NA members that complete and continuous abstinence provides the best foundation for recovery and personal growth. NA as a whole has no opinion on outside issues, including prescribed medications. Use of psychiatric medication and other medically indicated drugs prescribed by a physician and taken under medical supervision is not seen as compromising a person's recovery in NA.

Service Organization

The primary service provided by Narcotics Anonymous is the NA group meeting. Each group runs itself based on principles common to the entire organization, which is expressed in NA's literature.

Most groups rent space for their meetings in buildings run by public, religious, or civic organizations. Individual members lead the NA meetings while other members participate by sharing about their experiences in recovering from drug addiction. Group members also work together to perform the activities associated with running a meeting.

In a country where Narcotics Anonymous is a relatively new and emerging fellowship, the NA group is the only level of organization. In places where a number of Narcotics Anonymous groups have had the chance to develop and stabilize, groups elect representatives to form a local service committee. These local committees usually offer a number of services. Included among them are:

- distribution of NA literature;
- helpline information services;
- presentations for treatment and healthcare staff, civic organizations, government agencies, and schools;
- presentations to acquaint treatment or correctional facility clients with the NA program; and
- maintaining NA meeting directories for individual information and for any interested person.

In some countries, especially the larger countries or those where Narcotics Anonymous is well established, a number of local/area committees have come together to create regional committees. These regional committees handle services within their larger geographical boundaries while the local/area committees operate local services.

An international delegate assembly known as the World Service Conference provides guidance on issues affecting the entire organization. Primary among the priorities of NA's world services are activities that support emerging and developing NA communities and the translation of Narcotics Anonymous literature. For additional information, contact the World Service Office headquarters in Los Angeles, California. The mailing address, telephone number, fax number, and website address appear at the end of this pamphlet.

Organizational Philosophy

In order to maintain its focus, Narcotics Anonymous has established a tradition of nonendorsement and does not take positions on anything outside its own specific sphere of activity. Narcotics Anonymous does not express opinions—either pro or con—on civil, social, medical, legal, or religious issues. Additionally, it does not take stands on addiction-related issues such as criminality, law enforcement, drug legalization or penalties, prostitution, HIV/HCV infection, or syringe programs.

Narcotics Anonymous strives to be entirely self-supporting through member contributions and does not accept financial contributions from non-members. Based on the same principle, groups and service committees are administered by NA members, for members.

Narcotics Anonymous neither endorses nor opposes any other organization's philosophy or methodology. NA's primary focus is in providing a recovery environment whereby drug addicts can share their recovery experiences with one another. By remaining free from the distraction of controversy, NA is able to focus all of its energy on its particular area of purpose.

Cooperating with Narcotics Anonymous

Although certain traditions guide its relations with other organizations, Narcotics Anonymous welcomes the cooperation of those in government, the clergy, treatment and healthcare professions, criminal justice organizations and private voluntary organizations. NA's nonaddict friends have been instrumental in getting Narcotics Anonymous started in many countries and helping NA grow worldwide.

NA strives to cooperate with others interested in Narcotics Anonymous. Our more common cooperation approaches are: providing contact information, disseminating recovery literature, and sharing information about recovery. Additionally, NA members are often available to provide presentations for treatment centers and correctional facilities, offering information about the NA program to the professional staff and sharing with addicts otherwise unable to attend community-based meetings.

Membership Demographics

To offer some general informal observations about the nature of the membership, and the effectiveness of the program, the following observations are believed to be reasonably accurate.

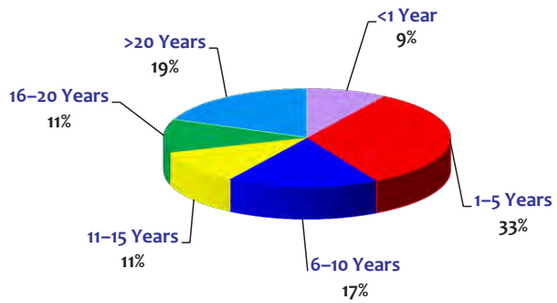
The socioeconomic strata represented by the NA membership vary from country to country. Usually, members of one particular social or economic class start and sustain most developing NA communities worldwide, but as their fellowship development activities become more effective, the membership becomes more broadly representative of all socioeconomic backgrounds.

All ethnic and religious backgrounds are represented among NA members. Once a developing NA community reaches a certain level of maturity, its membership generally reflects the diversity or homogeneity of the background culture.

Membership in Narcotics Anonymous is voluntary; no attendance records are kept either for NA's own purposes or for others. Because of this, it is sometimes difficult to provide interested parties with comprehensive information about NA membership. There are, however, some objective measures that can be shared based on data obtained from members attending one of our world conventions; the diversity of our membership, especially ethnic background, seems to be representative of the geographic location of the survey. The following demographic information was gathered from a survey completed by approximately 16,750 NA members. The survey was made available at the 2013 World Convention of NA in Philadelphia, Pennsylvania in our international journal, *The NA Way Magazine*, and on our website:

- Gender: 57% male, 43% female.
- Age: 1% 20 years old and under, 12% 21–30 years old, 18% 31–40 years old, 28% 41–50 years old, 31% 51-60 years old, and 10% over 60 years old.
- Ethnicity: 76% Caucasian, 13% African-American, 5% Hispanic, and 6% other.
- Employment status: 59% employed full-time, 12% employed part-time, 11% unemployed, 9% retired, 6% students, and 4% homemakers.

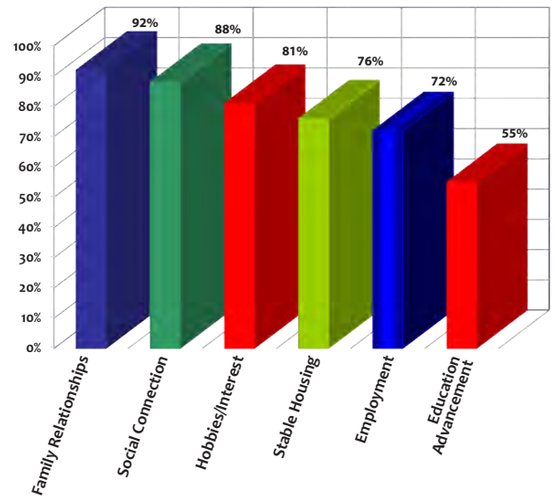
Years Drug-Free



NA members have an average of 11.07 years clean. This can be compared to NA's last survey, which was the 2011 *Membership Survey*, showed members with an average of 10.87 years clean.

Quality of Life Improvement Areas

Multiple answers were allowed.



In 2013 the two areas that received overwhelming improvement with NA attendance were family relationship, where 92% of our members stated enrichment; and social connection, which was realized by 88% of the respondents. NA literature states that active addiction is marked by increased isolation and destruction with relationships. Recovery in NA has helped survey respondents to repair the damage in their lives from drug addiction.

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Website: www.na.org
Item No. ZPR001002

Information about NA

Narcotics Anonymous is an international, community-based association of recovering drug addicts with more than 63,000 weekly meetings in 132 countries worldwide.

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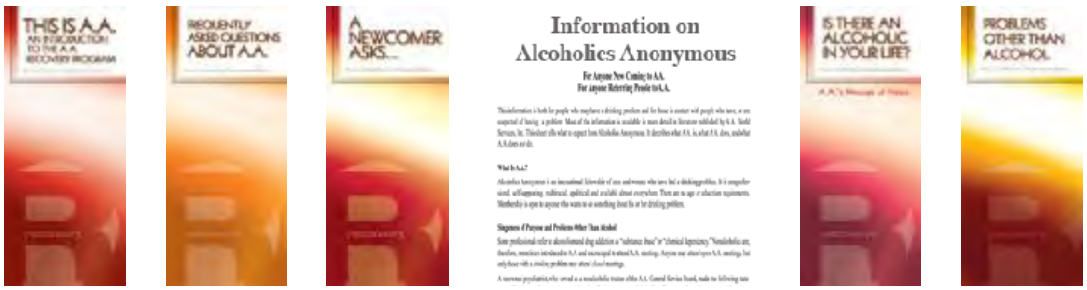
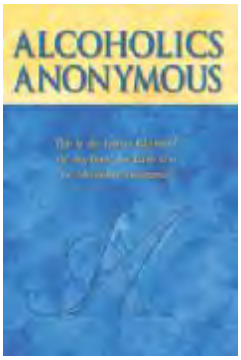
www.na-iran.org

What Is A.A.?

Alcoholics Anonymous is an international fellowship of men and women who have had a drinking problem. It is nonprofessional, self-supporting, multiracial, apolitical, and available almost everywhere. There are no age or education requirements. Membership is open to anyone who wants to do something about his or her drinking problem.



View by list



Since the book Alcoholics Anonymous first appeared in 1939, this basic text has helped millions of men and women recover from alcoholism.

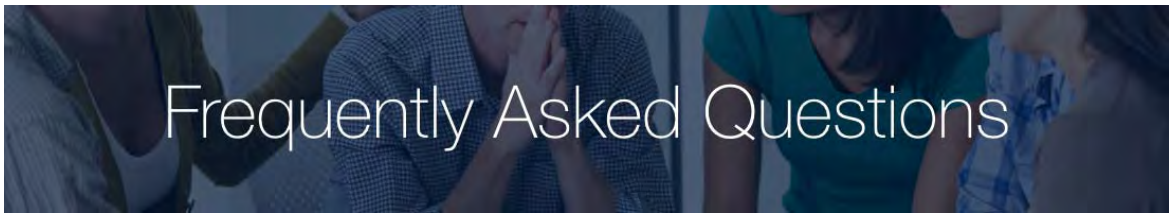
Currently available in the General Service Conference-approved Fourth Edition, the Big Book contains the stories of the co-founders, as well as many members of diverse backgrounds who have found recovery in the worldwide Fellowship.

THE TWELVE STEPS OF ALCOHOLICS ANONYMOUS A.A.'s Twelve Steps are a group of principles, spiritual in their nature, which, if practiced as a way of

life, can expel the obsession to drink and enable the sufferer to become happily and usefully whole.

THE TWELVE TRADITIONS OF ALCOHOLICS ANONYMOUS (Short Form)

A.A.'s Twelve Traditions apply to the life of the Fellowship itself. They outline the means by which A.A. maintains its unity and relates itself to the world about it, the way it lives and grows.



What's Nar-Anon?

The Nar-Anon Family Groups are a worldwide fellowship for those affected by someone else's addiction. As a Twelve-Step Program, we offer our help by sharing our experience, strength, and hope. The only requirement for membership is that there be a problem of addiction in a relative or friend. Our program of recovery is adapted from NA and uses our Twelve Steps, Twelve Traditions, and Twelve Concepts.

What's a Nar-Anon Family Group?

The Nar-Anon Family Group is for those who know the feeling of desperation due to the addiction problem of someone close to them. Members share their experiences, strength, and hope at weekly meetings, which are usually held at locations such as treatment and community centers, hospitals, churches, or local twelve-step clubs.

What if there's no Nar-Anon Group in my area?

If there's no Nar-Anon Family Group in your community, you may start one. Click here for more information on how you can do so.

How Do I Join Nar-Anon?

Joining is easy - just attend a meeting. There are no dues or fees. The only requirement for membership is that there be a problem of addiction in a relative or friend. We're never affiliated with any other organization or outside entity.

What Does It Cost?

Nar-Anon has no dues or fees. Each group is self-supporting and collects donations that are used for local expenses such as room rent and supplies. Group and member donations support the Nar-Anon World Service Office.

Is Literature Available?

Nar-Anon publications are based upon the shared experience of our membership and their application of Nar-Anon's principles to their lives. You can view and purchase Nar-Anon literature at our Webstore.

Is Professional Help Available?

Nar-Anon is a **non-professional** fellowship whose members share their experience, strength, and hope to solve their common problems. We've learned to avoid standing in the way of the addict's recovery. Nar-Anon is **not** a replacement for, nor provides professional treatment. We do cooperate with NA and other recovery programs, but don't affiliate with or recommend them specifically.

What's Nar-Anon? | Find a Meeting | Literature Store | Latest News | Outreach | Newsletter | Contact WSO

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Al-Anon Family Groups
Strength and hope for friends and families of problem drinkers

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2015/2018 Int'l Convention

How do you know if you have been affected by someone's problem drinking?

How can I find a meeting?

What do healthcare professionals say about Al-Anon?

Friends and families of problem drinkers find understanding and support at Al-Anon and Alateen meetings.

- Is Al-Anon for you?
- What If I'm not ready to go to a meeting?
- What can I expect at an Al-Anon meeting?
- What was my first meeting like?

- How can I help my problem drinker quit drinking?
- How does Al-Anon Work?
- How can I find a meeting?
- What do healthcare professionals say about Al-Anon?

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U.S. Department of Justice
Civil Rights Division
Disability Rights Section

QUESTIONS AND ANSWERS:

THE AMERICANS WITH DISABILITIES ACT

AND HIRING POLICE OFFICERS

The Americans with Disabilities Act, or ADA, is a civil rights law guaranteeing equal opportunity to jobs for qualified individuals with disabilities. The following questions and answers respond to the concerns most commonly raised by police departments.

Further information about the ADA's employment requirements may be obtained from the Equal Employment Opportunity Commission at 800-669-4000 (voice) or 800-669-6820 (TDD). Other ADA information is available through the Department of Justice's ADA Information Line at 800-514-0301 (voice) or 800-514-0383 (TDD).

1. Q: Who is a "qualified individual with a disability" for employment?

> **A:** A qualified individual with a disability is an employee or job applicant who meets legitimate skill, experience, education, or other requirements of an employment position that he or she holds or seeks. The person must also be able to perform the "essential" (as opposed to marginal or incidental) functions of the position either with or without reasonable accommodation. Job requirements that screen out or tend to screen out people with disabilities are legitimate only if they are job-related and consistent with business necessity.

2. Q: The ADA prohibits making disability-related inquiries or giving applicants for police jobs medical examinations until a conditional offer of employment is made. Why?

> **A:** In the past, people with disabilities, particularly those with hidden disabilities, were denied jobs once potential employers found out about their disabilities. The ADA seeks to prohibit discrimination by limiting an employer's knowledge of an applicant's disability to a later stage of the job application process. Under the ADA an employer may only ask about an applicant's disability or give a medical examination after the employer has made a job offer. The job offer can be conditioned on successfully passing a medical examination. Thus, if the person with a disability is denied the job because of information obtained from the medical examination or because of the applicant's disability, the reason for this decision is out in the open. This procedure should limit impermissible consideration of disability.

3. Q: I know I can't give a job applicant a medical exam before a conditional job offer is made. But what about physical agility and physical fitness tests?

> **A:** You can give job applicants tests measuring an applicant's ability to perform job-related tasks or physical fitness tests (tests measuring performance of running, lifting, etc.) before any job offer is made. Tests that measure simply an applicant's ability to perform a task are not considered to be medical examinations. But remember, job requirements that screen out or tend to screen out persons with disabilities are legitimate only if they are job-related and consistent with business necessity.

4. Q: But to limit the police department's liability, I need to get a medical approval that it's o.k. for a job applicant to take the physical fitness test. Doesn't the ADA create a catch-22 for police departments?

A: No, the ADA's prohibition on medical exams does not make it illegal for a police department to ask an applicant to provide a certification from a doctor that he or she can safely perform the physical fitness test. The ADA allows an employer to require a limited medical certification in these circumstances. The medical certification should only indicate whether or not the individual can safely perform the test and should not contain any medical information or explanation. The police department may also ask the applicant to sign a waiver releasing the employer from liability for injuries during the test resulting from any physical or mental disorders.

5. Q: Recently a job applicant for a police officer's job came into the police department with fingers that were visibly impaired. The police department required that he demonstrate that he could pull the trigger on the police issue firearm and reload it before a conditional job offer was made. Did this violate the ADA?

A: No. If an individual has a "known" disability that would reasonably appear to interfere with or prevent performance of job functions, that person may be asked to demonstrate how these functions will be performed, even if other applicants are not asked to do so.

6. Q: Can I refuse to consider an applicant because of his current use of illegal drugs?

A: Yes, individuals who currently engage in the illegal use of drugs are specifically excluded from the definition of an "individual with a disability" when an employer takes action on the basis of their current use.

7. Q: What about applicants with a history of illegal drug use? Do they have rights under the ADA?

A: It depends. Casual drug use is not a disability under the ADA. Only individuals who are addicted to drugs, have a history of addiction, or who are regarded as being addicted have an impairment under the law. In order for an individual's drug addiction to be considered a disability under the ADA, it would have to pose a substantial limitation on one or more major life activities. In addition, the individual could not currently be using illegal drugs. Denying employment to job applicants solely because of a history of casual drug use would not raise ADA concerns. On the other hand, policies that screen out applicants because of a history of addiction or treatment for addiction must be carefully scrutinized to ensure that the policies are job-related and consistent with business necessity. If safety is asserted as a justification for such a policy, then the employer must be able to show that individuals excluded because of a history of drug addiction or treatment would pose a direct threat -- i.e., a significant risk of substantial harm -- to the health or safety of the individual or others that cannot be eliminated or reduced by reasonable accommodation. Again, individuals who currently use illegal drugs, even users who are addicted, may be denied employment because of their current use.

8. Q: May an applicant be asked prior to a conditional job offer whether he or she has ever used illegal drugs or been arrested for any reason?

A: Yes. It does not violate the ADA to ask whether the applicant has ever used illegal drugs or been arrested for such use. However, a law enforcement agency may not ask at the pre-offer stage about the frequency of past illegal drug use or whether the applicant has ever been addicted to drugs or undergone treatment for addiction.

9. Q: Can I disqualify all applicants with felony convictions even though a former addict with a felony drug conviction would be excluded?

A: Yes, as long as you can show that the exclusion is job-related and consistent with business necessity.

10. Q: Does the ADA have any impact on the use of drug-testing?

A: No. Police departments may subject current employees to testing for illegal use of drugs and may require job applicants to undergo such testing at any stage of the application process.

11. Q: If an applicant tests positive for illegal drug use, can I ask whether he or she is using any prescription medications under a doctor's care that may have caused a positive result?

A: Yes. Inquiries into the use of prescription drugs are permitted in response to a positive drug test, even though the answers may disclose information about a disability.

12. Q: Are alcoholics covered by the ADA?

A. Yes. While a current illegal user of drugs is not protected by the ADA if an employer acts on the basis of such use, a person who currently uses alcohol is not automatically denied protection. An alcoholic is a person with a disability and is protected by the ADA if he or she is qualified to perform the essential functions of the job. An employer may be required to provide an accommodation to an alcoholic. However, an employer can discipline, discharge or deny employment to an alcoholic whose use of alcohol adversely affects job performance or conduct. An employer also may prohibit the use of alcohol in the workplace and can require that employees not be under the influence of alcohol.

13. Q: Can police departments still use polygraph tests at the application stage or do we have to wait until a conditional job offer has been made?

A: You can conduct polygraph exams before a conditional job offer is made. However, employers must exercise care not to ask any prohibited disability-related inquiries in administering the pre-offer polygraph exam.

14. Q: May a police department wait to conduct a background check on applicants until after the information from the medical exam has been reviewed -- which is after a conditional offer of employment has been made?

A: Yes, in certain circumstances. In general, a job offer is not viewed as "bona fide" under the ADA, unless an employer has evaluated all relevant non-medical information which, from a practical and legal perspective, could reasonably have been analyzed prior to extending the offer. However, a law enforcement employer may be able to demonstrate that a proper background check for law enforcement personnel could not, from a practical perspective, be performed pre-offer because of the need to consult medical records and personnel as part of the security clearance process. Where the police department uses the information from the medical exam during the background check, doing the background check at the post-offer stage saves the police department the cost of doing a second background check.

Federal investigators will carefully scrutinize situations in which a police department withdraws an offer after a post-offer background examination to determine whether the withdrawal was based on non-medical information in the background check or on information obtained through post-offer medical examinations and disability-related inquiries. If it is determined that the offer was withdrawn because of the applicant's disability, then the police department must demonstrate that the reasons for the withdrawal are job-related and consistent with business necessity.

15. Q: The police department hires from a pool of applicants that have received conditional offers. Does the ADA allow a police department to re-rank the applicants in the pool based on the results of the medical examination?

A: Yes, if certain procedures are followed. The ADA allows police departments to make conditional job offers to a pool of applicants that is larger than the number of currently available vacancies if an employer can demonstrate that, for legitimate reasons, it must provide a certain number of offers to fill current or anticipated vacancies. A police department must comply with the ADA when taking individuals out of the pool to fill actual vacancies. It must notify an individual (orally or in writing) if his or her placement into an actual vacancy is in any way adversely affected by the results of a post-offer medical examination or disability-related question. The police department must be able to demonstrate that the basis for any adverse action is job-related and consistent with business necessity.

16. Q: If an employee is injured or becomes ill can he or she be required to take a medical examination?

A: Yes, as long as the examination is job-related and consistent with business necessity.

17. Q: Do I have to create another job for an employee who, because of disability, can no longer perform the essential functions of her job even with reasonable accommodation?

A: No. The ADA does not require an employer to create jobs for people with disabilities. However, the employee must be reassigned to a vacant position for which the individual is qualified if it does not involve

a promotion and it would not result in an undue hardship. A municipal rule prohibiting transfers between different municipal personnel systems does not automatically constitute an undue hardship. Whether it would be an undue hardship to modify a no-transfer rule in a particular situation must be evaluated on a case-by-case basis.

18. Q: May a police department create a light duty job category reserved only for incumbent officers without offering identical positions to job applicants?

A: Yes. A police department may create a specific class of light duty jobs that are limited to incumbent police officers.

19. Q: If an officer wants to stay in a street job and his supervisor wants him to go on light duty because of a disability, can the supervisor force him to accept a light duty position?

A: It depends. If the employee can still perform the essential functions of the "street job" with or without reasonable accommodation, and without being a direct threat to health or safety, he or she cannot be forced into a light duty position because of a disability.

20. Q: If a charging party receives a right to sue letter, does that mean that the government has found that there has been a violation of the ADA?

A: No. The receipt of a right to sue letter in and of itself only signifies that the complainant has exhausted administrative remedies under title I and is now entitled to bring a lawsuit if he or she chooses. In some cases a right to sue letter may be accompanied by an EEOC finding that there is reasonable cause to believe that an ADA violation has occurred. In this situation, it is the EEOC finding and not the existence of the right to sue letter that establishes reasonable cause. More frequently a right to sue letter is issued after a charge has been dismissed for jurisdictional reasons, for lack of merit, or because the charging party has requested the letter and the government has determined that it will not be able to complete its investigation in a timely manner.

Note: Reproduction of this document is encouraged.

3/25/97

April 4, 2006

Drug and Alcohol-Related Intoxication Deaths in Maryland

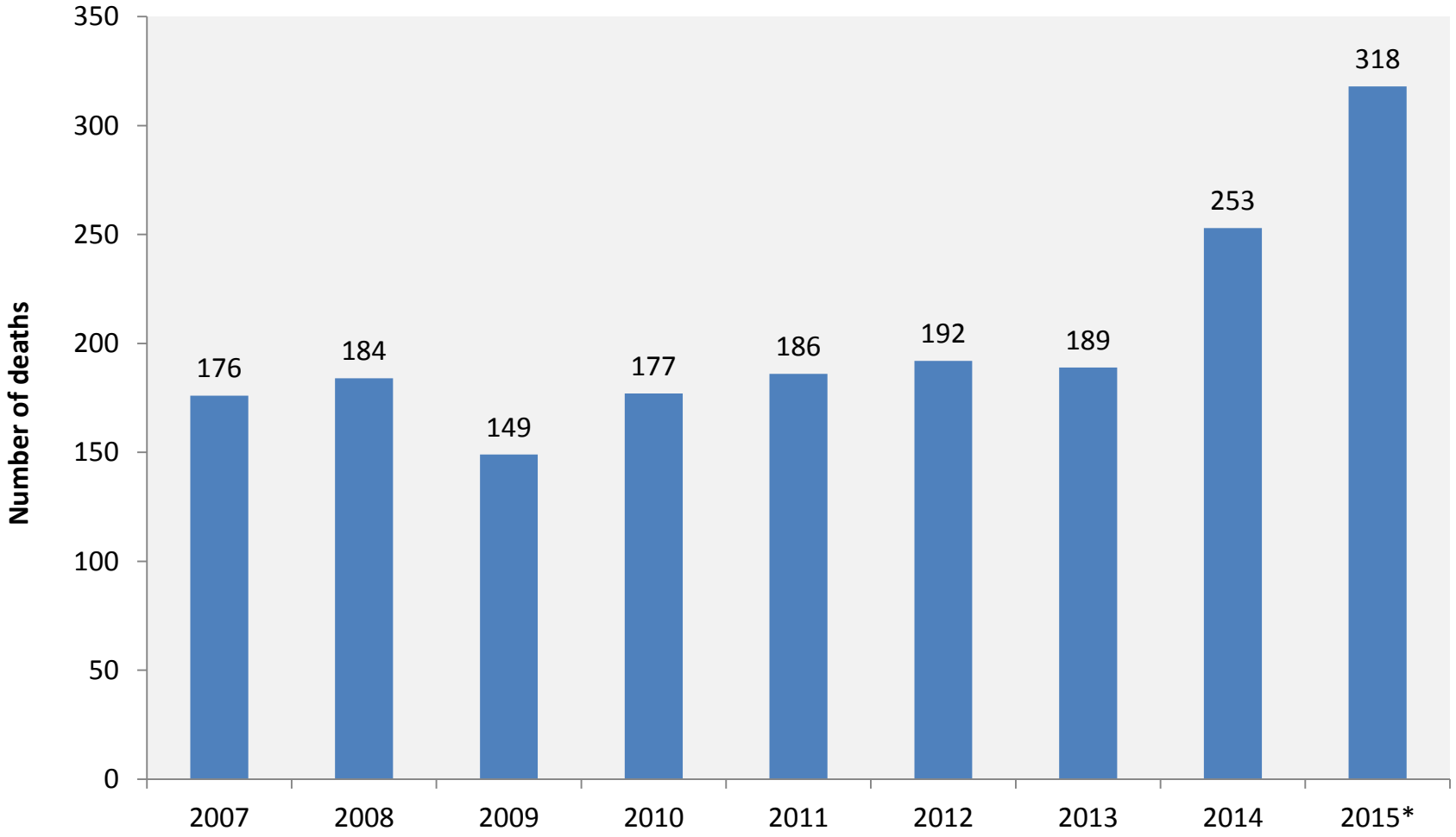
Data update through 1st quarter 2015

This report contains counts of drug and alcohol-related intoxication deaths* occurring in Maryland through the first quarter of 2015, the most recent period for which reasonably complete data are available. Counts are also shown for the same period of 2007-2014 to allow for comparison of trends over time. Counts for 2015 are preliminary and subject to change.

*Deaths resulting from recent ingestion or exposure to alcohol or other types of drugs, including heroin, cocaine, phencyclidine (PCP), prescription opioids, benzodiazepines, methamphetamines and other prescribed and unprescribed drugs.

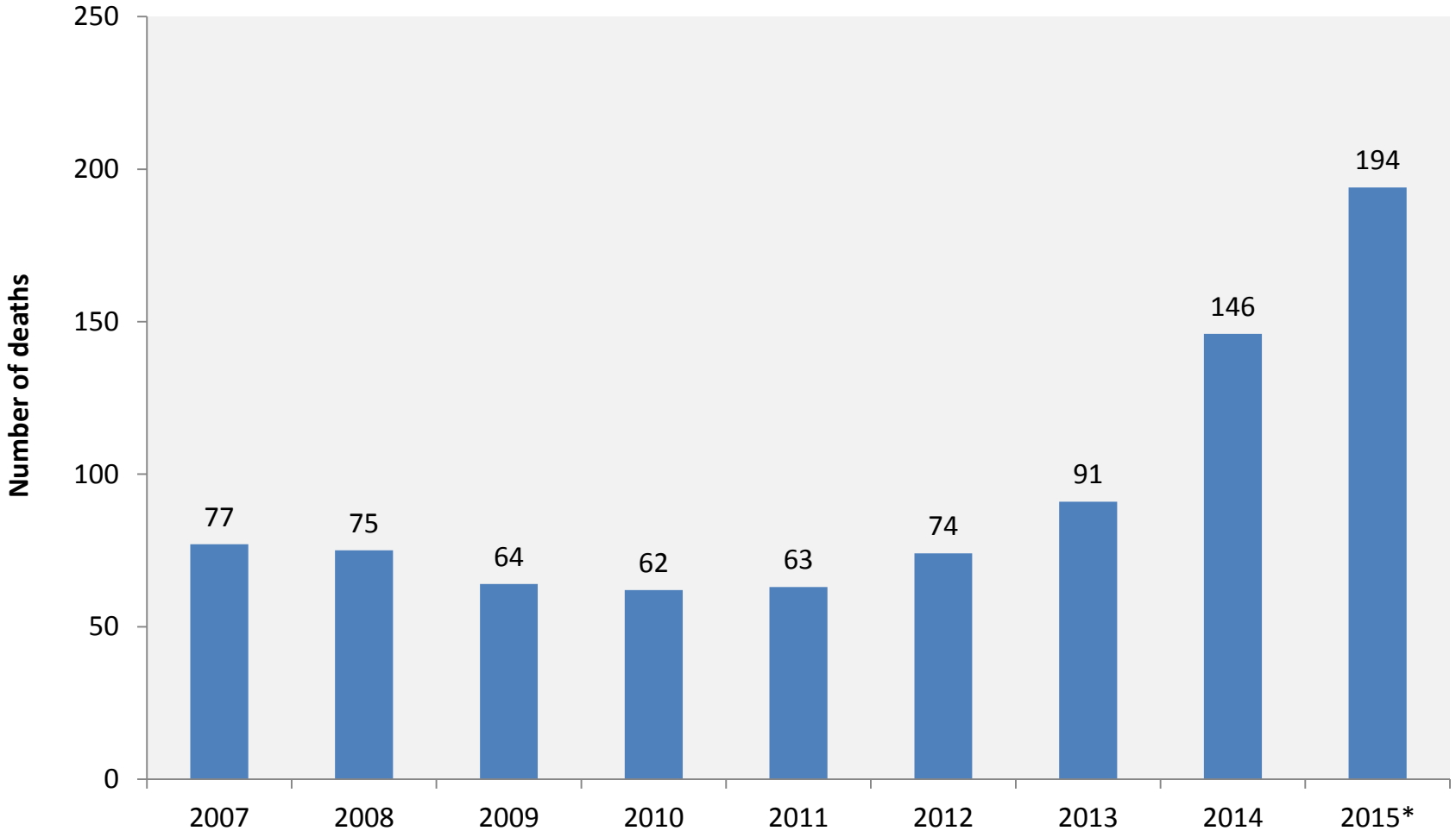
MARYLAND
DEPARTMENT OF HEALTH & MENTAL HYGIENE

Figure 1. Total Number of Unintentional Intoxication Deaths Occurring in Maryland from January-March of Each Year.*



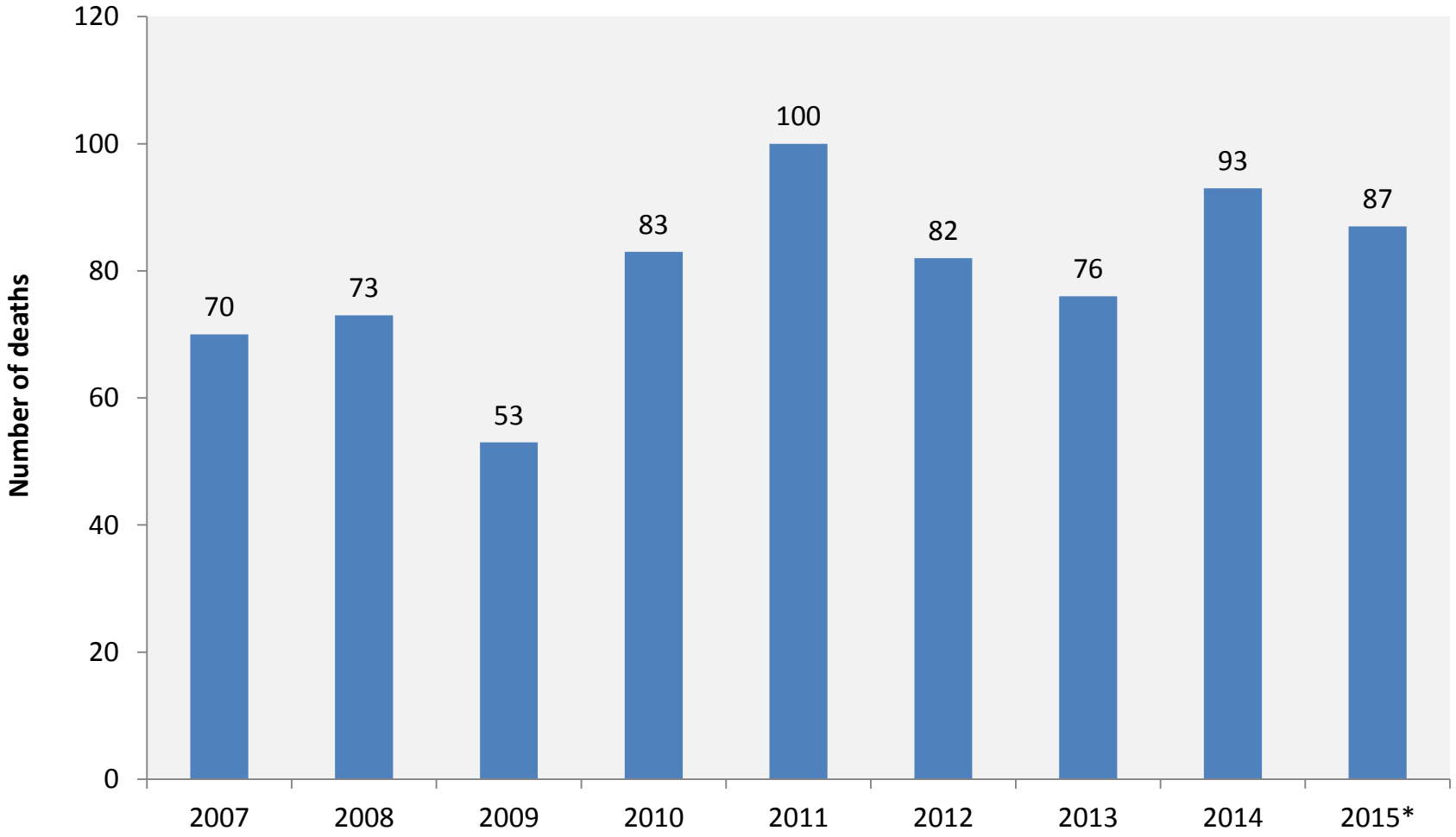
*2015 counts are preliminary.

Figure 2. Number of Heroin-Related Deaths Occurring in Maryland from January through March of Each Year.*



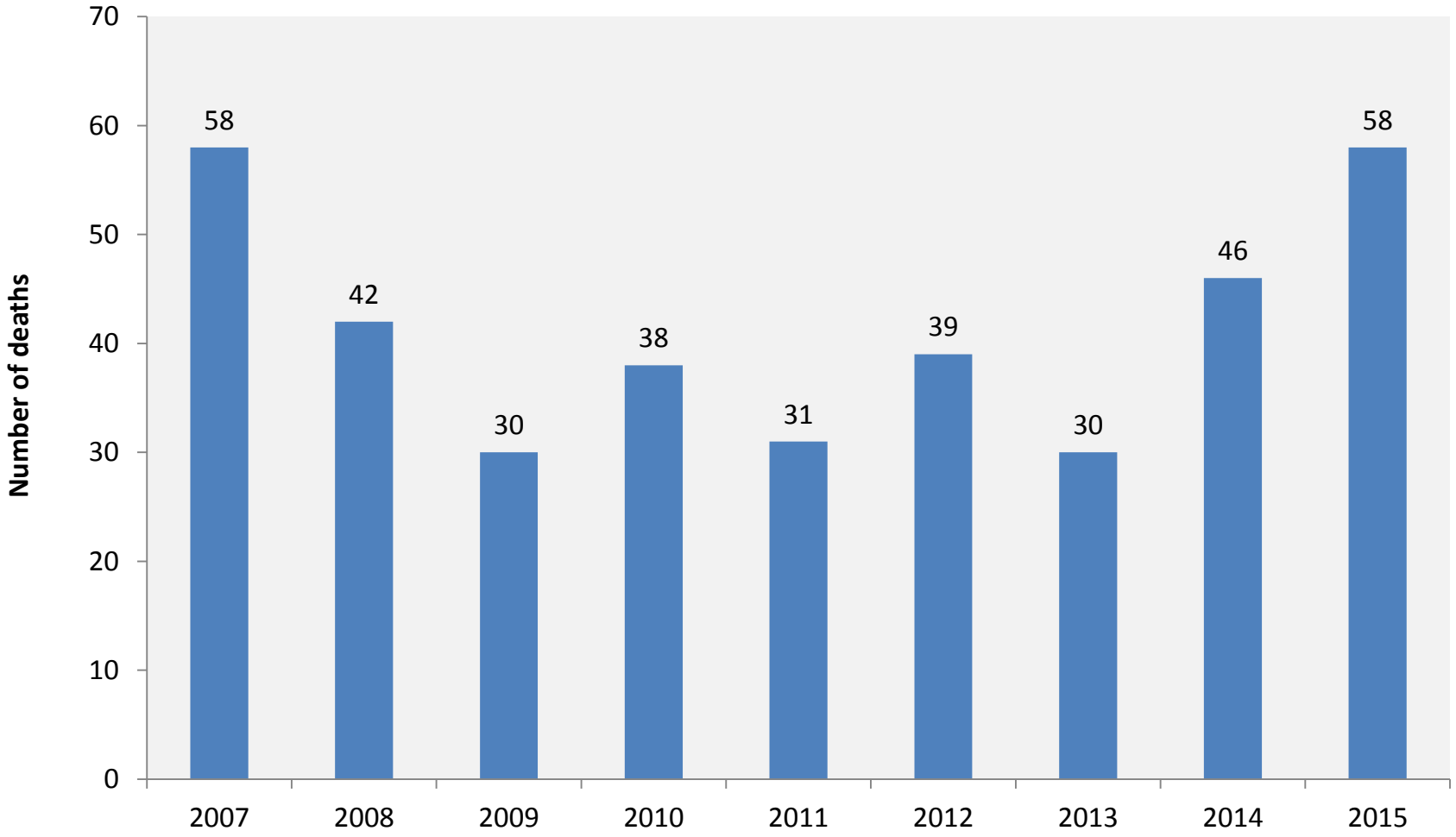
*2015 counts are preliminary.

Figure 3. Number of Prescription Opioid-Related Deaths Occurring in Maryland from January through March of Each Year.*



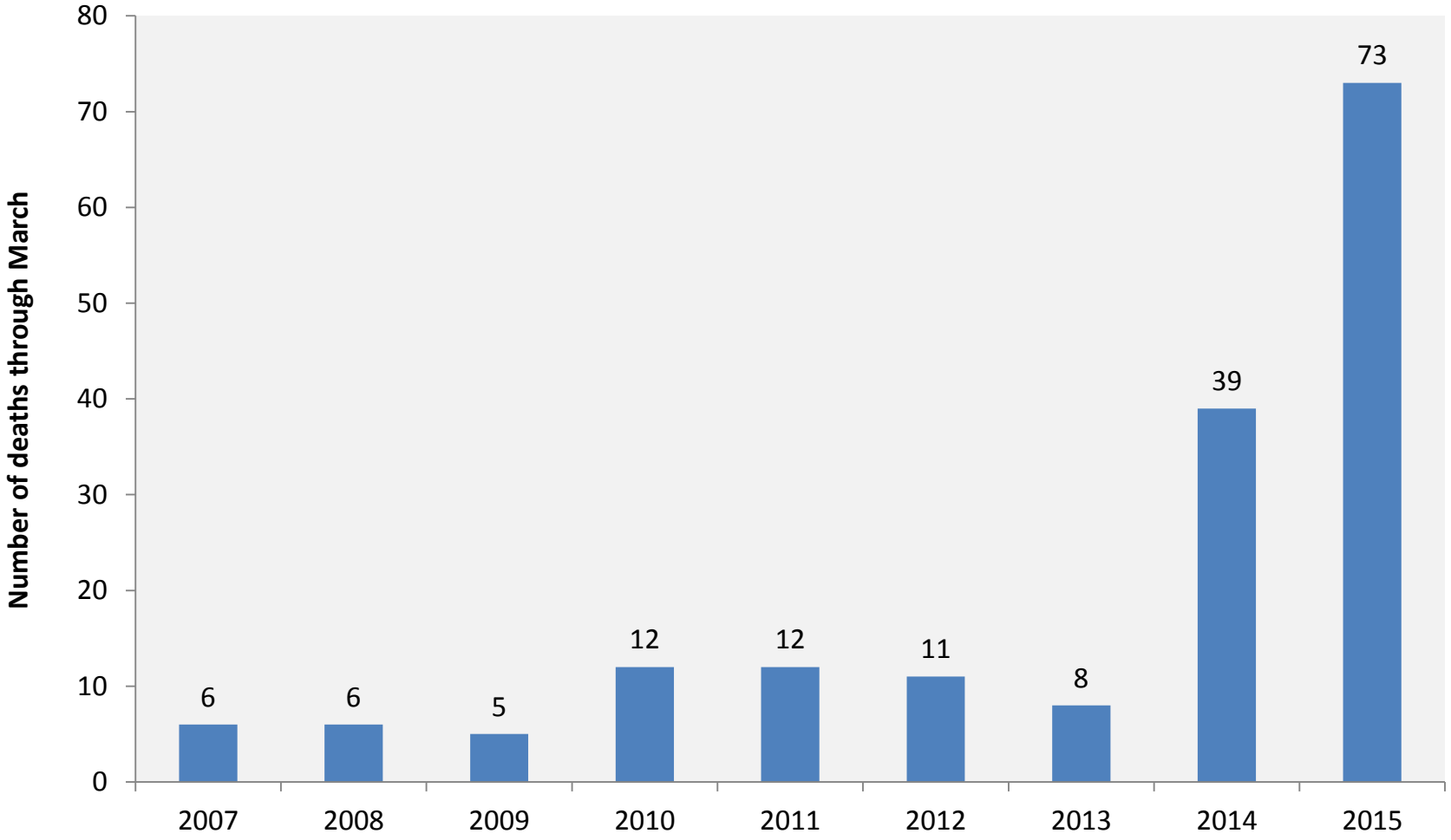
*2015 counts are preliminary.

Figure 4. Number of Cocaine-Related Deaths Occurring in Maryland from January through March of Each Year.*



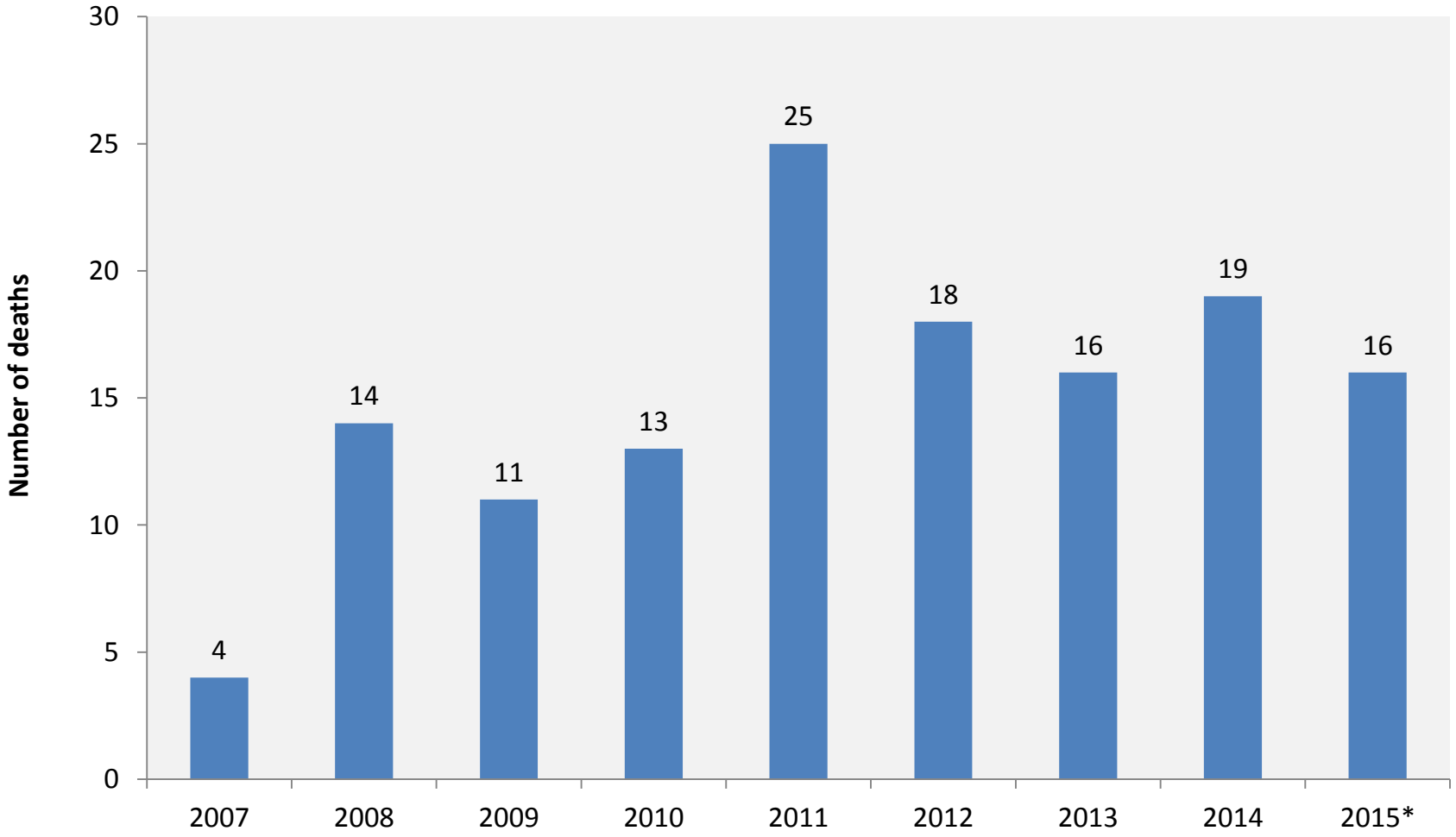
*2015 counts are preliminary.

Figure 5. Number of Fentanyl-Related Intoxication Deaths Occurring in Maryland Through March of Each Year.*



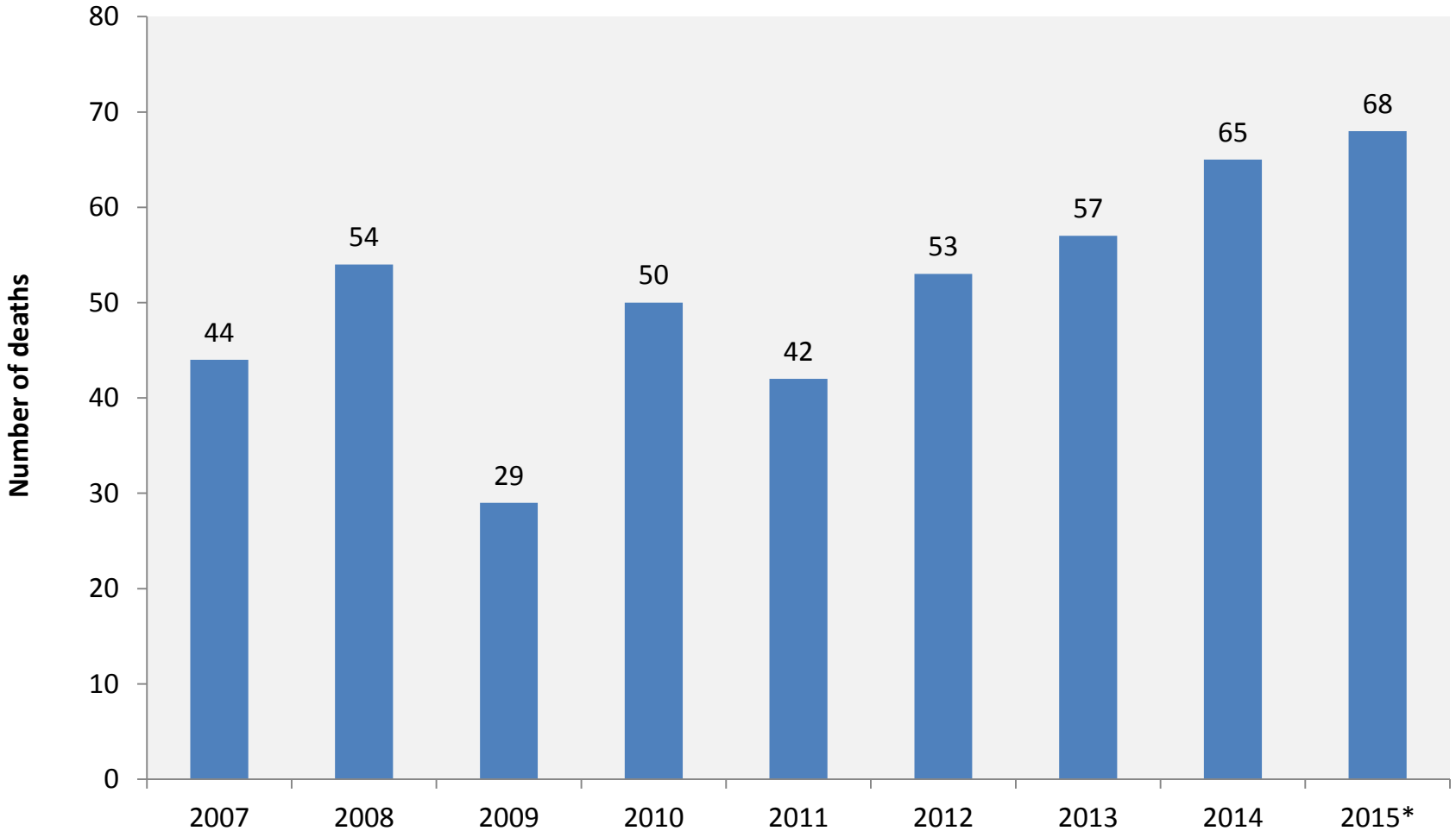
*2014 counts are preliminary and include deaths reported by OCME through March 2014.

Figure 6. Number of Benzodiazepine-Related Deaths Occurring in Maryland from January through March of Each Year.*



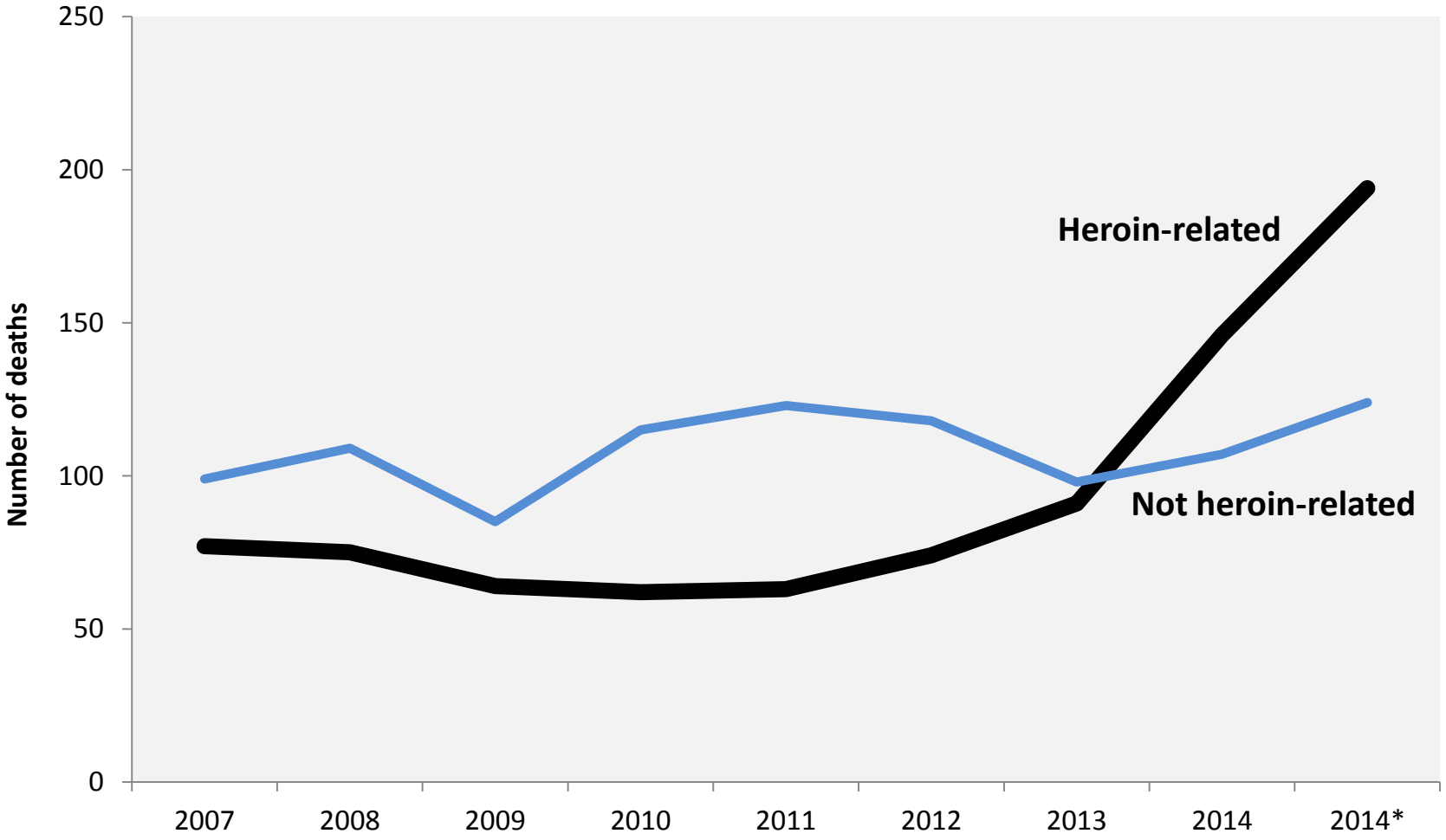
*2015 counts are preliminary.

Figure 7. Number of Alcohol-Related Deaths Occurring in Maryland from January through March of Each Year.*



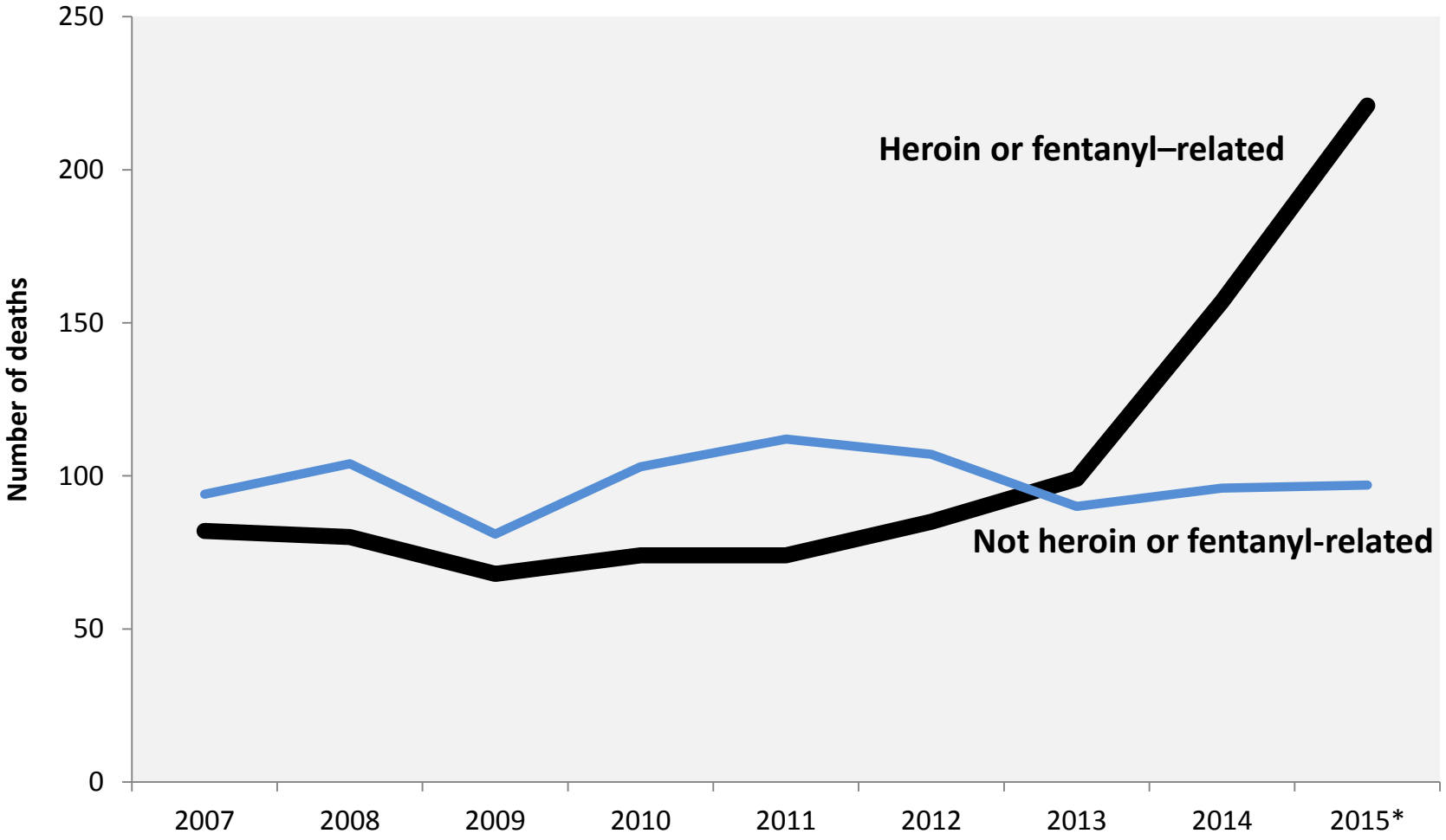
*2015 counts are preliminary.

Figure 8. Number of Drug and Alcohol-Related Intoxication Deaths Involving Heroin Through March of Each Year.*



*2015 counts are preliminary.

Figure 9. Number of Drug and Alcohol-Related Intoxication Deaths Involving Heroin or Fentanyl Through March of Each Year.*



*2015 counts are preliminary.

Figure 10

MARYLAND
DEPARTMENT OF HEALTH AND MENTAL HYGIENE

Total Number of Drug and Alcohol-Related Intoxication Deaths by Place of Occurrence, Maryland. January -- March, 2015 and 2014.

State of Maryland	Drug & Alcohol Intoxication Deaths		2015 vs 2014
COUNTY	Jan. - Mar. 2015	Jan. -Mar. 2014	# DIFFERENCE
Allegany County	5	1	4
A. A. County	27	23	4
Baltimore City	116	74	42
Baltimore County	47	40	7
Calvert County	5	9	-4
Caroline County	0	1	-1
Carroll County	11	14	-3
Cecil County	6	10	-4
Charles County	6	6	0
Dorchester County	0	0	0
Frederick County	3	11	-8
Garrett County	1	1	0
Harford County	9	7	2
Howard County	7	3	4
Kent County	2	0	2
Montgomery County	23	10	13
P.G. County	13	16	-3
Queen Anne's County	1	3	-2
Somerset County	6	1	5
St. Mary's County	3	3	0
Talbot County	2	0	2
Washington County	19	11	8
Wicomico County	4	6	-2
Worcester County	2	3	-1
Total	318	253	65

[1] Includes deaths that were the result of recent ingestion or exposure to alcohol or another type of drug, including heroin, cocaine, prescription opioids, benzodiazepines, and other prescribed and unprescribed drugs.

[2] Includes only deaths for which the manner of death was classified as accidental or undetermined.

[3] Counts for 2015 are preliminary.

TABLE 1. TOTAL NUMBER OF DRUG AND ALCOHOL-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014 AND YTD 2015 THROUGH MARCH.[1,2,3]

	TOTAL INTOXICATION DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	YTD 2015
MARYLAND	815	694	731	649	671	799	858	1,040	318
WESTERN AREA	110	99	97	96	109	115	138	161	51
GARRETT	1	3	3	3	2	0	6	2	1
ALLEGANY	14	9	9	15	12	14	15	12	5
WASHINGTON	16	26	18	20	21	27	28	40	19
FREDERICK	23	15	23	20	30	26	37	42	3
MONTGOMERY	56	46	44	38	44	48	52	65	23
CENTRAL AREA	550	443	479	411	420	519	557	677	217
BALTIMORE CITY	287	184	239	172	167	225	246	304	116
BALTIMORE COUNTY	131	118	106	115	107	119	144	170	47
ANNE ARUNDEL	71	70	63	56	79	83	78	101	27
CARROLL	14	17	22	15	8	29	24	38	11
HOWARD	16	19	16	10	21	24	29	21	7
HARFORD	31	35	33	43	38	39	36	43	9
SOUTHERN AREA	86	94	93	74	73	93	84	110	27
CALVERT	14	9	14	6	12	12	6	17	5
CHARLES	13	16	11	13	11	13	9	21	6
ST. MARY'S	6	11	9	12	8	12	10	9	3
PRINCE GEORGE'S	53	58	59	43	42	56	59	63	13
EASTERN SHORE AREA	69	58	62	68	69	72	79	92	23
CECIL	25	10	24	24	28	25	26	29	6
KENT	3	4	2	5	2	0	4	6	2
QUEEN ANNE'S	4	5	4	4	5	2	8	10	1
CAROLINE	1	4	2	2	11	4	2	7	0
TALBOT	5	4	3	3	1	5	7	4	2
DORCHESTER	4	5	2	6	2	5	5	0	0
WICOMICO	9	13	12	13	11	21	17	20	4
SOMERSET	6	3	4	1	3	3	4	3	6
WORCESTER	12	10	9	10	6	7	6	13	2

1 Includes deaths that were the result of recent ingestion or exposure to alcohol or another type of drug, including heroin, cocaine, prescription opioids, benzodiazepines, and other prescribed and unprescribed drugs.

2 Includes only deaths for which the manner of death was classified as accidental or undetermined.

3 Counts for 2015 are preliminary.

TABLE 2. HEROIN-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014 AND YTD 2015 THROUGH MARCH.[1,2,3]

	HEROIN-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	YTD 2015
MARYLAND	399	289	360	238	247	392	464	578	194
WESTERN AREA	33	35	39	27	34	49	68	86	30
GARRETT	0	0	1	0	1	0	2	1	1
ALLEGANY	3	4	2	3	3	6	3	5	4
WASHINGTON	5	13	11	6	8	11	14	21	11
FREDERICK	8	4	9	6	11	10	21	26	2
MONTGOMERY	17	14	16	12	11	22	28	33	12
CENTRAL AREA	323	203	264	171	165	272	319	379	140
BALTIMORE CITY	200	107	151	93	76	131	150	192	86
BALTIMORE COUNTY	56	51	53	42	38	64	76	86	25
ANNE ARUNDEL	38	24	31	18	24	38	41	53	14
CARROLL	9	5	7	3	2	13	14	16	5
HOWARD	8	8	7	3	10	12	16	9	5
HARFORD	12	8	15	12	15	14	22	23	5
SOUTHERN AREA	28	35	36	25	27	38	38	60	9
CALVERT	5	3	7	1	5	6	2	13	4
CHARLES	2	5	3	6	6	5	5	10	2
ST. MARY'S	1	3	0	4	4	7	6	5	0
PRINCE GEORGE'S	20	24	26	14	12	20	25	32	3
EASTERN SHORE AREA	15	16	21	15	21	33	39	53	15
CECIL	8	4	12	4	8	11	11	15	4
KENT	1	1	0	0	1	0	0	2	1
QUEEN ANNE'S	0	1	3	2	2	2	5	7	0
CAROLINE	0	0	0	0	3	3	2	6	0
TALBOT	1	2	0	0	1	2	2	4	2
DORCHESTER	1	2	0	2	1	3	3	0	0
WICOMICO	1	3	3	5	3	9	11	12	3
SOMERSET	2	1	1	0	1	2	1	1	4
WORCESTER	1	2	2	2	1	1	4	6	1

1 Includes deaths confirmed or suspected to be related to recent heroin use.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.
3 Counts for 2015 are preliminary.

TABLE 3. PRESCRIPTION OPIOID-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014 AND YTD 2015 THROUGH MARCH.[1,2,3]

	PRESCRIPTION OPIOID-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	YTD 2015
MARYLAND	302	280	251	311	342	311	316	329	87
WESTERN AREA	42	38	40	36	58	48	51	52	15
GARRETT	0	2	2	1	1	0	2	2	0
ALLEGANY	9	5	6	8	5	5	8	6	1
WASHINGTON	7	10	4	7	11	9	11	16	7
FREDERICK	6	4	9	6	21	16	14	9	0
MONTGOMERY	20	17	19	14	20	18	16	19	7
CENTRAL AREA	190	189	148	197	212	196	207	216	60
BALTIMORE CITY	95	60	63	61	82	74	86	83	25
BALTIMORE COUNTY	48	51	37	60	68	47	54	59	18
ANNE ARUNDEL	22	36	20	31	33	33	28	32	6
CARROLL	4	11	10	9	5	17	12	15	5
HOWARD	6	6	4	6	9	5	13	7	3
HARFORD	15	25	14	30	15	20	14	20	3
SOUTHERN AREA	25	28	31	33	30	29	26	35	7
CALVERT	8	3	4	3	7	6	3	7	1
CHARLES	6	6	7	4	5	7	5	9	3
ST. MARY'S	3	7	7	9	3	5	4	3	1
PRINCE GEORGE'S	8	12	13	17	15	11	14	16	2
EASTERN SHORE AREA	45	25	32	45	42	38	32	26	5
CECIL	19	6	10	20	20	18	12	12	0
KENT	2	3	2	3	1	0	4	2	1
QUEEN ANNE'S	4	1	1	2	2	0	3	3	1
CAROLINE	0	2	1	2	5	1	0	1	0
TALBOT	2	1	2	2	0	1	4	0	0
DORCHESTER	2	1	1	4	1	3	3	0	0
WICOMICO	5	4	8	7	7	9	4	3	1
SOMERSET	4	3	1	1	3	2	2	1	1
WORCESTER	7	4	6	4	3	4	0	4	1

1 Includes deaths that were related to recent ingestion of one or more prescription opioids.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.
3 Counts for 2015 are preliminary.

TABLE 4. COCAINE-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014 AND YTD 2015 THROUGH MARCH.[1,2,3]

	COCAINE-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	YTD 2015
MARYLAND	248	157	162	135	148	153	154	198	58
WESTERN AREA	29	16	11	12	22	21	26	26	7
GARRETT	0	0	0	1	0	0	0	0	0
ALLEGANY	2	1	1	1	0	2	2	2	2
WASHINGTON	3	1	0	3	3	5	6	6	3
FREDERICK	4	2	3	3	7	2	5	8	1
MONTGOMERY	20	12	7	4	12	12	13	10	1
CENTRAL AREA	178	108	124	93	97	108	102	138	44
BALTIMORE CITY	106	57	72	45	48	59	47	82	27
BALTIMORE COUNTY	30	25	25	23	19	17	27	28	11
ANNE ARUNDEL	26	18	15	13	18	13	12	19	3
CARROLL	2	2	3	6	3	7	7	2	1
HOWARD	6	1	4	1	5	7	5	3	2
HARFORD	8	5	5	5	4	5	4	4	0
SOUTHERN AREA	20	20	15	19	15	16	13	22	4
CALVERT	1	2	1	3	2	3	0	2	0
CHARLES	3	3	2	2	1	1	0	0	0
ST. MARY'S	1	1	1	2	0	2	1	1	1
PRINCE GEORGE'S	15	14	11	12	12	10	12	19	3
EASTERN SHORE AREA	21	13	12	11	14	8	13	12	3
CECIL	5	3	4	3	7	2	5	4	0
KENT	1	2	0	1	0	0	0	1	1
QUEEN ANNE'S	3	0	2	0	1	0	0	0	0
CAROLINE	0	0	1	0	1	1	0	1	0
TALBOT	4	0	1	0	0	0	3	0	1
DORCHESTER	1	1	0	1	1	1	1	0	0
WICOMICO	2	5	2	3	3	4	3	4	1
SOMERSET	1	0	1	1	0	0	0	0	0
WORCESTER	4	2	1	2	1	0	1	2	0

1 Includes deaths that were related to recent use of cocaine.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.
3 Counts for 2015 are preliminary.

TABLE 5. ALCOHOL-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014 AND YTD 2015 THROUGH MARCH.[1,2,3]

	ALCOHOL-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	YTD 2015
MARYLAND	187	175	162	160	161	195	239	270	68
WESTERN AREA	29	34	25	25	32	27	34	45	10
GARRETT	1	2	1	1	1	0	2	1	0
ALLEGANY	5	0	3	4	2	4	2	3	1
WASHINGTON	3	10	4	5	4	3	6	11	3
FREDERICK	5	7	8	5	9	5	11	12	2
MONTGOMERY	15	15	9	10	16	15	13	18	4
CENTRAL AREA	114	96	100	94	99	126	154	166	51
BALTIMORE CITY	56	41	54	39	44	71	86	86	31
BALTIMORE COUNTY	38	23	22	29	22	24	32	39	8
ANNE ARUNDEL	12	12	9	10	21	15	22	18	8
CARROLL	3	4	5	4	4	4	4	9	2
HOWARD	2	7	5	3	4	6	6	6	1
HARFORD	3	9	5	9	4	6	4	8	1
SOUTHERN AREA	31	27	21	22	19	30	29	30	5
CALVERT	3	3	4	0	2	2	1	4	1
CHARLES	5	5	1	4	3	2	4	5	1
ST. MARY'S	2	1	3	2	2	3	2	3	0
PRINCE GEORGE'S	21	18	13	16	12	23	22	18	3
EASTERN SHORE AREA	13	18	16	19	11	12	22	29	2
CECIL	5	4	7	6	3	6	9	5	0
KENT	0	0	0	1	0	0	1	1	0
QUEEN ANNE'S	1	2	0	1	3	0	1	7	0
CAROLINE	1	0	1	0	1	0	1	2	0
TALBOT	0	3	0	0	0	2	2	0	0
DORCHESTER	2	0	0	1	0	1	0	0	0
WICOMICO	1	6	3	4	2	2	6	7	0
SOMERSET	0	0	1	0	1	1	1	2	2
WORCESTER	3	3	4	6	1	0	1	5	0

1 Includes deaths that were related to recent ingestion of alcohol.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.
3 Counts for 2015 are preliminary.

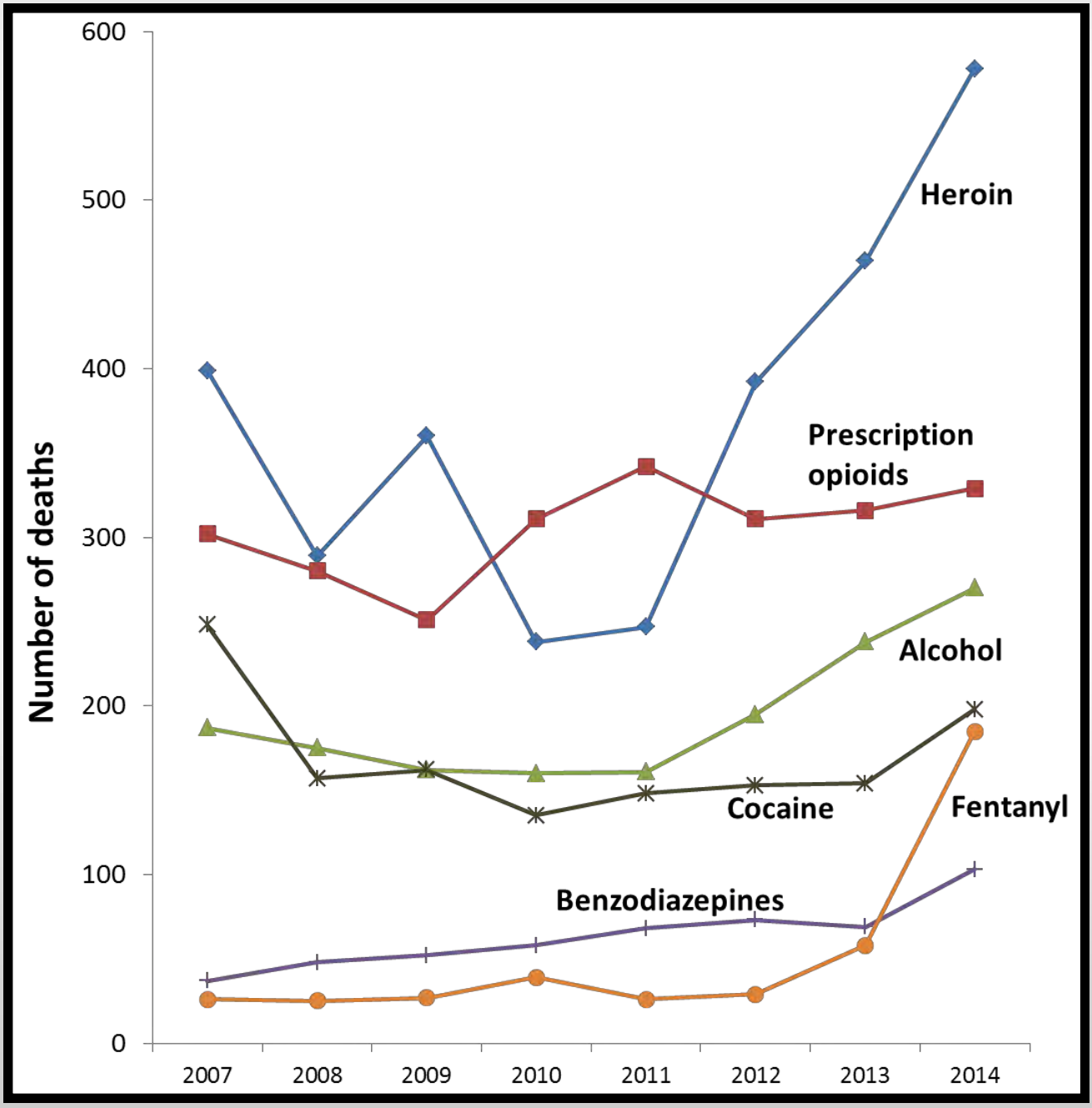
TABLE 6. FENTANYL-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014 AND YTD 2015 THROUGH MARCH.[1,2,3]

	FENTANYL-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	YTD 2015
MARYLAND	26	25	27	39	26	29	58	185	73
WESTERN AREA	5	1	2	7	6	5	7	16	7
GARRETT	0	1	0	0	1	0	0	0	0
ALLEGANY	3	0	1	2	1	1	1	1	0
WASHINGTON	0	0	0	2	1	1	4	1	1
FREDERICK	0	0	0	2	3	1	2	6	0
MONTGOMERY	2	0	1	1	0	2	0	8	6
CENTRAL AREA	14	19	16	20	10	16	35	141	57
BALTIMORE CITY	3	2	4	4	2	4	12	71	40
BALTIMORE COUNTY	6	9	9	6	4	5	11	36	12
ANNE ARUNDEL	3	5	3	5	2	3	6	23	2
CARROLL	0	2	0	2	0	1	2	4	1
HOWARD	1	0	0	0	0	2	3	5	1
HARFORD	1	1	0	3	2	1	1	2	1
SOUTHERN AREA	1	1	4	3	3	2	10	16	5
CALVERT	0	1	1	0	1	0	0	5	1
CHARLES	0	0	0	0	1	1	3	1	1
ST. MARY'S	0	0	1	1	1	0	1	3	0
PRINCE GEORGE'S	1	0	2	2	0	1	6	7	3
EASTERN SHORE AREA	6	4	5	9	7	6	6	12	4
CECIL	2	1	0	2	2	0	0	1	1
KENT	0	0	0	0	0	0	0	1	0
QUEEN ANNE'S	1	0	0	0	0	0	1	1	0
CAROLINE	0	0	0	1	4	0	0	0	0
TALBOT	1	1	0	1	0	1	0	2	1
DORCHESTER	0	0	0	2	0	0	2	0	0
WICOMICO	1	1	3	1	1	4	1	7	0
SOMERSET	1	1	0	1	0	0	2	0	1
WORCESTER	0	0	2	1	0	1	0	0	1

1 Includes deaths that were related to recent use of pharmaceutical or illicitly-produced fentanyl.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.
3 Counts for 2015 are preliminary.

Maryland Department of Health and Mental Hygiene
Larry Hogan, Governor – Boyd Rutherford, Lt. Governor – Van Mitchell, Secretary
May, 2015

Drug- and Alcohol-Related Intoxication Deaths in Maryland, 2014



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METHODS

Introduction

The purpose of this report is to describe trends in the number of unintentional drug- and alcohol-related intoxication deaths occurring in Maryland during the period 2007-2014. Trends are examined by age at time of death, race/ethnicity, gender, place of death and substances related to death.

This report was prepared using drug and alcohol intoxication data housed in a registry developed and maintained by the Vital Statistics Administration (VSA) of the Maryland Department of Health and Mental Hygiene (DHMH). The methodology for reporting on drug-related intoxication deaths in Maryland was developed by VSA with assistance from the DHMH Behavioral Health Administration, the Office of the Chief Medical Examiner (OCME) and the Maryland Poison Control Center. Assistance was also provided by authors of a Baltimore City Health Department report on intoxication deaths.[1]

Sources of data

The data included in this report were obtained mainly from OCME. Maryland law requires OCME to investigate all deaths occurring in the State that result from violence, suicide, casualty, or take place in a suspicious, unexpected or unusual manner. In these instances, information compiled during an investigation is used to determine the cause or causes of death. Depending on the circumstances, an investigation may involve a combination of scene examination, review of witness reports, review of medical and police reports, autopsy, and toxicological analysis of autopsy specimens. Toxicological analysis is routinely performed when there is suspicion that a death was the result of drug or alcohol intoxication.

A small number of additional intoxication deaths that occurred among U.S. military personnel were investigated by federal investigators rather than by OCME. These cases were identified through death records maintained by VSA and information available on these cases was included in the registry.

Information on place of death and race/ethnicity was missing for a small number of records provided by OCME and was obtained through death certificate data. Death certificate data were also used to update demographic information on records that were amended after the records were filed with the Division of Vital Records.

[1] Office of Epidemiology and Planning, Baltimore City Health Department. Intoxication Deaths Associated with Drugs of Abuse or Alcohol. Baltimore City, Maryland: Baltimore City Health Department. January 2007.

Identification of drug-related intoxication deaths

For the purpose of this report, an intoxication death was defined as a death that was the result of recent ingestion or exposure to alcohol or another type of drug, including heroin, cocaine, phencyclidine (PCP), prescription opioids, benzodiazepines, methamphetamines and other prescribed and unprescribed drugs. OCME provided all records to VSA for which the text of the cause of death included one or more of the following terms: poisoning, intoxication, toxicity, inhalation, ingestion, overdose, exposure, chemical, effects or use. Any records provided by OCME that were not drug-related intoxication deaths, such as deaths due to smoke inhalation, carbon monoxide intoxication, cold exposure, and chronic use of alcohol or other drugs, were excluded in the registry. Also excluded from the registry were any deaths that were not accidental or of undetermined intent. A death is considered to be of undetermined intent if the medical examiner does not have sufficient evidence to definitively determine whether a death was natural, accidental, or the result of suicide or homicide. In the case of intoxication deaths, a substantial proportion of records with an "undetermined" manner of death are likely to have been unintentional.

Analyses

Trends in the number of drug- and alcohol-related intoxication deaths occurring in Maryland during the years 2007-2014 were analyzed by age group, race/ethnicity, gender, place of occurrence of death, and substances related to the death. Changes were examined for deaths related to the following substances:

1. Opioids
    a. Heroin
    b. Prescription opioids
    c. Fentanyl
2. Cocaine
3. Benzodiazepines and related drugs
4. Alcohol

The number of deaths by place of occurrence was computed by jurisdiction and by region, categorized as follows:

Western Area	Central Area	Southern Area	Eastern Shore Area
Garrett County Allegany County Washington County Frederick County Montgomery County	Baltimore City Baltimore County Anne Arundel County Carroll County Howard County Harford County	Calvert County Charles County St. Mary's County Prince George's County	Cecil County Kent County Queen Anne's County Caroline County Talbot County Dorchester County Wicomico County Somerset County Worcester County

Trends in deaths for the period 2007-2014 are shown in Figures 1 through 30. Data on intoxication deaths related to a combination of substances are shown in Figures 31 through 33. Counts of the number of total deaths and deaths related to classes of substances or specific substances by place of occurrence are shown in Tables 1 through 9.

Since an intoxication death may involve more than one substance, counts of deaths related to specific substances do not sum to the total number of deaths in this report.*

Opioid-related deaths

Opioids include heroin and prescription opioid drugs such as oxycodone, hydrocodone, hydromorphone, methadone, fentanyl, tramadol and codeine. In this report, an opioid was considered to be associated with a death if a specific opioid drug was indicated in the cause of death. If the cause of death did not identify a specific drug (e.g., the cause of death indicated "Narcotic Intoxication"), OCME toxicology results were reviewed to determine whether the presence of any opioid drug was detected. If so, the cause of death was considered to be opioid-related, regardless of the level of the drug.

Since heroin is rapidly metabolized into morphine, the records of many deaths that are likely to be heroin-related do not list "heroin" as a cause of death, and therefore cannot be identified using only information listed in the cause of death. Therefore, a combination of information contained in the cause of death field, toxicology results, and scene investigation notes is used to identify heroin-related deaths. In this report, a death was considered to be heroin-related if:

1. "Heroin" was mentioned in the cause of death; or
2. The toxicology screen showed a positive result for 6-monacetylmorphine; or
3. The toxicology screen showed positive results for both morphine and quinine; or
4. The cause of death was nonspecific and the scene investigation notes indicated that heroin was likely to have been involved in the death; or
5. The death was associated with morphine through either cause of death information or toxicology results, unless information contained in the investigative report did not support this assumption.

Prescription opioid-related deaths were defined as deaths that involve one or more prescription opioids, as identified through cause of death information when a specific drug was indicated and through toxicology results when the cause of death was nonspecific. Prescription opioids include buprenorphine, codeine, hydrocodone, hydromorphone, meperidine, methadone, morphine, oxycodone, pentazocine, propoxyphene, tramadol and prescribed fentanyl. Prescribed fentanyl is an opioid analgesic approved for patient use to manage severe or chronic pain. There is also a form of fentanyl that is produced illicitly in clandestine laboratories and mixed with (or substituted for) heroin or other illicit drugs. Although in some cases it was difficult to determine whether a prescribed or illicit form of

fentanyl was related to a death, the count of prescription opioid-related drugs in this report includes only fentanyl deaths involving a prescription form of the drug.

Benzodiazepine-related deaths

Benzodiazepines are a class of depressants that include drugs such as alprazolam, clonazepam, diazepam and multiple related drugs. The category of benzodiazepine-related drugs in this report includes both benzodiazepines and related drugs, such as zolpidem, which have similar sedative effects.

SUMMARY OF TRENDS IN DEATHS—2007 TO 2014

Total alcohol and drug intoxication deaths

- A total of 1039 drug- and alcohol-related intoxication deaths occurred in Maryland in 2014, a 21% increase over the number of deaths in 2013 and a 60% increase since 2010, after which time the number of deaths began to rise.
- Intoxication deaths have been increasing among all age groups, but are increasing most rapidly among individuals 55 years of age and above.
- The number of deaths increased by 38% among African Americans, 15% among Whites, and 43% among Hispanics between 2013 and 2014. Although the number of deaths has increased among all three groups since 2010, the increase has been greatest among African Americans; the number of deaths doubled within this time period.
- Deaths increased by 27% among men and 8% among women between 2013 and 2014.
- Although the number of deaths has generally been increasing in all regions of the State since 2010, there are several small jurisdictions where the number of deaths has either remained stable, or declined.

Opioid-related deaths

- Eight hundred eighty-seven (887), or 85.7% of all intoxication deaths that occurred in Maryland in 2014 were **opioid**-related. **Opioid**-related deaths included deaths related to **heroin**, **prescription opioids**, and nonpharmaceutical **fentanyl**.
- The number of **opioid**-related deaths increased by 22% between 2013 and 2014, and by 76% between 2010 and 2014.
- Large increases in the number of **heroin** and **fentanyl**-related deaths were responsible for the overall increase in **opioid**-related deaths. The number of **heroin**-related deaths increased by 25% between 2013 and 2014 (from 464 to 578), and there was over a three-fold increase in the number of **fentanyl**-related deaths (from 58 to 185).
- The number of **heroin**-related deaths in Maryland more than doubled between 2010 and 2014. Deaths have increased among all age groups, whites and African Americans, men and women, and in all regions of the State.
- Twenty-five percent of **heroin**-related deaths in 2014 occurred in combination with **alcohol**, 22% with **cocaine,** and 18% with **fentanyl**.
- The overall number of **prescription opioid**-related deaths has remained relatively stable in recent years. However, deaths have been increasing among African Americans and among individuals ages 55 years and above.

- The number of **fentanyl**-related deaths began increasing in late 2013 as a result of overdoses involving nonpharmaceutical **fentanyl,** that is, nonprescription **fentanyl** produced in clandestine laboratories and mixed with, or substituted for, heroin or other illicit substances. **Fentanyl** is many times more potent than heroin, and greatly increases the risk of an overdose death.
- **Fentanyl**-related deaths have increased among all age groups, among whites and African Americans, and among both men and women. The increase has been particularly pronounced among African Americans; there were 74 deaths in 2014 compared with only two in 2012.
- While **fentanyl**-related deaths have been increasing in all regions of the State, the increase has been most rapid in Central Maryland.

Cocaine-related deaths

- The number of **cocaine**-related deaths, which had remained relatively stable since 2008, increased by 29% between 2013 and 2014. There were 198 deaths in 2014 compared to 154 in the year before.
- The number of deaths increased most rapidly between 2013 and 2014 among African Americans and among men.
- Nearly 66% of **cocaine**-related deaths occurred in combination with **heroin**, and 20% in combination with **prescription opioids**.

Benzodiazepine-related deaths

- The number of **benzodiazepine**-related deaths increased from 69 in 2013 to 103 in 2014, an increase of nearly 50%.
- Nearly 60% of all **benzodiazepine**-related deaths occurred in combination with **prescription opioids**.

Alcohol-related deaths

- The number of **alcohol**-related deaths increased by 13% between 2013 and 2014, and by 69% since 2010. There were 270 **alcohol**-related deaths in 2014, compared with 238 in 2013 and 160 in 2010.
- Most alcohol-related deaths occur among individuals between the ages of 45 and 54 years of age, and among men. The number of deaths has been increasing in recent years among both whites and African Americans.
- More than half of all **alcohol**-related deaths occurred in combination with **heroin**.

TOTAL INTOXICATION DEATHS

Figure 1. Total Number of Drug- and Alcohol-Related Intoxication Deaths Occurring in Maryland, 2007-2014.

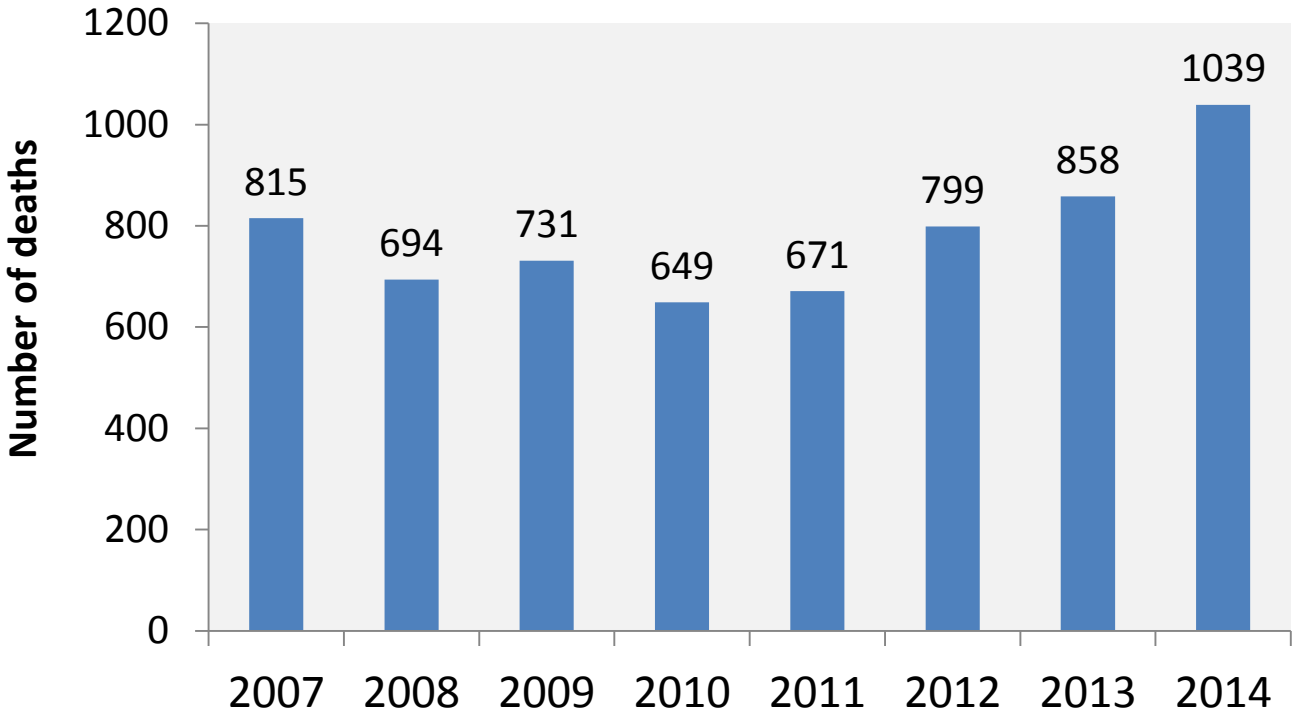


Figure 2. Total Number of Intoxication Deaths Occurring in Maryland by Place of Occurrence, 2014.

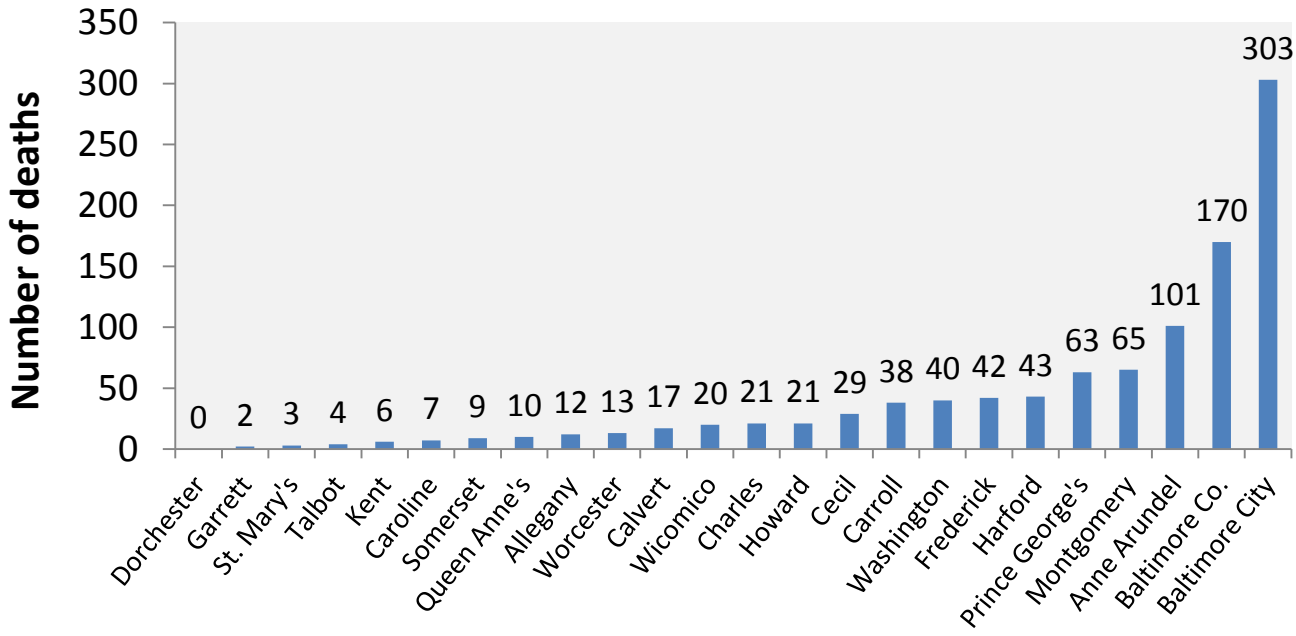
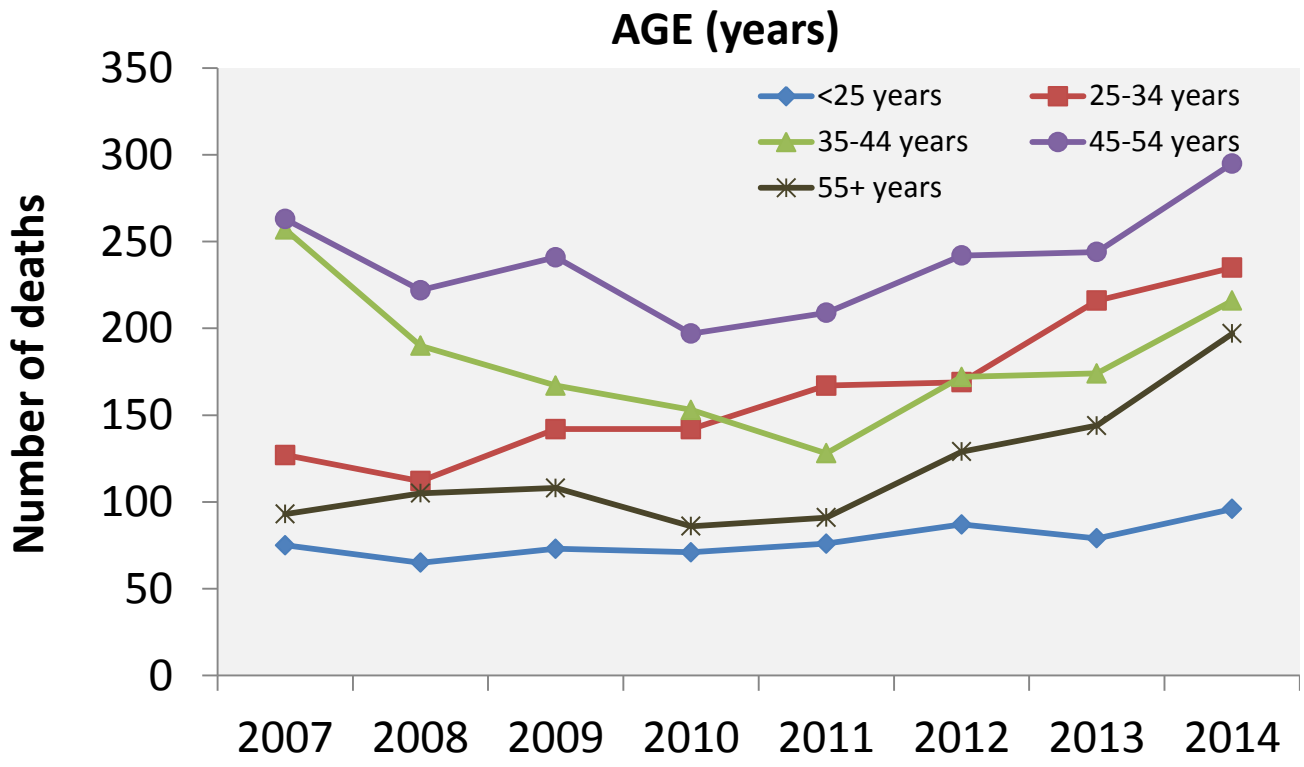
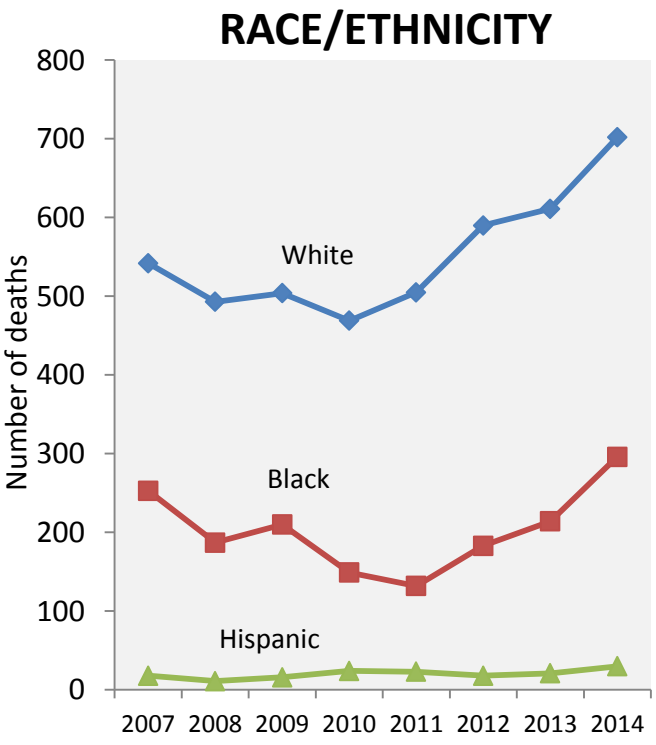


Figure 3. Total Number of Drug- and Alcohol-Related Intoxication Deaths Occurring in Maryland by Age Group, Race/Ethnicity and Gender, 2007-2014.





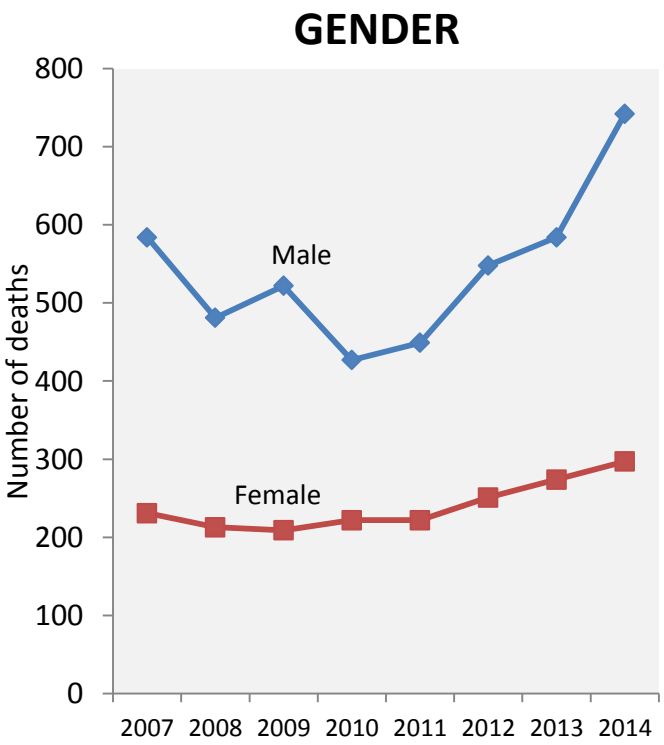
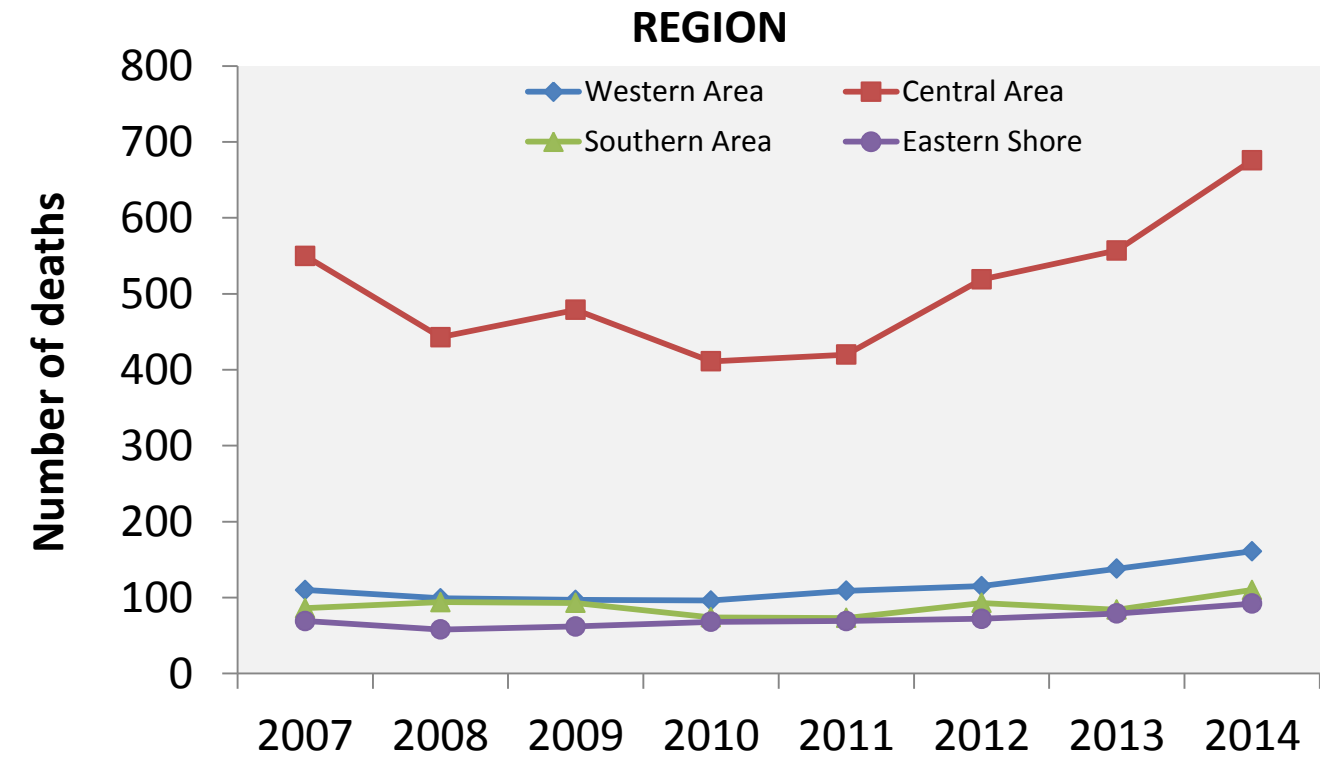
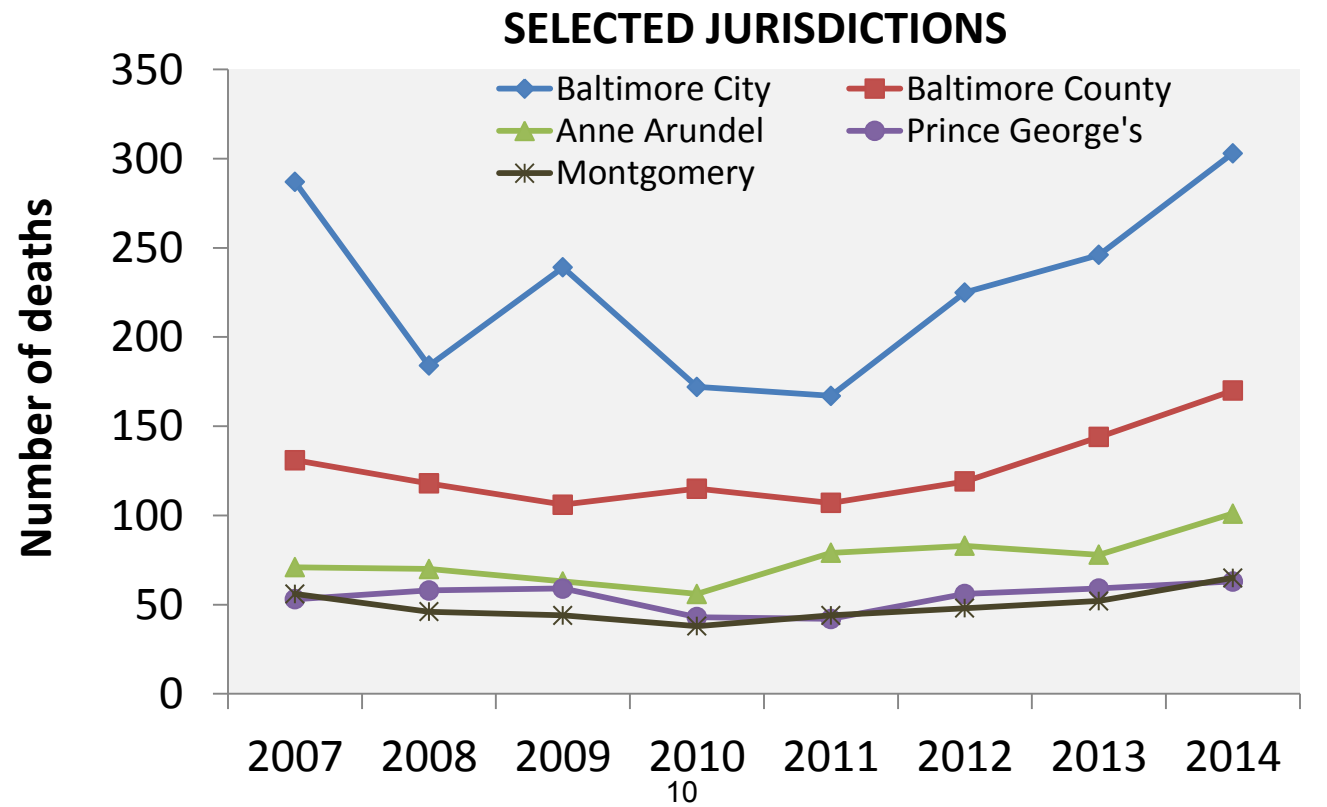


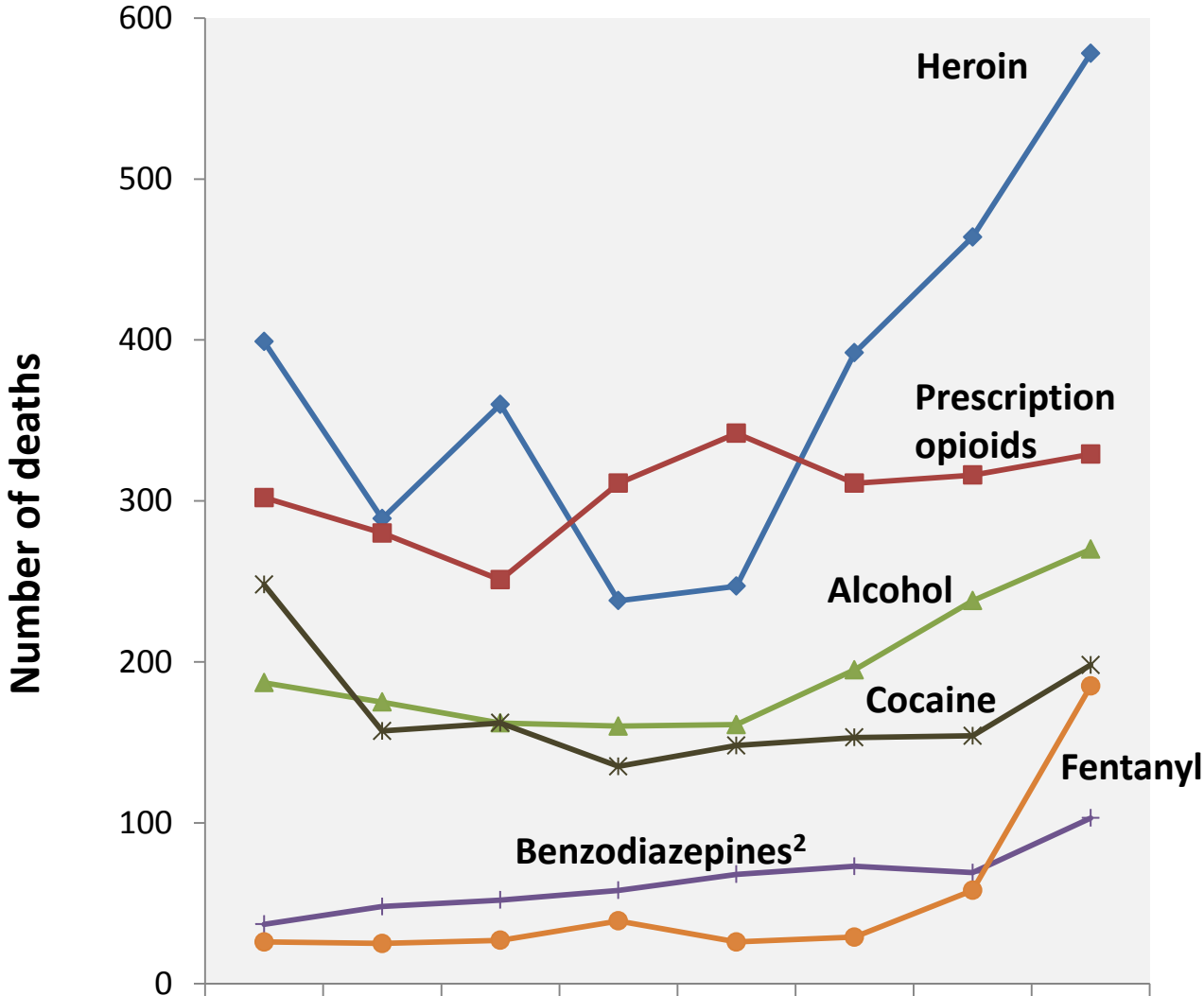
Figure 4. Total Number of Drug- and Alcohol-Related Intoxication Deaths by Place of Occurrence, Maryland, 2007-2014.





DRUG- AND ALCOHOL-RELATED INTOXICATION DEATHS BY SUBSTANCE

Figure 5. Total Number of Drug- and Alcohol-Related Intoxication Deaths by Selected Substances[1], Maryland, 2007-2014.



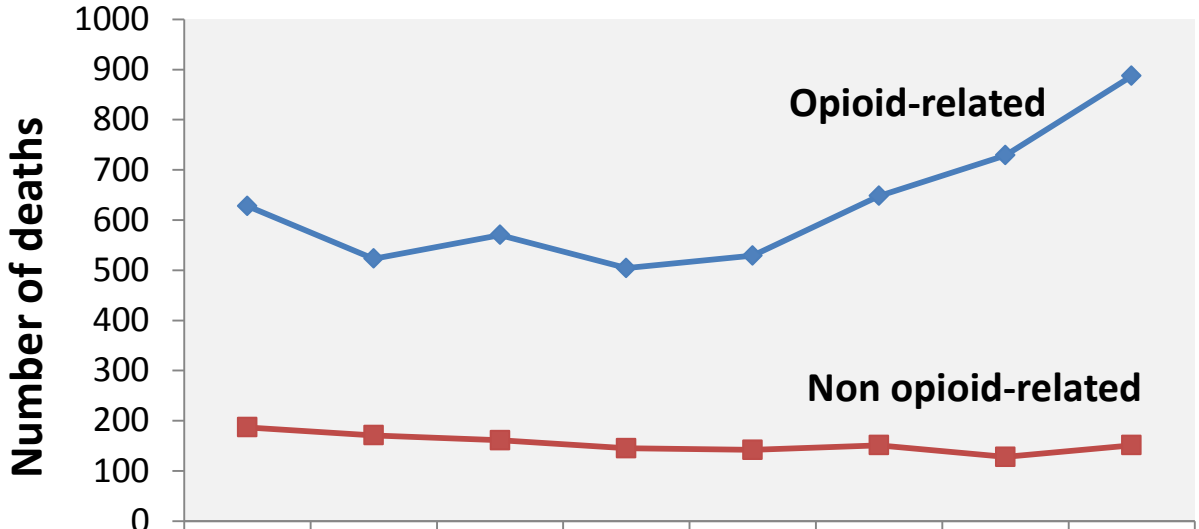
	2007	2008	2009	2010	2011	2012	2013	2014
Heroin	399	289	360	238	247	392	464	578
Prescription opioids	302	280	251	311	342	311	316	329
Alcohol	187	175	162	160	161	195	238	270
Benzodiazepines	37	48	52	58	68	73	69	103
Cocaine	248	157	162	135	148	153	154	198
Fentanyl	26	25	27	39	26	29	58	185

[1]Since an intoxication death may involve more than one substance, counts of deaths related to specific substances do not sum to the total number of deaths.

[2]Includes deaths caused by benzodiazepines and related drugs with similar sedative effects.

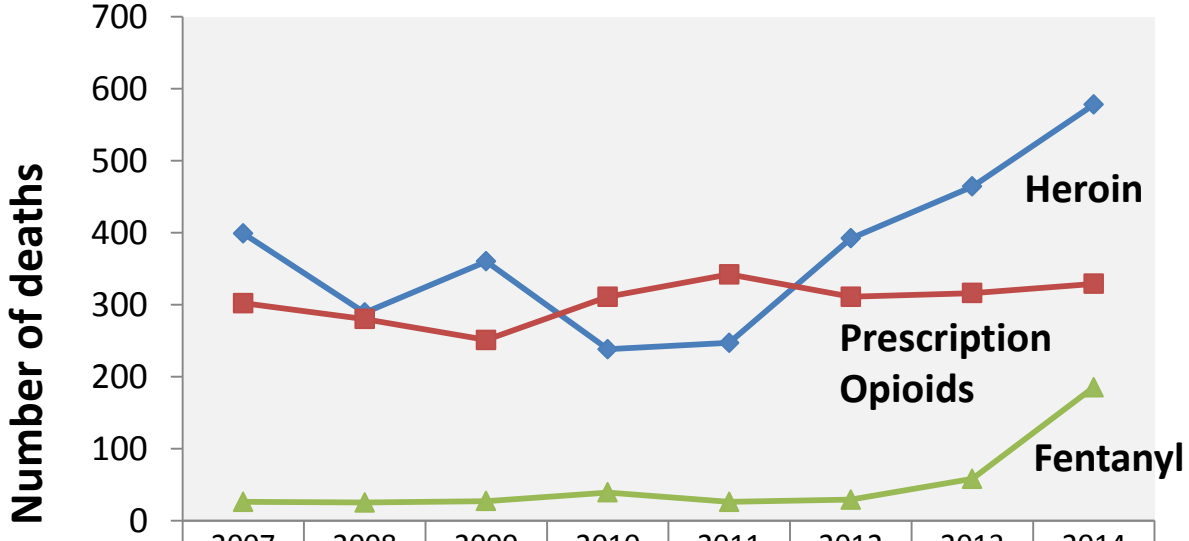
OPIOID-RELATED DEATHS

Figure 6. Total Number of Opioid* and Non-Opioid-Related Deaths Occurring in Maryland, 2007-2014.



	2007	2008	2009	2010	2011	2012	2013	2014
Opioid-related	628	523	570	504	529	648	729	887
Non opioid-related	187	171	161	145	142	151	128	151

Figure 6. Number of Opioid-Related Deaths Occurring in Maryland by Substance, 2007-2014.



	2007	2008	2009	2010	2011	2012	2013	2014
Heroin	399	289	360	238	247	392	464	578
Prescription opioids	302	280	251	311	342	311	316	329
Fentanyl	26	25	27	39	26	29	58	185

*Total opioids include heroin, prescription opioids, and illicit forms of fentanyl.

Figure 7. Number of Heroin-Related Deaths Occurring in Maryland, 2007-2014.

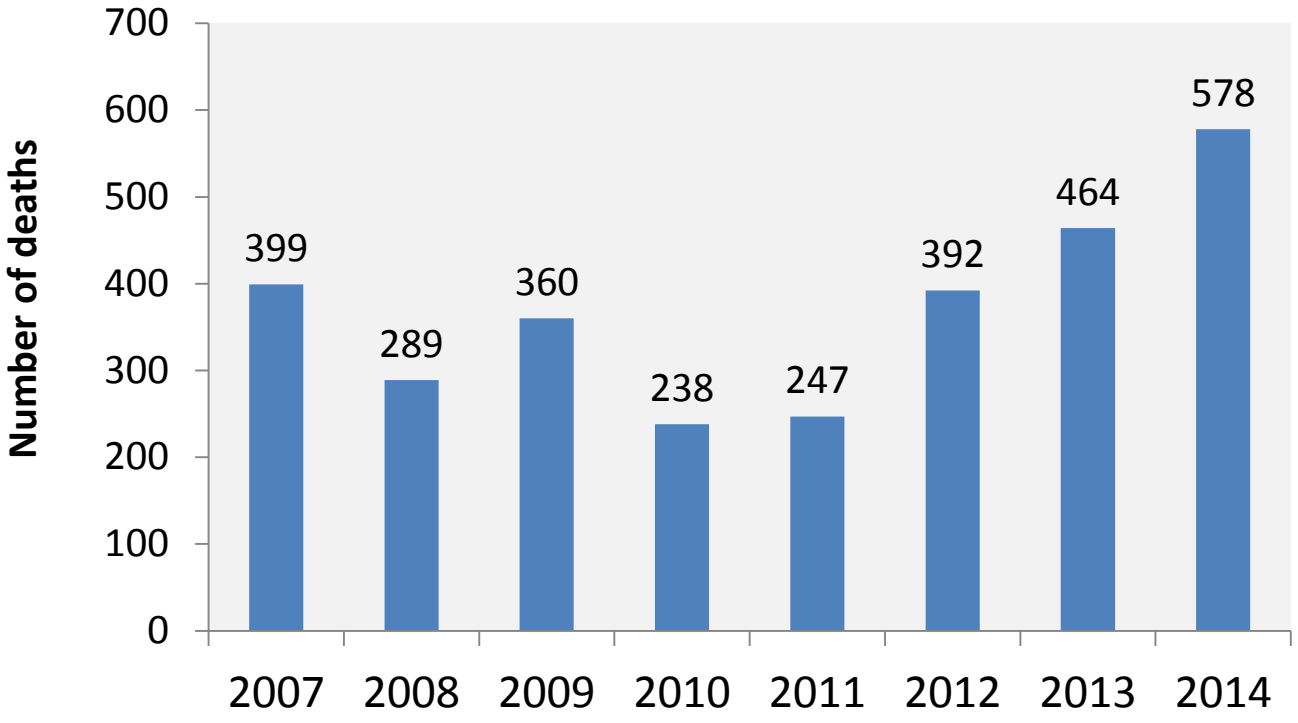


Figure 8. Number of Heroin-Related Deaths Occurring in Maryland by Place of Occurrence, 2014.

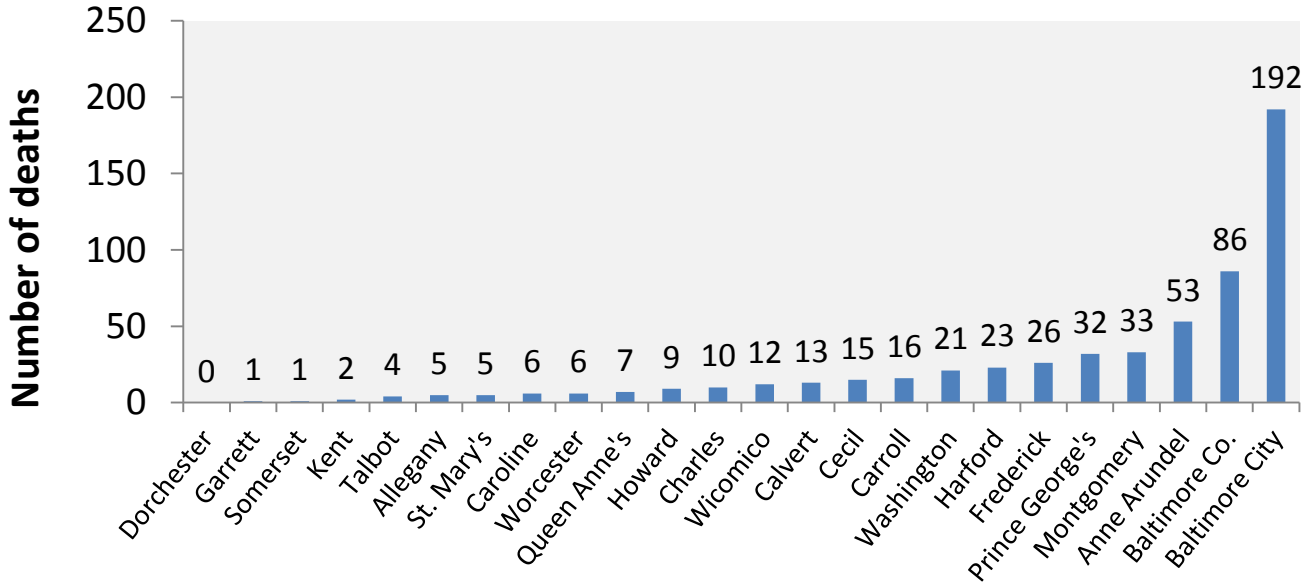
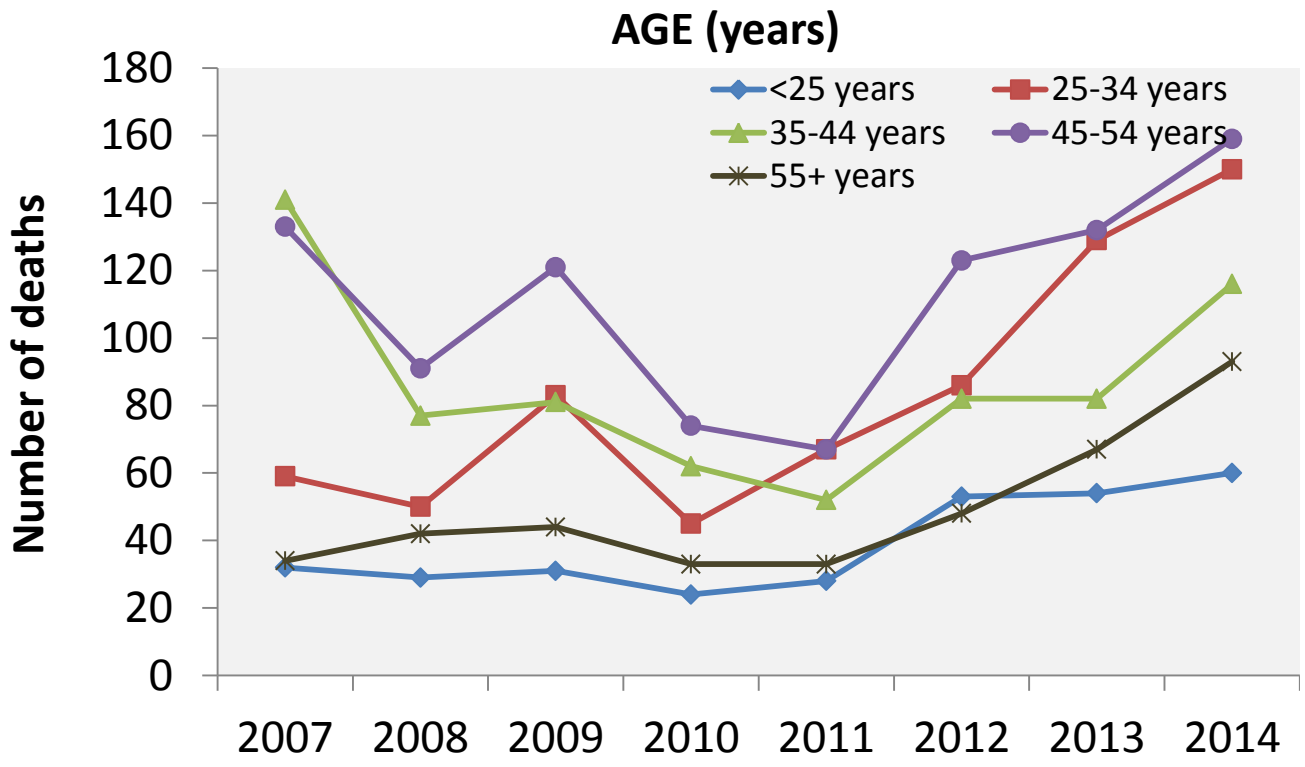
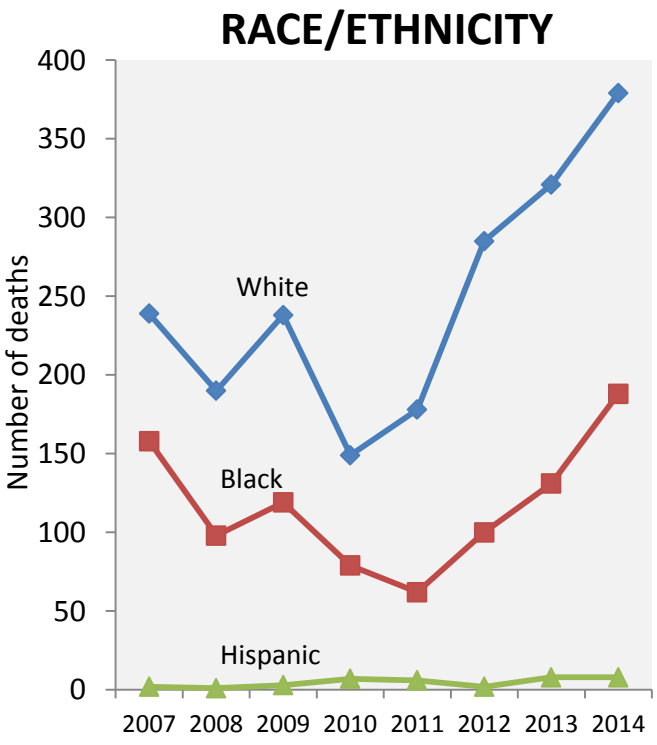


Figure 9. Number of Heroin-Related Deaths Occurring in Maryland by Age Group, Race/Ethnicity and Gender, 2007-2014.





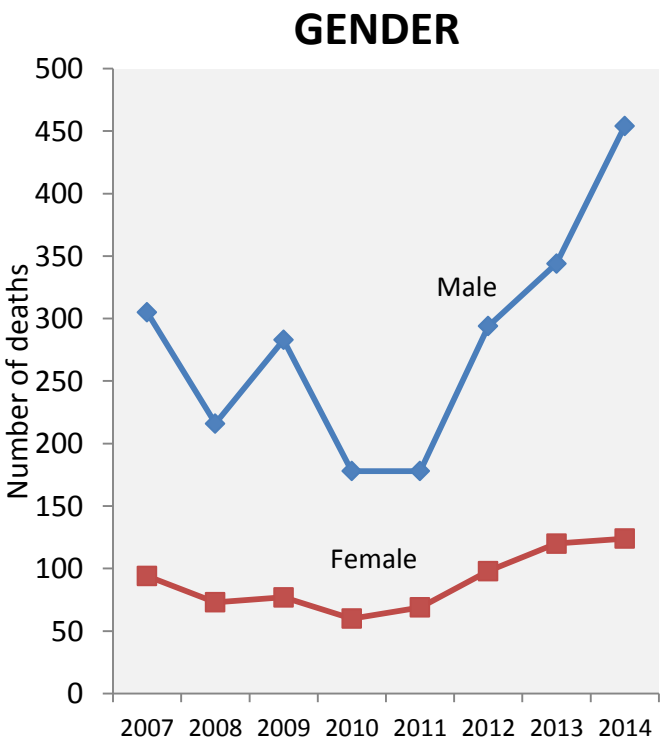
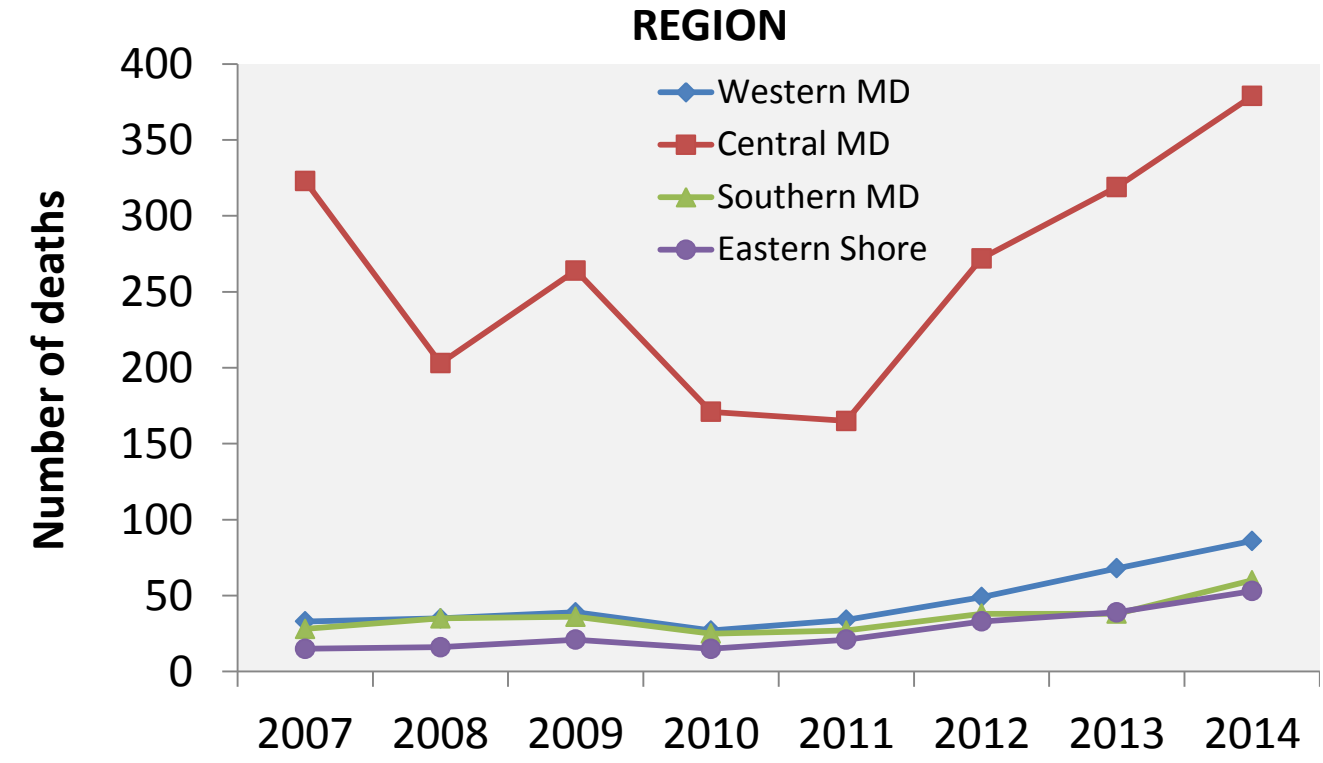


Figure 10. Number of Heroin-Related Deaths by Place of Occurrence, Maryland, 2007-2014.



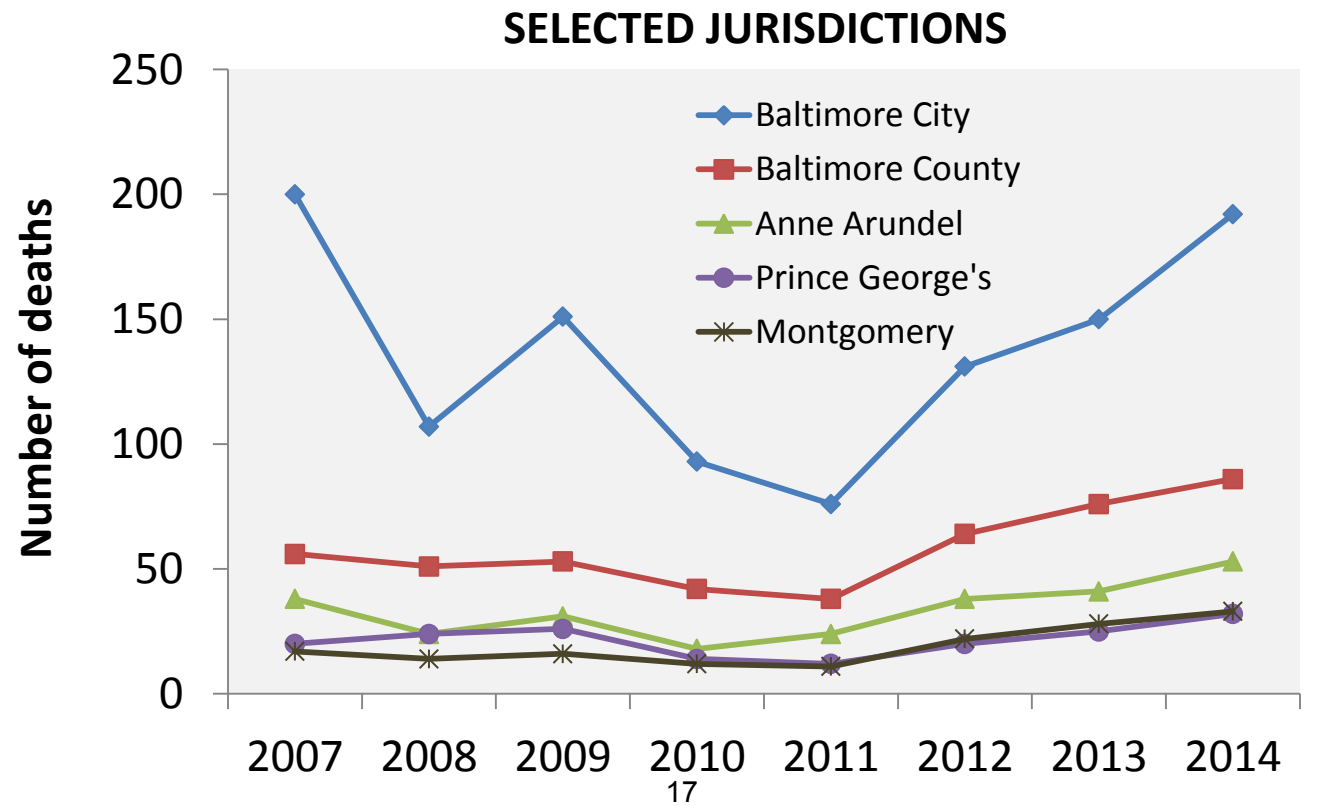
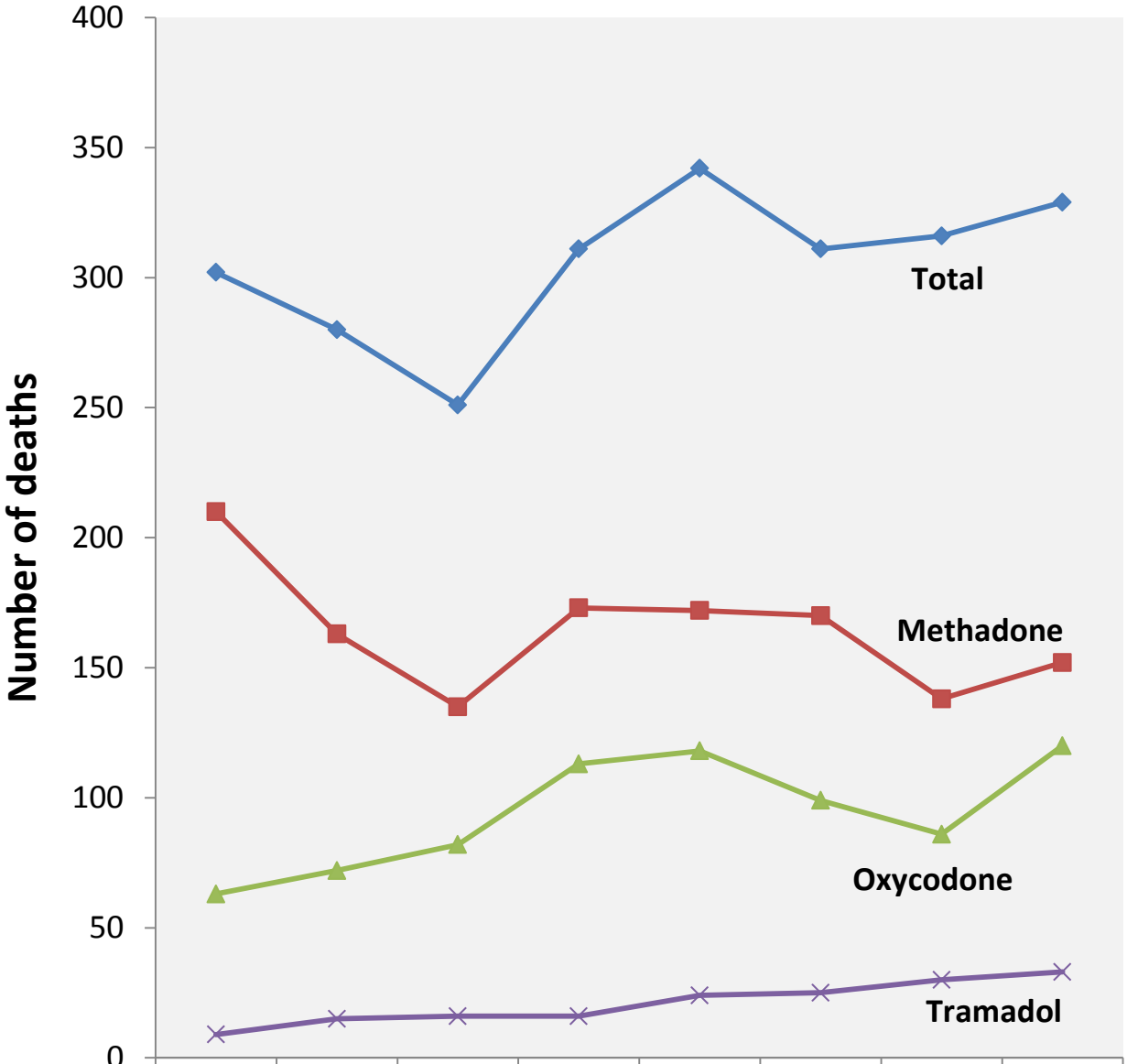


Figure 11. Number of Deaths Occurring in Maryland by Selected Prescription Opioids, 2007-2014.



	2007	2008	2009	2010	2011	2012	2013	2014
Total	302	280	251	311	342	311	316	329
Methadone	210	163	135	173	172	170	138	152
Oxycodone	63	72	82	113	118	99	86	120
Tramadol	9	15	16	16	24	25	30	33

Figure 12. Number of Prescription Opioid-Related Deaths Occurring in Maryland, 2007-2014.

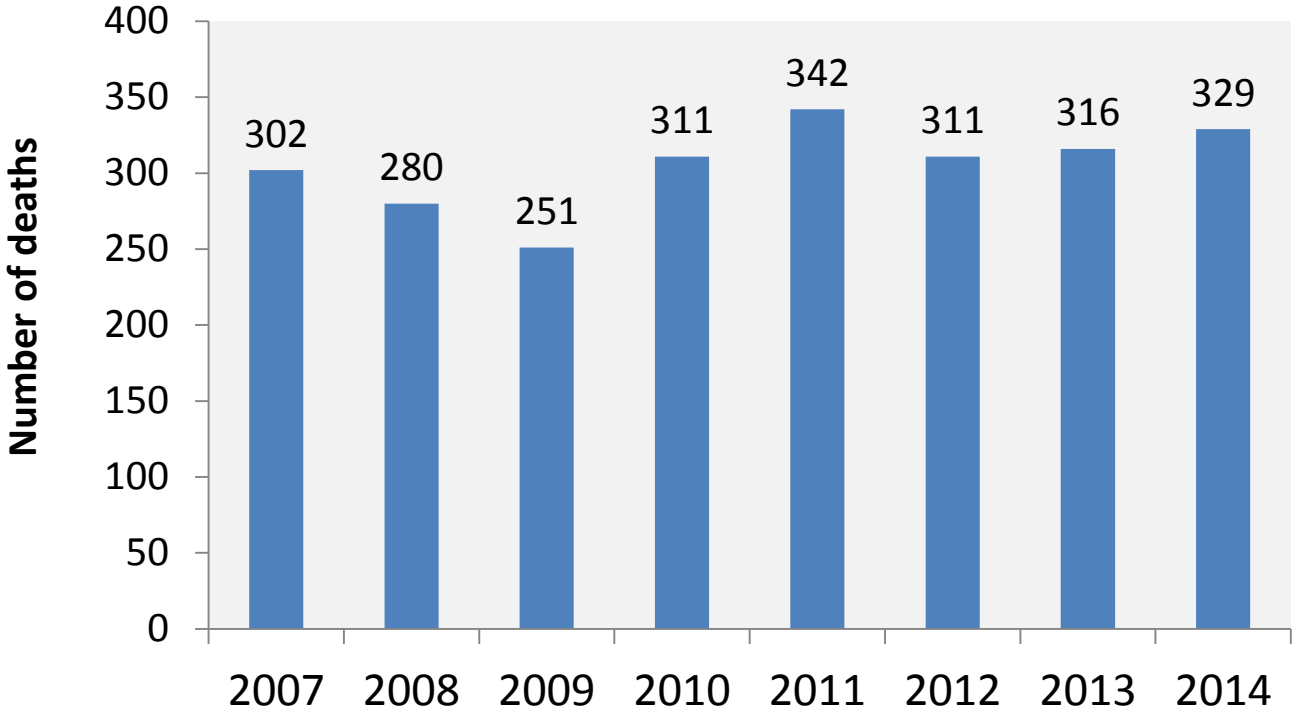


Figure 13. Number of Prescription Opioid-Related Deaths Occurring in Maryland by Place of Occurrence, 2014.

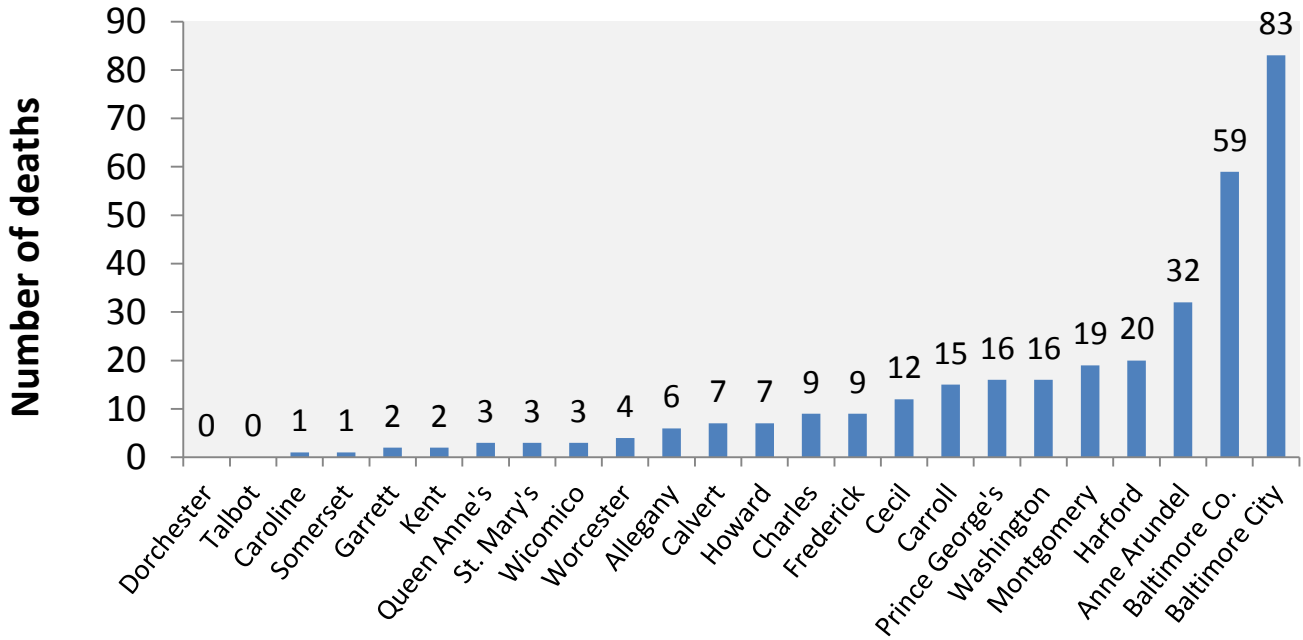
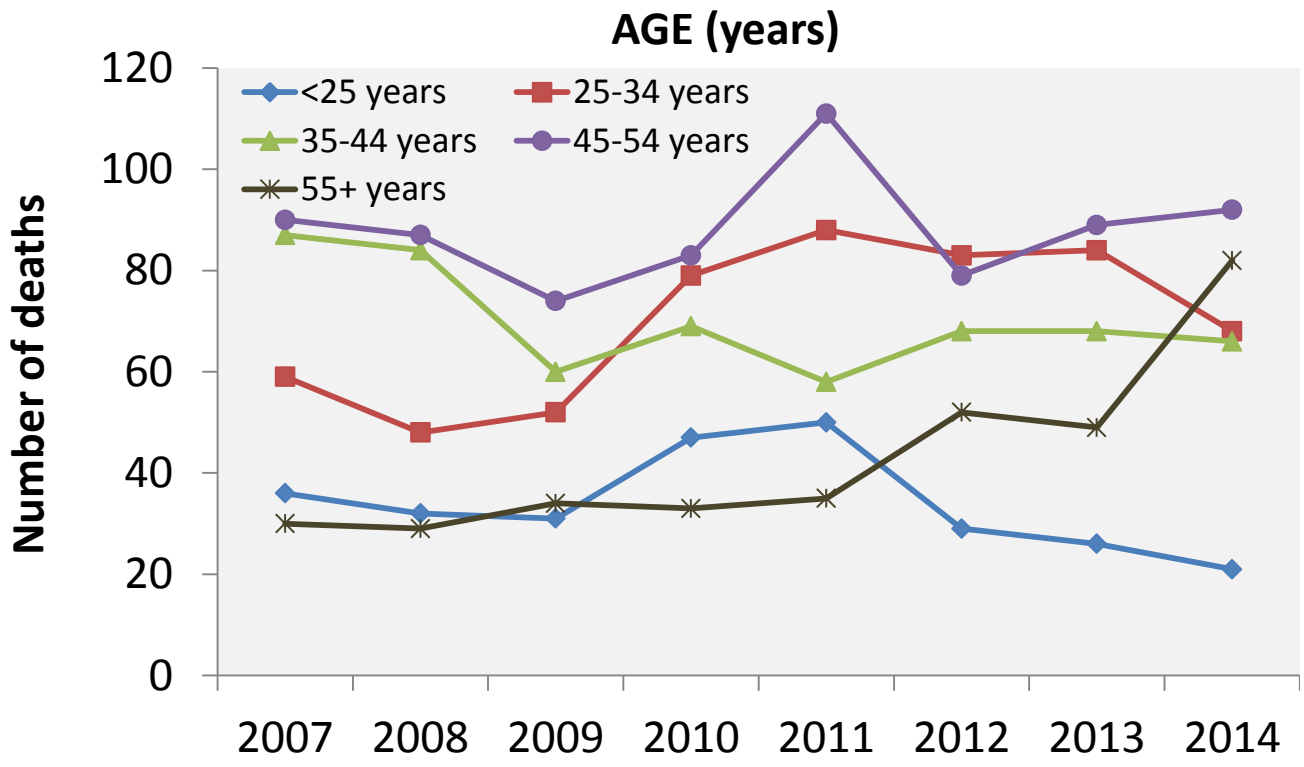
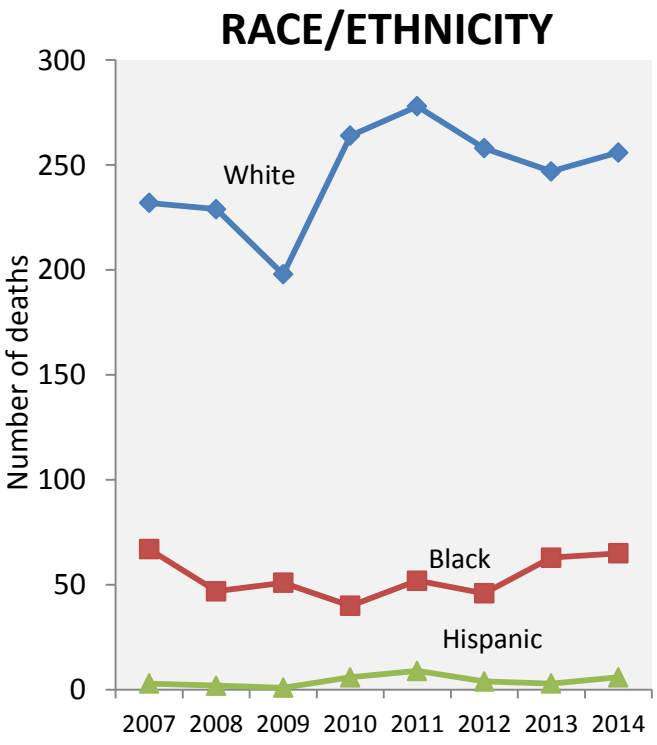


Figure 13. Number of Prescription Opioid-Related Deaths Occurring in Maryland by Age Group, Race/Ethnicity and Gender, 2007-2014.





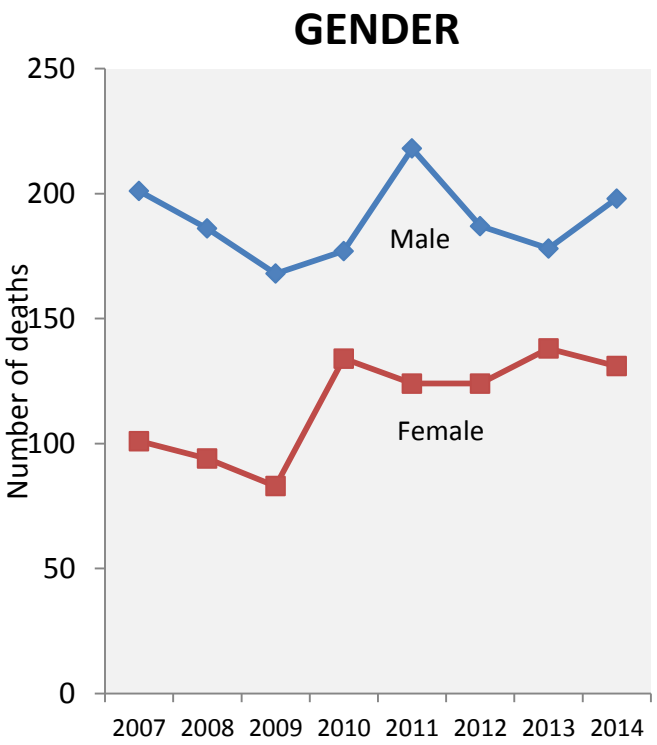
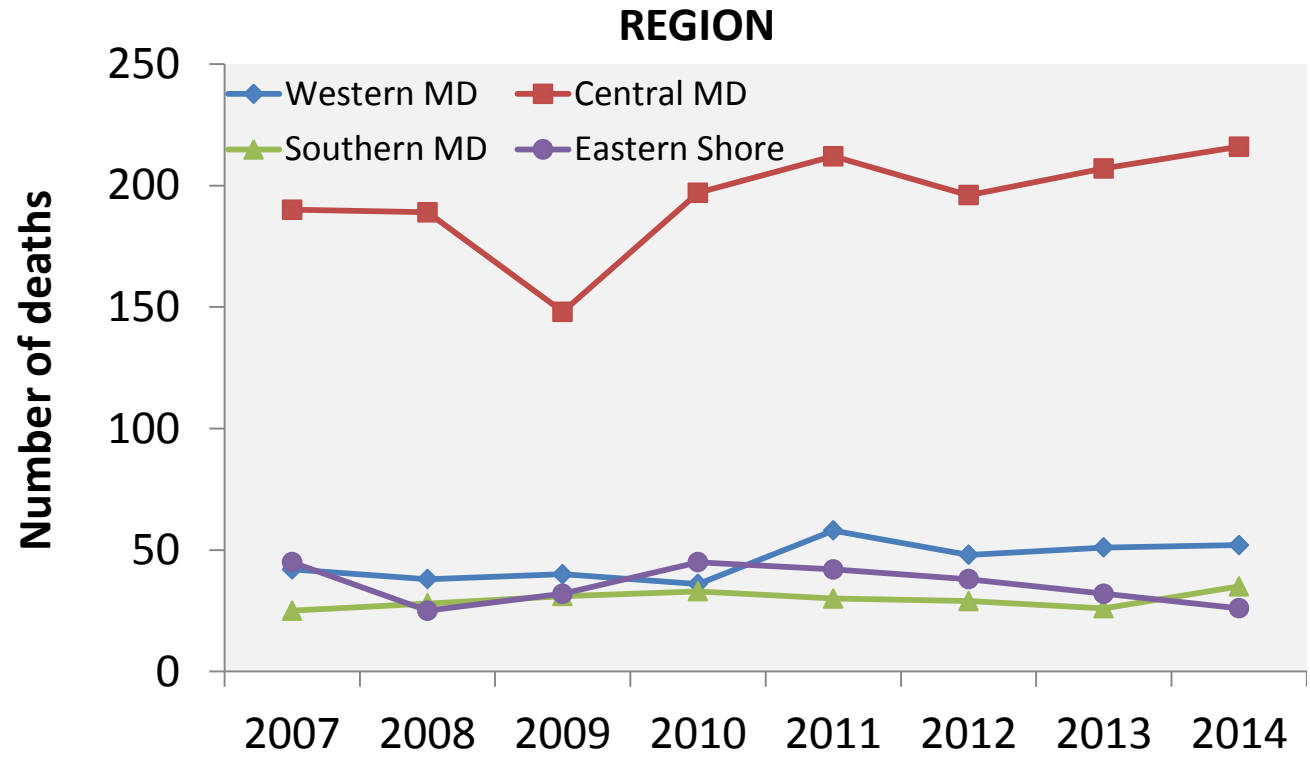


Figure 14. Number of Prescription Opioid-Related Deaths by Place of Occurrence, Maryland, 2007-2014.



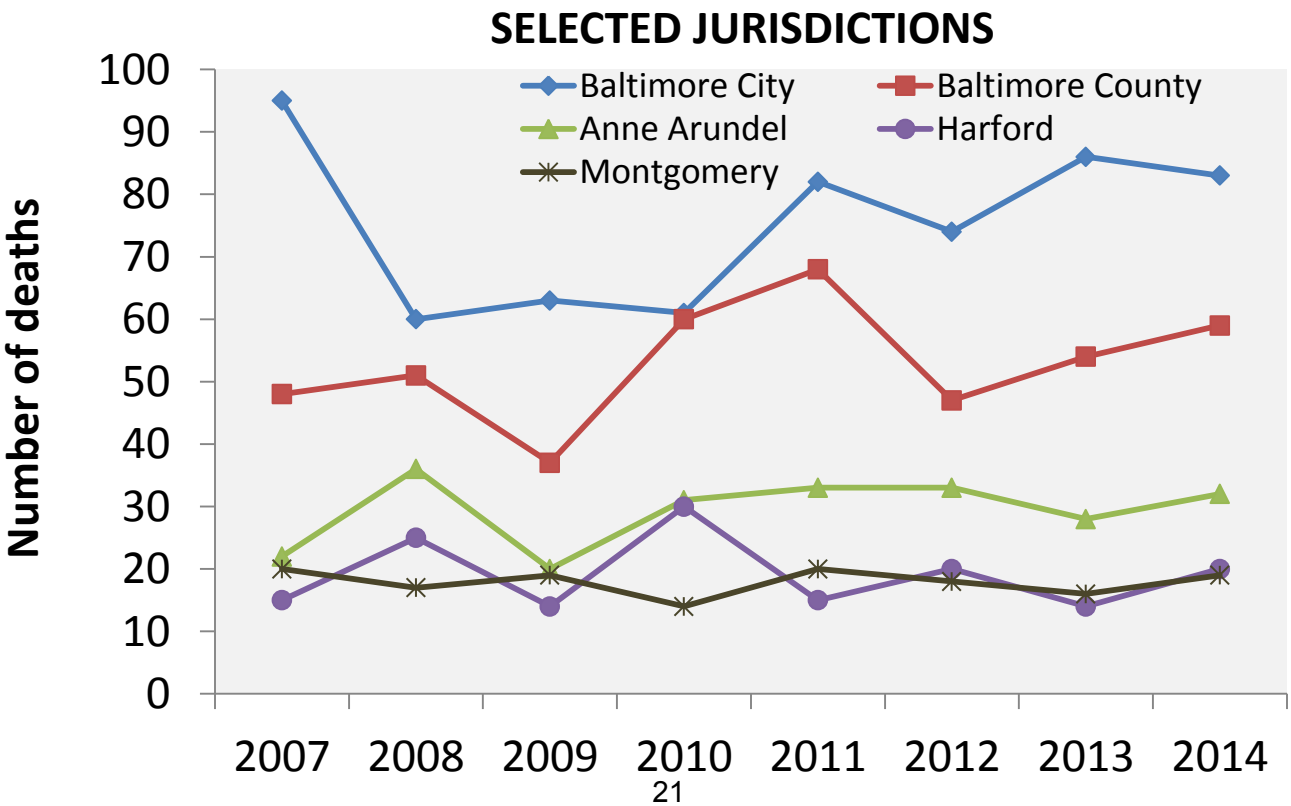


Figure 15. Number of Fentanyl-Related Deaths Occurring in Maryland, 2007-2014.

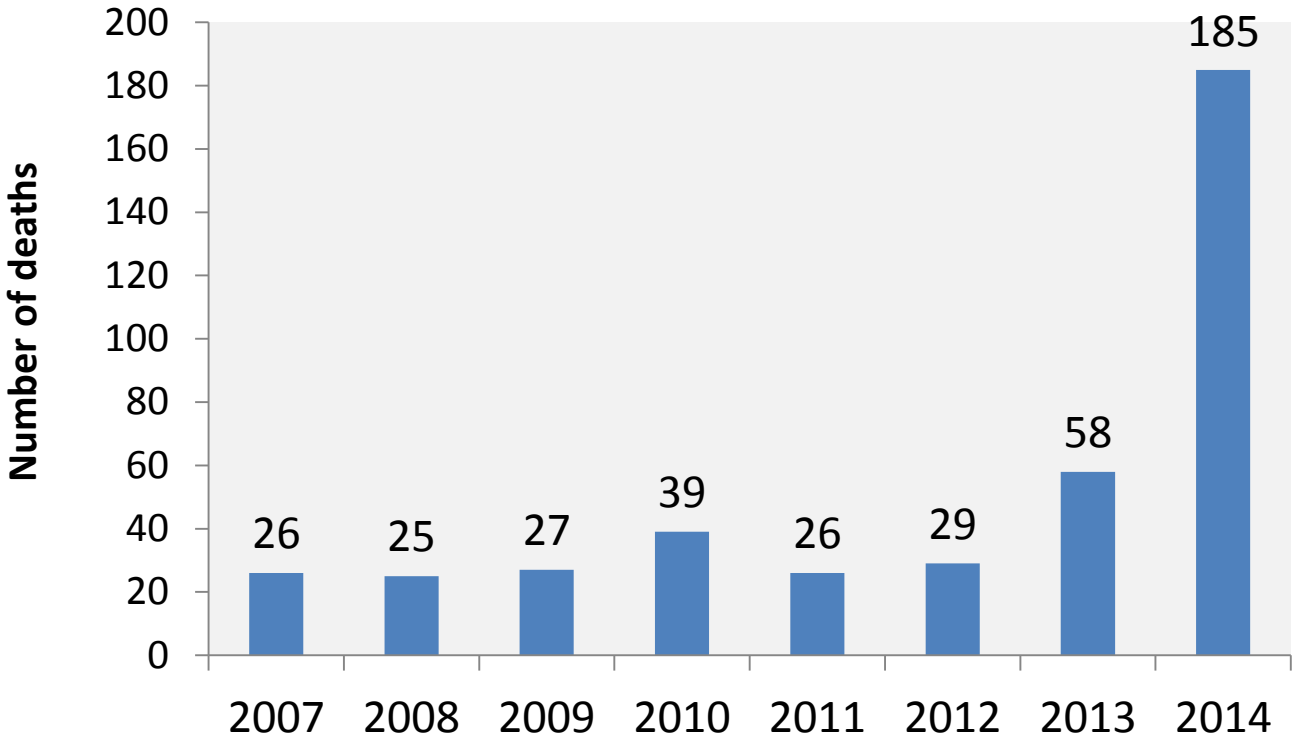


Figure 16. Number of Fentanyl-Related Deaths Occurring in Maryland by Place of Occurrence, 2014.

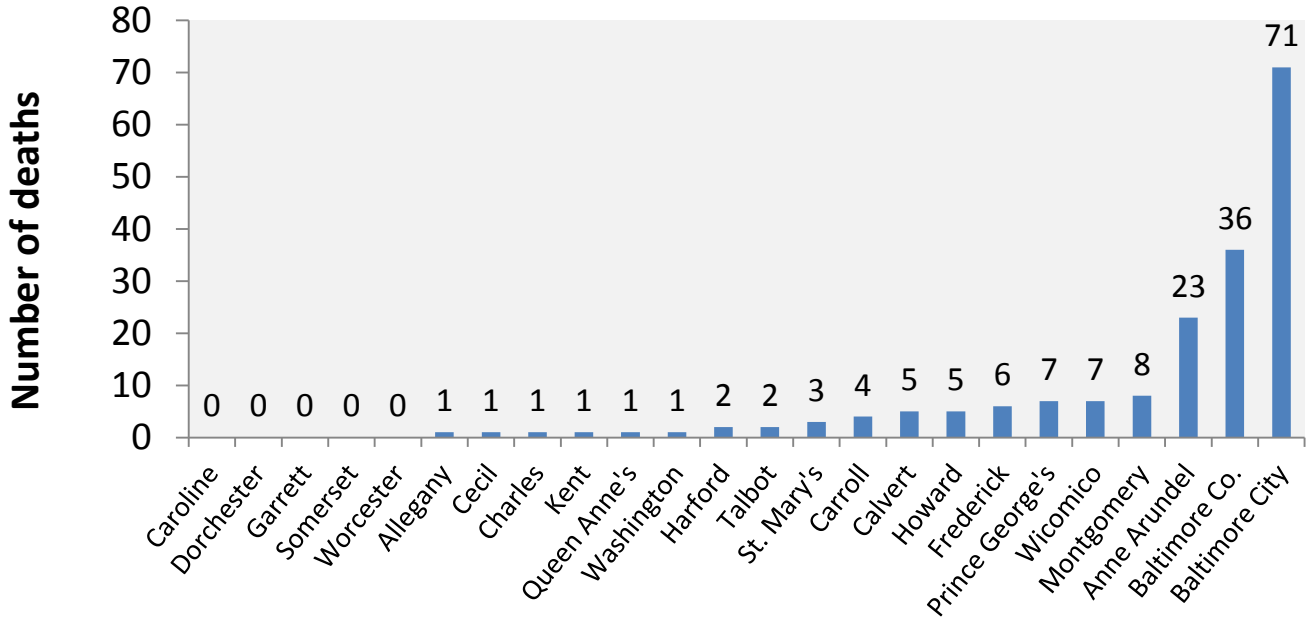
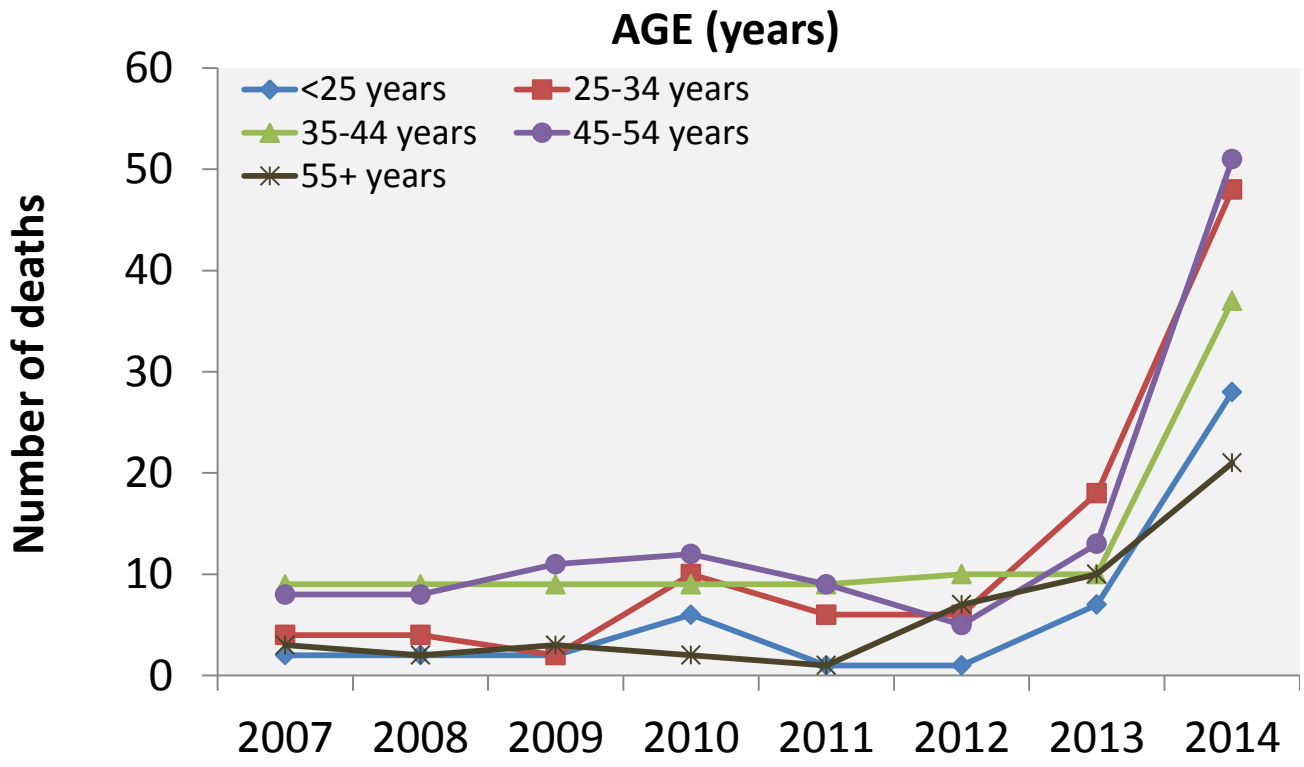
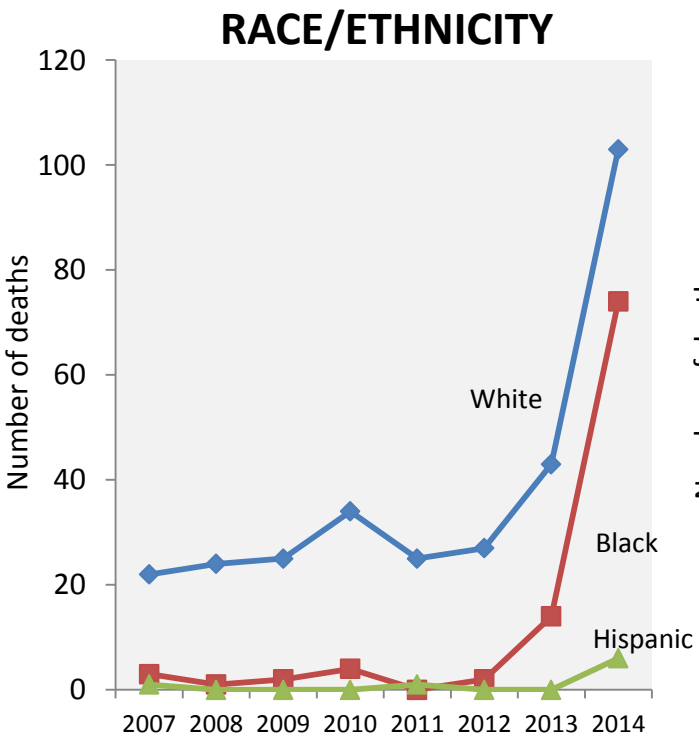


Figure 17. Number of Fentanyl-Related Deaths Occurring in Maryland by Age Group, Race/Ethnicity and Gender, 2007-2014.





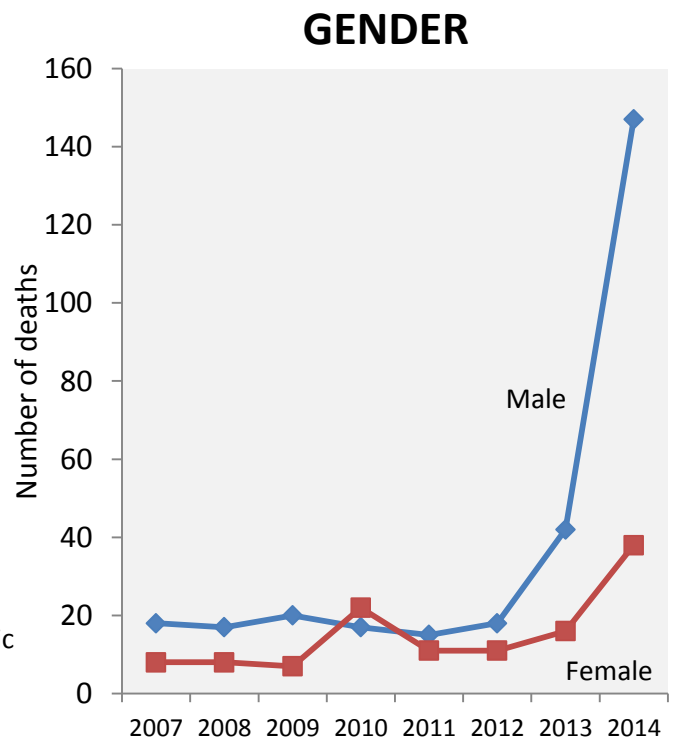
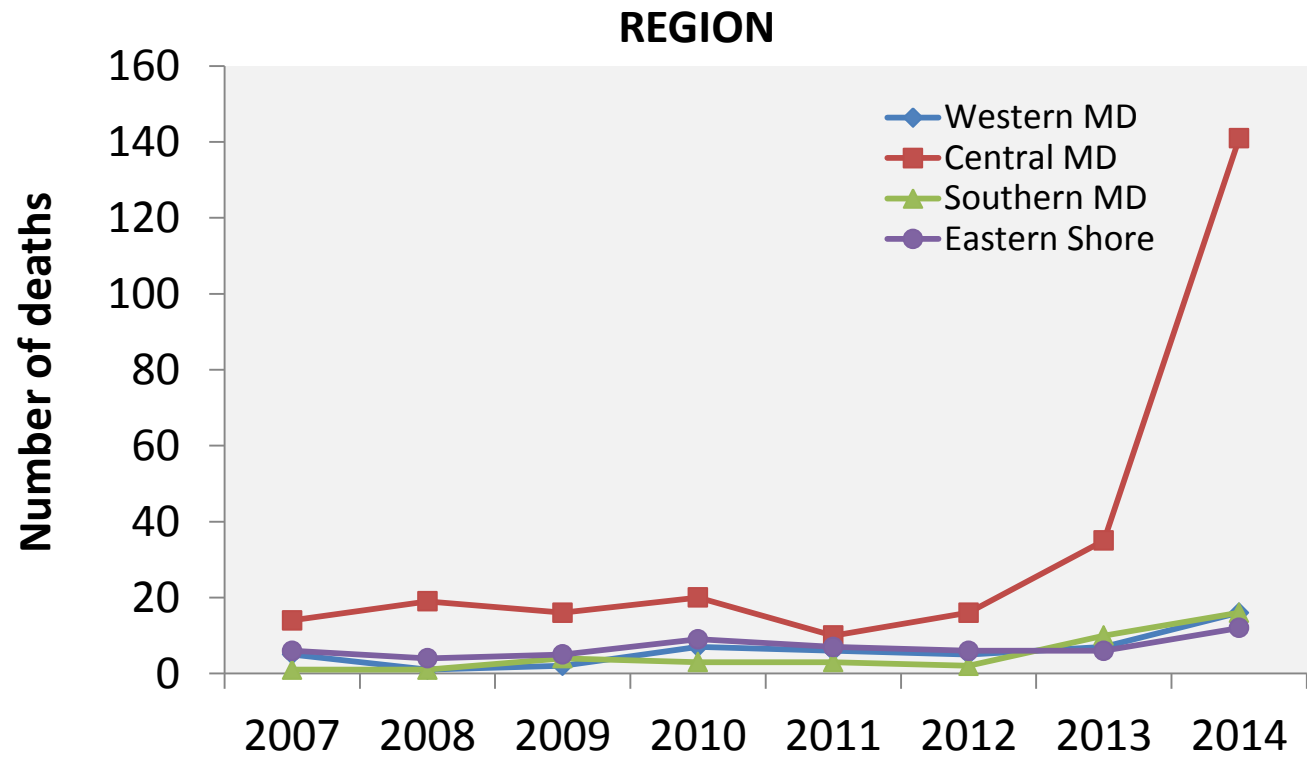
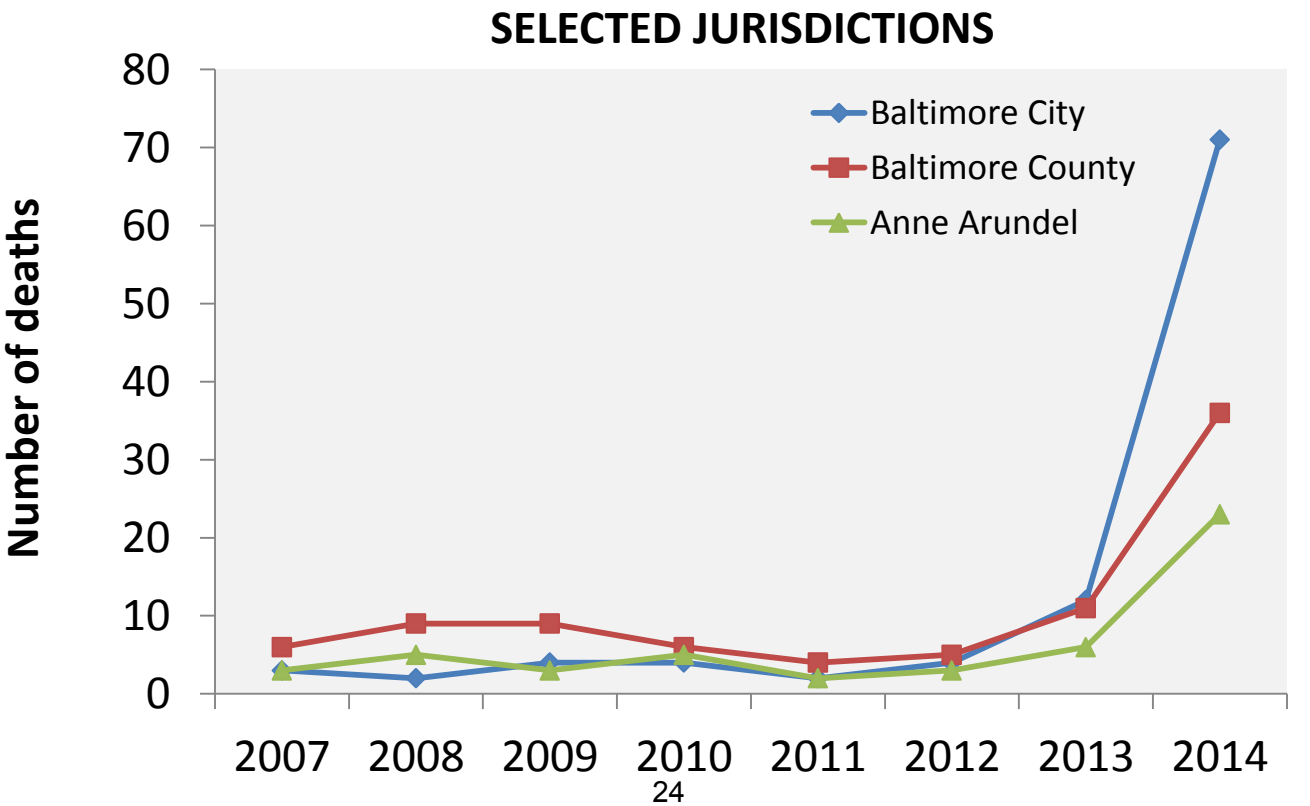


Figure 18. Number of Fentanyl-Related Deaths by Place of Occurrence, Maryland, 2007-2014.





COCAINE-RELATED DEATHS

Figure 19. Number of Cocaine-Related Deaths Occurring in Maryland, 2007-2014.

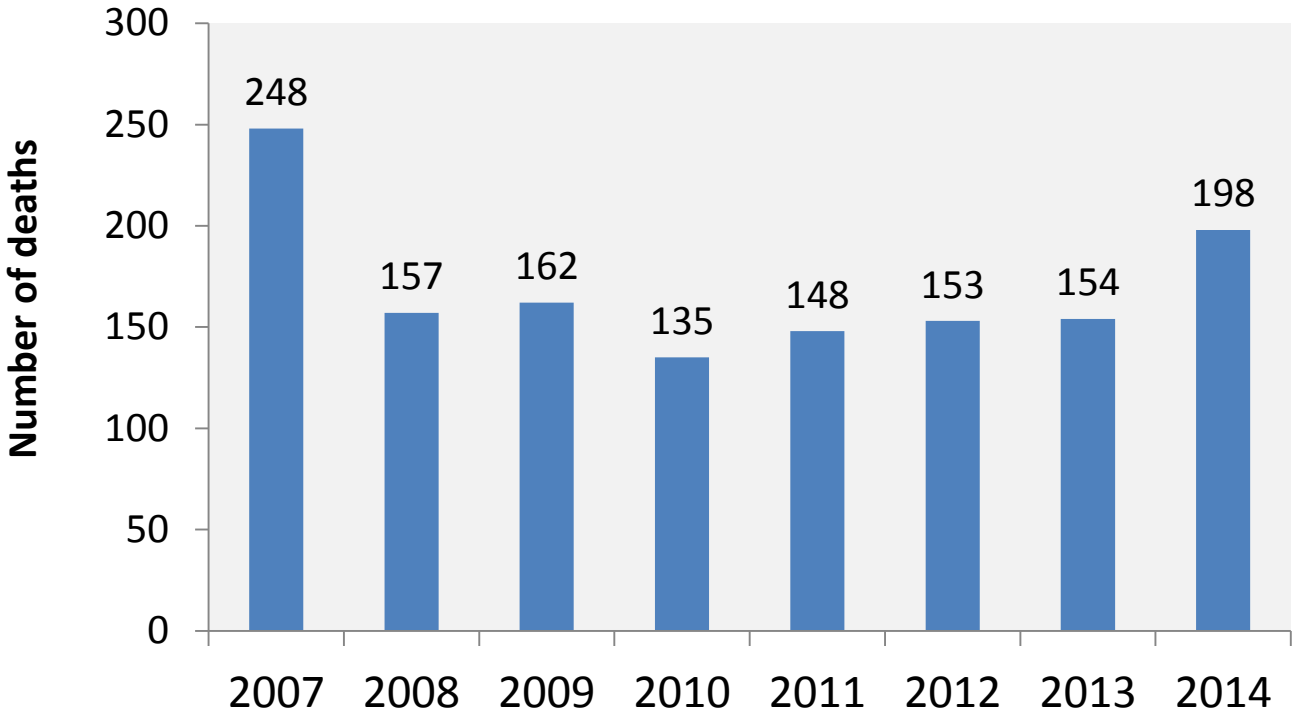


Figure 20. Number of Cocaine-Related Deaths Occurring in Maryland by Place of Occurrence, 2014.

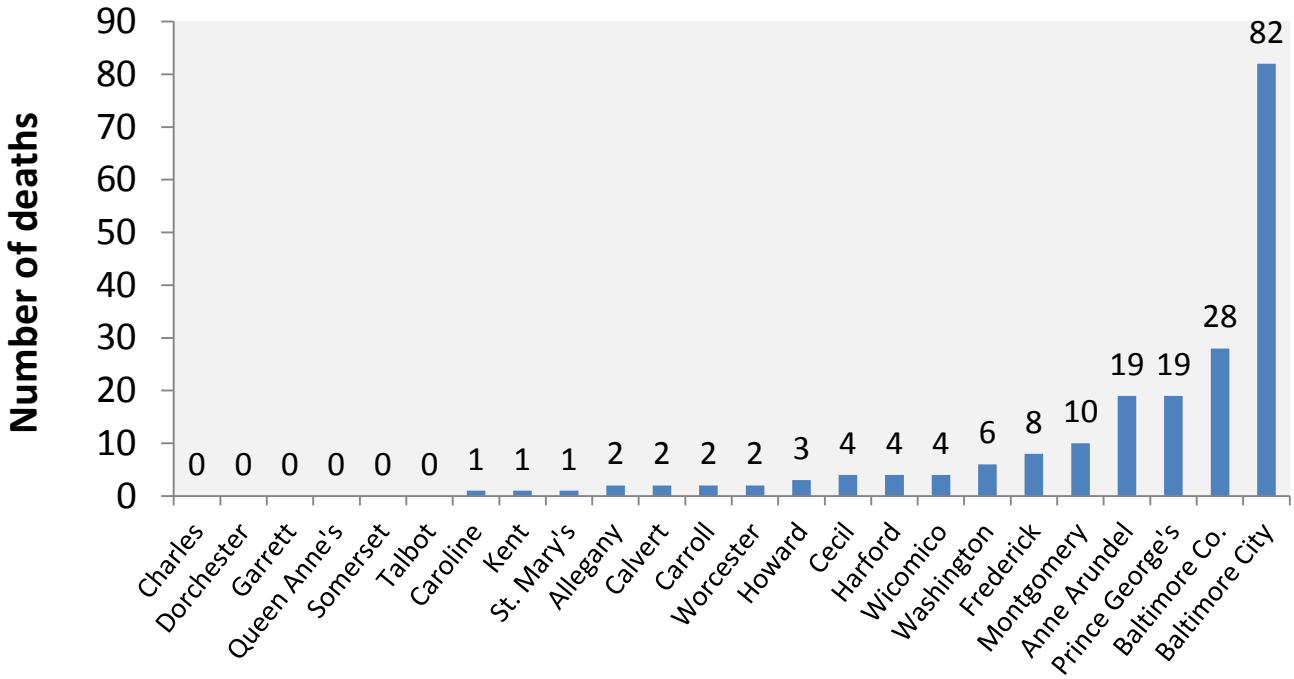
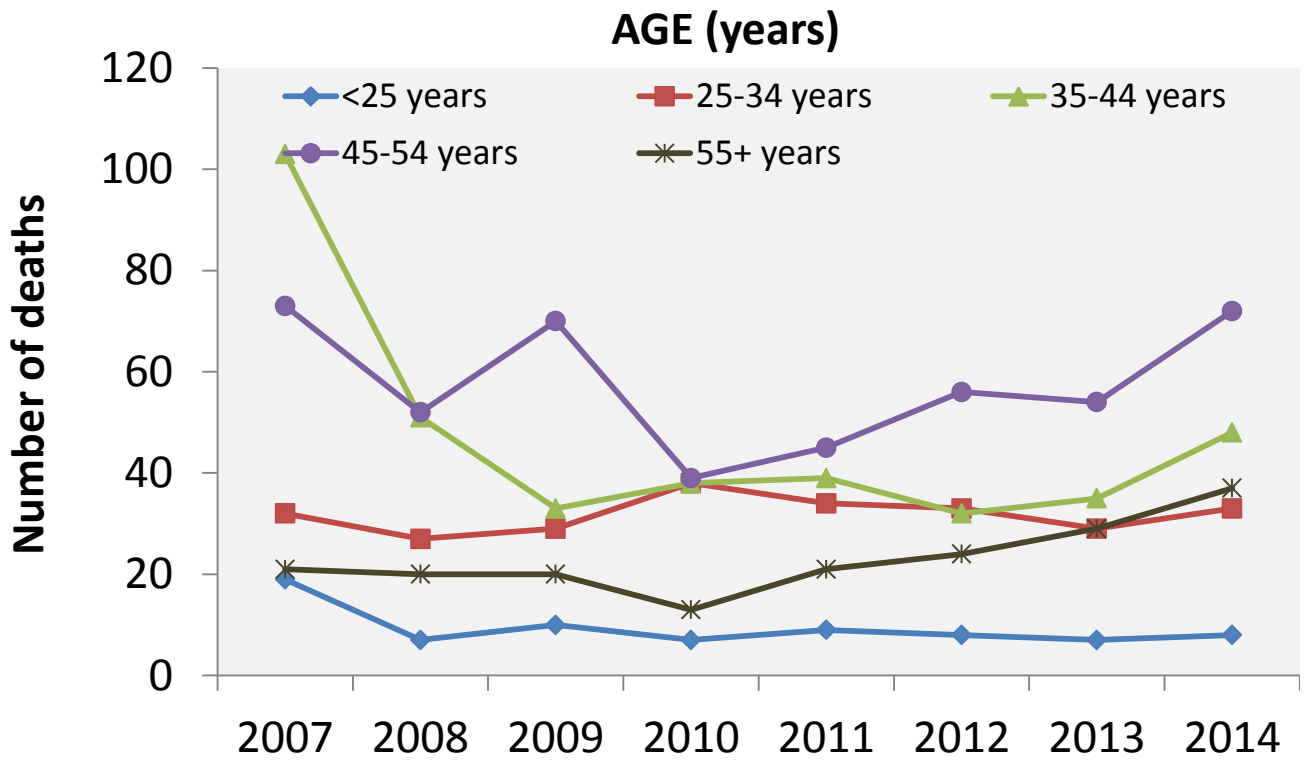
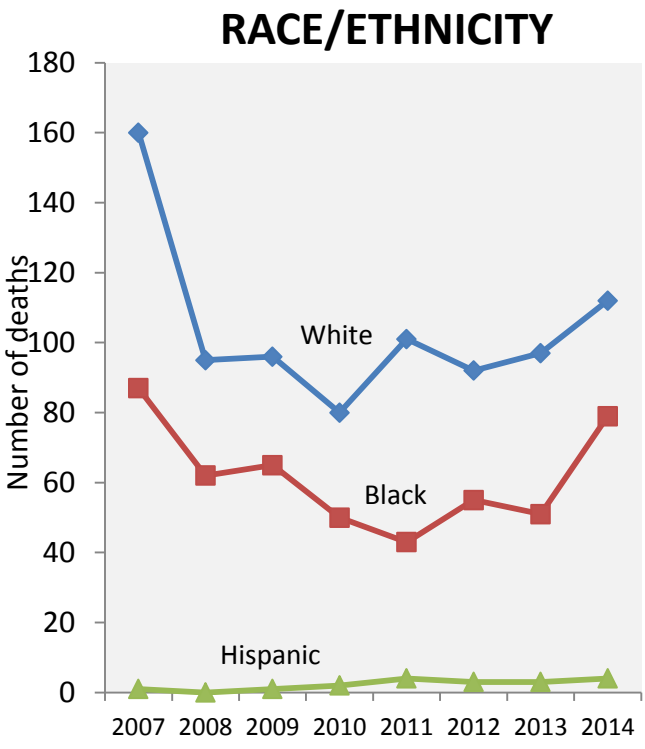


Figure 21. Number of Cocaine-Related Deaths Occurring in Maryland by Age Group, Race/Ethnicity and Gender, 2007-2014.





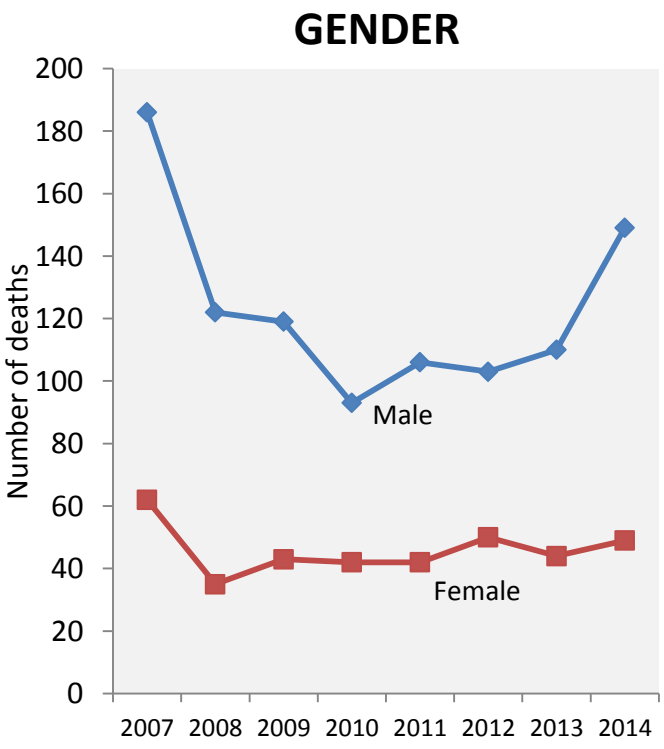
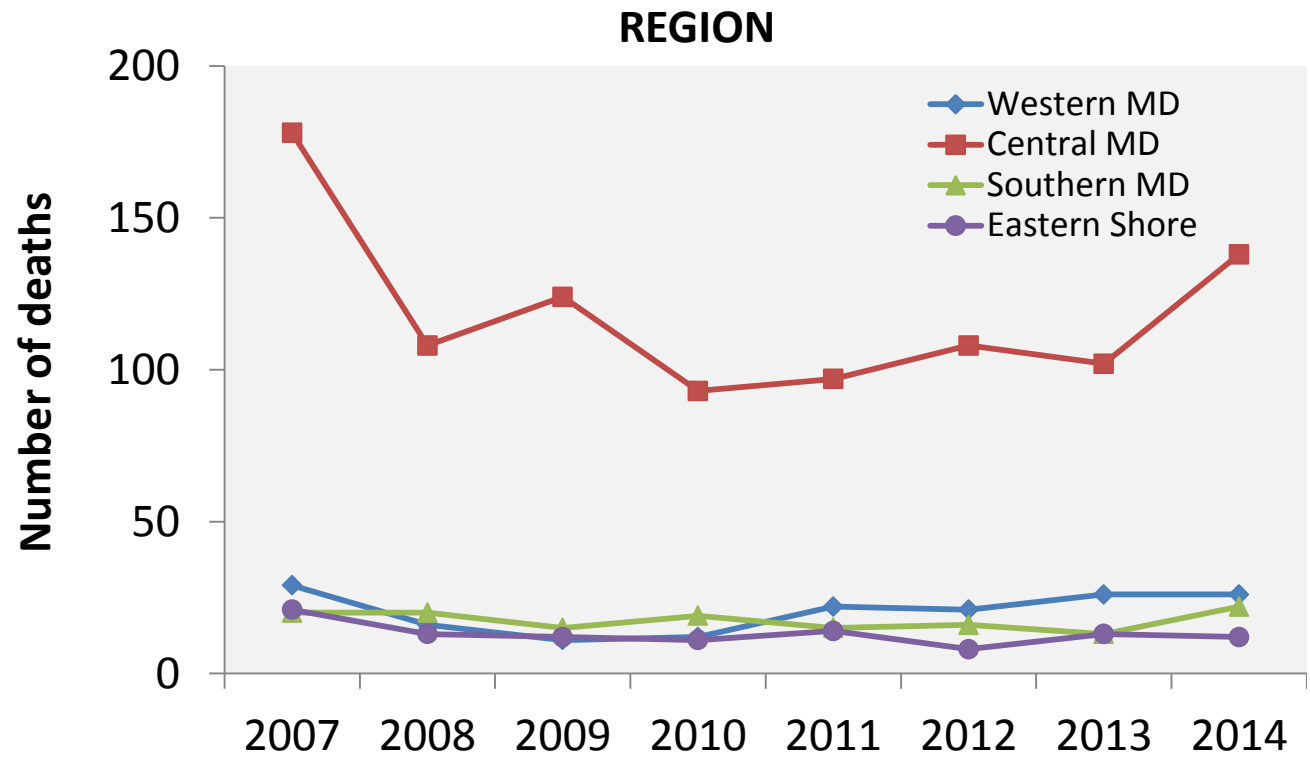
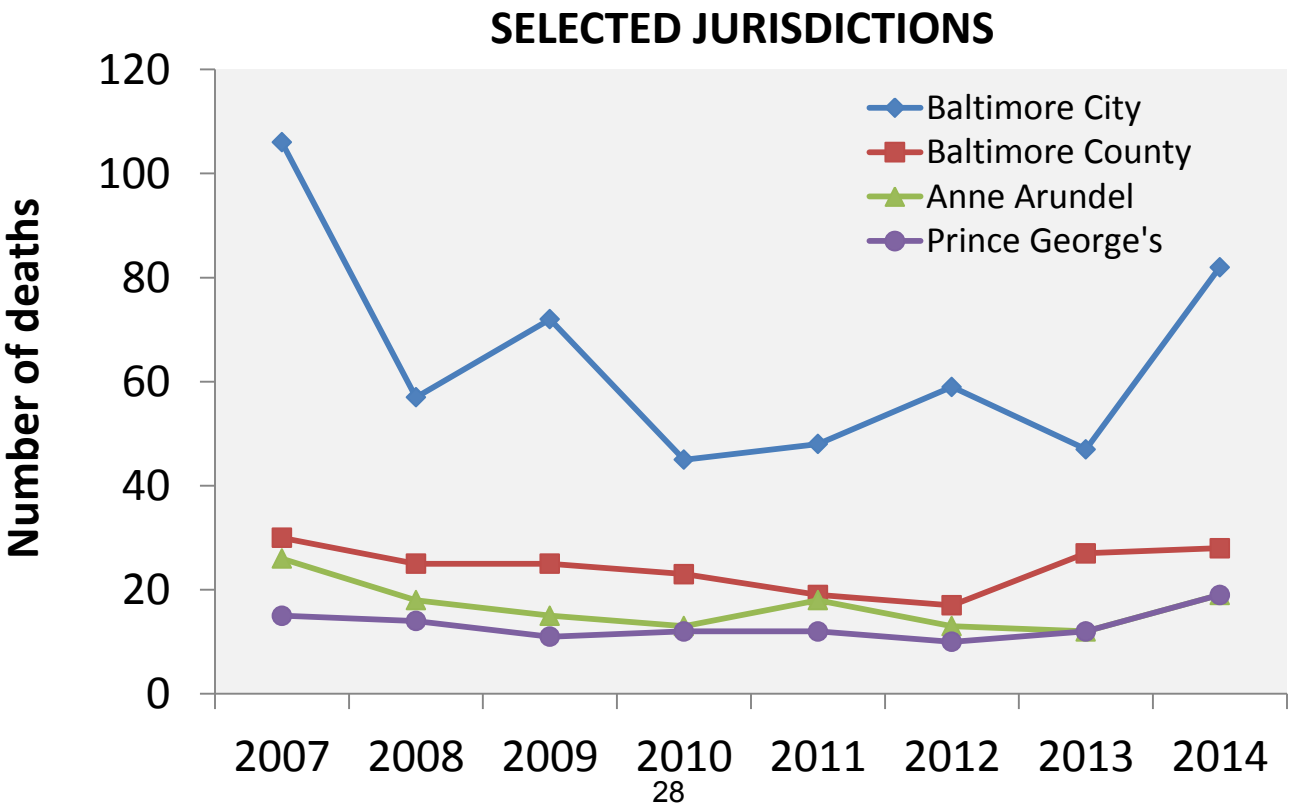


Figure 22. Number of Cocaine-Related Deaths by Place of Occurrence, Maryland, 2007-2014.





BENZODIAZEPINE-RELATED DEATHS

Figure 23. Number of Benzodiazepine-Related Deaths Occurring in Maryland, 2007-2014.

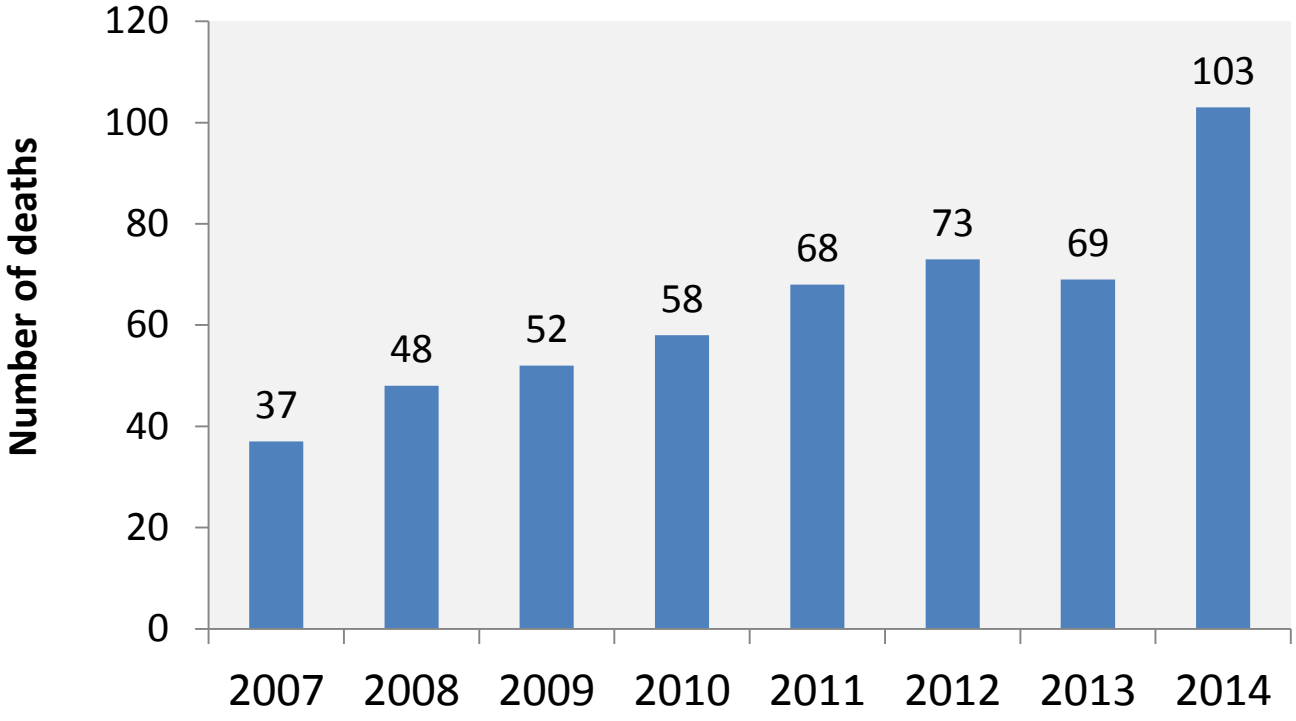


Figure 24. Number of Benzodiazepine-Related Deaths Occurring in Maryland by Place of Occurrence, 2014.

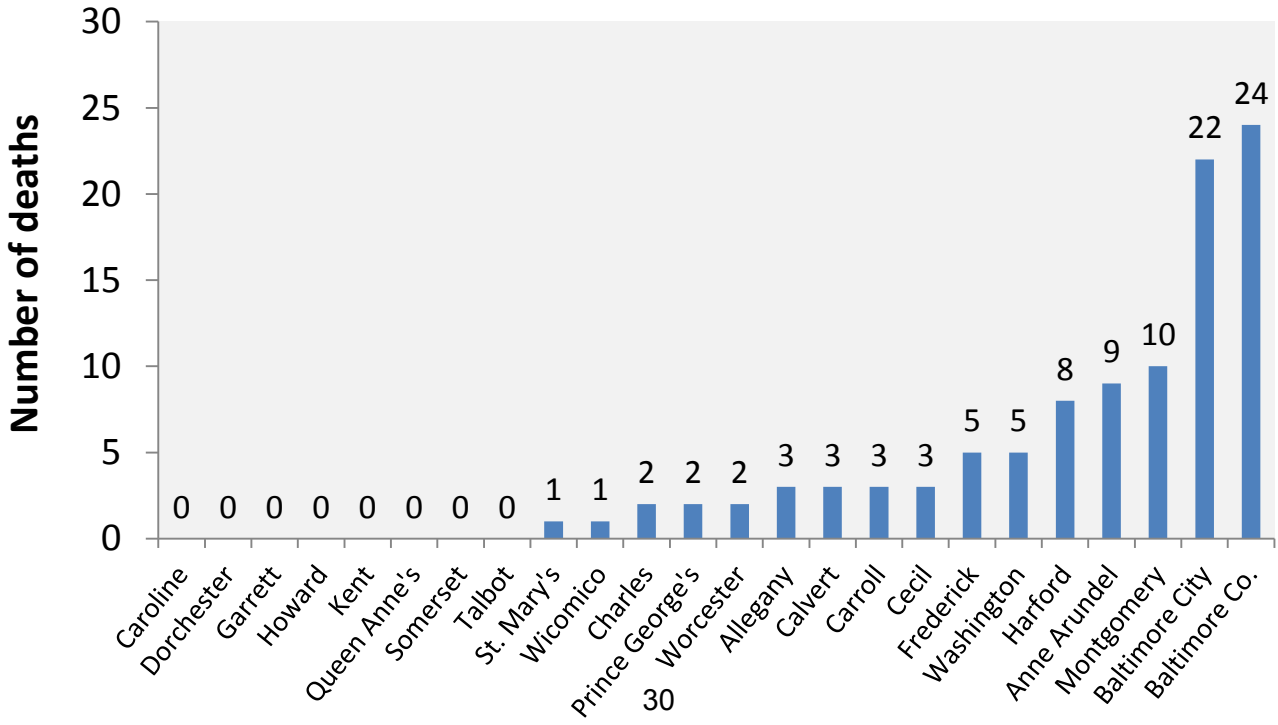
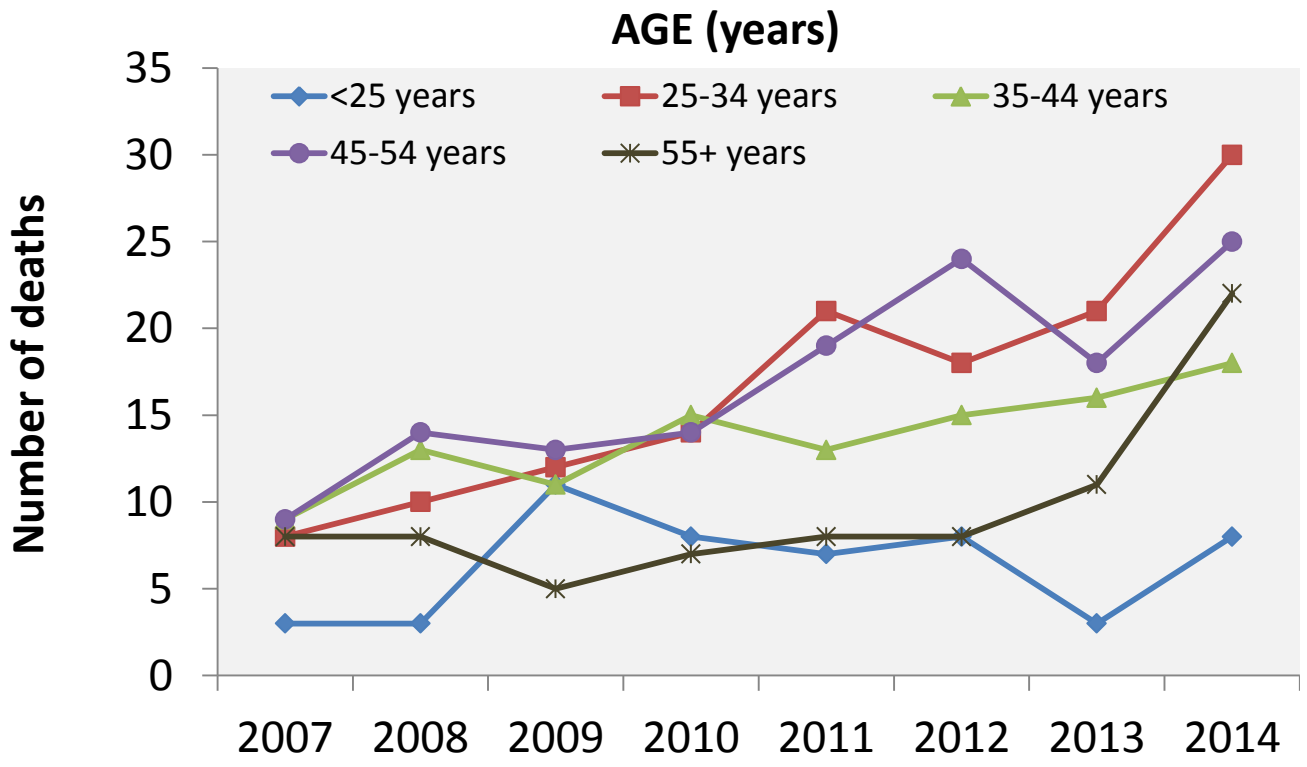
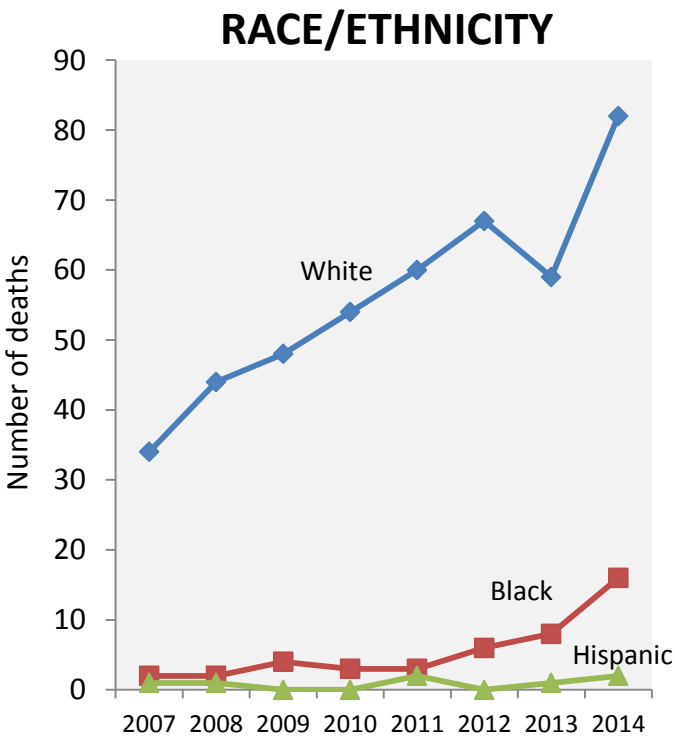


Figure 25. Number of Benzodiazepine-Related Deaths Occurring in Maryland by Age Group, Race/Ethnicity and Gender, 2007-2014.





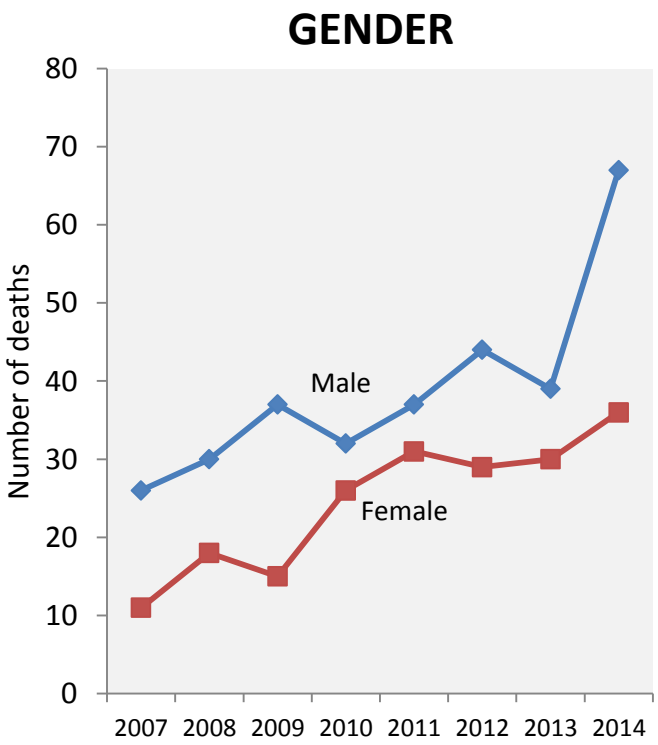
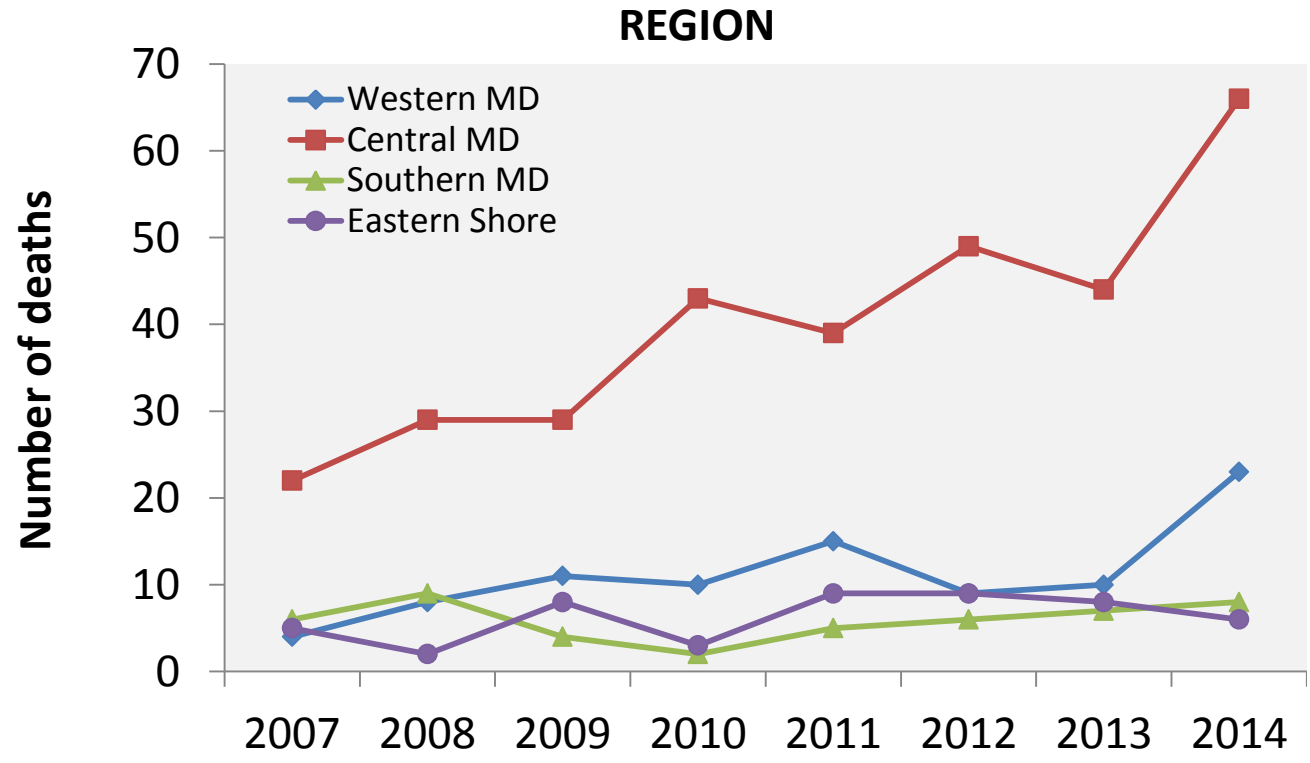
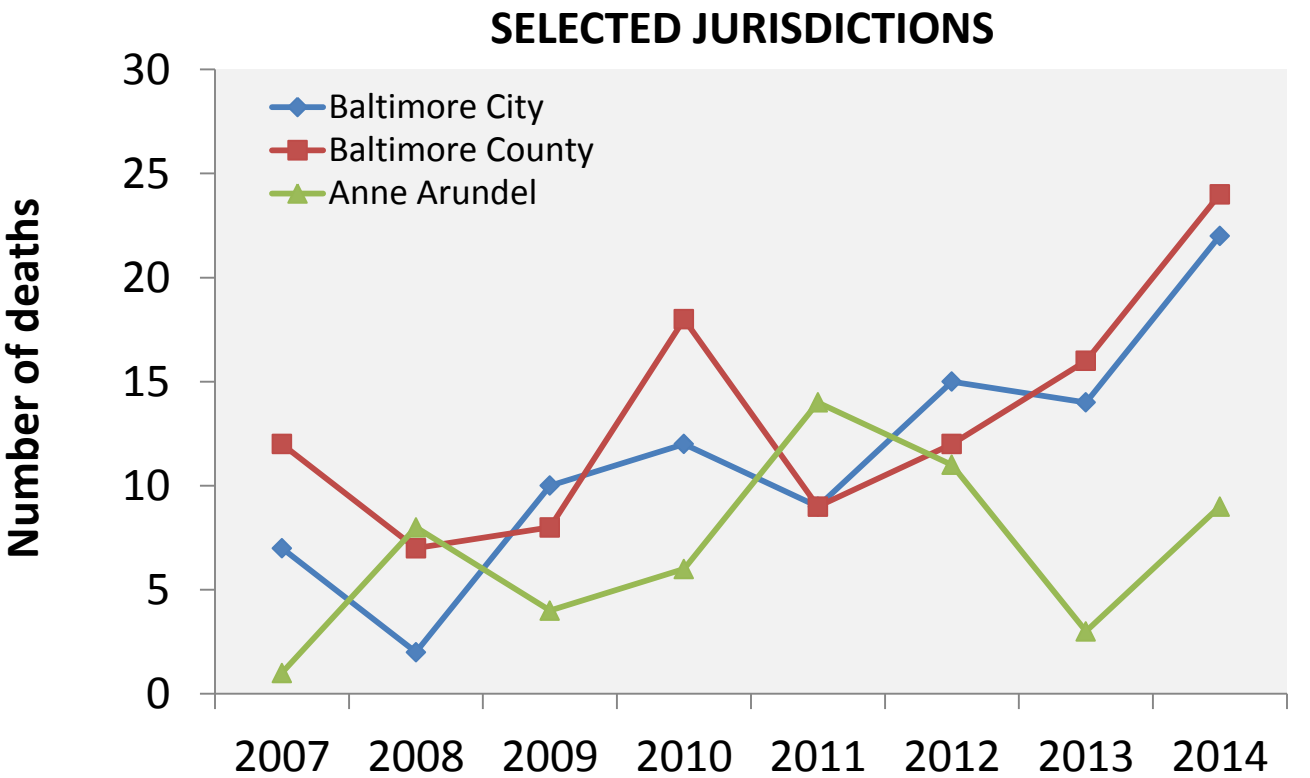


Figure 26. Number of Benzodiazepine-Related Deaths by Place of Occurrence, Maryland, 2007-2014.





ALCOHOL-RELATED DEATHS

Figure 27. Number of Alcohol-Related Deaths Occurring in Maryland, 2007-2014.

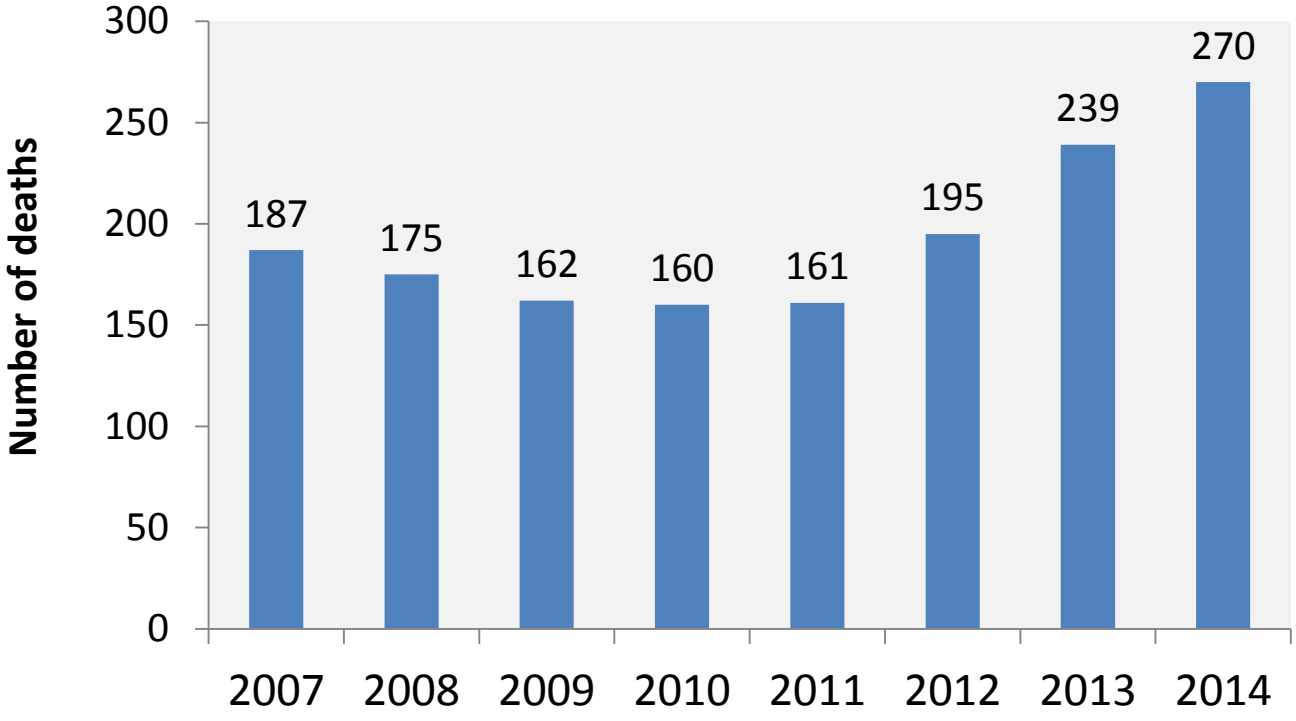


Figure 28. Number of Alcohol-Related Deaths Occurring in Maryland by Place of Occurrence, 2014.

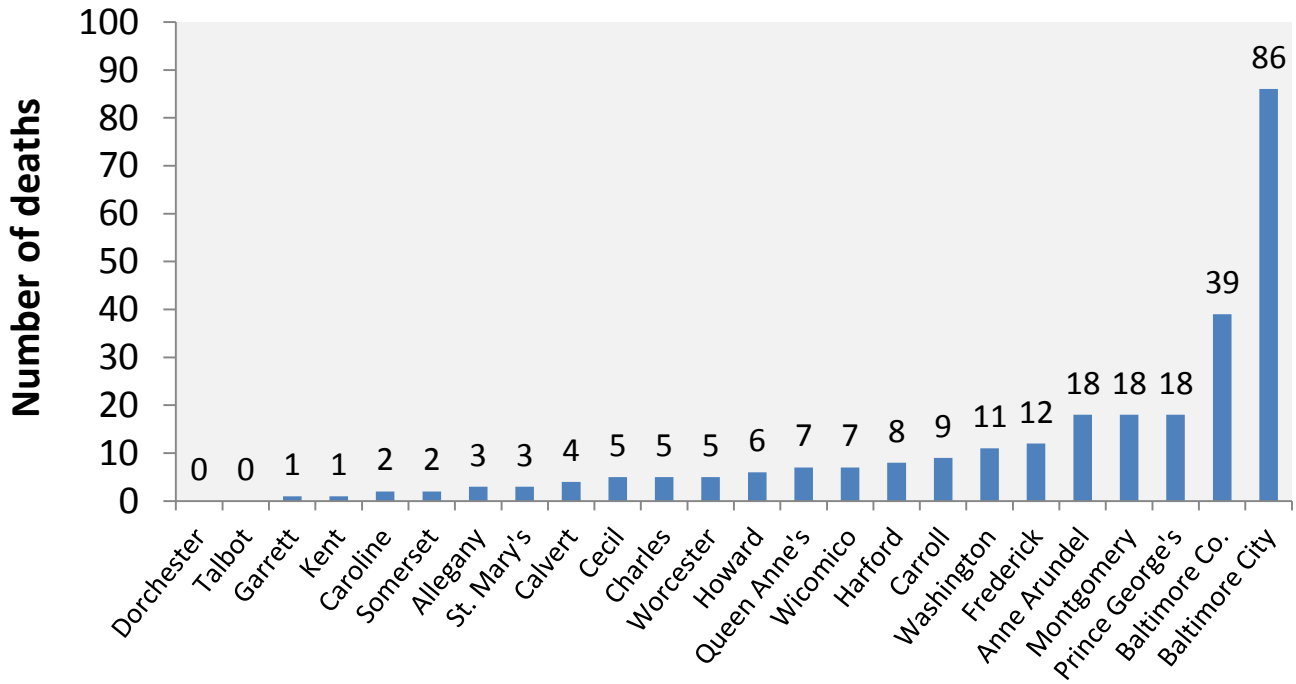
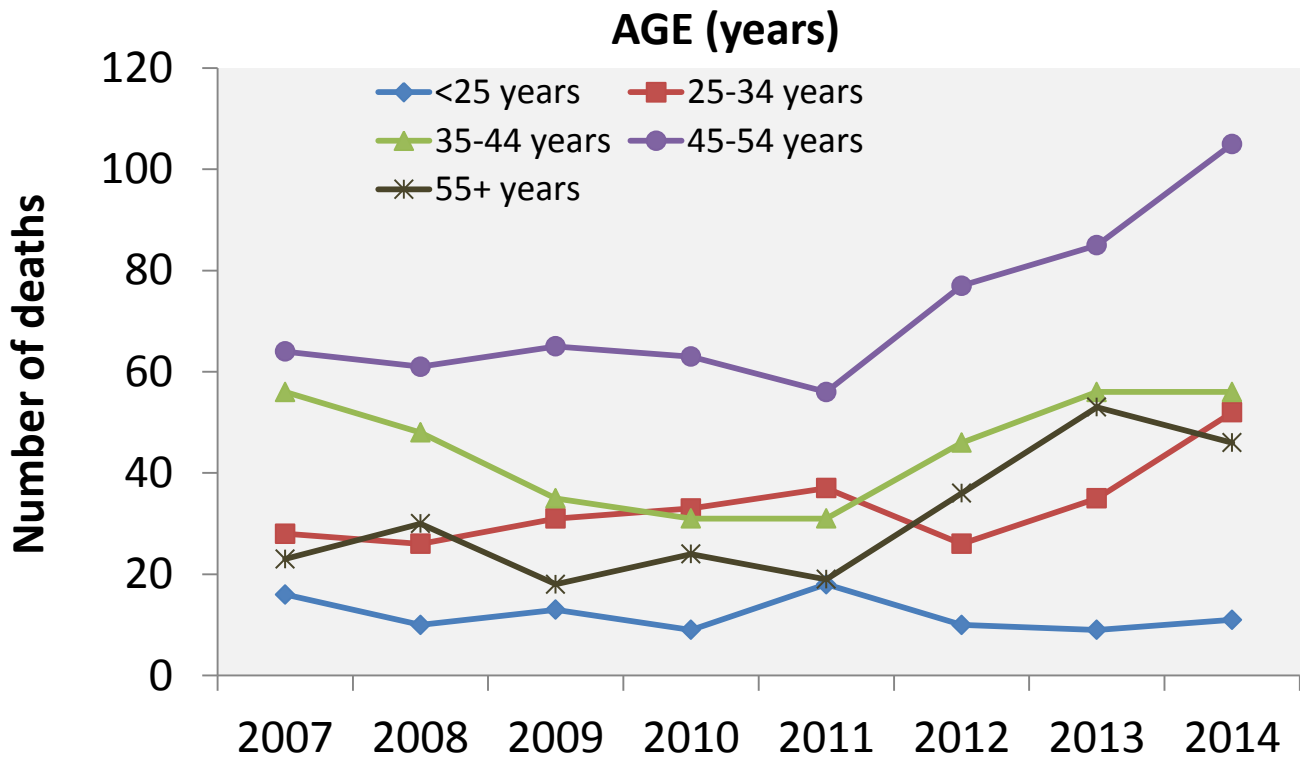
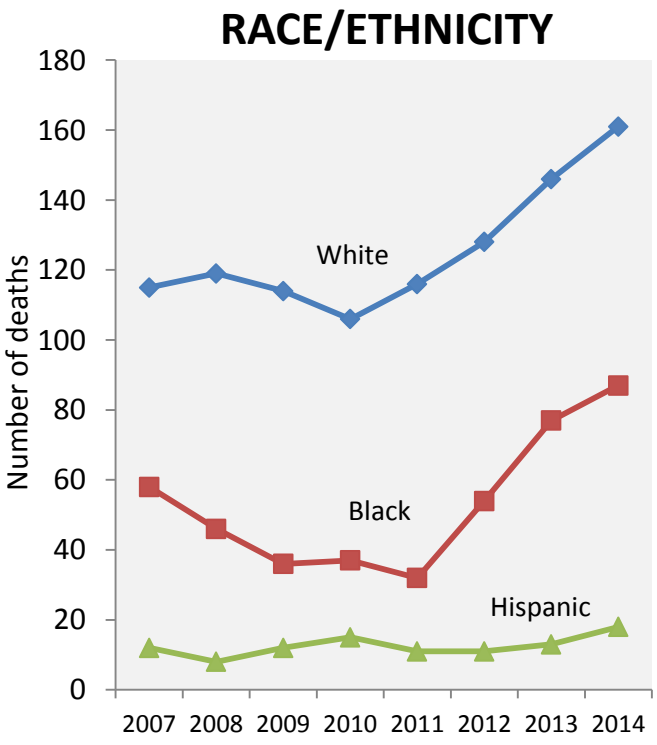


Figure 29. Number of Alcohol-Related Deaths Occurring in Maryland by Age Group, Race/Ethnicity and Gender, 2007-2014.





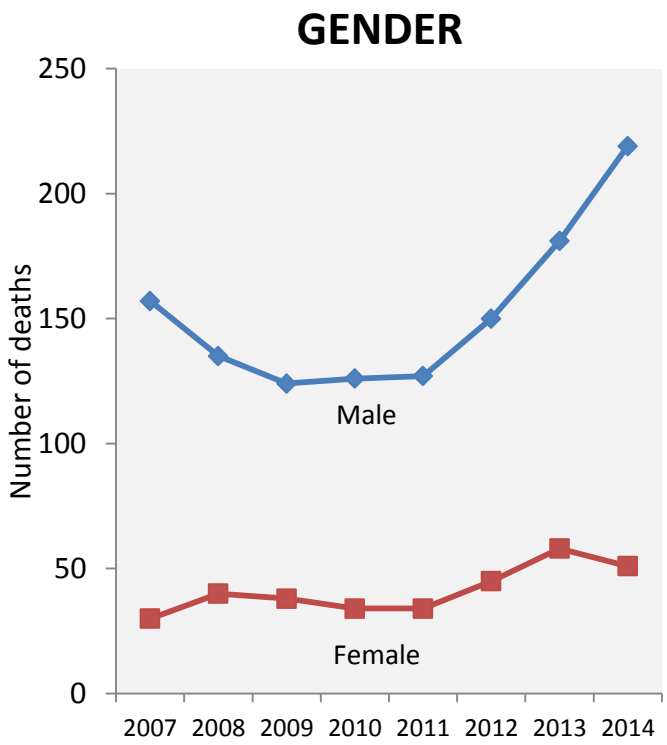
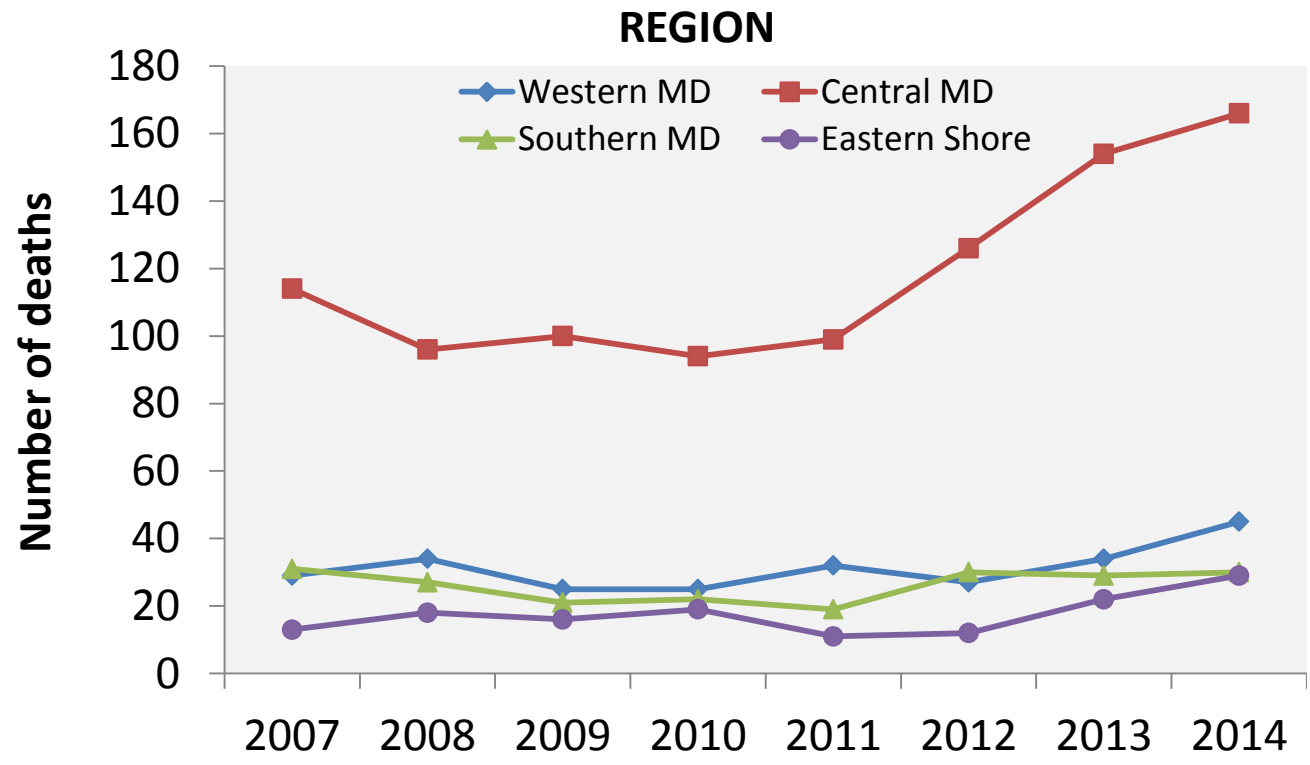
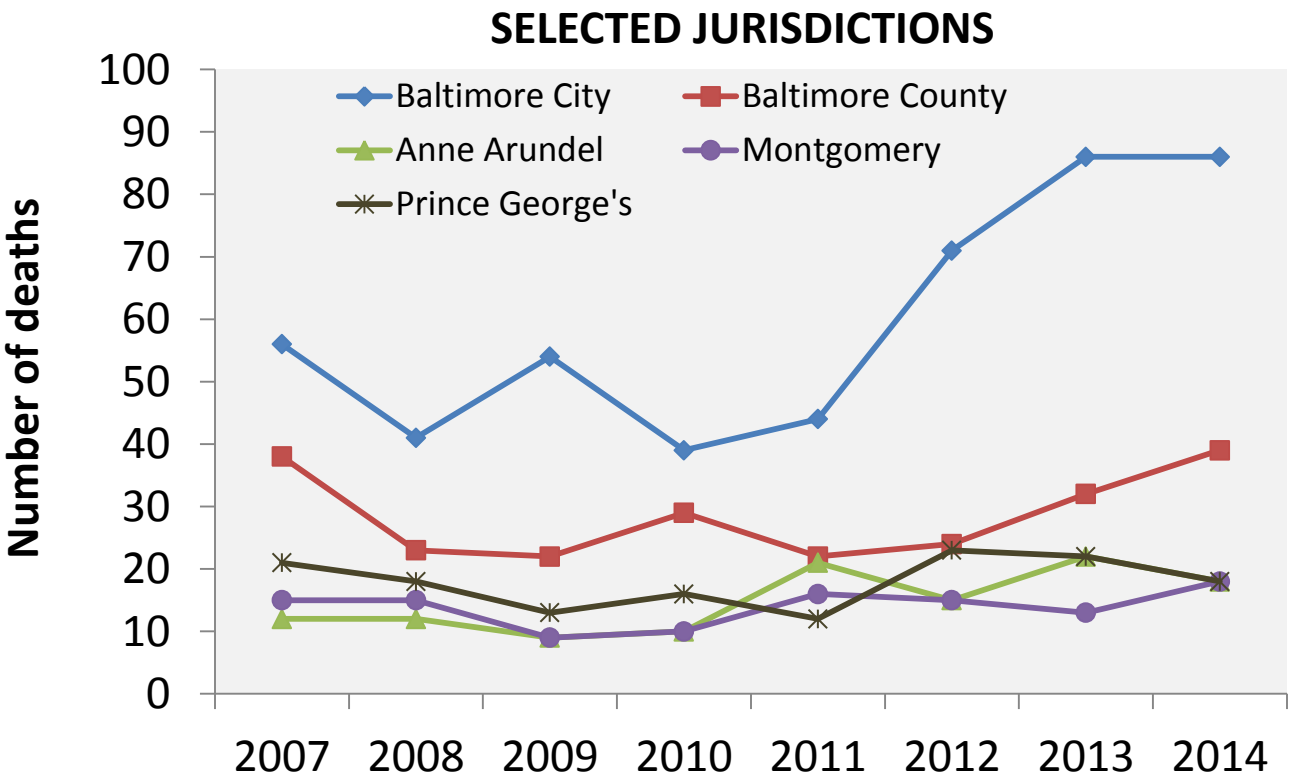


Figure 30. Number of Alcohol-Related Deaths by Place of Occurrence, Maryland, 2007-2014.





DRUG COMBINATIONS

Figure 31. Combinations of Substances Related to Unintentional Drug- and Alcohol-Relation Intoxication Deaths, Maryland, 2014.

	Number	Percent
Heroin		
Total	578	
In combination		
With alcohol	143	24.7
With cocaine	130	22.5
With fentanyl	101	17.5
With prescription opioids	83	14.4
With benzodiazepines	32	5.5
Prescription opioids		
Total	329	
In combination		
With heroin	83	25.2
With benzodiazepines	61	18.5
With alcohol	50	15.2
With cocaine	39	11.9
With fentanyl	34	10.3
Cocaine		
Total	198	
In combination		
With heroin	130	65.7
With prescription opioids	39	19.7
With fentanyl	32	16.2
With alcohol	32	16.2
With benzodiazepines	10	5.1
Benzodiazepines		
Total	103	
In combination		
With prescription opioids	61	59.2
With heroin	32	31.1
With alcohol	22	21.4
With cocaine	10	9.7
With fentanyl	8	7.8
Fentanyl		
Total	185	
In combination		
With heroin	101	54.6
With alcohol	37	20.0
With prescription opioids	34	18.4
With cocaine	32	17.3
With benzodiazepines	8	4.3
Alcohol		
Total	270	
In combination		
With heroin	143	53.0
With prescription opioids	50	18.5
With fentanyl	37	13.7
With cocaine	32	11.9
With benzodiazepines	22	8.1

Figure 32. Number of Drug- and Alcohol-Related Intoxication Deaths Involving Heroin, 2014.

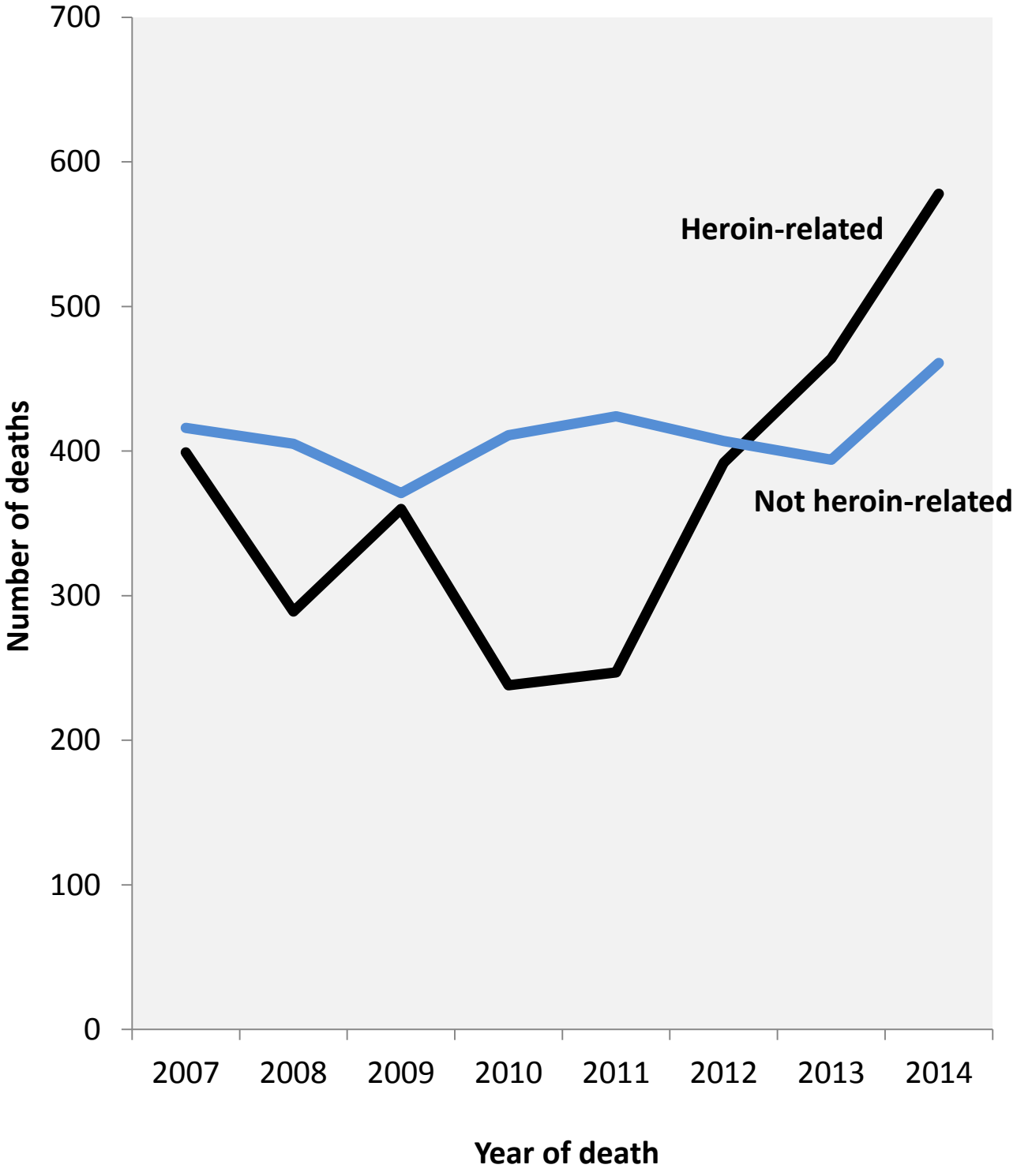
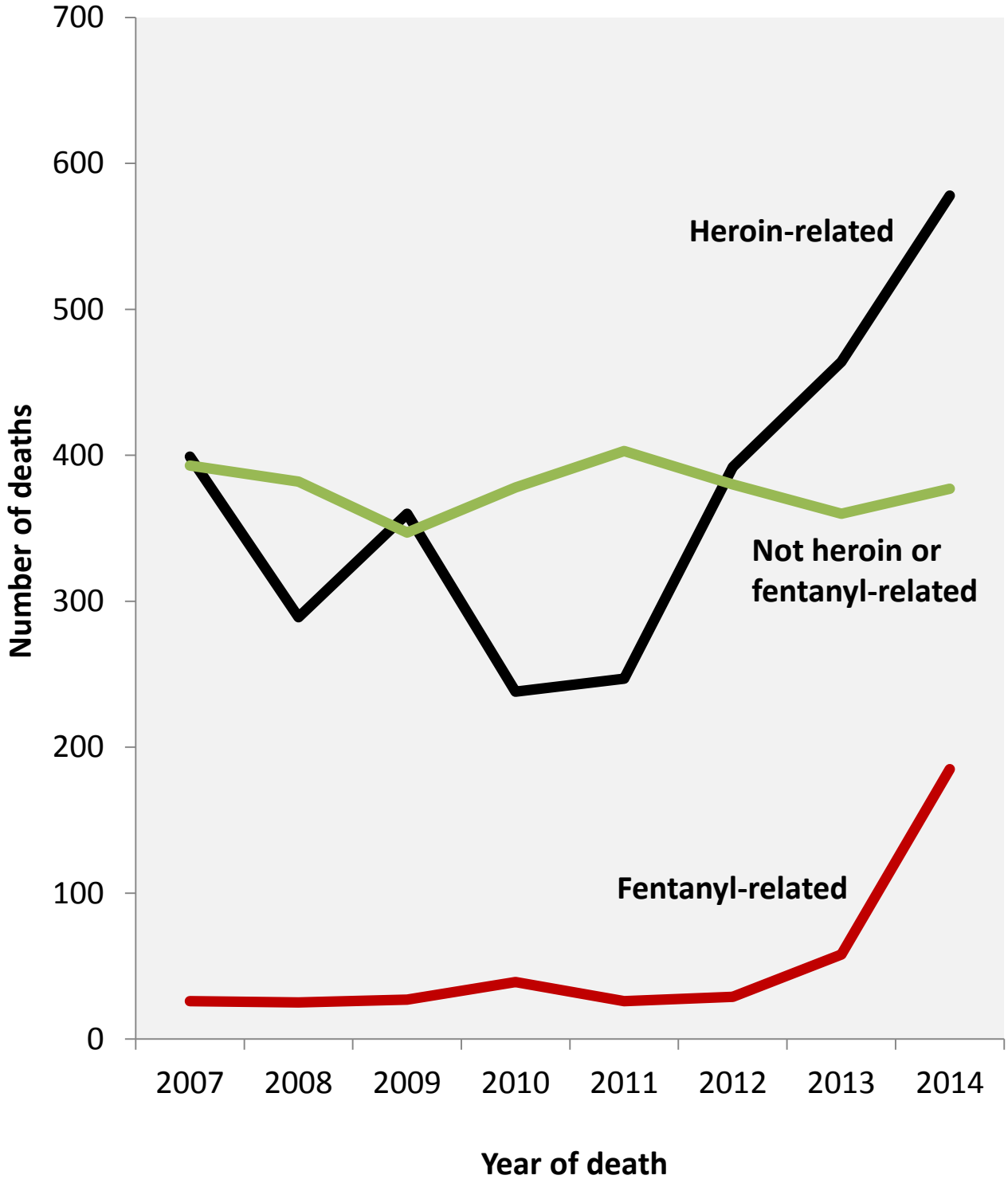


Figure 33. Number of Drug- and Alcohol-Related Intoxication Deaths Involving Heroin or Fentanyl, 2014.



TABLES

TABLE 1. TOTAL NUMBER OF DRUG AND ALCOHOL-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014.[1,2]

REGION AND POLITICAL SUBDIVISION	TOTAL INTOXICATION DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
MARYLAND	815	694	731	649	671	799	858	1,039	6,256
WESTERN AREA	110	99	97	96	109	115	138	161	925
GARRETT	1	3	3	3	2	0	6	2	20
ALLEGANY	14	9	9	15	12	14	15	12	100
WASHINGTON	16	26	18	20	21	27	28	40	196
FREDERICK	23	15	23	20	30	26	37	42	216
MONTGOMERY	56	46	44	38	44	48	52	65	393
CENTRAL AREA	550	443	479	411	420	519	557	676	4,055
BALTIMORE CITY	287	184	239	172	167	225	246	303	1,823
BALTIMORE COUNTY	131	118	106	115	107	119	144	170	1,010
ANNE ARUNDEL	71	70	63	56	79	83	78	101	601
CARROLL	14	17	22	15	8	29	24	38	167
HOWARD	16	19	16	10	21	24	29	21	156
HARFORD	31	35	33	43	38	39	36	43	298
SOUTHERN AREA	86	94	93	74	73	93	84	110	707
CALVERT	14	9	14	6	12	12	6	17	90
CHARLES	13	16	11	13	11	13	9	21	107
ST. MARY'S	6	11	9	12	8	12	10	9	77
PRINCE GEORGE'S	53	58	59	43	42	56	59	63	433
EASTERN SHORE AREA	69	58	62	68	69	72	79	92	569
CECIL	25	10	24	24	28	25	26	29	191
KENT	3	4	2	5	2	0	4	6	26
QUEEN ANNE'S	4	5	4	4	5	2	8	10	42
CAROLINE	1	4	2	2	11	4	2	7	33
TALBOT	5	4	3	3	1	5	7	4	32
DORCHESTER	4	5	2	6	2	5	5	0	29
WICOMICO	9	13	12	13	11	21	17	20	116
SOMERSET	6	3	4	1	3	3	4	3	27
WORCESTER	12	10	9	10	6	7	6	13	73

[1] Includes deaths that were the result of recent ingestion or exposure to alcohol or another type of drug, including heroin, cocaine, prescription opioids, benzodiazepines, and other prescribed and unprescribed drugs.

[2] Includes only deaths for which the manner of death was classified as accidental or undetermined.

TABLE 2. NUMBER OF HEROIN-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014.[1,2]

REGION AND POLITICAL SUBDIVISION	HEROIN-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
MARYLAND	399	289	360	238	247	392	464	578	2,967
WESTERN AREA	33	35	39	27	34	49	68	86	371
GARRETT	0	0	1	0	1	0	2	1	5
ALLEGANY	3	4	2	3	3	6	3	5	29
WASHINGTON	5	13	11	6	8	11	14	21	89
FREDERICK	8	4	9	6	11	10	21	26	95
MONTGOMERY	17	14	16	12	11	22	28	33	153
CENTRAL AREA	323	203	264	171	165	272	319	379	2,096
BALTIMORE CITY	200	107	151	93	76	131	150	192	1,100
BALTIMORE COUNTY	56	51	53	42	38	64	76	86	466
ANNE ARUNDEL	38	24	31	18	24	38	41	53	267
CARROLL	9	5	7	3	2	13	14	16	69
HOWARD	8	8	7	3	10	12	16	9	73
HARFORD	12	8	15	12	15	14	22	23	121
SOUTHERN AREA	28	35	36	25	27	38	38	60	287
CALVERT	5	3	7	1	5	6	2	13	42
CHARLES	2	5	3	6	6	5	5	10	42
ST. MARY'S	1	3	0	4	4	7	6	5	30
PRINCE GEORGE'S	20	24	26	14	12	20	25	32	173
EASTERN SHORE AREA	15	16	21	15	21	33	39	53	213
CECIL	8	4	12	4	8	11	11	15	73
KENT	1	1	0	0	1	0	0	2	5
QUEEN ANNE'S	0	1	3	2	2	2	5	7	22
CAROLINE	0	0	0	0	3	3	2	6	14
TALBOT	1	2	0	0	1	2	2	4	12
DORCHESTER	1	2	0	2	1	3	3	0	12
WICOMICO	1	3	3	5	3	9	11	12	47
SOMERSET	2	1	1	0	1	2	1	1	9
WORCESTER	1	2	2	2	1	1	4	6	19

1 Includes deaths confirmed or suspected to be related to recent heroin use.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.

TABLE 3. NUMBER OF PRESCRIPTION OPIOID-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014.[1,2]

REGION AND POLITICAL SUBDIVISION	PRESCRIPTION OPIOID-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
MARYLAND	302	280	251	311	342	311	316	329	2,442
WESTERN AREA	42	38	40	36	58	48	51	52	365
GARRETT	0	2	2	1	1	0	2	2	10
ALLEGANY	9	5	6	8	5	5	8	6	52
WASHINGTON	7	10	4	7	11	9	11	16	75
FREDERICK	6	4	9	6	21	16	14	9	85
MONTGOMERY	20	17	19	14	20	18	16	19	143
CENTRAL AREA	190	189	148	197	212	196	207	216	1,555
BALTIMORE CITY	95	60	63	61	82	74	86	83	604
BALTIMORE COUNTY	48	51	37	60	68	47	54	59	424
ANNE ARUNDEL	22	36	20	31	33	33	28	32	235
CARROLL	4	11	10	9	5	17	12	15	83
HOWARD	6	6	4	6	9	5	13	7	56
HARFORD	15	25	14	30	15	20	14	20	153
SOUTHERN AREA	25	28	31	33	30	29	26	35	237
CALVERT	8	3	4	3	7	6	3	7	41
CHARLES	6	6	7	4	5	7	5	9	49
ST. MARY'S	3	7	7	9	3	5	4	3	41
PRINCE GEORGE'S	8	12	13	17	15	11	14	16	106
EASTERN SHORE AREA	45	25	32	45	42	38	32	26	285
CECIL	19	6	10	20	20	18	12	12	117
KENT	2	3	2	3	1	0	4	2	17
QUEEN ANNE'S	4	1	1	2	2	0	3	3	16
CAROLINE	0	2	1	2	5	1	0	1	12
TALBOT	2	1	2	2	0	1	4	0	12
DORCHESTER	2	1	1	4	1	3	3	0	15
WICOMICO	5	4	8	7	7	9	4	3	47
SOMERSET	4	3	1	1	3	2	2	1	17
WORCESTER	7	4	6	4	3	4	0	4	32

1 Includes deaths that were related to recent ingestion of one or more prescription opioids.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.

TABLE 4. NUMBER OF OXYCODONE-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014.[1,2]

REGION AND POLITICAL SUBDIVISION	OXYCODONE-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
MARYLAND	63	72	82	113	118	99	86	120	753
WESTERN AREA	11	15	19	14	20	21	19	21	140
GARRETT	0	1	0	0	0	0	1	0	2
ALLEGANY	3	0	1	2	0	2	3	3	14
WASHINGTON	0	4	3	2	5	2	5	5	26
FREDERICK	1	2	5	3	6	9	3	2	31
MONTGOMERY	7	8	10	7	9	8	7	11	67
CENTRAL AREA	31	44	34	59	63	51	44	69	395
BALTIMORE CITY	7	6	10	5	15	15	11	20	89
BALTIMORE COUNTY	8	14	14	21	22	12	14	22	127
ANNE ARUNDEL	5	9	4	9	14	11	9	10	71
CARROLL	2	3	3	6	3	6	3	4	30
HOWARD	3	2	0	4	2	2	4	4	21
HARFORD	6	10	3	14	7	5	3	9	57
SOUTHERN AREA	12	9	15	15	15	13	12	17	108
CALVERT	3	1	2	2	4	5	3	3	23
CHARLES	5	3	4	2	4	3	1	5	27
ST. MARY'S	1	3	5	3	2	2	2	3	21
PRINCE GEORGE'S	3	2	4	8	5	3	6	6	37
EASTERN SHORE AREA	9	4	14	25	20	14	11	13	110
CECIL	3	0	3	13	9	4	6	6	44
KENT	0	0	1	2	0	0	1	0	4
QUEEN ANNE'S	1	0	1	1	1	0	1	1	6
CAROLINE	0	0	1	1	0	0	0	0	2
TALBOT	0	0	0	1	0	1	1	0	3
DORCHESTER	1	0	0	2	1	1	0	0	5
WICOMICO	1	2	4	2	5	5	1	2	22
SOMERSET	0	0	1	1	2	1	1	1	7
WORCESTER	3	2	3	2	2	2	0	3	17

1 Includes deaths that were related to recent ingestion of oxycodone.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.

TABLE 5. NUMBER OF METHADONE-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014.[1,2]

REGION AND POLITICAL SUBDIVISION	METHADONE-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
MARYLAND	210	163	135	173	172	170	138	152	1,313
WESTERN AREA	23	17	14	13	20	21	11	25	144
GARRETT	0	0	1	1	0	0	1	1	4
ALLEGANY	3	4	2	3	4	1	1	3	21
WASHINGTON	6	4	0	3	5	4	3	10	35
FREDERICK	6	1	4	1	5	9	3	6	35
MONTGOMERY	8	8	7	5	6	7	3	5	49
CENTRAL AREA	141	118	97	128	128	122	110	112	956
BALTIMORE CITY	80	47	50	53	65	54	57	54	460
BALTIMORE COUNTY	34	29	18	37	32	28	29	31	238
ANNE ARUNDEL	15	19	13	17	17	15	6	14	116
CARROLL	1	7	4	2	2	12	7	5	40
HOWARD	2	1	4	2	5	1	5	2	22
HARFORD	9	15	8	17	7	12	6	6	80
SOUTHERN AREA	12	15	12	14	10	11	6	8	88
CALVERT	5	0	2	1	2	2	0	2	14
CHARLES	2	4	2	1	0	1	1	4	15
ST. MARY'S	2	3	3	5	1	2	1	1	18
PRINCE GEORGE'S	3	8	5	7	7	6	4	1	41
EASTERN SHORE AREA	34	13	12	18	14	16	11	7	125
CECIL	16	3	6	9	9	10	4	4	61
KENT	2	2	1	2	1	0	2	1	11
QUEEN ANNE'S	2	1	1	1	1	0	1	0	7
CAROLINE	0	0	0	1	1	1	0	1	4
TALBOT	2	0	2	1	0	1	2	0	8
DORCHESTER	1	1	0	0	0	1	0	0	3
WICOMICO	3	2	1	3	1	1	2	0	13
SOMERSET	3	2	0	0	1	0	0	0	6
WORCESTER	5	2	1	1	0	2	0	1	12

1 Includes deaths that were related to recent ingestion of methadone.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.

TABLE 6. NUMBER OF FENTANYL-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014.[1,2]

REGION AND POLITICAL SUBDIVISION	FENTANYL-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
MARYLAND	26	25	27	39	26	29	58	185	415
WESTERN AREA	5	1	2	7	6	5	7	16	49
GARRETT	0	1	0	0	1	0	0	0	2
ALLEGANY	3	0	1	2	1	1	1	1	10
WASHINGTON	0	0	0	2	1	1	4	1	9
FREDERICK	0	0	0	2	3	1	2	6	14
MONTGOMERY	2	0	1	1	0	2	0	8	14
CENTRAL AREA	14	19	16	20	10	16	35	141	271
BALTIMORE CITY	3	2	4	4	2	4	12	71	102
BALTIMORE COUNTY	6	9	9	6	4	5	11	36	86
ANNE ARUNDEL	3	5	3	5	2	3	6	23	50
CARROLL	0	2	0	2	0	1	2	4	11
HOWARD	1	0	0	0	0	2	3	5	11
HARFORD	1	1	0	3	2	1	1	2	11
SOUTHERN AREA	1	1	4	3	3	2	10	16	40
CALVERT	0	1	1	0	1	0	0	5	8
CHARLES	0	0	0	0	1	1	3	1	6
ST. MARY'S	0	0	1	1	1	0	1	3	7
PRINCE GEORGE'S	1	0	2	2	0	1	6	7	19
EASTERN SHORE AREA	6	4	5	9	7	6	6	12	55
CECIL	2	1	0	2	2	0	0	1	8
KENT	0	0	0	0	0	0	0	1	1
QUEEN ANNE'S	1	0	0	0	0	0	1	1	3
CAROLINE	0	0	0	1	4	0	0	0	5
TALBOT	1	1	0	1	0	1	0	2	6
DORCHESTER	0	0	0	2	0	0	2	0	4
WICOMICO	1	1	3	1	1	4	1	7	19
SOMERSET	1	1	0	1	0	0	2	0	5
WORCESTER	0	0	2	1	0	1	0	0	4

1 Includes deaths that were related to recent ingestion or exposure to pharmaceutical or nonpharmaceutical fentanyl.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.

TABLE 7. NUMBER OF COCAINE-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014.[1,2]

REGION AND POLITICAL SUBDIVISION	COCAINE-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
MARYLAND	248	157	162	135	148	153	154	198	1,355
WESTERN AREA	29	16	11	12	22	21	26	26	163
GARRETT	0	0	0	1	0	0	0	0	1
ALLEGANY	2	1	1	1	0	2	2	2	11
WASHINGTON	3	1	0	3	3	5	6	6	27
FREDERICK	4	2	3	3	7	2	5	8	34
MONTGOMERY	20	12	7	4	12	12	13	10	90
CENTRAL AREA	178	108	124	93	97	108	102	138	948
BALTIMORE CITY	106	57	72	45	48	59	47	82	516
BALTIMORE COUNTY	30	25	25	23	19	17	27	28	194
ANNE ARUNDEL	26	18	15	13	18	13	12	19	134
CARROLL	2	2	3	6	3	7	7	2	32
HOWARD	6	1	4	1	5	7	5	3	32
HARFORD	8	5	5	5	4	5	4	4	40
SOUTHERN AREA	20	20	15	19	15	16	13	22	140
CALVERT	1	2	1	3	2	3	0	2	14
CHARLES	3	3	2	2	1	1	0	0	12
ST. MARY'S	1	1	1	2	0	2	1	1	9
PRINCE GEORGE'S	15	14	11	12	12	10	12	19	105
EASTERN SHORE AREA	21	13	12	11	14	8	13	12	104
CECIL	5	3	4	3	7	2	5	4	33
KENT	1	2	0	1	0	0	0	1	5
QUEEN ANNE'S	3	0	2	0	1	0	0	0	6
CAROLINE	0	0	1	0	1	1	0	1	4
TALBOT	4	0	1	0	0	0	3	0	8
DORCHESTER	1	1	0	1	1	1	1	0	6
WICOMICO	2	5	2	3	3	4	3	4	26
SOMERSET	1	0	1	1	0	0	0	0	3
WORCESTER	4	2	1	2	1	0	1	2	13

1 Includes deaths that were related to recent use of cocaine.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.

TABLE 8. NUMBER OF BENZODIAZEPINE-RELATED INTOXICATION DEATHS BY COUNTY OF OCCURRENCE, 2007-2014.[1,2]

REGION AND POLITICAL SUBDIVISION	BENZODIAZEPINE-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
MARYLAND	37	48	52	58	68	73	69	103	508
WESTERN AREA	4	8	11	10	15	9	10	23	90
GARRETT	0	0	1	0	0	0	1	0	2
ALLEGANY	1	0	1	3	1	0	1	3	10
WASHINGTON	1	2	2	2	4	3	2	5	21
FREDERICK	1	1	3	1	4	2	2	5	19
MONTGOMERY	1	5	4	4	6	4	4	10	38
CENTRAL AREA	22	29	29	43	39	49	44	66	321
BALTIMORE CITY	7	2	10	12	9	15	14	22	91
BALTIMORE COUNTY	12	7	8	18	9	12	16	24	106
ANNE ARUNDEL	1	8	4	6	14	11	3	9	56
CARROLL	0	4	3	3	0	1	3	3	17
HOWARD	1	2	2	2	4	2	5	0	18
HARFORD	1	6	2	2	3	8	3	8	33
SOUTHERN AREA	6	9	4	2	5	6	7	8	47
CALVERT	1	1	1	1	1	1	1	3	10
CHARLES	1	3	1	0	0	2	1	2	10
ST. MARY'S	1	1	0	1	1	1	2	1	8
PRINCE GEORGE'S	3	4	2	0	3	2	3	2	19
EASTERN SHORE AREA	5	2	8	3	9	9	8	6	50
CECIL	4	0	3	2	6	7	3	3	28
KENT	0	0	0	0	0	0	0	0	0
QUEEN ANNE'S	0	0	0	1	1	0	0	0	2
CAROLINE	0	0	0	0	0	0	0	0	0
TALBOT	0	1	0	0	0	0	3	0	4
DORCHESTER	0	0	1	0	0	1	1	0	3
WICOMICO	0	0	0	0	1	0	0	1	2
SOMERSET	1	0	1	0	0	1	1	0	4
WORCESTER	0	1	3	0	1	0	0	2	7

1 Includes deaths that were related to recent ingestion of a benzodiazepine or related drug with sedative effects.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.

TABLE 9. NUMBER OF ALCOHOL-RELATED INTOXICATION DEATHS BY PLACE OF OCCURRENCE, 2007-2014.[1,2]

REGION AND POLITICAL SUBDIVISION	ALCOHOL-RELATED DEATHS								
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
MARYLAND	187	175	162	160	161	195	239	270	1,549
WESTERN AREA	29	34	25	25	32	27	34	45	251
GARRETT	1	2	1	1	1	0	2	1	9
ALLEGANY	5	0	3	4	2	4	2	3	23
WASHINGTON	3	10	4	5	4	3	6	11	46
FREDERICK	5	7	8	5	9	5	11	12	62
MONTGOMERY	15	15	9	10	16	15	13	18	111
CENTRAL AREA	114	96	100	94	99	126	154	166	949
BALTIMORE CITY	56	41	54	39	44	71	86	86	477
BALTIMORE COUNTY	38	23	22	29	22	24	32	39	229
ANNE ARUNDEL	12	12	9	10	21	15	22	18	119
CARROLL	3	4	5	4	4	4	4	9	37
HOWARD	2	7	5	3	4	6	6	6	39
HARFORD	3	9	5	9	4	6	4	8	48
SOUTHERN AREA	31	27	21	22	19	30	29	30	209
CALVERT	3	3	4	0	2	2	1	4	19
CHARLES	5	5	1	4	3	2	4	5	29
ST. MARY'S	2	1	3	2	2	3	2	3	18
PRINCE GEORGE'S	21	18	13	16	12	23	22	18	143
EASTERN SHORE AREA	13	18	16	19	11	12	22	29	140
CECIL	5	4	7	6	3	6	9	5	45
KENT	0	0	0	1	0	0	1	1	3
QUEEN ANNE'S	1	2	0	1	3	0	1	7	15
CAROLINE	1	0	1	0	1	0	1	2	6
TALBOT	0	3	0	0	0	2	2	0	7
DORCHESTER	2	0	0	1	0	1	0	0	4
WICOMICO	1	6	3	4	2	2	6	7	31
SOMERSET	0	0	1	0	1	1	1	2	6
WORCESTER	3	3	4	6	1	0	1	5	23

1 Includes deaths that were related to recent ingestion of alcohol.
2 Includes only deaths for which the manner of death was classified as accidental or undetermined.

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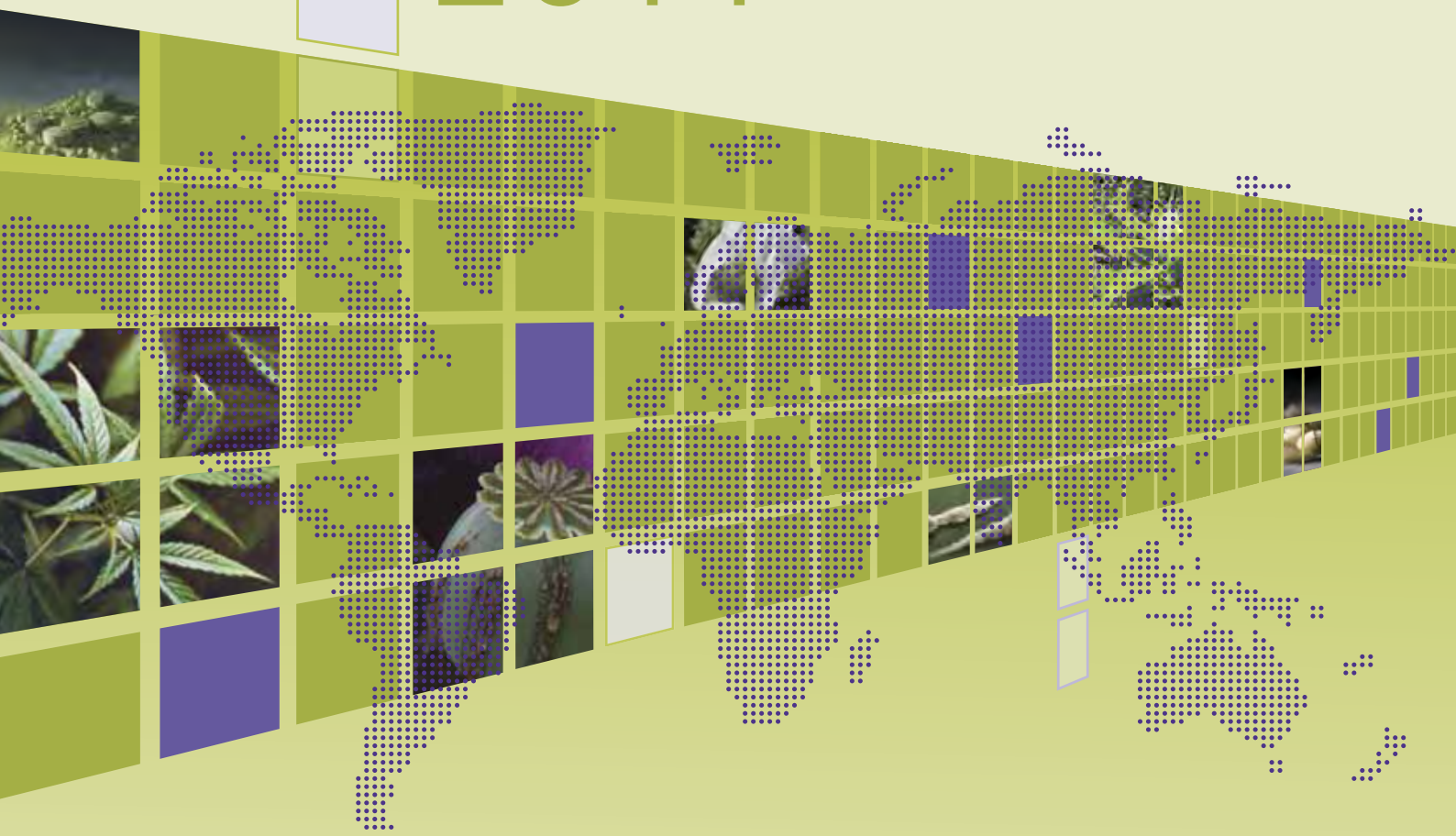
WORLD DRUG REPORT 2011



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This report is dedicated to the memory of

Leonardo Iván Alfaro Santiago,
Patricia Olga Delgado Rúa de Altamirano,
Mariela Cinthia Moreno Torreblanco *and*
Stephan Javier Campos Ruiz

who lost their lives on 5 May, 2011, while on duty
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6. STATISTICAL ANNEX

TEXT BOXES

PREFACE

Today there is widespread recognition among Member States and United Nations entities that drugs, together with organized crime, jeopardize the achievement of the Millennium Development Goals. It is increasingly clear that drug control must become an essential element of our joint efforts to achieve peace, security and development. At the same time, we must reinforce our commitment to shared responsibility and the basic principles of health and human rights.

The *World Drug Report* documents developments in global drug markets and tries to explain the factors that drive them. Its analysis of trends and emerging challenges informs national and international drug and crime priorities and policies, and provides a solid foundation of evidence for counternarcotics interventions. Drug markets and drug use patterns change rapidly, so measures to stop them must also be quick to adapt. Thus the more comprehensive the drug data we collect and the stronger our capacity to analyse the problem, the better prepared the international community will be to respond to new challenges.

Recent trends

Despite increased attention to drug demand reduction in recent years, drug use continues to take a heavy toll. Globally, some 210 million people use illicit drugs each year, and almost 200,000 of them die from drugs. There continues to be an enormous unmet need for drug use prevention, treatment, care and support, particularly in developing countries.

Drug use affects not only individual users, but also their families, friends, co-workers and communities. Children whose parents take drugs are themselves at greater risk of drug use and other risky behaviours. Drugs generate crime, street violence and other social problems that harm communities. In some regions, illicit drug use is contributing to the rapid spread of infectious diseases like HIV and hepatitis.

Heroin consumption has stabilized in Europe and cocaine consumption has declined in North America – the most lucrative markets for these drugs. But these gains have been offset by several counter-trends: a large increase in cocaine use in Europe and South America over the last decade; the recent expansion of heroin use to Africa; and increased abuse of synthetic 'designer drugs' and prescription medications in some regions. Meanwhile, new drug use profiles are also emerging: consumption of combinations of drugs rather than just one illicit substance is becoming more common, and this increases the risk of death or serious health consequences.

On the supply side, illicit cultivation of opium poppy and coca bush is now limited to a few countries, but heroin and cocaine production levels remain high. Although 2010 saw a significant decrease in opium production, this was largely due to a plant disease that affected opium poppies in the major growing regions of Afghanistan. Yet between 1998 and 2009, global production of opium rose almost 80 per cent, which makes the 2010 production decline less significant over the last decade. Meanwhile, the market for cocaine has not shrunk substantially, it has simply experienced geographical shifts in supply and demand. Just a decade ago, the North American market for cocaine was four times larger than that of Europe, but now we are witnessing a complete rebalancing. Today the estimated value of the European cocaine market ($33 billion) is almost equivalent to that of the North American market ($37 billion).

Drug trafficking, the critical link between supply and demand, is fuelling a global criminal enterprise valued in the hundreds of billions of dollars that poses a growing challenge to stability and security. Drug traffickers and organized criminals are forming transnational networks, sourcing drugs on one continent, trafficking them across another, and marketing them in a third. In some countries and regions, the value of the illicit drug trade far exceeds the size of the legitimate economy. Given the enormous amounts of money controlled by drug traffickers, they have the capacity to corrupt officials. In recent years we have seen several such cases in which ministers and heads of national law enforcement agencies have been implicated in drug-related corruption. We are also witnessing more and more acts of violence, conflicts and terrorist activities fuelled by drug trafficking and organized crime.

A stronger multilateral response to illicit drugs

In the face of such diverse and complex challenges, we must improve the performance of our global response to illicit drugs.

This year is the 50th anniversary of the keystone of the international drug control system: the 1961 Single Convention on Narcotic Drugs. Its provisions remain sound

and highly relevant, as does its central focus on the protection of health. The international community must make more effective use of all three Drug Conventions as well as the Conventions against Transnational Organized Crime and Corruption. Mobilizing these powerful international legal instruments, together with existing law enforcement and judicial networks, can strengthen transnational cooperation in investigating and prosecuting drug traffickers, combating money-laundering, and identifying, freezing and confiscating criminal assets.

A comprehensive and integrated approach can also help us to confront the global threat from drugs more effectively. We must build new partnerships. Governments and civil society must work together. States have to join forces in promoting regional cooperation. This strategy is already having some success against drugs originating in Afghanistan. The Paris Pact unites more than 50 States and international organizations to counter traffic in and consumption of Afghan opiates. Regional counternarcotics information-sharing and joint cooperation initiatives like the Triangular Initiative (involving Afghanistan, the Islamic Republic of Iran and Pakistan), the Central Asian Regional Information and Coordination Centre and Operation TARCET (initiative to prevent the smuggling of precursors to Afghanistan) have intercepted and seized tons of illicit drugs and precursor chemicals. Building on the lessons of the Paris Pact, the Group of Eight, under the leadership of the French Presidency, recently launched an initiative to create a unified response to tackle the global cocaine market.

We also must ensure that supply and demand reduction efforts work together rather than in parallel. On the supply side, if we are to make real progress against heroin and cocaine, we must address illicit cultivation in a more meaningful and coordinated way. We have many tools at our disposal, including alternative livelihoods. Governments and aid agencies must invest more in development, productive employment and increased security. Crop eradication can also play a role, as a national responsibility with international support and assistance and in combination with programmes that help farmers shift to the cultivation of licit crops. We must also develop new strategies for preventing the diversion of chemicals that are used to make synthetic 'designer drugs' and to turn coca bush and opium poppies into cocaine and heroin.

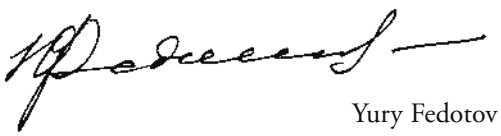
On the demand side, there is growing recognition that we must draw a line between *criminals* (drug traffickers) and their *victims* (drug users), and that treatment for drug use offers a far more effective cure than punishment. We are seeing progress in drug use prevention through family skills training, and more attention is being paid to comprehensive HIV prevention, treatment and care. As an essential part of demand reduction efforts, we also need to more vigorously raise public awareness about illicit drugs, and facilitate healthy and fulfilling alternatives to drug use, which must not be accepted as a way of life.

Better data and analysis to enrich policy

A lack of comprehensive data continues to obstruct our full understanding of the markets for illicit drugs. The gaps are more prominent in some regions, such as Africa and Asia, and also around new drugs and evolving consumption patterns.

More comprehensive data collection allows for more and better analysis, which in turn enriches our response to the world drug challenge. I urge countries to strengthen their efforts to collect data on illicit drugs, and I encourage donors to support those countries that need assistance in these efforts. If we can strengthen our research and analysis, we can better understand the drug phenomenon and pinpoint areas where interventions are most likely to achieve positive results.

I would like to thank the teams of skilled surveyors who gather data on cultivation and production levels of illicit crops in the world's major drug-producing regions. The information they collect is of strategic importance to the efforts of both the Governments concerned and the international community to make our societies safer from drugs and organized crime. In addition, their data forms the core of this report. These brave individuals work in challenging and sometimes dangerous conditions. Sadly, in May 2011 a team of UNODC crop surveyors in the Plurinational State of Bolivia lost their lives while on the job. I would like to pay tribute to their courage and commitment, and dedicate this report to their memory.



Yury Fedotov
Executive Director
United Nations Office on Drugs and Crime

EXPLANATORY NOTES

Types of drugs:

ATS – Amphetamine-type stimulants (ATS) refers to a group of substances comprised of synthetic stimulants from the amphetamines-group of substances, including amphetamine, methamphetamine, methcathinone and the ecstasy-group substances (MDMA and its analogues). In cases where countries report to UNODC without indicating the specific ATS they are referring to, the term non-specified amphetamines is used. In cases where ecstasy is referred to in enclosed brackets ('ecstasy'), the drug represents cases where the drug is sold as ecstasy (MDMA) but which may contain a substitute chemical and not MDMA.

Coca paste (or coca base) – An extract of the leaves of the coca bush. Purification of coca paste yields cocaine (base and hydrochloride).

Cocaine (base and salts) – Coca paste, cocaine base and cocaine hydrochloride referred to in the aggregate.

Crack (cocaine) – Cocaine base obtained from cocaine hydrochloride through conversion processes to make it suitable for smoking.

Heroin HCl (heroin hydrochloride) – Injectable form of heroin, sometimes referred to as 'Heroin no. 4.'

Heroin no. 3 – A less refined form of heroin suitable for smoking.

Opioid – A generic term applied to alkaloids from opium poppy, their synthetic analogues, and compounds synthesized in the body.

Opiate – A subset of opioids comprised of the various products derived from the opium poppy plant including opium, morphine and heroin.

Poppy straw – All parts (except the seeds) of the opium poppy, after mowing.

Terms: Since there is some scientific and legal ambiguity about the distinctions between drug 'use', 'misuse' and 'abuse', this report uses the neutral terms, drug 'use' or 'consumption'.

Annual prevalence refers to the total number of people of a given age range who have used a given drug at least once in the past year divided by the number of people of a given age.

Maps: The boundaries and names shown and the designations used on maps do not imply official endorsement or acceptance by the United Nations. A dotted line represents approximately the line of control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Disputed boundaries (China/India) are represented by cross hatch due to the difficulty of showing sufficient detail.

Population data: The data on population used in this report comes from: United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects: The 2008 Revision, 2009.

Regions: In various sections, this report uses a number of regional designations. These are not official designations. They are defined as follows:

- East Africa: Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Mauritius, Rwanda, Seychelles, Somalia, Tanzania (United Republic of) and Uganda.
- North Africa: Algeria, Egypt, Libyan Arab Jamahiriya, Morocco, Sudan and Tunisia.
- Southern Africa: Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe.
- West and Central Africa: Angola, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Congo (Democratic Republic of), Congo (Republic of), Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone and Togo.

- Caribbean: Antigua and Barbuda, Bahamas, Barbados, Bermuda, Cuba, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines and Trinidad and Tobago.
- Central America: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama.
- North America: Canada, Mexico and the United States of America.
- South America: Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela (Bolivarian Republic of).
- Central Asia and Transcaucasia: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.
- East and South-East Asia: Brunei Darussalam, Cambodia, China (including Hong Kong, Macao, and Taiwan Province of China), the Democratic People's Republic of Korea, Indonesia, Japan, Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, Philippines, the Republic of Korea, Singapore, Thailand, Timor-Leste and Viet Nam.
- Near and Middle East/South-West Asia: Afghanistan, Bahrain, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Pakistan, Qatar, Saudi Arabia, Syrian Arab Republic, the United Arab Emirates and Yemen. The Near and Middle East refers to a subregion which includes Bahrain, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.
- South Asia: Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka.
- East Europe: Belarus, Republic of Moldova, Russian Federation and Ukraine.
- South-East Europe: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Kosovo, Montenegro, Romania, Serbia, the former Yugoslav Republic of Macedonia and Turkey.
- West and Central Europe: Andorra, Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, the Netherlands, Norway, Poland, Portugal, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.
- Oceania: Australia, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, New Zealand, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu and other small island territories.

EXPLANATORY NOTES

The following abbreviations have been used in this Report:

AIDS	Acquired Immune-Deficiency Syndrome
ARQ	UNODC annual reports questionnaire
ATS	amphetamine-type stimulants
CCDAC	Central Committee for Drug Abuse Control (Myanmar)
CICAD	Inter-American Drug Abuse Control Commission
CIS	Commonwealth of Independent States
COP	Colombian peso
DAINAP	Drug Abuse Information Network for Asia and the Pacific
DEA	United States, Drug Enforcement Administration
DELTA	UNODC Database on Estimates and Long Term Trend Analysis
DIRAN	Colombian National Police – Antinarcotics Directorate
DUMA	Drug Use Monitoring in Australia
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
ESPAD	European School Survey Project on Alcohol and other Drugs
EUROPOL	European Police Office
Govt.	Government
HIV	Human Immunodeficiency Virus
HONLEA	Heads of National Drug Law Enforcement Agencies
IDS	UNODC individual drug seizures database
IDU	injecting drug use
INCB	International Narcotics Control Board
INCSR	International Narcotics Control Strategy Report (United States Department of State)
INTERPOL/ ICPO	International Criminal Police Organization
LSD	lysergic acid diethylamide
LCDC	Lao National Commission for Drug Control and Supervision
MDA	3,4-methylenedioxyamphetamine (tenamfetamine)
MDE	3,4-methylenedioxyethylamphetamine
MDMA	3,4-methylenedioxymethamphetamine
NGO	Non-governmental organization
NIDA	National Institute of Drug Abuse (USA)
OECD	Organization for Economic Co-operation and Development
ONDCP	Office of National Drug Control Policy (USA)
P-2-P	1-phenyl-2-propanone (BMK)
SACENDU	South African Community Epidemiology Network on Drug Use
SAMHSA	Substance Abuse and Mental Health Services Administration (USA)
SRO	safrole-rich oils
THC	tetrahydrocannabinol
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNODC	United Nations Office on Drugs and Crime
WCO	World Customs Organization
WDR	*World Drug Report*
WHO	World Health Organization
3,4-MDP-2-P	3,4-methylenedioxyphenyl-2-propanone (PMK)

Weights and measurements:

l	litre
g	gram
mg	milligram
kg	kilogram
mt	metric ton

EXECUTIVE SUMMARY

Global developments in illicit drug consumption, production and trafficking

Consumption

Globally, UNODC estimates that, in 2009, between 149 and 272 million people, or 3.3% to 6.1% of the population aged 15-64, used illicit substances at least once in the previous year. About half that number are estimated to have been current drug users, that is, having used illicit drugs at least once during the past month prior to the date of assessment. While the total number of illicit drug users has increased since the late 1990s, the prevalence rates have remained largely stable, as has the number of problem drug users,[1] which is estimated at between 15 and 39 million.

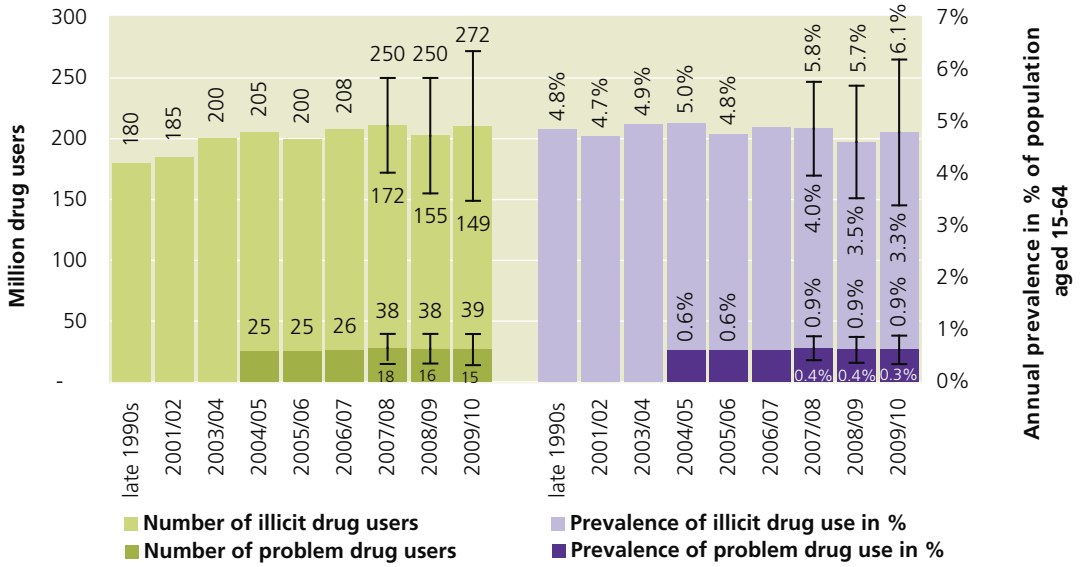
Cannabis is by far the most widely used illicit drug type, consumed by between 125 and 203 million people worldwide in 2009. This corresponds to an annual prevalence rate of 2.8%-4.5%. In terms of annual prevalence, cannabis is followed by ATS (amphetamine-type stimulants; mainly methamphetamine, amphetamine and ecstasy), opioids (including opium, heroin and prescription opioids) and cocaine. Lack of information regarding use of illicit drugs – particularly ATS - in populous countries such as China and India, as well as in emerging regions of consumption such as Africa, generate uncertainty when estimating the global number of users. This is reflected in the wide ranges of the estimates.

While there are stable or downward trends for heroin and cocaine use in major regions of consumption, this is being offset by increases in the use of synthetic and prescription drugs. Non-medical use of prescription drugs is reportedly a growing health problem in a number of developed and developing countries.

Moreover, in recent years, several new synthetic compounds have emerged in established illicit drug markets. Many of these substances are marketed as 'legal highs' and substitutes for illicit stimulant drugs such as cocaine or 'ecstasy.' Two examples are piperazines and mephedrone, which are not under international control. A similar development has been observed with regard to cannabis, where demand for synthetic cannabinoids

Annual prevalence and number of illicit drug users at the global level, late 1990s-2009/2010

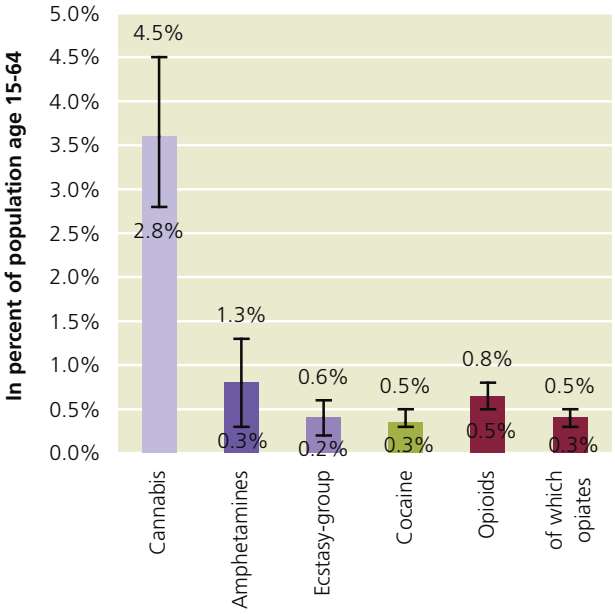
Source: UNODC estimates based on ARQ data and other official sources.



1 While there is no established definition of problem drug users, they are usually defined by countries as those that regularly use illicit substances and can be considered dependent, and those who inject drugs.

Annual prevalence of drug use at the global level, by illicit drug category, 2009-2010

Source: UNODC estimates based on ARQ data and other official sources.



('spice') has increased in some countries. Sold on the internet and in specialized shops, synthetic cannabinoids have been referred to as 'legal alternatives' to cannabis, as they are not under international control. The control status of these compounds differs significantly from country to country.

In terms of treatment demand, the picture varies between regions. Cannabis contributes significantly to treatment demand in most regions, but it is particularly prominent in Africa and Oceania. Opiates dominate treatment demand in Europe and Asia, whereas cocaine is the main problem drug in South America. In North America, cannabis, opioids and cocaine make up similar shares of total treatment demand. ATS does not dominate any one region but makes a sizable contribution to treatment demand particularly in Asia and Oceania, but also in Europe and North America.

In terms of the health consequences of drug use, the global average prevalence of HIV among injecting drug users is estimated at 17.9%, or equivalently, 2.8 million people who inject drugs are HIV positive. This means that nearly one in five injecting drug users is living with HIV. The prevalence of Hepatitis C among injecting drug users at the global level is estimated at 50% (range: 45.2%-55.3%), suggesting that there are 8.0 million (range: 7.2 – 8.8 million) injecting drug users worldwide who are also infected with HCV. Deaths related to or associated with the use of illicit drugs are estimated between 104,000 and 263,000 deaths each year, equivalent to a range of 23.1 to 58.7 deaths per one million inhabitants aged 15-64. Over half of the deaths are estimated to be fatal overdose cases.

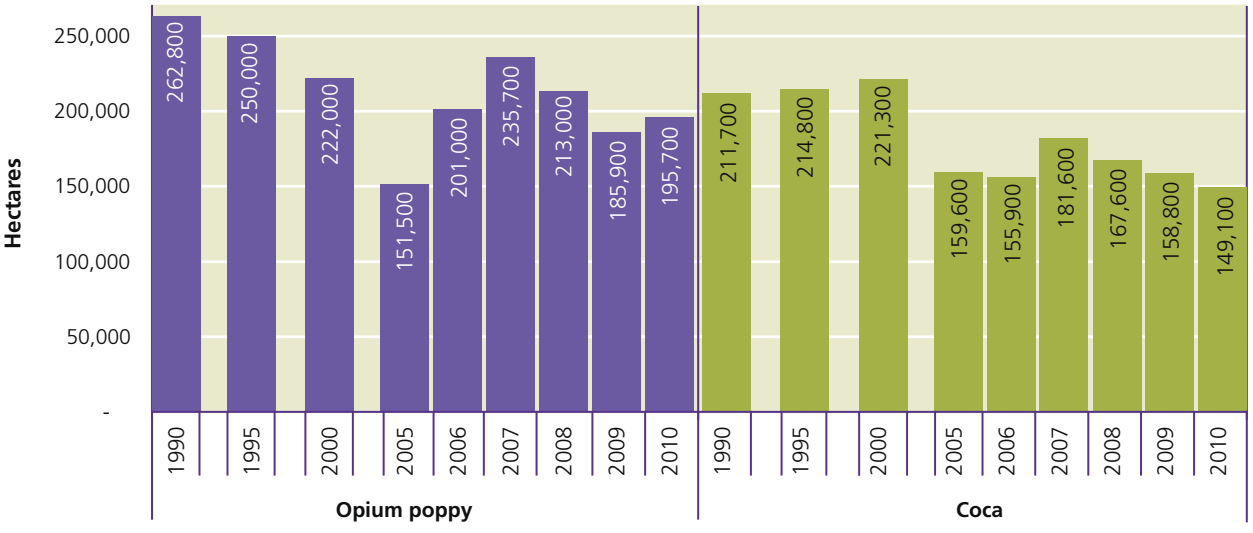
Production

Global opium poppy cultivation amounted to some 195,700 ha in 2010, a small increase from 2009. The vast bulk - some 123,000 ha - were cultivated in Afghanistan, where the cultivation trend remained stable. The global trend was mainly driven by increases in Myanmar, where cultivation rose by some 20% from 2009. There was a significant reduction in global opium pro-

Global opium poppy and coca cultivation (ha), 1990-2010*

* For Mexico (opium poppy) and the Plurinational State of Bolivia (coca), in the absence of data for 2010, the estimates for 2009 were imputed to 2010.

Sources: UNODC.



duction in 2010, however, as a result of disease in opium poppy plants in Afghanistan.

The global area under coca cultivation continued to shrink to 149,100[2] ha in 2010, falling by 18% from 2007 to 2010. There was also a significant decline in potential cocaine manufacture, reflecting falling cocaine production in Colombia which offset increases identified in both Peru and the Plurinational State of Bolivia.

While it is difficult to estimate total global amphetamine-type stimulants manufacture, it has spread, and more than 60 Member States from all regions of the world have reported such activity to date. The manufacture of amphetamines-group substances is larger than that of ecstasy. Methamphetamine - which belongs to the amphetamines-group - is the most widely manufactured ATS, with the United States of America reporting a large number of detected illicit laboratories.

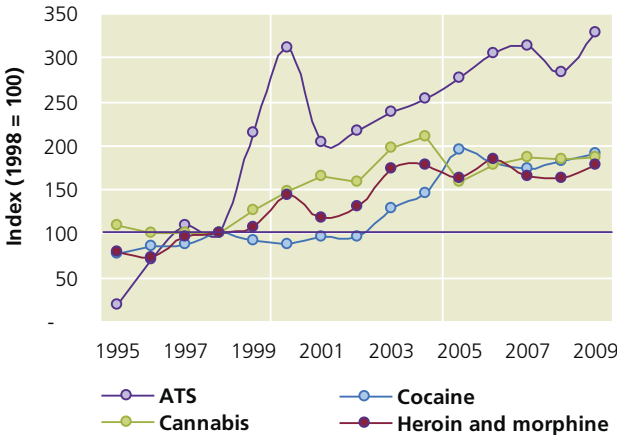
Cannabis herb cultivation occurs in most countries worldwide. Although there was insufficient data available to update the global cultivation estimate, the relatively stable seizure trend suggests a stable level of production. Indoor cultivation of cannabis herb is still largely limited to the developed countries of North America, Europe and Oceania. Cannabis resin production estimates were not updated this year, but based on ARQ replies to UNODC, Afghanistan and Morocco were major producers.

Trafficking

Trafficking flows vary according to the drug type involved. The most commonly seized drug type, cannabis herb, is often locally produced and thus, international trafficking is limited. Cocaine and heroin are trafficked both intra- and inter-regionally, though considerable amounts are consumed quite far from the countries of cultivation and production. Most ATS-manufacture occurs in the region of consumption, whereas their precursor chemicals are trafficked inter-regionally.

Trends in the volume of seizures, by main drug categories(index: 1998 = 100)

Source: UNODC ARQ.



The long-term trends show increased seizures for all the major drug types. Between 1998 and 2009, seizures of cocaine, heroin and morphine, and cannabis almost doubled. ATS seizures more than tripled over the same period.

Though it is still the most commonly seized drug, by far, the relative importance of cannabis in total illicit drug seizures has declined, rendering the other drug types – particularly ATS - increasingly prominent.

Looking at recent trends, global seizures of ATS rose to a record high in 2009, driven by increases in methamphetamine seizures. Ecstasy seizures, on the other hand, decreased. The predominant type of ATS seized varies according to region, with methamphetamine dominating in Oceania, Africa, North America and much of Asia.

Seizures of opiates remained stable in 2009, with the Islamic Republic of Iran and Turkey continuing to account for the largest national seizure totals. Cocaine seizures also remained largely stable, at a high level. For cannabis, seizures of cannabis herb – the most widely consumed variety – increased, whereas resin seizures decreased.

For cocaine and cannabis resin, seizures are shifting away from the main consumer markets to source regions. Both North America and West and Central Europe account for declining shares of global cocaine seizures, while South America is seizing more. Similarly, cannabis resin seizures decreased significantly in Europe but increased in North Africa from 2008 to 2009.

The major drug markets

Opiates

Global use of opiates remained largely stable in 2009. UNODC estimates that some 12 to 21 million people used opiates worldwide; some three quarters of them used heroin. In 2009, an estimated 12-14 million global heroin users consumed some 375 mt of heroin. Europe and Asia remain the key global consumption markets, and they are largely supplied by Afghan opium.

In recent years, the non-medical use of various prescription opioids has become increasingly problematic in some areas of the world, particularly in North America. In the United States, many emergency room visits are now related to prescription opioid use, and this drug class is also responsible for an increasing share of treatment admissions in that country.

2 The figure for the Plurinational State of Bolivia was not available at the time of printing of this report. The total area under cultivation in 2010 is based on 2009 figures for Bolivia and will be revised when the 2010 figure becomes available.

Afghanistan accounts for 63% of the total global area under opium poppy cultivation. Cultivation there remained stable in 2010. Increases were registered in Myanmar in 2010, however, which resulted in an increasing global trend (5%). The opium yield is also increasing in Myanmar, causing the country's potential opium production to increase by some 75%.

Nonetheless, global opium production dropped to 4,860 mt in 2010, from to 7,853 mt the year before. This was largely due to a drastic reduction in Afghanistan's opium production as a result of disease in opium poppy plants. UNODC forecasts for Afghan production in 2011 predict a further small decline or at least a stabilization of overall opium poppy cultivation at the lower levels. If opium yield returns to the average level, opium production is likely to increase in Afghanistan in 2011.

Seizures of opium and heroin appeared to stabilize in 2009, amounting to 653 mt and 76 mt, respectively. An estimated 460-480 mt of heroin were trafficked (including seizures) worldwide in 2009, of which 375 mt reached the consumers. Traffickers' use of maritime transportation and seaports has been identified as a key emerging threat.

The global opiate market was valued at US$68 billion in 2009, with heroin consumers contributing US$61 billion of this. Heroin prices vary greatly. Although prices in Afghanistan increased in 2010, one gram costs less than US$4. In West and Central Europe, users pay some US$40-100 per gram, in the United States and northern Europe, US$170-200, and in Australia, the price is as high as US$230–370. While Afghan farmers only earned some US$440 million in 2010, organized crime groups in the main countries of consumption reap the largest profits.

Cocaine

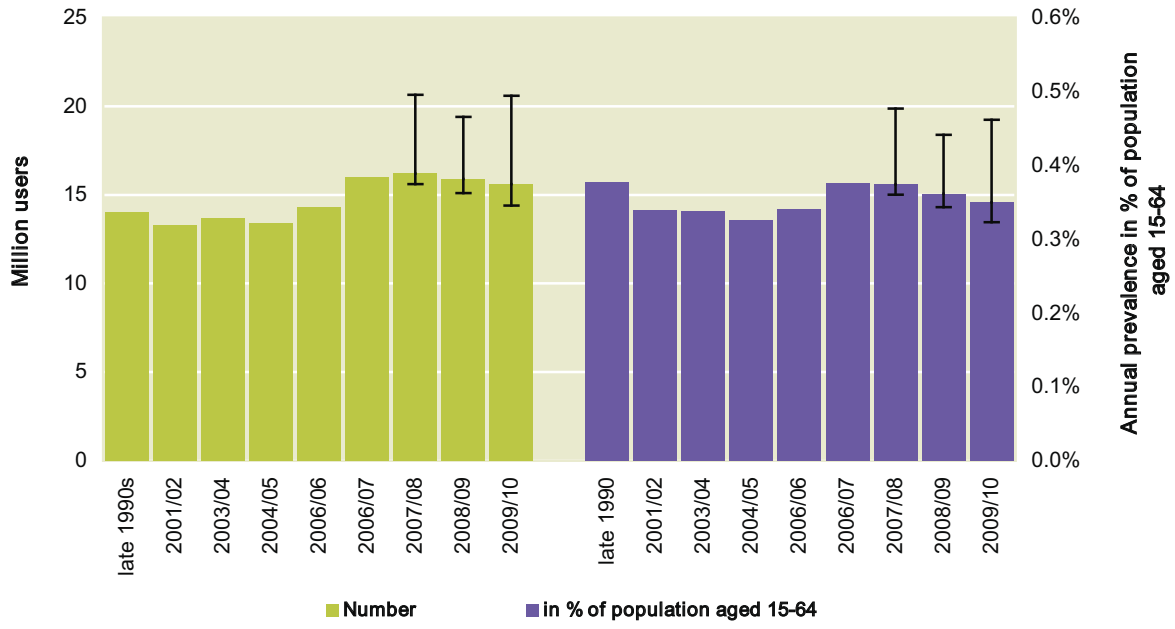
In 2009, the annual prevalence of cocaine use was estimated between 0.3% and 0.5% of the world population aged 15-64, or some 14.2 to 20.5 million people in that age range. Though the lower and upper bounds of cocaine users in 2009 have widened somewhat, consumption remains essentially stable. Taking qualitative information into account, the actual number of cocaine users is probably closer to the lower end of the range.

Despite significant declines in recent years, the largest cocaine market continues to be that of the United States, with an estimated consumption of 157 mt of cocaine, equivalent to 36% of global consumption. The second-largest cocaine market is that of Europe, notably West and Central Europe, where consumption is estimated at 123 mt. Over the last decade, the volume of cocaine consumed in Europe has doubled. In recent years, there are some signs of stabilization, though at the higher levels. Cocaine use in East Europe is limited.

The area under coca cultivation declined by 18% from 2007 to 2010. Considering the past decade (2000-2010), the decrease is even larger, 33%. Global seizures of cocaine have been generally stable over the period 2006-2009, amounting to some 732 mt in 2009. Since 2006 seizures have shifted towards the source areas in South America and away from the consumer markets in

Annual prevalence and number of cocaine users at the global level, late 1990s-2009/2010

Source: UNODC.



North America and West and Central Europe. The role of West Africa in cocaine trafficking from South America to Europe might have decreased if judged from seizures only, but there are other indications that traffickers may have changed their tactics, and the area remains vulnerable to a resurgence in trafficking of cocaine. Some countries in the Asia-Pacific, with potentially large consumer markets, registered increasing cocaine seizures in 2008 and 2009.

The value of the global cocaine market is lower than it was in the mid-1990s, when prices were much higher and the market in the United States was strong. In 1995, the global market was worth some US$165 billion, while in 2009, this had been reduced to just over half of that, some US$85 billion (range: US$75-US$100 bn). As with heroin, almost all the profits are reaped by traffickers.

Amphetamine-type stimulants (ATS)

Global ATS use levels remained essentially stable in 2009. ATS can be divided into two main categories: Amphetamines-group (mainly amphetamine and methamphetamine) and ecstasy-group (MDMA and its analogues). UNODC estimates that the annual prevalence for amphetamines-group substances ranged between 0.3% and 1.3% in 2009, or some 14 to 57 million people aged 15-64 who had used such substances at least once in the past year. For the ecstasy-group, global annual prevalence was estimated at between 0.2% and 0.6% of the population aged 15-64, or some 11 to 28 million past-year users.

The predominant substance used varies between and within regions. Amphetamines-group substances dominate in Africa, the Americas and Asia, whereas for Europe and Oceania, ecstasy-group prevalence rates are higher. In North America, the two groups are nearly on par. On aggregate, experts who reported their assessment of ATS use in their respective countries perceive that the use of amphetamines-group substances is stable or increasing, whereas for ecstasy, the trend was most often reported as stable (decreasing in Asia).

The manufacture of ATS is not geographically bound, and ATS laboratories tend to be located close to the illicit markets for these drugs. Precursors and other chemicals used in the illicit manufacture of ATS are frequently trafficked across regions.

Some 10,600 ATS-related laboratories were reported seized in 2009. The vast bulk of the seized laboratories were manufacturing methamphetamine, most of them located in the United States. Methamphetamine is the most widely manufactured ATS worldwide. Amphetamine and ecstasy manufacture operations tend to be fewer in number but have more sophisticated operations as they require more specialized equipment, precursor chemicals and greater skill levels.

In 2009, global seizures of ATS rose significantly, slightly exceeding the high level of 2007. The increase was mainly driven by methamphetamine seizures, which rose by more than 40% to reach 31 mt. Amphetamine seizures rose by some 10% to 33 mt. Ecstasy seizures decreased somewhat from the already low 2008 level, and amounted to 5.4 mt.

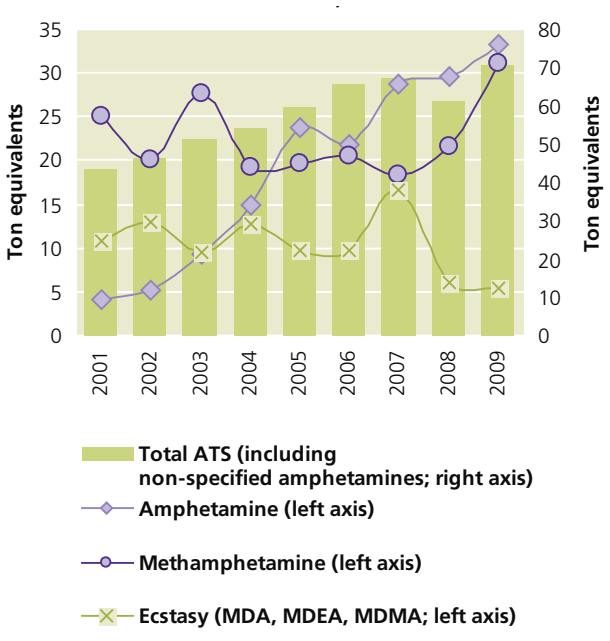
In East and South-East Asia, ATS markets have expanded over the past year. Expert perceptions indicate that increases in ATS use – notably use of methamphetamine - are significant. Government experts have reported that methamphetamine ranks among the top three illicit drugs consumed in several countries in this region, including China, Japan and Indonesia.

Africa is a region of concern with regard to the trafficking of ATS. Trafficking of methamphetamine from Africa was reported first at the end of 2008 and reports have continued since. West Africa, in particular, is emerging as a new source of methamphetamine for illicit markets in East Asia, with couriers transiting Europe, West Asia or East Africa. Precursor chemicals are also frequently trans-shipped through the region.

In India, the first clandestine ATS manufacture operation was detected in May 2003. Since then, several additional facilities have been uncovered. Attempts at illicit ATS manufacture have also been reported from Bangladesh and Sri Lanka. South Asia has become one of the main regions used to obtain ephedrine and

Seizures of ATS, by type, 2001-2009

Source: UNODC DELTA.



pseudoephedrine for the illicit manufacture of methamphetamine. India is one of the world's largest manufacturers of precursor chemicals and Bangladesh also has a growing chemical industry. Amphetamine, methamphetamine and ecstasy have been regularly seized in South Asia over the past five years.

Cannabis

Cannabis remains by far the most widely produced and consumed illicit substance globally. In 2009, between 2.8% and 4.5% of the world population aged 15-64 - between 125 and 203 million people - had used cannabis at least once in the past year. This is similar to last year's estimates. Cannabis herb is the most common type used, produced and seized.

Some increases in cannabis use were reported from the Americas, Africa and Asia in 2009, whereas consumption in western Europe and Oceania remained stable or declined. Over the past 10 years, experts from an increasing number of countries have been reporting stable cannabis use trends. Despite this, cannabis use accounts for the bulk of treatment demand in Africa and Oceania.

Recent studies have shown that intensive (long-term regular use, high doses) exposure to cannabis products with high potency levels may increase the risk of psychotic disorders. The average concentration of the major psychoactive substance in cannabis products (THC) seems to be higher than it was 10-15 years ago, though data for the past five years show a stable trend in some countries. The pattern, however, is not consistent for all products and all countries.

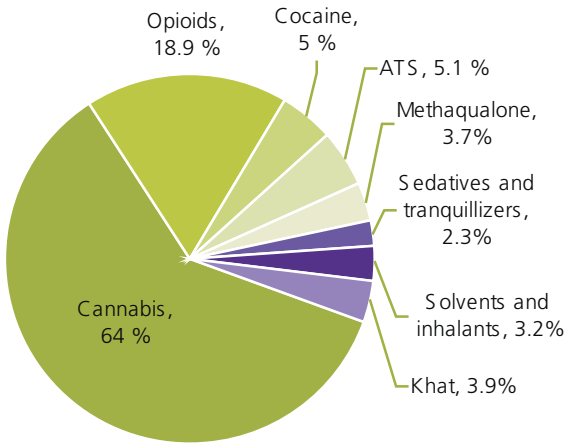
Cannabis herb cultivation is widely dispersed as it is mostly produced for domestic or regional markets. Therefore, an estimation of total global production is fraught with difficulty. Cannabis resin production is more localized and the drug is trafficked over larger distances. The countries most often identified as sources by the cannabis resin consumer markets are Morocco, Afghanistan, Lebanon and Nepal/India.

In Afghanistan, the first UNODC/Government cannabis survey in 2009 indicated that Afghanistan is indeed among the significant cannabis resin-producing countries. Moreover, cannabis has become a competitor to opium poppy as a lucrative crop for farmers in the country. The preliminary second survey in 2010 gave no indications of major changes in the levels of cultivation and production compared to 2009.

Cannabis herb seizures increased somewhat – returning to the levels of 2006-2007 following a drop in 2008 - and amounted to some 6,000 mt. North America accounts for the bulk of herb seizures, and seizures in the United States and Mexico increased in 2009. Cannabis resin seizures, on the other hand, decreased from their peak level in 2008. Resin seizures continued their shift away from West and Central Europe – where seizures are at their lowest level for the last 10 years - to the prominent source region of North Africa, where seizures have increased.

Africa: Distribution* of primary drug of abuse of people entering treatment, 2009

*Total is greater than 100% due to polydrug use.
Source: UNODC ARQ.



1. OVERVIEW OF GLOBAL AND REGIONAL DRUG TRENDS AND PATTERNS

The following chapter first draws together information on the global drug problem in its three main sectoral dimensions – production, trafficking and consumption, including prevalence, drug-related treatment, drug-related infectious diseases and drug deaths. This is followed by a regional overview. More detailed information on specific drug markets (opiates, cocaine, cannabis and amphetamine-type stimulants) can be found in subsequent chapters.

2) Global overview

a) Production

The world's largest illicit drug product – in volume terms – is cannabis, that is, the production of cannabis herb, followed by cannabis resin. The second largest illicit drug production is related to cocaine, followed by heroin. Amphetamine-type stimulants production seems to be at comparable levels with heroin.

Cannabis – the most widely produced illicit drug worldwide

Cannabis herb production takes place across all continents and in almost all countries. Indoor production of cannabis, in contrast, is concentrated in developed countries in North America, Europe and Oceania. No reliable trend information of cannabis herb production at the global level is available. Cannabis herb seizures suggest a stable level of cannabis herb production globally.

Cannabis resin production is geographically more limited. Based on information on the origin of cannabis resin, supplied by Member States, this seems to take place primarily in Morocco – mainly producing for the markets in West and Central Europe and North Africa – and Afghanistan – mainly producing for neighbouring countries in South-West Asia and for the local market. Moroccan authorities report that cannabis resin production has declined in recent years. Cannabis production in Afghanistan – based on joint surveys conducted by UNODC and the Government – seems to show a generally stable level in 2010, compared to a year earlier (which was 1,500-3,500 mt in 2009).

Opium and cocaine production falling...

Information on production is more readily available when it comes to heroin and cocaine. UNODC and the Governments concerned conduct regular opium and coca surveys in the main opium and coca producing areas. These surveys showed clear declines over the 2007-2009 period (-21% for opium and -13% for coca). The global area under coca cultivation continued to

Fig. 1: Global opium poppy and coca cultivation, 1990-2010*

* For Mexico (opium poppy) and the Plurinational State of Bolivia (coca), in the absence of data for 2010, the estimates for 2009 were imputed to 2010.

Source: UNODC, Illicit Crop Monitoring Programme (ICMP).

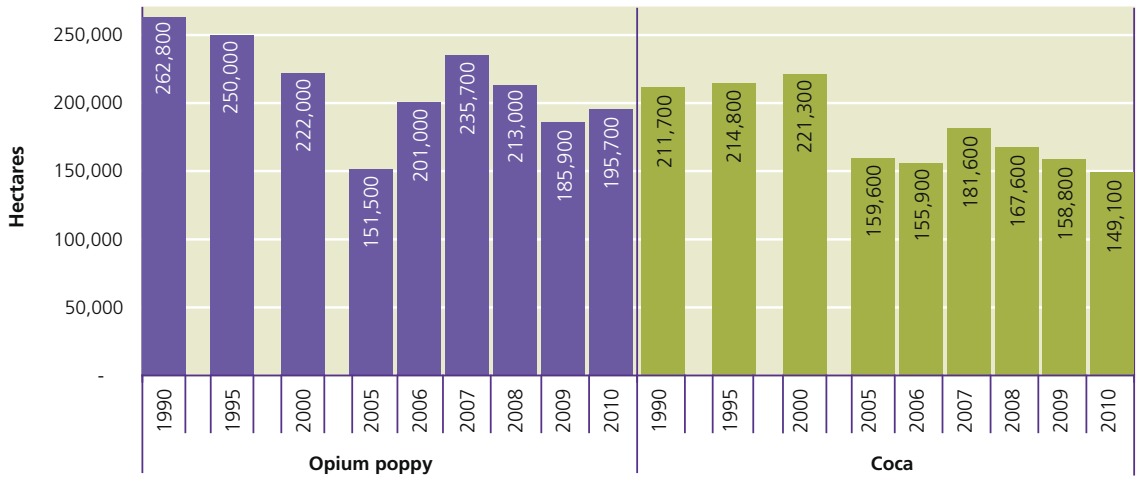
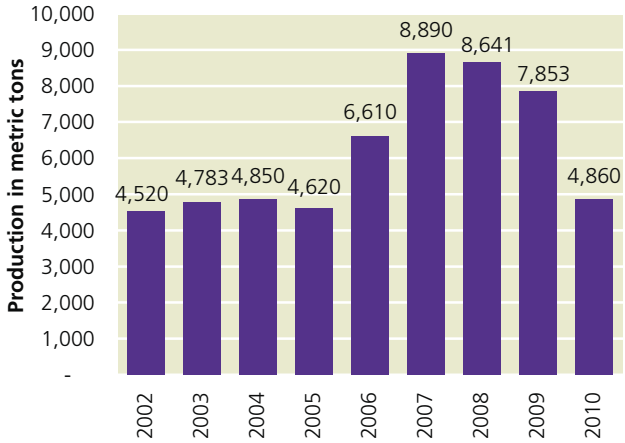


Fig. 2: Global opium production (mt), 2002-2010

Source: UNODC, Illicit Crop Monitoring Programme (ICMP).



shrink further to 149,100[1] ha in 2010, thus falling by 18% from 2007 to 2010. The global area under coca cultivation in 2010 was a third lower than in 2000.

The downward trend for the area under opium poppy cultivation did not continue in 2010, mainly due to increases in Myanmar. The global area under opium cultivation in 2010 amounted to some 195,700 ha, which was still some 12% lower than in 2000 and more than a quarter lower than in 1990. Afghanistan continued to account for the bulk of the cultivation with some 123,000 ha (63% of the global total).

In terms of production, opium output declined strongly in 2010 (-38%) due to a massive decline of opium production in Afghanistan (-48%) linked to much lower yields as a consequence of various plant diseases that affected poppy plants. These declines of the yield in Afghanistan more than offset the increases in Myanmar. Nonetheless, Afghanistan remained the world's largest illicit opium-producing country, accounting for 74% of global opium production in 2010, down from 88% in 2009 and 92% in 2007. In parallel, the importance of Myanmar increased, from 5% of total opium production in 2007 to 12% in 2010. Given the declines of opium production in Afghanistan, global opium production declined by 45% between 2007 and 2010.

In parallel, 'potential' heroin manufacture, that is, the heroin that could have been manufactured from the opium produced (less the amounts of opium consumed as is), fell from some 760 mt in 2007 to less than 400 mt in 2010. These calculations, however, do not take into account the stock and inventory of opium. Based on consumption estimates and the amounts seized, it is estimated that the 'heroin available in the market' (prior to seizures) was, on average, around 430 mt per year over the 2002-2008 period and between 460 and 480 mt in 2009.

There has been a significant decline in potential cocaine manufacture in recent years. Between 2007 and 2010, potential cocaine production shrank by about one sixth, reflecting strongly falling cocaine production in Colombia which offset increases identified in both Peru and the Plurinational State of Bolivia.

… while manufacture of ATS appears to be increasing

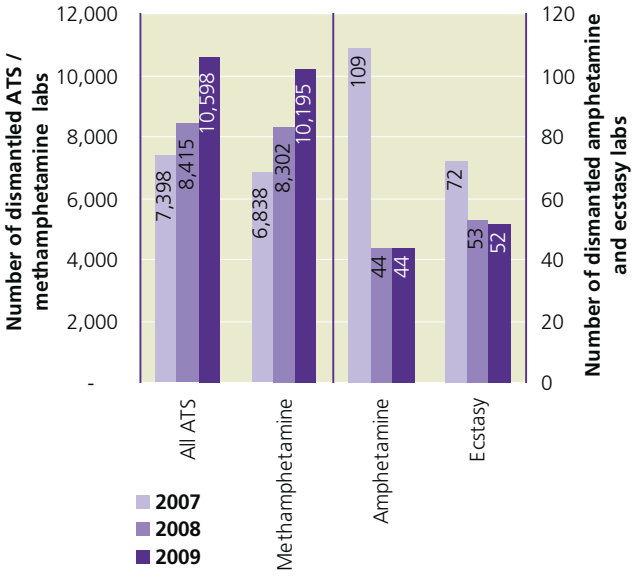
There is no new global ATS production estimate for the year 2009. Available indicators suggest, however, that global manufacture of ATS may have increased in 2009. Seizures of ATS increased by 16% in 2009. The number of ATS laboratory incidents rose by 26% on a year earlier to some 10,600, though this figure was still 46% lower than in the peak year of 2004.

The increase was mainly linked to methamphetamine laboratories dismantled in the United States of America. Global seizures of the main methamphetamine precursor chemicals (ephedrine and pseudoephedrine), taken together, more than doubled in 2009.

In contrast, the number of amphetamine and ecstasy laboratories dismantled globally was lower in 2009 than in 2007 and far lower than in 2004. Seizures of the main amphetamine and ecstasy precursors fell in 2009. The importance of Europe as a key location for the manufacture of ecstasy continued to decline.

Fig. 3: Global number of dismantled ATS laboratories, 2007-2009

Source: UNODC ARQ.



1 The figure for the Plurinational State of Bolivia was not available at the time of printing of this report. The total area under cultivation in 2010 is based on 2009 figures for Bolivia and will be revised when the 2010 figure becomes available.

b) Trafficking

Trafficking flows continue to show distinct patterns:

- Most of the cannabis herb trafficking is intra-regional. In fact, most cannabis is locally produced and locally consumed and thus does not generally leave domestic frontiers.
- Most of the cannabis resin produced in Morocco is destined for consumption in West and Central Europe and North Africa. Cannabis resin produced in Afghanistan is primarily destined for neighbouring regions.
- Cocaine trafficking is both intra-regional and inter-regional. Cocaine produced in the three Andean countries (Colombia, Peru and the Plurinational State of Bolivia) continues to be primarily destined for North America and West and Central Europe. Actual exports out of Andean countries (after deducting seizures and consumption in the Andean region) are estimated at 788 mt. 378 mt are estimated to have left the Andean region for North America in 2009, of which some 200 mt – purity adjusted – were seized in the process. The importance of North America has declined, however, over the last few years. The next main destinations were the countries of West and Central Europe, mostly direct shipments, though some trafficking also takes place via countries in Africa, notably West Africa (around 13% of all trafficking to Europe). About 217 mt of cocaine are thought to have left the Andean region for West and Central Europe, of which almost 100 mt (purity-adjusted) were seized in the process. In addition, a significant share of the cocaine produced is also trafficked to the Southern Cone countries of South America for domestic consumption.
- Heroin trafficking is both intra-regional and inter-regional in nature. Heroin produced in Afghanistan is consumed within the region and/or trafficked to Europe. Some 160 mt of Afghan heroin are estimated to have entered Pakistan in 2009 of which the bulk (some 138 mt) were for final destinations in Europe, South-East Asia, South Asia and Africa. Some 145 mt of heroin is estimated to have been trafficked from Afghanistan to the Islamic Republic of Iran for local consumption and onward trafficking in 2009. Some 75-80 mt of heroin are estimated to have reached West and Central Europe, mostly trafficked via South-East Europe. About 90 mt of Afghan heroin are estimated to have been trafficked to Central Asia, mainly for final destinations in the C.I.S countries, notably the Russian Federation. Heroin manufactured in Myanmar is primarily for the market in other South-East Asian countries. Heroin produced in Mexico and Colombia is mainly destined for the United States and some limited local consumption.
- Trafficking in amphetamines continues to be mainly intra-regional, while the trafficking in amphetamines precursor chemicals continues to be largely inter-regional.
- Ecstasy-trafficking has – traditionally – been intra-regional within Europe (as the origin of most of the ecstasy used to be Europe) and inter-regional for other regions. In recent years, the importance of Europe as a source region has clearly declined. Production has shifted to other regions, notably North America and South-East Asia. Exports from the latter regions to other regions are, however, still very limited.

Seizures of cannabis herb and resin have shown a generally stable trend over the 2007-2009 period. In 2009, cannabis herb seizures increased while resin seizures declined.

Following strong increases over the 2000-2005 period,

Fig. 4: Global seizures of selected drugs (mt), 2005-2009

Source: UNODC ARQ. Quantities as reported (not adjusted for purity).

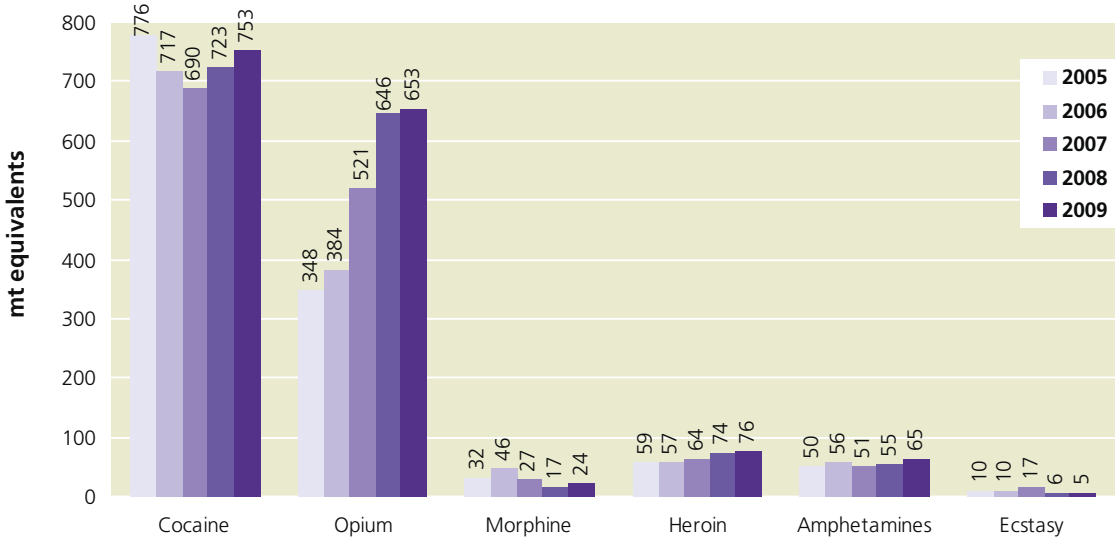
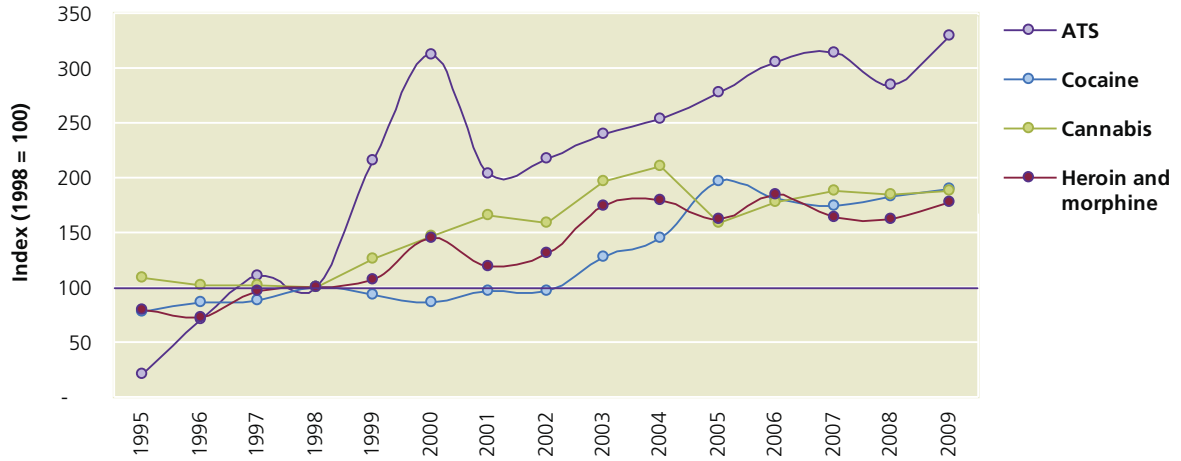


Fig. 5: Trends in seizures of main drug categories (index: 1998 = 100), 1995-2009

Source: UNODC ARQ.



global cocaine seizures fluctuated, but did not change significantly between 2005 and 2009. The high cocaine seizures indicate ongoing improvements in the cocaine interception rates, given falling cocaine production at the global level.

Opium seizures almost doubled between 2005 and 2009, while seizures of heroin and morphine, taken together, remained generally stable over the 2005-2009 period. This suggests that the strong increase of opium production in Afghanistan (until 2007) led to increasing opium exports but was not translated into an equally rapid expansion of heroin production at the global level. Similarly, the declines of Afghan opium production after 2007 did not lead to any declines of heroin and morphine trafficking - at least not until 2009.

Seizures of amphetamines increased over the 2005-2009 period, mainly reflecting increases in methamphetamine seizures.[2] Ecstasy seizures, in contrast, declined. Between 2007 and 2009 they fell by more than two thirds, which seems to confirm reports of an ecstasy shortage in several markets.

Long-term seizure trends show that cocaine, heroin and morphine as well as cannabis seizures – in volume terms - almost doubled between 1998 and 2009, while seizures of ATS more than tripled over the same period.

Over the 2005-2009 period, the above-mentioned plant-based drug seizures remained largely stable while ATS seizures, excluding ecstasy, showed a clear increase.

2 Seizures of amphetamines and ecstasy shown in this report differ from those shown in previous reports. Pills have been converted in 'gross weight' terms into amphetamines or ecstasy (instead of the actual amounts of psychoactive substances contained in such pills) as seizures of other substances are also shown in 'gross weight' terms, and not purity-adjusted. The volume of amphetamines and ecstasy, shown in kilogram equivalents, is thus higher than in previous reports.

c) Consumption

Drug users

Globally, UNODC estimates that between 149 and 272 million people, or, 3.3% to 6.1% of the population aged 15-64 used illicit substances at least once in the previous year. About half that number is estimated to have been current drug users, that is, having used illicit drugs at least once during the past month prior to the survey. Thus, the use of illicit psychoactive substances – for which a global control system is in place - continues to be substantially lower than the use of a legal psychoactive substance such as tobacco.[3] Some 25% of the adult population (15 years and above) are current tobacco smokers, according to the World Health Organization.[4]

Prevalence rates of illicit drug use have remained generally stable over the last decade

The overall number of drug users appears to have increased over the last decade, from 180 to some 210 million people (range: 149-272 million). In terms of prevalence rate, the proportion of drug users among the population aged 15-64, however, remained almost unchanged at around 5% (range: 3.4%-6.2%) in 2009/2010.

Problem drug use remains relatively stable

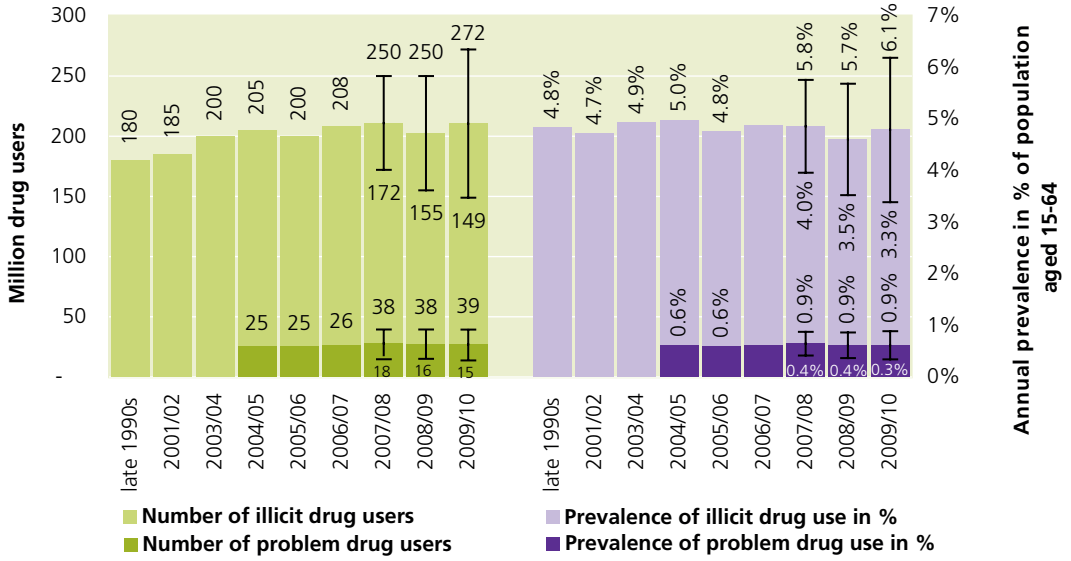
Considering only the problem drug users, estimates range from 15 to 39 million people, equivalent to 0.3%-

3 The WHO places tobacco in the group of psychoactive substances (World Health Organization, *Neuroscience of psychoactive substance use and dependence*, Geneva, 2004.)

4 World Health Organization, *World Health Statistics 2010*. Results were derived from the WHO report on the global tobacco epidemic, 2009. Data on male use of tobacco products (41.1% of the male population aged 15 and above) and female use of tobacco products (8.9% of the female population aged 15 and above) are considered by WHO to be the best estimate for the year 2006.

Fig. 6: Annual prevalence of illicit drug use, late 1990s-2009/2010

Source: UNODC estimates based on UNODC ARQ and other official sources.

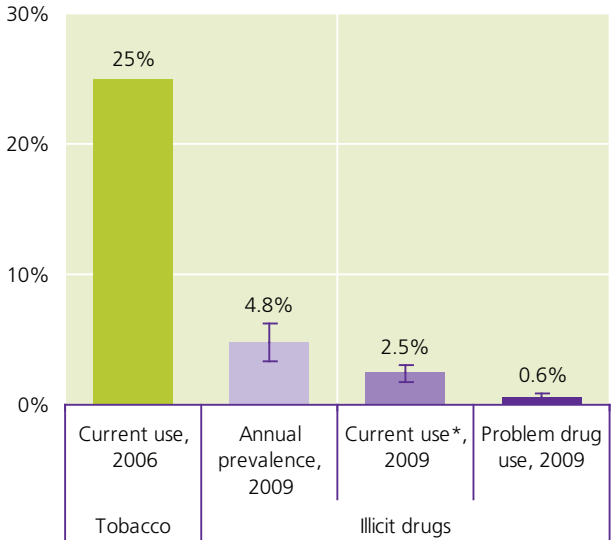


0.9% of the population aged 15-64. While there is no established definition of problem drug users, they are usually defined by countries as those that regularly use illicit substances and can be considered dependent, and those who inject drugs. The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) defines problem drug use as "injecting drug use or long duration/regular use of opioids, cocaine and/or amphetamines."[5] A comparison of problem drug use since 2004/2005 shows a fairly stable trend.

Fig. 7: Prevalence of tobacco and illicit drug use among the adult population, in %

* The calculation of monthly use was based on information from 35 countries for which ratios of past month to annual drug use levels were calculated. In case no total drug use figures were available, the ratio of past month cannabis to past year cannabis use was used as a proxy. The unweighted average showed that past-month prevalence was equivalent to 52% of annual prevalence. Applying this to a prevalence rate of 4.8% results in a past-month prevalence estimate of around 2.5%.

Sources: UNODC estimates for illicit drugs based on UNODC ARQ; tobacco statistics: WHO, World Health Statistics 2010.



5 EMCDDA (2008), *Guidelines for Estimating the Incidence of Problem Drug Use*, Lisbon.

Table 1: Estimated number of past-year illicit drug users aged 15-64, by region and subregion, 2009

	Cannabis users in the past year		Opioid users in the past year		Opiate users in the past year		Cocaine users in the past year		Amphetamines-group users in the past year		Ecstasy users in the past year	
Region/subregion	**Number (lower)**	**Number (upper)**	**Number (lower)**	**Number (upper)**	**Number (lower)**	**Number (upper)**	**Number (lower)**	**Number (upper)**	**Number (lower)**	**Number (upper)**	**Number (lower)**	**Number (upper)**
Africa	**21,630,000**	**59,140,000**	**940,000**	**3,750,000**	**890,000**	**3,210,000**	**940,000**	**4,420,000**	**1,180,000**	**8,150,000**	**350,000**	**1,930,000**
Eastern Africa	2,340,000	8,870,000	150,000	1,790,000	140,000	1,310,000	*estimate cannot be calculated*		*estimate cannot be calculated*		*estimate cannot be calculated*	
North Africa	4,780,000	10,620,000	130,000	550,000	130,000	550,000	30,000	50,000	*estimate cannot be calculated*		*estimate cannot be calculated*	
Southern Africa	3,130,000	7,810,000	240,000	320,000	210,000	280,000	270,000	730,000	280,000	780,000	190,000	300,000
West and Central Africa	11,380,000	31,840,000	420,000	1,090,000	410,000	1,070,000	550,000	2,300,000	*estimate cannot be calculated*		*estimate cannot be calculated*	
Americas	**40,950,000**	**42,860,000**	**12,960,000**	**14,590,000**	**1,180,000**	**1,910,000**	**8,280,000**	**8,650,000**	**5,170,000**	**6,210,000**	**3,770,000**	**4,020,000**
The Caribbean	440,000	2,060,000	60,000	100,000	50,000	80,000	110,000	330,000	30,000	530,000	20,000	240,000
Central America	550,000	610,000	110,000	230,000	20,000	20,000	120,000	140,000	320,000	320,000	20,000	30,000
North America	32,520,000	32,520,000	11,950,000	13,320,000	1,000,000	1,630,000	5,690,000	5,690,000	3,460,000	3,460,000	3,210,000	3,210,000
South America	7,410,000	7,630,000	850,000	940,000	110,000	170,000	2,360,000	2,480,000	1,340,000	1,890,000	520,000	530,000
Asia	**31,340,000**	**67,970,000**	**6,760,000**	**12,520,000**	**6,440,000**	**12,020,000**	**400,000**	**2,300,000**	**4,330,000**	**38,230,000**	**2,390,000**	**17,330,000**
Central Asia	1,950,000	2,260,000	350,000	350,000	320,000	320,000	*estimate cannot be calculated*		*estimate cannot be calculated*		*estimate cannot be calculated*	
East/South-East Asia	5,440,000	24,160,000	2,870,000	5,050,000	2,800,000	4,990,000	400,000	1,070,000	3,480,000	20,870,000	1,480,000	6,920,000
Near and Middle East	6,060,000	12,360,000	2,120,000	3,730,000	1,940,000	3,540,000	40,000	650,000	460,000	4,330,000	*estimate cannot be calculated*	
South Asia	16,830,000	28,110,000	1,420,000	3,380,000	1,380,000	3,170,000	*estimate cannot be calculated*		*estimate cannot be calculated*		*estimate cannot be calculated*	
Europe	**28,730,000**	**29,250,000**	**3,270,000**	**3,730,000**	**3,110,000***	**3,470,000***	**4,300,000**	**4,750,000**	**2,540,000**	**3,180,000**	**3,680,000**	**3,920,000**
East/South-East Europe	5,980,000	6,380,000	2,100,000	2,330,000	2,100,000	2,300,000	310,000	660,000	510,000	1,050,000	1,190,000	1,370,000
West/Central Europe	22,750,000	22,860,000	1,170,000	1,400,000	1,010,000	1,170,000	3,990,000	4,090,000	2,030,000	2,120,000	2,490,000	2,560,000
Oceania	**2,160,000**	**3,460,000**	**100,000**	**190,000**	**40,000**	**50,000**	**330,000**	**400,000**	**470,000**	**640,000**	**850,000**	**920,000**
GLOBAL ESTIMATE	**124,810,000**	**202,680,000**	**24,030,000**	**34,780,000**	**11,660,000**	**20,660,000**	**14,250,000**	**20,520,000**	**13,690,000**	**56,410,000**	**11,080,000**	**28,090,000**

* Opiate estimates for Europe - where countries reported only opioid estimates - were derived by using the distribution of opiate users within the overall number of opioid users in treatment.

Cannabis remains the most widely used illicit drug, ahead of ATS, opioids and cocaine

A breakdown of illicit drug use shows that cannabis remains by far the most widely used illicit substance. The number of cannabis users was estimated between 125 and 203 million in 2009, equivalent to a prevalence rate of 2.8%-4.5% of the population aged 15-64.

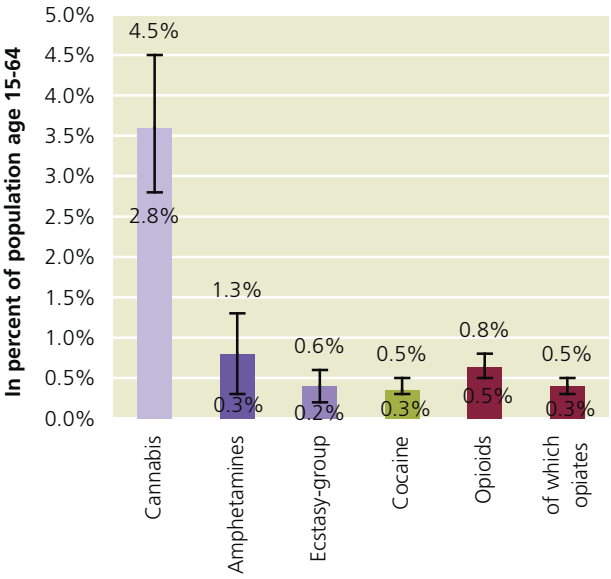
The second most widely used group of substances seems to be the ATS (including methamphetamine, amphetamine, methcathinone and ecstasy). Within ATS, the 'amphetamines' (methamphetamine, amphetamine and methcathinone) is still the most prominent group of substances, used by 14-56 million people in 2009, equivalent to a prevalence rate ranging from 0.3% to 1.3% of the population aged 15-64. The broad ranges are mainly due to major uncertainties regarding the extent of amphetamines consumption in the world's two most populous countries, China and India, as well as uncertainties regarding the spread of amphetamines use in Africa. The same applies to the broad ranges for ecstasy use (11-28 million people, or a prevalence rate ranging from 0.2-0.6% of the population aged 15-64).

The third most widely used group of substances appears to be the opioids, with estimates ranging from 24 to 35 million people, equivalent to a prevalence rate of 0.5%-0.8% of the population aged 15-64. The most problematic opioids[6] at the global level, as reflected in treatment demand, are the opiates, that is, the various psychoactive substances derived from the opium poppy plant, notably opium and heroin. About 12-21 million people are estimated to have consumed illicit opiates in 2009, equivalent to a prevalence rate ranging from 0.3% to 0.5%. The most problematic opiate in the world's illegal drug markets continues to be heroin. UNODC estimates that there were some 12-14 million heroin users in the world in 2009. In recent years, problem drug use has also been related to the non-medical use of various prescription opioids, such as oxycodone, fentanyl or pethidine.

Cocaine appears to rank fourth in terms of global prevalence, with estimates ranging from 14 to 21 million people,[7] equivalent to an annual prevalence rate ranging from 0.3%-0.5% of the population aged 15-64. The global use of cocaine seems to be less widespread than the use of opioids, similar to the use of opiates, and more widespread than the use of heroin.

Fig. 8: Annual prevalence of drug use at the global level, in percent of the population aged 15-64, 2009/2010

Source: UNODC estimates based on ARQ and other official data.



Generally stable trends for use of main drug categories at the global level…

The total number of users for the individual drug categories mentioned above does not appear to have changed significantly over the last few years. All changes occurred well within the existing ranges. If there has been a general trend, it has been – for most drugs - towards a widening of existing ranges (that is, increases of the upper level and declines of the lower level of the estimates), reflecting greater uncertainty about the actual number of drug users. Some of this is a result of statistical good practice, whereby prevalence estimates older than 10 years are now not being used to estimate prevalence. Since a large number of countries in Africa and Asia do not have recent data on drug use, the levels of uncertainty increase.

Using a five-point scale from large decrease to large increase, most government experts perceived a stabilization of drug use in 2009, as reported through the ARQ. This applied to cannabis, amphetamines, ecstasy, cocaine and the opioids, including heroin.

… while new drugs are emerging

The generally positive trends for the 'traditional' drugs, however, do not apply to all illicit drug markets. These markets continue to evolve and every year new products, not under control, are manufactured to supply an increasingly diversified demand for psychoactive substances.

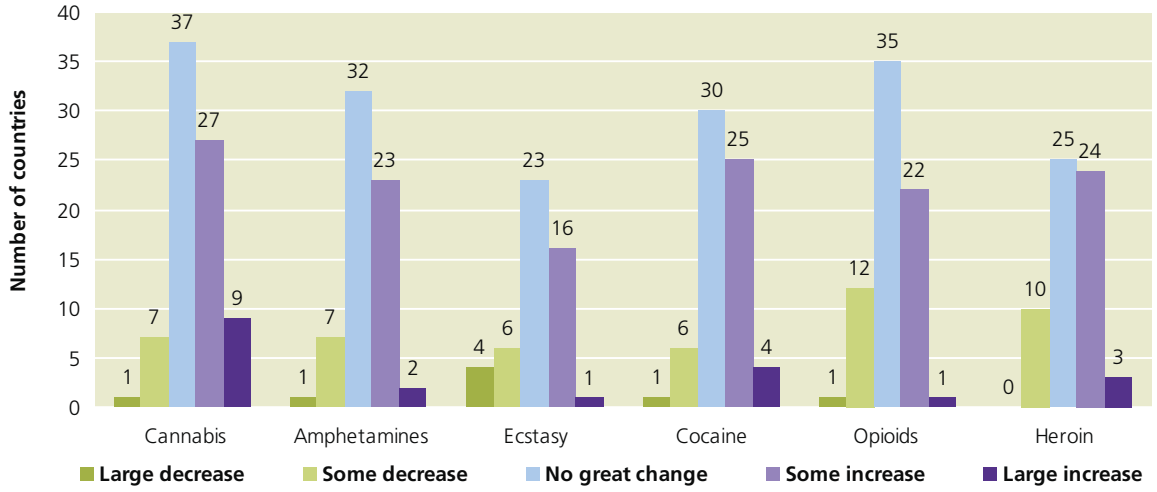
Synthetic drugs are the fastest evolving substances in this

6 Opioid is a generic term applied to alkaloids from opium poppy, their synthetic analogues, and compounds synthesized in the body. In general, a distinction is made between 'opiates' (that is, the various products derived from the opium poppy plant) and synthetic opioids. More detail is available in the chapter on the opium/heroin market.

7 Taking qualitative information into account (regarding Africa and Asia), the best estimate is probably less than 16 million.

Fig. 9: Government experts' perceptions of trends in illicit drug use,* 2009

* based on information from 83 countries and territories.
Source: UNODC ARQ.



context, but products based on cannabis, cocaine and opiates are also becoming more diversified. In addition, reports of drug-adulterant combinations involving pharmacologically active substances are increasing.

New psychoactive substances are supplied to the illicit market as a response to a number of factors: i) the use of different chemicals/precursors to evade an established law enforcement pattern; ii) the use of substances which are not nationally or internationally regulated and controlled; iii) the replacement of substances whose supply is decreasing; and iv) the offer of products which can satisfy the evolving requirements of users.

The fact that new psychoactive substances are emerging on the drug markets is not a new development. More recently, the market for new substances detected in seizures has been expanding quickly. In Europe, one of the most 'innovative' regions when it comes to new drugs, 110 new psychoactive substances were reported to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) and Europol between 1997 and 2009. In 2010, more than 40 new substances were notified in the European early-warning system, compared to 24 in 2009.[8] These included piperazines, cathinones, synthetic cannabinoids, tryptamines and phenethylamines.

In the last few years, a number of new substances entered the illicit market imitating either the pharmacological properties or chemical structures of existing controlled substances such as amphetamines or ecstasy. Some of these contain unregulated substances and are known as 'legal highs'. The piperazines and the cathinones, for example mephedrone, are examples of unregulated substances which recently entered the markets.

8 EMCDDA, *2010 Annual Report.*

Piperazines

Piperazine was initially developed as an anthelminthic used in the treatment of parasitic worms. Its best known derivative, benzylpiperazine (BZP), was further developed as an antidepressant but was not marketed for this purpose because it produced similar effects to d-amphetamine, though less potent. These amphetamine-like effects include a sense of euphoria and stimulant properties. Piperazine derivatives such as BZP and 3-trifluoromethylphenylpiperazine (TFMPP) are often sold as 'ecstasy' to overcome the shortage of MDMA.

Mephedrone

Mephedrone, also known as 4-methylmethcathinone (4-MMC), is chemically related to the internationally controlled substance cathinone, one of the psychoactive substances in the khat plant. Mephedrone was introduced to the drug markets recently and is often touted as a legal alternative to amphetamine or cocaine with increasing reports emanating from Europe, North America and Australia. Although mephedrone and analogues such as naphyrone produce effects similar to those of some internationally controlled substances, there are often no legislative restrictions on their manufacture and distribution due to the chemical differences.

'Spice'

The cannabis market has diversified with the introduction of synthetic cannabinoids which emulate the effect of using cannabis. Since 2008, several synthetic cannabinoids ('spice') have been detected in herbal smoking blends. These products typically contain about 3 grams of finely cut plant material to which one or more synthetic cannabinoids have been added. As they do not contain products that are under international control,

these products have often been marketed as 'legal alternatives' to cannabis. Little is known about the pharmacology and toxicology of these compounds, and it is believed that a number of these substances may have a higher addictive potential than cannabis. In response, a number of countries have placed 'spice' and similar products under control, leading to a decrease in the extent of the problem.

Drug-adulterant combinations: Cocaine adulterated with levamisole

Street dealers have traditionally 'cut' cocaine with diluents such as lactose to increase profits. Recently, there have been reports of the use of more pharmacologically active adulterants such as atropine, phenacetin and methyphenidate. The presence of some of these adulterants may serve to increase the desired effects of the illicit substances or even reduce or eliminate some of its adverse effects. Data from the Netherlands (confirmed by data from several other European and North American countries) show that in 2008 and 2009, an increased number of cocaine samples contained levamisole, an anthelminthic, effective in infections with the common roundworm.

Difficulties in controlling new substances…

The large number of new substances that enter the market worldwide is posing a number of challenges to public health and law enforcement systems which require improved monitoring and a coordinated response across countries and regions. While some countries have tried to address the problem via the application of 'emergency scheduling' mechanisms, others have started to experiment with 'generic scheduling mechanisms' which automatically also put analogue substances under control. This is, however, difficult to implement in many legal systems. Other countries have started to bring the rapidly growing number of new substances under immediate control via the 'Medicines Act' (instead of the 'Narcotics Act'), which typically requires that medicinal products need to be properly tested before they can be sold to the general public.

The precursor chemicals for synthetic drugs also continue to change in response to stricter controls. For example, in some countries, traffickers have started to use norephedrine as a precursor for the manufacture of methamphetamine, instead of ephedrine and pseudoephedrine, which have been under increasing governmental scrutiny.

… and problems related to the non-medical use of prescription drugs increase

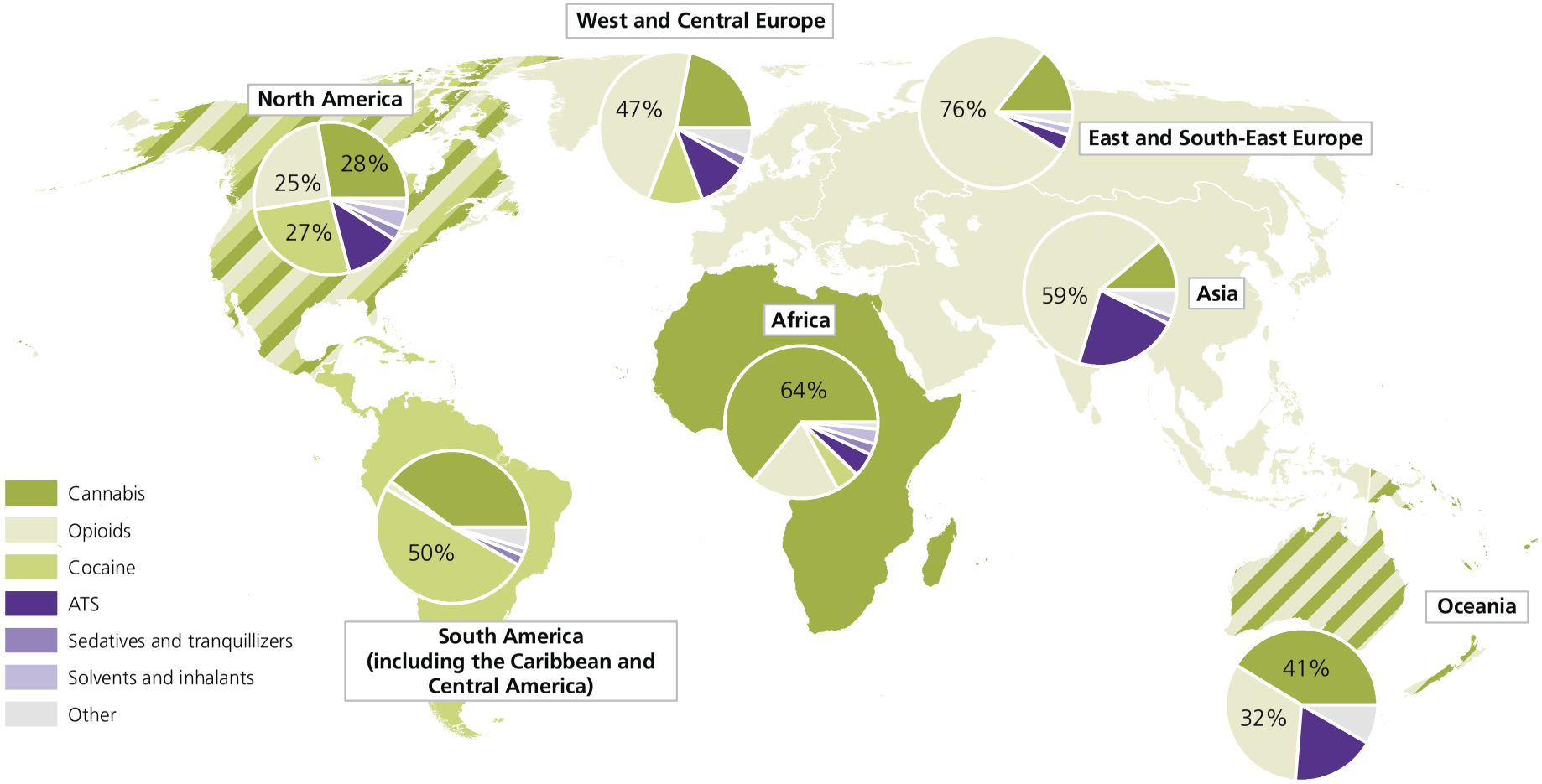
While there are stable trends for traditionally used drugs, and in major consumption regions even some decline for heroin and cocaine, there seems to be an increase in the non-medical use of prescription drugs in a number of countries.

Non-medical use of prescription drugs, such as a number of synthetic opioids, tranquillizers and sedatives or prescription stimulants is reportedly a growing health problem in a number of countries. In the United States, emergency room visits related to the non-medical use of prescription drugs have started to exceed the numbers related to the use of illicit drugs. Prescription drugs may replace certain illicit drugs since their use is perceived to be less harmful, being prescribed by physicians. They are legal, cheaper than illicit drugs and their use is more socially acceptable. Another factor for the growing popularity of prescription drugs is that patients who have been prescribed medications share or sell them to family members, friends or others who approach them. Non-medical use of prescription drugs is a common phenomenon among young adults, women, elderly patients and health care professionals. Another issue of concern is that the growing numbers of polydrug users among illicit drug users also use prescription drugs in combination with their illicit drug of choice to enhance the effects of the main drug.

Treatment demand

The need to enter treatment reflects problematic drug use, associated with adverse effects on the health of individuals. In most regions of the world, there continue to be clear regional patterns regarding the main problem drug types. In Europe and Asia, opioids (basically opiates, and in particular heroin) are dominant for problematic use. In some of the Asian countries, ATS - notably methamphetamine in South-East Asia and Captagon (that is, amphetamine, often mixed with caffeine) on the Arabian peninsula – has emerged as the most problematic drug group. ATS in treatment demand is also widespread in Oceania, North America and West and Central Europe. The problematic use of cannabis makes a significant contribution to treatment demand across all regions but is particularly prevalent in Africa. In South America (including the Caribbean and Central America), cocaine is the primary drug responsible for drug treatment. In North America, a more diversified pattern has developed where a single, dominant drug type does not emerge. Cannabis, opioids and cocaine are all equally represented. In Oceania, treatment is linked primarily to cannabis, followed by opioids.

Main problem drugs as reflected in treatment demand, by region, 2009 (or latest year available)



Notes: Percentages are unweighted means of treatment demand from reporting countries.
Number of countries reporting data: Africa (26); North America (3); South America including the Caribbean and Central America (26); Asia (42); East and Southeast Europe (11), West and Central Europe (33), Oceania (3).
Data generally account for primary drug use. Polydrug use may increase totals beyond 100%.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Sources: UNODC, Annual Reports Questionnaire Data/DELTA and National Government Reports

Opiates are the most harmful drugs as reflected in treatment demand

One way of 'measuring' the potential harmfulness of drugs is to compare the number of people having to undergo treatment with the total number of persons using the drug in question.

The latest US data[9] show that, on average, three persons per 100 annual drug users had to undergo treatment for drug use in 2008. Opiates use is far more problematic than the use of other illicit drugs. The rate for heroin is much higher than the average, at 22 for 100 users, that is, more than one out of five users enters treatment. Though treatment demand for prescription opioids has been rising far stronger in the USA (460% between 1998 and 2008) than heroin-related treatment demand (8%), only 1 out of 100 people who misuse prescription opioids enter treatment. The corresponding rates amounted to between four and five per 100 users for cocaine and amphetamines ('stimulants') and one per 100 users for cannabis in 2008. Above average treatment demand still exists for crack-cocaine users (14 per 100 users), clearly exceeding overall cocaine-related treatment demand, and for methamphetamine users (14 per 100 users), clearly exceeding overall amphetamines-related treatment demand. For users of tranquillizers and sedatives, the rates are between 0.6 and 0.7 per 100 users.

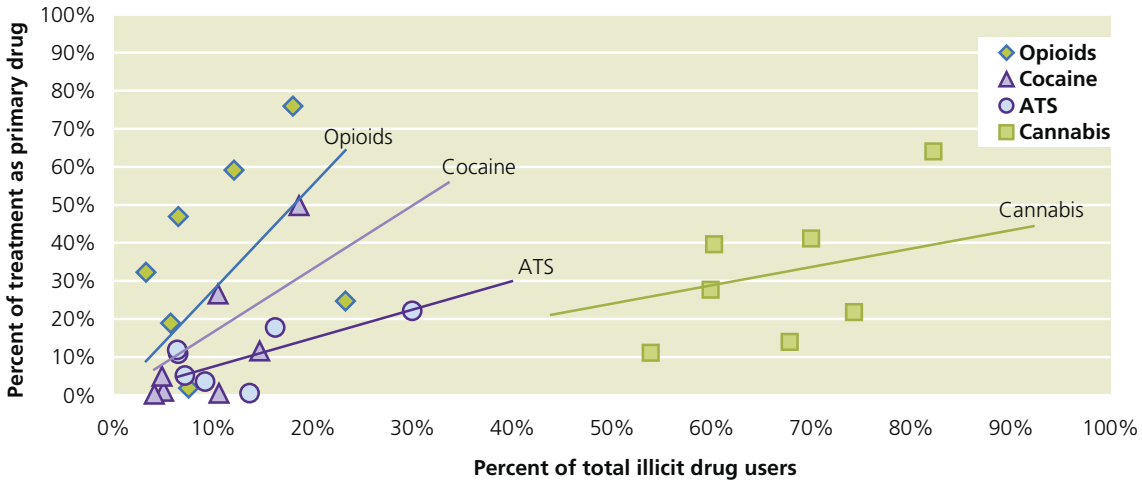
Based on the number of past-year users in European countries and the reported numbers in treatment for the various drug types, data suggest that between one in every four or five opioid users end up in treatment. These rates are comparable to those found in the USA, as most of the reported opioid use in Europe is linked to the abuse of opiates, notably heroin. For cocaine and ATS, available data suggest that around one in every 100 users in Europe end up in treatment, that is, less than in the USA. This would suggest that cocaine and stimulant use in Europe is still not as problematic as in the USA because crack-cocaine and methamphetamine, the two most problematic substances in these categories, are still small in Europe. While treatment related to cannabis use increased in Europe over the last decade, this is still far less common than in the USA. Around one in every 230 cannabis users underwent treatment in Europe, compared to one in every 80 in the USA. Differences in treatment policy (notably with regard to compulsory cannabis-related treatment schemes) and recording practices may explain some of the differences. Consequently, opioid/opiate users in Europe are 20 times more likely to end up in treatment compared to cocaine and ATS users, and 50 times more likely compared to cannabis users. In the USA, the likelihood for opiate users to end up in treatment is about five times higher than for cocaine and stimulant users and 20 times higher than for cannabis users.[10]

The prevalence of opiate use, compared to other drugs, is relatively low. However, opiates dominate treatment with a disproportionately high percentage of demand. This reflects the considerable harm associated with opi-

Fig. 10: Comparison of drug types between treatment demand and relative number of users,* by region**

* Percentage of illicit drug users does not consider polydrug use. ** Seven regions are represented: Africa, Asia, East and South-East Asia, North America, Oceania, South America, West and Central Europe. Each geometric shape corresponds to one region.

Source: UNODC ARQ; Government reports.



9 SAMHSA, *Results from the 2009 National Survey on Drug Use and Health: Detailed Tables*; SAMHSA, Treatment Episode Data Set (TEDS), 1998-2008; estimates on the number of opioid and opiate users have been derived from ONDCP estimates on the number of heroin users and SAMHSA estimates on the number of prescription opioid users.

10 This analysis is based on macro data and does not take into account polydrug use.

ates (notably heroin) and the high probability that opiate users will require some form of treatment intervention. As for most regions (except North and South America), the opiate and opioid figures are still almost identical.

With the high prevalence rates of ATS in Asia, especially in East and South-East Asia, there remain concerns over an unmet demand for treatment of ATS use there. With most of the treatment services aimed at meeting the needs of opioid and cannabis users, ATS treatment services are relatively scarce and under-resourced.[11]

The vast majority of illicit drug users consume cannabis, and although the harm associated with its use is relatively small in comparison with the opiates, cannabis contributes in no small way to treatment demand. The level of treatment demand for cannabis coincides with regional prevalence rates, with the highest levels of consumption in Oceania and Africa, followed by the Americas, Europe and Asia.

Infectious diseases among injecting drug users

A systematic review[12] conducted for the Reference Group to the UN on HIV and Injecting Drug Use estimated that there are approximately 15.9 million (range 11.0-21.2 million) injecting drug users worldwide, with the largest numbers in China, the United States and the Russian Federation. These figures suggest that close to 60% of all problem drug users worldwide inject drugs, and that injecting drug users account for about 7.5% of all drug users worldwide.

Injecting drug use is an extreme form of illicit drug use with serious health implications and costs for the individual and the community. Risky injecting and sexual behaviour among drug users becomes a major public health concern because of the high risk for the transmission of blood-borne infections such as HIV, Hepatitis C and B, especially among the marginalized and most at risk populations.

Around one in five injecting drug users is HIV positive …

Based on information compiled by UNODC, the global average prevalence of HIV among injecting drug users is estimated at 17.9%, or equivalently, 2.8 million people who inject drugs are living with HIV. This is consistent with the estimate of 3.0 million (range 0.8-6.6 million) presented by the Reference Group to the UN on HIV and injecting drug use.[13] High levels of HIV infections are, in general, found among marginalized populations of drug users as well as among those in prison settings.

According to the Reference Group, there are large geographical variations in the prevalence of HIV among injecting drug users, with the largest numbers and highest rates in Latin America, East Europe, and East and South-East Asia. Combined, these regions account for 73% of the global number of injecting drug users living with HIV. In some countries, the prevalence of HIV among injecting drug users is extremely high, such as in Estonia (72%), Argentina (50%) and Brazil (48%).

… and around half of all injecting drug users are infected with the Hepatitis C virus (HCV)

Infections with viral hepatitis C and B also pose significant public health concerns giving rise to considerable morbidity and mortality among drug users.

The hepatitis C virus (HCV) affects around 130-170 million people worldwide[14] (representing 2.2%-3.0% of the global population) and is a major cause of liver disease with the potential for considerable ill health effects and premature death. In developed countries, injecting drug use is the main route for the transmission of HCV.[15] Although HCV and HIV have different viral properties and clinical outcomes, they share parallel risks, and their epidemic follows a similar path. HCV is five times more widespread worldwide than HIV, however, because it is more infectious and has probably been present for longer in human populations.

The prevalence of HCV among injecting drug users at the global level is high, at 50.3% (45.2%-55.3%), with 13 out of 51 countries reporting prevalence rates greater than 70%. Africa and Oceania have the highest rates at 73.2% and 63.8% respectively, although the number of countries reporting rates from these two regions is very low. Applying the estimated global average prevalence suggests that there are 8.0 (7.2-8.8) million injecting drug users worldwide who are also infected with HCV. As with HIV, higher levels of HCV infections are found among marginalized populations of drug users and those in prison settings.

Most of the information reported to UNODC comes from Europe where the average level of infection of HCV among injecting drug users is 47.0%, but eight out of the 29 countries have prevalence rates above 60% and five over 70%.

11 UNODC, *Patterns and Trends of Amphetamine Type Stimulants and Other Drugs Asia and the Pacific*, Global SMART Programme, 2010.

12 Mathers BM, Degenhardt L, Phillips B, et al., (November 2008), 'Global epidemiology of injecting drug use and HIV among people who inject drugs: a systematic review,' *Lancet* 372 (9651): 1733–45.

13 Ibid.

14 Daniel Lavanchy. The global burden of hepatitis C, *Liver International,* 2009; 29(s1): 74–81.

15 Ibid, and Colin W Shepard, Lyn Finelli, Miriam J Alter. Global epidemiology of hepatitis C virus infection. *Lancet Infect Dis* 2005;5: 558–67.

Map 1: Reported trend in the prevalence of HIV infection among drug injectors, 2009 (or latest year available

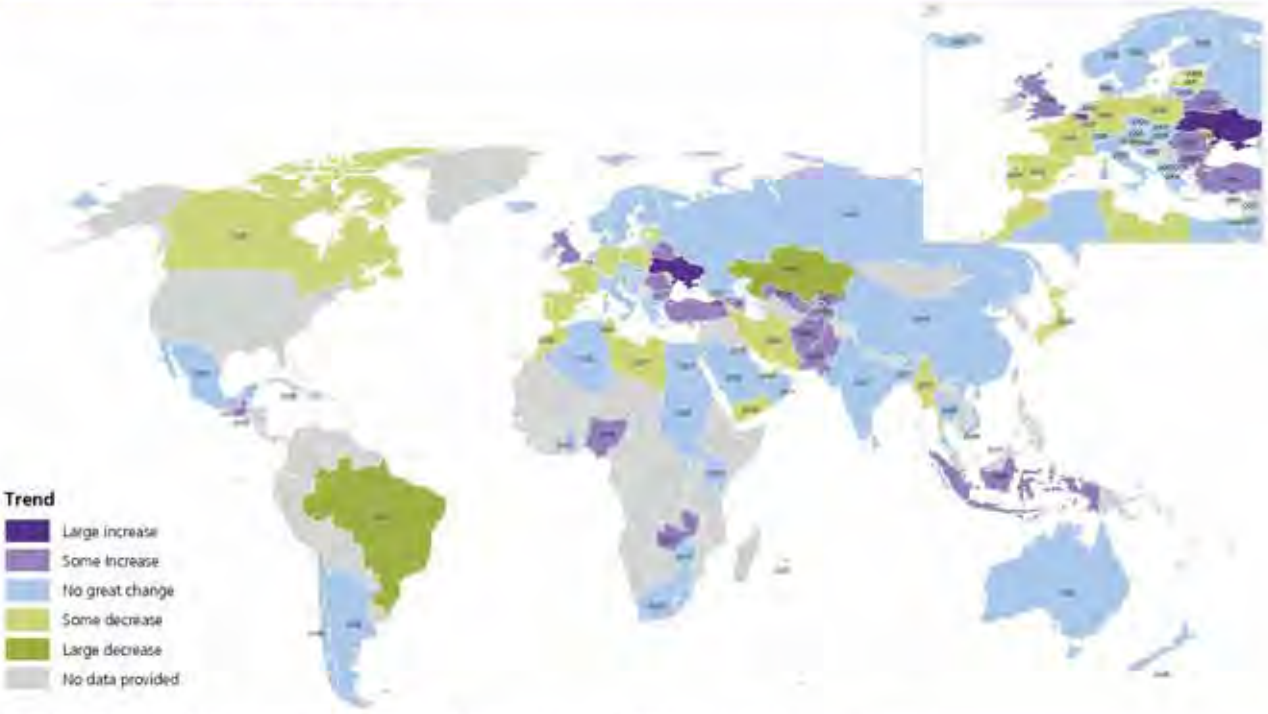


Table 2: Hepatitis B and C prevalence among injecting drug users

Source: UNODC ARQ and UN Reference Group for HIV among injecting drug users

Region	HCV among injecting drug users		HBV among injecting drug users	
	Number of countries*	Prevalence (%)**	Number of countries*	Prevalence (%)**
Africa	2	73.2	1	9.0
Americas	4	58.4	2	5.9
Asia	10	50.6	9	22.0
Europe	28	47.0	26	24.4
Oceania	2	63.8	1	18.0
Global	**46**	**50.3**	**39**	**22.0**

* Number of countries used in prevalence calculation (requires both an estimate of number of injecting drug users and country-level prevalence). The total number of countries reporting prevalence is 51 (HCV) and 44 (HBV)

** Country-level prevalence weighted by number of injecting drug users.

...and more than 20% of injecting drug users are infected with the Hepatitis B virus (HBV)

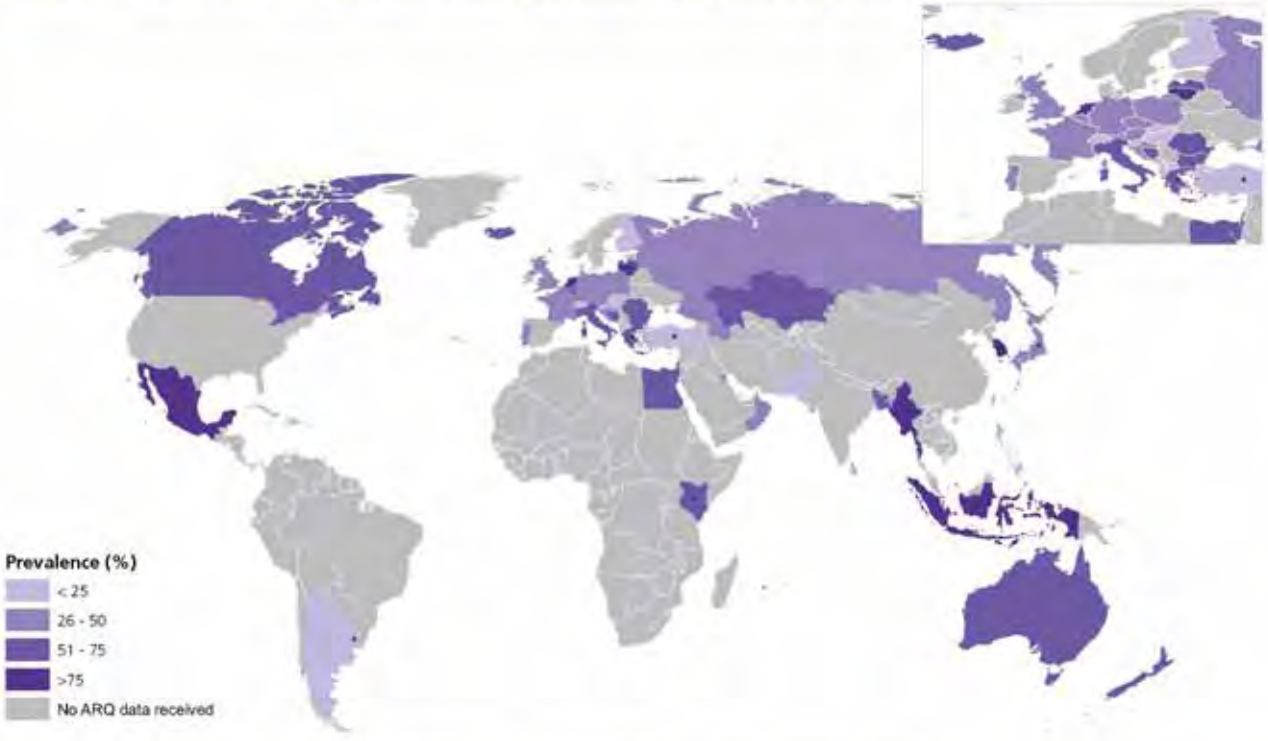
There are an estimated 350 million people worldwide chronically infected with the hepatitis B virus (HBV),[16] a disease that is associated with severe health consequences such as cirrhosis and liver cancer.

It is estimated that 22.0% of injecting drug users are infected with HBV globally. This translates into an estimated 3.5 million HBV-infected injecting drug users. Europe has the highest rate at 24.4% (based on information from 26 countries).

In order to prevent all new HIV infections among people who use drugs by 2015, as outlined in the joint programme strategy of UNAIDS for 2011 – 2015, there is therefore a need for comprehensive, evidence-informed and human-rights-based programmes to be accessible to all people who inject drugs.

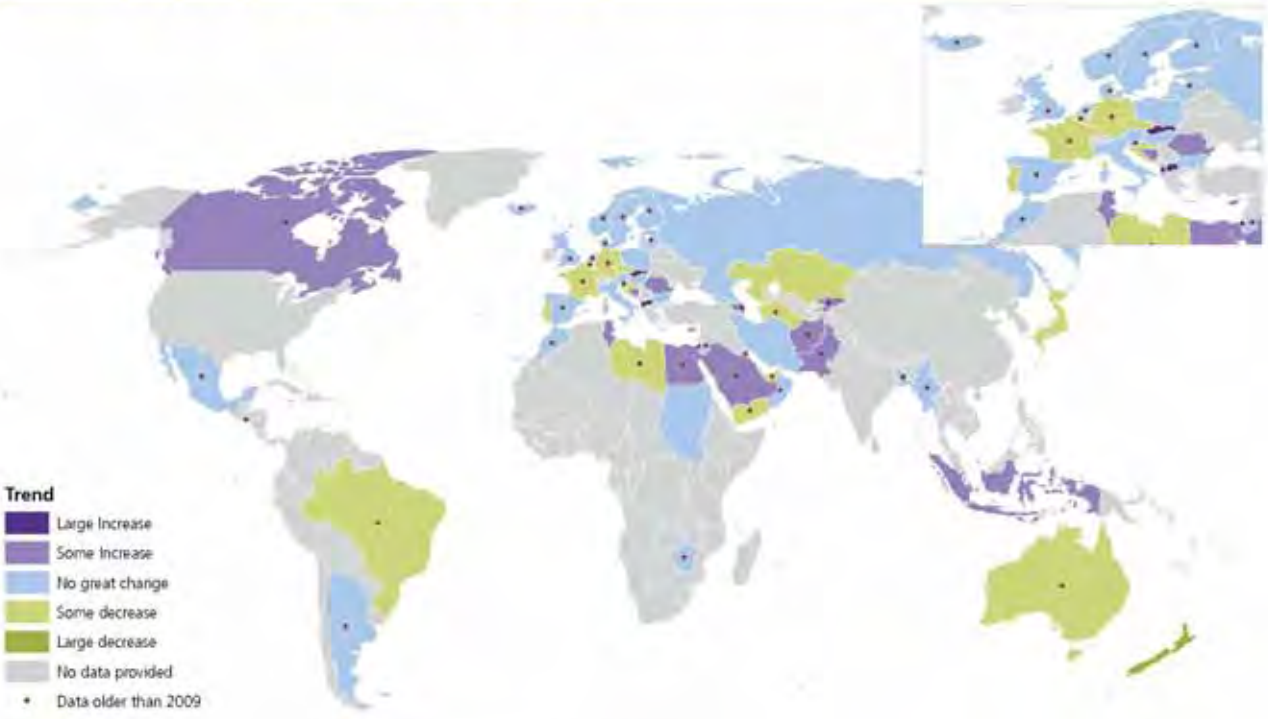
16 Custer B, Sullivan SD, Hazlet TK, Iloeje U, Veenstra DL, Kowdley KV. Global epidemiology of hepatitis B virus, *Journal Clinical Gastroenterology*, 2004 Nov-Dec;38(10 Suppl 3):S158-68.

Map 2: Prevalence of Hepatitis C among injecting drug users, 2009 (or latest year available)



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Map 3: Reported trend in the prevalence of Hepatitis C infection among drug injectors, 2009 (or latest year available back to 2005)



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Deaths associated with illicit drug use

Deaths related to or associated with the use of illicit drugs may include: fatal drug overdoses; suicide; accidents (such as motor vehicle accidents) while under the influence of illicit drugs; deaths among injecting and other drug users from infectious diseases such as HIV/AIDS and Hepatitis C transmitted through the use of contaminated needles; or from medical conditions (such as organ failure) associated with long-term drug use. The information on the number of drug-related deaths reported to UNODC is often based on different criteria of classification of diseases and may include some or all of these categories.

Data on drug-related deaths is a measure that provides information on the most extreme consequences and the health impact of drug use in the community. This can also provide essential information on risky patterns of drug use, the risk attributed to certain drugs or combinations of substances, the level of risk among the most vulnerable population groups, and to monitor the prevalence of risks attributed to certain drugs.[17] Toxicological examinations to identify the cause of death are not standard in most countries and even if such examinations are undertaken, they can often only confirm the presence of a psychoactive substance in the dead body but do not provide information on a causal relationship. Thus, drug deaths related to cannabis are often reported, though in most cases, the presence of this drug did not cause the death. Information on drug-related deaths, compiled from different countries using different classification systems, must be treated with caution.

Globally, different estimates of drug-related deaths have been published by the World Health Organization in the past. These estimates include:

- 194,000 (uncertainty interval 113,494 – 276,584) drug-related deaths for the year 2000, based on estimates of the following four causes: AIDS, opioid overdose, suicide among opioid users and trauma.[18]
- 197,400 (uncertainty interval 101,751 – 322,456) for the year 2000, based on all-cause mortality from cohort studies and attributable fractions.[19]
- 245,000 deaths attributed to illicit drug use in 2004, which includes deaths related to heroin and cocaine use, and deaths from HIV/AIDS, hepatitis B and C resulting from illicit drug use.[20]

For 2009, UNODC has compiled information on drug-related deaths based on data reported through the ARQ. The level of reporting on drug-related deaths encompasses nearly half (49%) of the world's population aged 15-64 - although there are large regional differences in coverage: North America - 100%; Europe - 97%; South America (including the Caribbean and Central America) - 64%; Oceania - 62%; Asia - 42%; and Africa, <1%. Since very little data emerged from countries in Africa, an alternative source on drug-related deaths has been used.[21]

According to the data compiled by UNODC, it is estimated that globally, there are between 104,000 and 263,000 deaths each year that are attributable to illicit drug use, or equivalently, that there are between 23.1 and 58.7 deaths per million population aged 15-64 due to illicit drug use. These estimates are consistent with other previously published estimates by the WHO. As reported by Member States, approximately 50% of the deaths are fatal overdose cases. Significantly, drug-related deaths occur among a young age group. For example, EMCDDA reports that the mean age for deaths resulting from overdose in Europe is the mid-30s.[22]

In Europe, drug overdoses account for 4% of all deaths for those aged 15-39[23] - and the rates in some countries exceed 10% in this age group. In a study on drug-related mortality in eight European cities, 10–20% of mortality within the 15-49 age group is attributable to opioid use.[24] Data from Europe also suggest that for each drug-induced death, there are an estimated 20-25 non-fatal overdose cases. As such, drug-related deaths are highly premature (and preventable) and account for a disproportionate contribution to the burden of disease as measured by potential years of life lost.

17 EMCDDA, *An overview of the drug-related deaths and mortality among drug users (DRD) key indicator,* January 2009.

18 Degenhardt L, Hall W, Warner-Smith M, Lynskey M., 'Chapter 13: Illicit drug use,' In: Ezzati M, Lopez A, Rodgers A, Murray CJL, eds. *Comparative quantification of health risks: global and regional burden of disease attributable to selected major risk factors*, Geneva, World Health Organization, 2003.

19 Ibid.

20 World Health Organization, *Global health risks: mortality and burden of disease attributable to selected major risks*, 2009.

21 Darke, S., Degenhardt, L. and Mattick, R., *Mortality Amongst Illicit Drug Users: Epidemiology, Causes and Intervention*, Cambridge University Press, 2007.

22 EMCDDA, *Annual report: the state of the drugs problem in Europe - 2010,* Lisbon, November 2010.

23 Ibid.

24 Bargagli, A.M., Hickman, M., Davoli, M., Perucci, C.A., Schifano, P. et al. (2006), 'Drug-related mortality and its impact on adult mortality in eight European countries', *European Journal of Public Health* 16, pp. 198–202.

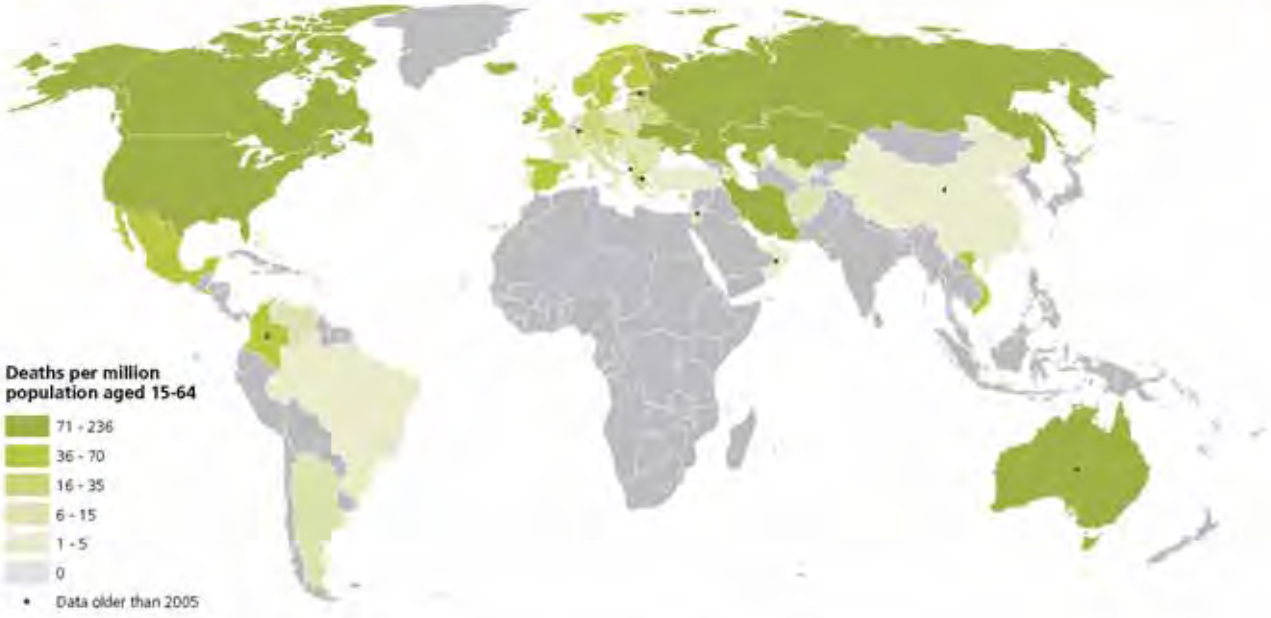
Table 3: Estimated number of drug-related deaths and rates per million population aged 15-64

Source: UNODC ARQ (except for Africa: Chapter 13: Illicit drug use, in Comparative quantification of health risks: global and regional burden of disease attributable to selected major risk factors, World Health Organization, 2003.)

Region	Number of drug-related deaths		Mortality rate per million aged 15-64	
	Lower estimate	Upper estimate	Lower estimate	Upper estimate
Africa	13,000	41,700	22.9	73.5
North America	45,100	45,100	147.9	147.9
South America*	2,200	6,300	7.0	20.5
Asia	15,300	140,200	5.6	51.5
Europe	25,200	26,700	45.6	48.4
Oceania	2,800	2,800	118.9	118.9
Global	**104,000**	**263,000**	**23.1**	**58.7**

* incl. the Caribbean and Central America.

Map 4: Drug-related deaths, 2009 (or latest year available)



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3) Regional overview

This overview highlights some of the main characteristics and illicit drug market trends at the regional level.

a) North America

North America continues to be the world's largest drug market, even though it is – according to all estimates – now smaller, in economic terms, than a decade or two ago.

Production

Production of illicit drugs in North America is primarily linked to cannabis (mainly cannabis herb), amphetamine-type stimulants (ATS) and opiates.

Substantial amounts of cannabis are grown in all North American countries and important exports are directed from Mexico to the United States, and, to a lesser extent, from Canada to the United States. Greenhouse cultivation of cannabis is still limited to the USA and Canada.

Manufacture of ATS takes place in all three countries and is mainly of methamphetamine and, to a lesser extent, ecstasy. Some 99% of all methamphetamine laboratories worldwide (though mostly 'kitchen labs') are dismantled in North America, notably in the United States. Significant amounts of methamphetamine continue to be shipped across the border from Mexico to the United States. Manufacture of ecstasy is mainly concentrated in Canada and the USA. A significant share of the Canadian ecstasy production is destined for the US market. Asian groups with links to China and South-East Asian countries are mainly involved in the ecstasy production.

Production of opiates in North America only takes place in Mexico. Mexico's opium production accounted for 5% of the world total in 2009.

Trafficking

Trafficking of drugs continues to be primarily directed towards North America. Trafficking of drugs out of the region to other destinations exists, but is limited. Trafficking of cannabis herb is mainly intra-regional, with cannabis herb from both Mexico and Canada being shipped into the United States, in addition to domestic shipments of locally produced cannabis herb across US states. Similarly, methamphetamine trafficking is primarily intra-regional, with flows from Mexico into the United States, as well as locally produced methamphetamine being trafficked domestically in the United States. Ecstasy trafficking used to be intra-regional (from western Europe to North America) but has now become mainly intra-regional, with deliveries from Canada into the United States. Cocaine trafficking, in contrast, remains inter-regional, with shipments of cocaine from the Andean region, notably Colombia, to Central America and Mexico for final destination markets in the United States and, to a lesser extent, Canada.

The largest seizures in North America are reported for cannabis, followed by cocaine and the amphetamines. Expressed as a proportion of the global total, data show that 70% of global cannabis herb and 70% of global ecstasy seizures took place in North America in 2009, followed by amphetamines (21%) [methamphetamine only: 44%], cocaine (18%) and heroin (4% of the world total). Cannabis resin seizures accounted for less than 1% of the total, showing that hashish does not play a significant role in North America.

While cocaine seizures declined markedly between 2005 and 2009 (-43%), reflecting the overall decline of the cocaine market in North America, seizures increased over this period for amphetamines (87%), ecstasy (71%), cannabis herb (32%) and heroin (19%).

Illicit drug use

The highest levels of illicit drug use are related to the consumption of cannabis, mainly cannabis herb. With a prevalence rate of 10.7% among the population aged 15-64, cannabis use in North America is above the global average. The region accounts for about one fifth of global cannabis users, far above its share of the global population (around 7%). Following years of decline, cannabis use increased again in 2009 in the United States. The annual prevalence of cannabis use in the

Table 4: Seizures in North America, in kilogram equivalents, 2005-2009

Source: UNODC ARQ.

	2005	2006	2007	2008	2009	In % of global total in 2009
Cannabis herb	3,183,053	3,278,467	3,930,620	3,205,334	4,188,620	70%
Cocaine	233,605	193,601	175,316	132,970	132,355	18%
Amphetamines	7,422	9,226	7,047	8,551	13,876	21%
Ecstasy	2,227	3,008	3,981	3,279	3,816	70%
Heroin	2,391	2,432	1,760	2,283	2,853	4%
Memo: Population					*458 million*	*7%*

USA increased from 10.1% of the population aged 12 and above in 2007 to 11.3% in 2009.

The relative importance of North America is larger when it comes to cocaine. Almost 37% of all cocaine users worldwide are found in North America. With a prevalence rate of 1.9% among the population aged 15-64, North America – despite declines in recent years – still has the highest prevalence rate of any subregion, far above the global average (0.4%). The decline was most pronounced after 2006, with the annual prevalence of cocaine use in the USA falling from 3.0% of the population aged 15-64 to 2.4% in 2009. Significant declines in cocaine use were also reported from Canada in recent years, with the annual prevalence rate falling from 2.3% in 2004 to 1.4% in 2009.

About 1.1% of the population in North America uses amphetamines and a similar proportion uses ecstasy. These are – in both cases – above the global average. Use of amphetamine-type stimulants showed a downward trend over the 2006-2008 period and increased again slightly in 2009. The increase was mainly related to the 'recovery' of methamphetamine, rising from 0.3% of the population aged 12 and above in 2008 to 0.5% in 2009. The same applied to the use of ecstasy which rose in the USA from 0.9% of the population aged 12 and above in 2008 to 1.1% in 2009.

If opioids are considered, available estimates suggest that more than 40% of global opioid users are found in North America. These high levels are mainly due to widespread non-medical use of prescription opioids, which rose between 2002 and 2006, before falling until 2008 and rising again in 2009. The abuse of opiates is, at 0.4%, close to the global average. Opiate use levels have remained stable in recent years.

North America has, in general, a significant problem when it comes to the non-medical use of prescription drugs. In the United States, such use of prescription drugs ('psychotherapeutics') has ranked for some years second after cannabis, with an annual prevalence of 6.4% among the population aged 12 and above.[25] The non-medical use of pain relievers (4.9%) which are prescription opioids and of tranquillizers (2.2%) now show higher annual prevalence rates than cocaine (1.9%). The non-medical use of easily available prescription opioids - oxycodone in particular - appears to have increased since 2005. Among the new initiators of drug use in 2009, around 2.2 million people in the USA initiated their drug use with pain relievers, approaching the number of those who initiated their drug use with cannabis.

25 Substance Abuse and Mental Health Services Administration, *Results from the 2009 National Survey on Drug Use and Health: Volume I.* Summary of National Findings, 2010, Rockville, Maryland, USA.

The main pharmaceutical prescription drug categories used in Canada are 'opioid pain relievers', 'stimulants' and 'tranquillizers and sedatives'. In 2009, prescription opioid misuse in Canada was reported at 0.5%, the same level as 2008, while heroin use was estimated at 0.36%.[26]

In Mexico, the annual prevalence of non-medical use of prescription drugs seems to be much lower. The national household survey found prescription opioid prevalence to amount to 0.06% of the adult population in 2008, compared to 0.04% for heroin.[27]

Drug-related deaths

North America seems to experience a large proportion of drug-related deaths (45,100 deaths) and the highest drug-related mortality rate (148 deaths per million population aged 15-64). The United States saw an estimated 38,400 deaths from illicit drug use in 2006, corresponding to a drug-related mortality rate of 182 deaths per one million inhabitants aged 15-64.

In the United States, overdoses from prescription opioids have been steadily increasing from 4,000 in 2001 to 11,000 in 2006 (the most recent year available), an increase of 175%, primarily as a result of the non-medical use of diverted prescription opioids.[28] Similar trends in the non-medical use of prescription medicines are also emerging in other countries.[29]

b) South America, Central America and the Caribbean

South America continues to be primarily a subregion known for large-scale cocaine production and trafficking, though drug use, notably in the Southern Cone countries, has also become significant.

Production

Notable illicit drug production continues to take place in the three Andean countries. Colombia, Peru and the Plurinational State of Bolivia are responsible for close to 100% of global coca leaf production, the raw material for the manufacture of cocaine. In 2010, coca was cultivated on 149,100[30] ha in the Andean countries, down

26 Estimated by UNODC based on 1% prevalence of injecting drug use (estimated 220,690 IDU in 2004) reported by the Reference Group to the United Nations on HIV and injecting drug use, 2008.

27 SALUD, *Encuesta Nacional de Adicciones 2008,* Instituto Nacional de Salud Pública, Mexico.

28 U.S. Department of Justice, Drug Enforcement Administration, National Drug Intelligence Centre, *National Prescription Drug Threat Assessment 2009*,and *National Drug Threat Assessment 2010*.

29 Nicholas R., Lee N., and A. Roche, *Responding to pharmaceutical drug misuse in Australia: A Matter of Balance,* NCETA Literature Review to support the development of the National Pharmaceutical Drug Misuse Strategy, March 2011.

30 The figure for the Plurinational State of Bolivia was not available at the time of printing of this report. The total area under cultivation in 2010 is based on old figures for Bolivia and will be revised once the

from 221,300 ha in 2000. Cocaine manufacture in clandestine laboratories also takes place, to a large extent, in the Andean countries. Since 2007, cocaine production has shown a clear downward trend, mainly due to declines of production in Colombia, which also continued in 2010. Cocaine production fell by some one sixth over the 2007-2010 period.

Most of the countries in South America, Central America and the Caribbean have significant levels of cannabis production, notably of cannabis herb. In 2009, 70% of global cannabis plant seizures, an indirect indicator of cannabis eradication, occurred in this subregion. Three quarters of these seizures took place in South America. Cannabis production seems to be - in most countries - primarily for domestic use. Opium production in South America is almost negligible at the global level.

Manufacture of amphetamine-type stimulants is still limited in the region as most of the ATS consumed are still diverted prescription stimulants. However, in recent years, illicit manufacture of ATS has emerged in several countries with little or no previous history of reported manufacture.

Trafficking

Trafficking flows are primarily directed out of the cocaine-producing countries in the Andean region towards North America, either directly to Mexico and then the United States, or via Central America to Mexico or via the Caribbean to the United States. Trafficking flows to Europe are either directly from the Andean region or via neighbouring countries to Europe, via countries in the Caribbean region as well as via countries in Africa (notably West Africa) to Europe.

Cannabis trafficking flows are mainly intra-regional. In addition, there are limited trafficking flows of heroin from Colombia to the United States.

In contrast, trafficking flows of amphetamines and ecstasy are still mainly from Europe towards South America, though these appear to be declining as they start to be substituted by local production.

The largest seizures, in volume terms, are those of coca leaf in South America, which accounts for all global coca leaf seizures. Such seizures declined, however, over the 2007-2009 period by some 25%, partly reflecting a decline in coca leaf production. In contrast, cocaine seizures, for which the countries of South America, Central America and the Caribbean accounted for 74% of the world total, showed an increase by 27% over the 2007-2009 period. Increasing interdiction efforts by the Andean countries (notably Colombia) as well as improvements in international cooperation – and thus more 'upstream' interdictions – have been responsible for this.

Seizures of opium and heroin declined markedly between 2005 and 2009. The decline is in line with reports of strong reductions of opium production in South America over the last decade.

Illicit drug use

Surveys suggest that about 5% of all cannabis users worldwide are found in South America, the Caribbean and Central America, slightly less than the region's share of the global population. Nonetheless, cannabis is the most widely consumed illicit substance in the region. The prevalence rate for cannabis use in South America ranged between 2.9%-3.0% of the population aged 15-64 in 2009, between 1.6%-7.6% in the Caribbean and between 2.2%-2.5% in Central America.

The prevalence of cocaine use in South America, Central America and the Caribbean is clearly above the global average. About 0.9%-1.0% of the population aged 15-64 consumes cocaine, equivalent to some 2.6-3.0 million people or 17% of the world's cocaine-using population. Following years of increases, the latest data indicate a

Table 5: Seizures in South America, Central America and the Caribbean, in kilogram equivalents, 2005-2009

Source: UNODC ARQ.

	2005	2006	2007	2008	2009	In % of global total in 2009
Cannabis herb	509,265	1,065,673	1,009,470	857,534	619,786	10%
Coca leaf	3,195,757	3,318,645	4,698,820	4,883,732	3,517,918	100%
Cocaine	429,740	400,266	427,685	523,040	541,070	74%
Amphetamines	140	87	519	41	189	0.3%
Ecstasy	141	53	103	46	54	1%
Heroin	1,863	1,689	1,205	1,335	1,159	2%
Opium	2,129	263	259	300	74	0.01%
Memo: Population					*473 million*	*7%*

2010 figure becomes available.

stabilization at the higher levels. Cocaine continues to be the main problem drug in South America, Central America and the Caribbean, accounting for some 50% of all drug-related treatment demand in the region.

Use of other drugs is below average. This is true for ATS as well as the opioids. Overall opioid use is far more prevalent (some 0.4%) than the use of opiates (0.1%).

The most prevalent prescriptions drugs in the region seem to be prescription opioids. High prevalence of the non-medical use of prescription opioids has been reported by Costa Rica, Brazil and Chile. Most of the ATS use in the region is linked to diverted prescription stimulants (legally prescribed mainly as anorectics or for the treatment of attention deficit disorders). High levels of consumption have been reported for 2009, in particular from Argentina, Brazil and, to a lesser extent, Chile.[31]

Drug-related deaths

Countries in South America, including the Caribbean and Central America, report relatively few drug-related deaths (between 2,200 and 6,300) with a mortality rate (between seven and 20 deaths per million aged 15-64) well below the global average. Countries consistently rank cocaine first as the primary cause of death, which is in accordance with high prevalence of cocaine use and the dominance of cocaine in treatment demand.

c) Europe

Production

Illicit drug production in Europe is mainly linked to cannabis, amphetamines and ecstasy.

- Cannabis production in Europe is believed to be increasing, mostly in indoor settings. Twenty-nine European countries reported domestic cultivation of cannabis herb in 2008.
- In the past, ecstasy-group substances used to be manufactured predominantly in West Europe. The Netherlands and Belgium are still the main sources for ecstasy in Europe. However, manufacture has shifted away from the region and only a few laboratories were reported from Europe in 2008 and 2009.
- Most amphetamine seized in Europe is manufactured, in order of importance, in the Netherlands, Poland and Belgium.
- The clandestine manufacture of methamphetamine is concentrated in the Czech Republic, though some production is also taking place in the Baltic countries. Methamphetamine production and consumption are, however, still the exception in Europe.
- In Spain, there is some evidence of the reconversion of cocaine mixed with other substances back into cocaine.
- In East Europe, notably in the Russian Federation and Ukraine, there is domestic production of opium or poppy straw for local consumption purposes ('kompot').

Trafficking

Most cannabis seizures are related to cannabis resin in Europe, accounting for 49% of the global total in 2009. Cannabis resin found on the European market originates primarily in Morocco. While cannabis resin seizures declined over the 2005-2009 period, those of cannabis herb increased by 88%, confirming reports of increasing levels of (often hydroponic) cannabis herb production within Europe for local consumption. Despite the increasing importance of cannabis herb, overall cannabis seizures declined by 19% between 2005 and 2009.

Cocaine is trafficked to Europe mainly by sea, though in terms of reported seizure cases, deliveries by air are higher. The trafficking of cocaine into the EU by maritime containers seems to have increased in recent years. While the European cocaine market appears to have been fairly stable between 2006 and 2009 – following strong increases in trafficking over the 1998-2006 period – cocaine seizures declined massively over this period (-53%). This partially reflects improved cooperation with law enforcement counterparts in Latin America and thus improved sharing of information, leading to seizures in South Americas rather than waiting for the cocaine to arrive in Europe. Cocaine seizures are still concentrated in western Europe. The countries of West and Central Europe accounted for 97% of all European cocaine seizures in 2009. In addition to direct shipments from South America, shipments via Africa, notably West Africa, gained strongly in importance over the 2004-2007 period, before decreasing over the 2007-2009 period. Though the Iberian peninsula, followed by the Netherlands and Belgium, continue to be main entry points for cocaine shipments into Europe, there have also been reports of shipping cocaine to the Balkan region (by container or air freight) for final destinations in the European Union.

Heroin seizures made in Europe accounted for 38% of the world total in 2009. Heroin seizures are mostly concentrated in South-East Europe (63% of all heroin seizures in Europe), mainly reflecting the strong seizure efforts of Turkey as heroin is shipped via the Islamic Republic of Iran to Turkey and then along the various branches of the 'Balkan route' to western Europe. While heroin seizures in West and Central Europe remained largely stable over the 2005-2009 period, they doubled in South-East Europe.

Europe is primarily a region of final consumption - except for ecstasy, which is still produced locally and shipped to other destinations as well. Ecstasy exports out of Europe, however, have declined markedly in recent

31 INCB, *Report for 2010 – Psychotropic Substances.*

years, which has been linked to improvements in precursor control and thus shortages of the traditional ecstasy precursor. Europe's share in global ecstasy seizures declined from 90% in 1996 to 18% in 2009.

Europe accounted for 24% of global amphetamine seizures in 2009. Amphetamine seizures remained largely stable over the 2005-2009 period. More than 80% of all European amphetamine seizures in 2009 took place in the countries of West and Central Europe.

Seizures of benzodiazepines and barbiturates increased by more than 50% between 2005 and 2009. Close to 90% of all benzodiazepines and barbiturate seizures worldwide in 2009 were reported from countries in Europe.

Seizures of GHB (gamma-hydroxybutyric acid), frequently known in the illicit drug markets as 'liquid ecstasy' and as a 'date rape drug,' increased four-fold in Europe over the 2005-2009 period. European seizures accounted for almost 80% of the world total.

Seizures of LSD, which in volume terms are hardly noticeable, have shown a downward trend over the 2005-2009 period. Europe accounts for 80% all LSD seizures made worldwide.

Illicit drug use

The most prevalent drug in Europe is cannabis, showing an annual prevalence rate of 5.2%-5.3% among the population aged 15-64. Around 18% of the total cannabis-using population lives in Europe. Following years of significant increases, cannabis use appears to have stabilized in Europe.

Cocaine is the second most prevalent drug (0.8%-0.9%). With 4.3 - 4.75 million cocaine users, Europe accounts for almost 30% of all cocaine users worldwide. Cocaine use is still concentrated in West and Central Europe, accounting for some 90% of all cocaine users in Europe. Cocaine prevalence rates in West and Central Europe doubled between 1998 and 2006 but remained basically stable over the 2006-2009 period.

The next most prevalent substance is ecstasy (0.7% of the population aged 15-64). With 3.7-4 million ecstasy users, Europe accounts for about one fifth of the global ecstasy-using population. Most European countries report stable trends of ecstasy use.

Use of amphetamines affects some 2.5-3.2 million people in Europe, or 0.5-0.6% of the population aged 15-64. Most countries report stable trends in amphetamine use. Amphetamine remains the main amphetamines-group substance used in Europe. Methamphetamine use is mainly limited to the Czech Republic, though some consumption also occurs in neighbouring Slovakia, some of the provinces of Germany and Austria bordering the Czech Republic, as well as in the Baltic countries and some of the Nordic countries. If ecstasy and amphetamines-group use are combined, use of ATS constitutes the second most prominent drug group after cannabis.

In contrast to other regions, non-medical use of prescription drugs has not been regarded as a major problem in Europe so far.[32] Denmark, Estonia and Finland are countries with substantial or higher proportions of non-medical use of prescription opioids than heroin. The highest levels of non-medical use of prescription opioids so far have been reported from Northern Ireland (UK). Other countries in Europe reporting a substantial proportion of treatment demand for sedatives and tran-

Table 6: Seizures in Europe in kilogram equivalents, 2005-2009

Source: UNODC ARQ.

	2005	2006	2007	2008	2009	In % of global total in 2009
Cannabis resin	907,423	618,448	853,654	937,027	623,369	49%
Cannabis herb	105,577	132,558	144,310	178,345	198,841	3%
Cocaine	106,587	121,065	79,864	62,737	56,736	8%
Amphetamines-group	9,906	11,434	11,216	9,771	9,077	14%
of which amphetamine	8,039	6,019	8,791	9,438	8,117	24%
Ecstasy	4,709	5,649	5,839	1,763	995	18%
Heroin	22,165	22,171	26,394	29,206	28,762	38%
Opium	2,059	1,292	1,445	1,324	1,379	0.2%
Benzodiazepines and barbiturates	1,344.25	126.13	452.38	580.54	2,103.22	89%
GHB	156	38	318	383	675	79%
LSD	6.1	0.5	0.4	0.1	0.1	80%
Memo: Population					*808 million*	*12%*

32 EMCDDA, *The State of Drugs Problem in Europe, Annual Report 2010.*

quillizers are found among the Nordic countries, notably Sweden (11.6%), Norway (10.2%) and Finland (8.5%). The use of benzodiazepines is common among drug users all across Europe, including substitution treatment clients. Studies show that between 11% and 70% of clients report current use of benzodiazepines.[33]

Drug-related deaths

For Europe, the best estimates suggest that there are between 25,000 and 27,000 drug-related deaths annually, with a rate between 46 and 48 deaths per one million people aged 15-64, though some estimates give substantially higher figures (about twice these numbers). Drug-related deaths due to overdose amounted to some 7,000 in the countries of the European Union in recent years, down from around 8,000 in 2000.[34] Opioids, mainly heroin, are predominantly ranked as the primary cause of death, followed – at much lower levels – by cocaine. Most drug-related deaths seem to occur in Ukraine, the Russian Federation, the United Kingdom, Spain and Germany. Combined, these five countries account for some 80% of all reported drug-related deaths in Europe. In terms of mortality rates, Ukraine, Iceland, Ireland and Luxembourg seem to experience some of the highest levels in Europe, with over 100 drug-related deaths per one million inhabitants aged 15-64.

d) Africa

Production

Illicit drug production in Africa is mainly focused on cannabis. While cannabis resin is mainly produced in Morocco, cannabis herb is produced all over Africa.

Small-scale opium production is limited to countries in North Africa, notably Egypt, which regularly reports the largest eradication of opium poppy among all countries in Africa.

ATS manufacture appears to be emerging in some African countries. For some time, methamphetamine and methcathinone production has been taking place in South Africa, basically for domestic use. Similarly, Egypt has reported clandestine manufacture of ATS for some years. This production only takes place at low levels and is intended for the domestic market.

In contrast, recent reports of shipments of methamphetamine from countries in West Africa (notably Nigeria) to various destinations in East and South-East Asia is an international concern, and suggest that a more professional ATS production has been emerging in West Africa. Some equipment and chemicals seized in Guinea in 2010 might indicate possible ATS manufacture there.

Finally, khat is cultivated in several East African countries. Khat is not under international control, though a number of countries – including countries in Africa – have introduced national legislation to prohibit its cultivation and trafficking.

Trafficking

Most of the cannabis trafficking is for shipments across African countries. Only smaller amounts are destined for overseas markets, mainly in Europe. Most of the cannabis resin production in North Africa is for final consumption in Europe. The largest seizures were reported for cannabis herb, followed by cannabis resin. Africa's share of global cannabis herb seizures amounts to 11% – and is thus below its share of the global population (15%), while its share in global cannabis resin seizures – mostly carried out by countries in North Africa – is equivalent to 25% of the world total.

Africa has been affected by significant shipments of cocaine from South America to Europe in recent years. The amounts trafficked via Africa to Europe, however, seem to have decreased in 2008 and 2009, and only partly resumed in 2010. Estimates for 2009 suggest that some 35 mt of cocaine may have left South America for Africa of which some 21 mt actually arrived in Europe. Most of the rest appears to have been consumed locally. In addition, there are some indications that West African countries are being used to stockpile cocaine which is later trafficked in small quantities to Europe.

In addition, African countries are increasingly being used by traffickers to ship Afghan heroin to final destinations in Europe and other regions. Though East Africa is reportedly the main intermediate target for these trafficking activities, African heroin seizures were highest in Southern Africa and North Africa. Estimates suggest that 40-45 mt of Afghan heroin was trafficked to Africa in 2009.

Methamphetamine seizures have been reported from Nigeria and South Africa. For 2009, however, only South Africa reported such seizures, out of a total of four African countries reporting any ATS seizures in the ARQ. Approximately one half of the ATS seized in Africa was amphetamine. The paucity of the data does not allow for a reliable characterization for the continent as a whole. Several African countries appear to be affected by trafficking in, and consumption of, diverted or counterfeit prescription drugs containing controlled substances whose nature is not always clear, though they appear to include ATS as well as sedatives and tranquillizers.

Illicit drug use

Information on drug use in Africa is extremely limited, given the lack of scientific surveys in the region. The

33 EMCDDA, *Polydrug Use: Patterns and responses*, Selected issues 2009.

34 EMCDDA, *Statistical Bulletin*, Number of drug-induced death recorded in EU Member States according to national definition, Dutal drug-induced deaths, 1995-2008.

Table 7: Seizures in Africa, kilogram equivalents, 2005-2009

Source: UNODC ARQ.

	2005	2006	2007	2008	2009	In % of global total in 2009
Cannabis herb	865,974	1,220,578	694,177	936,084	639,769	11%
Cannabis resin	121,576	132,784	140,544	165,455	320,600	25%
Khat*	1,522	5,691	2,490	6,219	23,442	12%
Cocaine	2,575	851	5,535	2,551	956	0.1%
Methaqualone	159	773	93	1,586	828	99%
Heroin	325	335	328	311	515	0.7%
Opium	45	33	49	67	57	0.01%
Amphetamines-group	2,085	851	721	3,492	98	0.2%
Ecstasy	3.7	74.5	9.2	0.06	0.02	0.0%
Memo: Population					*1,009 million*	*15%*

*Not under international control.

high level of uncertainty is reflected in the broad ranges around the best estimates. The available information suggests that cannabis use is widespread, and that other drugs are used as well, notably in urban areas.

The limited information on drug-related treatment in Africa identified cannabis as the main problem drug, accounting for 64% of all treatment demand in the region. This is a far higher proportion for cannabis than in any other region. Cannabis was followed by opioids (19%), cocaine (5%) ATS (5%), methaqualone (4%), khat (3%), solvents and inhalants (3%) and sedatives and tranquillizers (2%).

Given the absence of information on overall drug use patterns, it is also difficult to estimate the extent of non-medical prescription drug use in the region. However, parallel markets exist in many African countries, where prescription drugs are sold outside the control of the health authorities. ARQ data suggest frequent non-medical use of prescription drugs such as buprenorphine, pentazocine and benzodiazepines in several African countries. In Mauritius, the use of buprenorphine was reported to be higher than heroin. In Madagascar, around 38% of the total treatment demand was for tranquillizers, second to cannabis (>60%). Similarly in South Africa, on average 6.9% of people in treatment reported prescription opioids and tranquillizers as either their primary or secondary drug of abuse.[35]

Drug-related deaths

Information on drug related deaths in Africa is also limited. The best available estimates suggest that there could be between 13,000 and 41,700 drug-related deaths, equivalent to between 23 and 74 per one million inhabitants aged 15-64. These figures would suggest that drug-related death in Africa is close to the global average. Estimates could of course change substantially were better data to become available.

35 South African Community Epidemiology Network on Drug Use (SACENDU), *Monitoring Alcohol and drug abuse trends in South Africa*, SACENDU Research Brief Vol 13 (01), 2010.

e) Asia

Production

The main illicit drug produced in Asia is opium. The two largest opium-producing countries are Afghanistan and Myanmar. Though the proportion of Asian opium production in the global total declined from 98% in 2007 to 87% in 2010, Asian opium continues to dominate the world opium and thus also the world heroin market. While Afghan opium production declined over the 2007-2010 period, production in Myanmar increased.

Cannabis production is widespread across Asia, including cannabis resin production in Afghanistan and its neighbours in South-West Asia and Central Asia, and cannabis herb production in East and South-East Asia, and South Asia. The preliminary UNODC/Government of Afghanistan cannabis survey found cannabis resin production of 1,200-3,700 mt in Afghanistan in 2010, and Afghanistan was worldwide the second most frequently mentioned source country for cannabis resin shipments after Morocco. Seizures of cannabis plants – an indirect indicator of cannabis eradication – were higher in Asia 2009 than in North America, Europe or Oceania. Only South America showed higher figures.

Asia also plays a major role in the clandestine manufacture of ATS, notably of methamphetamine. Methamphetamine manufacture is mainly concentrated in East and South-East Asia, including the Philippines, China, Malaysia and Myanmar. In addition, since 2009, the Islamic Republic of Iran appears to have emerged as a significant location for the clandestine manufacture of

methamphetamine. Limited production of ecstasy also takes place in Asia, notably East and South-East Asia, including Malaysia, China and Indonesia. ATS production is mainly for consumption within the region. Exports to other regions (with the exception of a few exports to Oceania) hardly take place.

Trafficking

Trafficking in Asia is dominated by opium and heroin, which are smuggled to final destinations within the region as well as to Europe (from Afghanistan) and China (from Myanmar), though some Afghan opiates also find their way to China (up to 30% of Chinese demand). Overall, Asian opium exports accounted for more than 99% of the world total. Similarly, morphine seizures made in Asia accounted for more than 99% of the world total. More than half of all heroin seizures (56% in 2009) were made by Asian countries. In line with the much larger opium production of Afghanistan compared to Myanmar, opiate seizures have been far larger for the countries surrounding Afghanistan (notably the Islamic Republic of Iran and Pakistan) than for the countries surrounding Myanmar.

Cannabis herb seizures in Asia amounted to just 6% of the world total. In contrast, cannabis resin seizures accounted for 24% of the world total in 2009. Cannabis herb and resin seizures in Asia both showed upward trends over the 2005-2009 period (60% and 30%, respectively). A breakdown shows that 98% of Asian cannabis resin seizures in 2009 took place in the Near and Middle East/South-West Asia. Cannabis herb seizures, in contrast, occurred primarily in South Asia (53% of all Asian seizures) and in East and South-East Asia (36%).

In addition, Asia has developed into a major production and trafficking hub for ATS, accounting for 64% of all such seizures worldwide in 2009. Amphetamine seizures (mainly Captagon) happen primarily in the Near and Middle East, notably the Arabian peninsula, accounting for almost all Asian amphetamine seizures. Methamphetamine seizures, in contrast, affect primarily East and South-East Asia (95% of all Asian methamphetamine seizures). Both amphetamine and methamphetamine seizures increased in Asia over the 2005-2009 period (by 59% and 36%, respectively).

Ecstasy seizures, in contrast, declined over the 2005-2009 period (-58%), which is also in line with reports of improved ecstasy precursor controls. The importance of Asian ecstasy seizures in the global total (9%) is much lower than for the amphetamines.

A problem, for countries in East and South-East Asia as well as South Asia, is the increasing popularity of ketamine, a drug used mainly in veterinary medicine for its analgesic properties. It is not under international control. Ketamine is sometimes sold as 'ecstasy' or mixed with MDMA. Seizures of ketamine tripled over the 2005-2009 period and were in 2009 – in volume terms – some 20 times larger than ecstasy seizures in Asia. Asia accounted for 99% of global ketamine seizures in 2009. Most of the ketamine is produced in the region.

Cocaine seizures reported in Asia accounted for just 0.1% of the global total. Nonetheless, except for countries in Central Asia, all other subregions reported seizures of cocaine in recent years. Relative concentrations of cocaine trafficking seem to exist in East and South-East Asia as well as in the Near and Middle East.

Illicit drug use

Information on illicit drug use is only slightly better in Asia than in Africa, which also results in broad ranges around the best estimates.

Table 8: Seizures in Asia, kilogram equivalents, 2005-2009

Source: UNODC ARQ.

	2005	2006	2007	2008	2009	In % of global total in 2009
Opium	337,071	381,741	517,119	643,873	649,449	> 99%
Morphine	31,342	45,787	27,039	17,060	23,655	> 99%
Heroin	31,852	30,442	34,699	40,490	42,512	56%
Cannabis herb	233,808	231,786	201,030	331,322	373,522	6%
Cannabis resin	236,284	227,822	308,410	543,177	306,556	24%
Amphetamines-group	29,968	32,460	31,031	32,854	41,592	64%
of which amphetamine	15,572	15,690	19,296	19,711	24,772	74%
methamphetamine	12,175	12,360	11,026	13,052	16,577	53%
Ecstasy	1,202	451	1,998	843	506	9%
Ketamine	3,256	4,455	12,098	7,913	10,693	99%
Cocaine	525	711	568	1,136	676	0.1%
Memo: Population					*4,068 million*	*59%*

Cannabis is the most widely consumed drug in Asia. Despite national differences, overall cannabis use is, however, rather low in Asia, clearly below the global average. While cannabis resin is mostly used in Afghanistan and Lebanon and their respective neighbouring countries, cannabis herb is mainly used in South and South-East Asia.

The second most widely consumed drug type in Asia is the amphetamines, that is, methamphetamine in East and South-East Asia and amphetamine on the Arabian peninsula. Available information suggests that the use of amphetamines increased in recent years.

Asian countries reported mixed trends of ecstasy use. Estimates regarding ecstasy, however, must be treated with caution. Substances other than MDMA are often sold as 'ecstasy' in Asia.

By far the most problematic group of substances for most Asian countries are the opiates. It is estimated that more than half of the world's opiate-using population lives in Asia. Opiate prevalence rates are particularly high in the main opium-producing regions as well as in some of their neighbouring countries. The highest estimates of opiate consumption are found in the countries of South-West Asia.

Cocaine use in Asia is still limited, though there are regular reports that organized crime groups are trying to develop the market, notably in some of the richer parts of Asia, where sufficient purchasing power exists.

Due to the absence of regular prevalence studies for the majority of countries in Asia, information on non-medical use of prescription drugs is scattered and limited. Available reports nonetheless indicate substantial non-medical use of prescription opioids, tranquillizers and amphetamines in many Asian countries.

In Bangladesh, Nepal and India, buprenorphine is commonly injected. In South-West and Central Asia, among the regular heroin users, the non-medical use of prescription opioids, barbiturates and sedatives has been a commonly observed phenomenon. In Afghanistan, an annual prevalence rate of 0.5% for prescription opioids and 0.4% for tranquillizers was reported among the adult population. The annual prevalence of tranquillizer use was about the same among the male and female populations, while other drug use is far more male-dominated.[36]

In South-East Asia, along with the use of ATS, the non-medical use of tranquillizers – especially benzodiazepines – is widely reported from various countries in the region, including Brunei Darussalam, Malaysia, Myanmar, the Philippines and Singapore. In the Republic of Korea and the Philippines, prescription opiates are the predominantly used opioids. Increased use of synthetic and prescription drugs has also been reported in a number of countries, including Jordan, Qatar and the United Arab Emirates. In Kuwait, for instance, around 16% of treatment demand was related to the use of sedatives and tranquillizers.

Drug-related deaths

Asia has the largest uncertainty in the estimated range of drug-related deaths: between 6 and 51 deaths per one million persons aged 15-64. This needs to be interpreted with caution, considering the lower coverage and reporting of mortality data. Nevertheless, due to the considerable population in Asia, this translates to between 15,000 and 140,000 deaths. In Asia, opioids are almost exclusively reported as the primary substance in drug-related deaths.

f) Oceania

Production

Drug production in Oceania is limited to the cultivation of the cannabis plant, mainly for the production of cannabis herb. Cannabis production takes place in Australia, New Zealand and most of the small island countries. Cannabis production is for local consumption and there is no information on exports to other regions.

In addition, ATS production has started to gain prominence over the last decade. This is mainly methamphetamine and, to a lesser extent, ecstasy. In addition, some amphetamine is also produced. ATS production is concentrated in Australia and, to a lesser extent, New Zealand.

Trafficking

The amounts of drugs seized in Oceania tend to be very small by international standards. Seizures of cannabis herb continued to decline over the 2005-2009 period and account for just 0.02% of the world total – far less than the share of the population of the Oceania region in the global total (0.5%). This is surprising as Oceania has one of the world's highest cannabis use prevalence rates.

The second largest seizures in volume terms were of cocaine, accounting for 0.04% of global seizures. Cocaine seizures increased over the 2005-2008 period, but declined again in 2009. Cocaine is trafficked from South America to Australia, though some recent arrests suggest that Mexican drug cartels may have started to show an interest in the potentially lucrative Australian cocaine market (due to high cocaine prices).

The proportion of Oceania in the global total is higher when it comes to ATS. Seizures of amphetamines-group substances accounted for 0.4% of the world total.

36 UNODC, *Drug Use in Afghanistan: 2009 Survey.*

Amphetamines-group seizures declined by some 85% between 2006 and 2009.

The decline was even more pronounced for ecstasy seizures, falling by 96% between 2005 and 2009, or by 99% between 2007 and 2009. Nonetheless, with a share in global seizures of 1.2%, ecstasy continues to play an above-average role in this region. Significant amounts of ecstasy – by local standards – are still being smuggled into Oceania (notably Australia) from Europe and South-East Asia, in addition to domestic supply.

The importance of heroin seizures in Oceania is also modest (0.3% of global seizures). Heroin seizures, however, showed a clear increase over the 2006-2009 period but were nonetheless some 80% lower than in 2000.

LSD seizures declined by some 95% between 2005 and 2009, but LSD was the only substance where Oceania accounted for a substantial share of global drug seizures (16%).

Illicit drug use

Illicit drug use in Oceania is generally characterized by high prevalence rates, notably for cannabis (9.3%-14.8% of the population aged 15-64), but also for ATS, both ecstasy (3.6%-4%) and amphetamines (2%-2.8%), as well as for cocaine (1.4%-1.7%). Only the prevalence rate for opiates (0.2%) is below the global average – a lasting result of the 'heroin drought' in 2001.

At the same time, much progress has been made over the last decade in reducing the prevalence rates. This was particularly true for the opiates, but also for cannabis. Use of ecstasy and cocaine increased. More recently, all indicators show a stabilization of drug use.

Though annual drug use prevalence rates are high, per capita consumption of drugs among drug users tends to be low in Oceania, notably for cocaine. Very high drug prices may explain this.

Non-medical use of prescription drugs also appears to be widespread in Oceania, and it seems to be mainly linked to some prescription amphetamines and prescription opioids.

In Australia, there is substantial non-medical use of both amphetamines (2.7%) and prescription opioids (0.2%) among the general population. Use of tranquillizers is also common. Among students aged 12-17, 16.2% had used tranquillizers without a doctor's prescription in their lifetime. This compares with a lifetime prevalence of 3.8% for amphetamines among students, and 2.3% who had used opiates in their lifetime.[37] Widespread non-medical use of prescription drugs was also reported by New Zealand.

Drug-related deaths

For Oceania, although the total number of drug-related deaths is small (approximately 2,800 deaths), the mortality rate seems to be rather high, at 119 deaths per one million inhabitants aged 15-64. Since Australia is the only reporting country, this rate probably does not reflect the situation across Oceania. Moreover, Australia has a better drug-death registration system than many other countries.

Table 9: Seizures in Oceania, kilogram equivalents, 2005-2009

Source: UNODC ARQ.

	2005	2006	2007	2008	2009	In % of global total in 2009
Cannabis herb	3,514	2,845	2,730	1,445	1,389	0.02%
Cocaine	95	285	626	931	290	0.04%
Amphetamines-group	338	1,753	198	312	253	0.4%
of which methamphetamine	*132*	*216*	*174*	*48*	*171*	*0.6%*
Ecstasy	1,447	541	4,666	58	63	1.2%
Heroin	152	67	65	80	195	0.3%
LSD	0.67	0.13	0.13	0.00	0.03	16%
Memo: Population					*36 million*	*0.5%*

37 White V. and Smith G., *Australian secondary school students' use of tobacco, alcohol, and over-the-counter and illicit substance in 2008*, Drug Strategy Branch, Australian Government Department of Health and Ageing, September 2009.

2. The opium/heroin market

2.1 Introduction

UNODC estimates that there were between 12 and 21 million opiate users worldwide in 2009. Heroin remains the most commonly used opiate, consumed by a vast majority of global opiate users (about 75%). In 2009, an estimated 12-14 million heroin users consumed some 375 mt of heroin.

Europe and Asia remain the key opiate consumption markets. However, a range of opiates are consumed worldwide, including raw opium, morphine and local types of opiates.[1] Consumption of these substances is limited and generally confined to certain geographical areas. In recent years, problem drug use has also been related to the non-medical use of various prescription opioids, such as oxycodone, fentanyl or pethidine.

Global opium poppy cultivation amounted to some 195,700 ha in 2010, a 5% increase from 2009, mainly driven by increased cultivation in Myanmar. Cultivation in the Lao People's Democratic Republic increased in 2010, but remains at a low level. Over the last three years, although cultivation in Afghanistan has declined, it remains high (63% of global cultivation). The area under opium poppy cultivation in Afghanistan was estimated at some 123,000 ha in 2010, the same level as 2009.

Global opium production amounted to 4,860 mt in 2010, compared to 7,853 mt the year before. This was largely due to a drastic reduction in Afghanistan's opium production as a result of a disease in opium poppy plants. Forecasts for Afghan production in 2011, based on UNODC's *Winter Rapid Assessment* (February 2011), project a further small decline or at least a stabilization of overall opium poppy cultivation at the lower levels. Moreover, if the opium yield returns to the average level, it is likely that opium production will increase in Afghanistan in 2011.

On the basis of production, seizure and consumption data, an estimated 460-480 mt of heroin were trafficked (including seizures) worldwide in 2009. Of this, 375 mt reached the consumers. Opiate trafficking from production countries to consumer markets requires a global network of routes as well as facilitation by domestic and international criminal groups. In particular, traffickers' use of maritime transportation and seaports has been identified as a key emerging threat – one which is largely overlooked by international law enforcement. In 2009, more than 420 million containers were shipped worldwide, yet only 2% of these were inspected. Although the trafficking routes are constantly changing, the global movement of heroin from producers to international consumers follows well-established paths. Heroin from Myanmar is mainly trafficked to China and Mexican heroin is mainly trafficked to the United States of America, while Afghan heroin is trafficked to every region of the world, except South and Central America. Opiates flow from Afghanistan through Pakistan, the Islamic Republic of Iran and Central Asia before moving to the main consumer markets in West and Central Europe, East Europe, and East and South-East Asia.

Opiate users generated an estimated US$68 billion in revenue for traffickers in 2009 – with around US$60 billion from Afghan opiates. Local anti-government ele-

1 Produced by mixing locally grown opium poppy with acetic anhydride.

ments and criminal networks profit from the opiate trade in Afghanistan and neighbouring countries, but the bulk of the profits benefit international drug traffickers. According to conservative estimates (with a 10% net-profit margin[2]) organized crime groups made net profits of at least US$7 billion from the opiate trade.

Organized crime is a threat to political stability, public security and health in transit and destination countries. The underground economy produced by the global opiate trade is undermining legal economies and fuelling corruption in some countries. Opiates, especially heroin, also cause serious health problems, including the transmission of blood-borne infections such as HIV/AIDS and Hepatitis C.

2.2 Consumption

UNODC estimates that between 12 and 21 (midpoint: 16.5) million people used opiates at least once in the past year[3] in 2009, with an annual prevalence rate between 0.3% and 0.5% of the world's population aged 15-64. Although this section mainly analyses global 'opiate' consumption (heroin and opium), other opioids[4] are also considered as some Member States only provide overall opioid statistics rather than individual heroin or opium prevalence rates through the Annual Reports Questionnaire (ARQ).[5]

Heroin is the most commonly used opiate, consumed by some three quarters of global opiate users. There were an estimated 12-14 million heroin users worldwide in 2009. A range of opiates are consumed worldwide, however, including raw opium, morphine and local types of opiates, such as *kompot* or *cherniashka.*[6] Raw opium consumption is largely restricted to some parts of Asia, kompot or cherniashka are consumed almost exclusively in East Europe, and illicit morphine has an extremely limited consumer base. In recent years, the non-medical use of various prescription opioids[7] has increased in some countries, becoming one of the drug groups affecting problem drug users.

In terms of absolute numbers of users, most opioid users are in the Americas, particularly in North America, followed by Asia and Europe. However, if only opiate use is considered, more than half of the world's estimated opiate (heroin and opium) users are in Asia, followed by Europe and Africa. The global pattern of opioid use varies considerably by region. In the Americas and Oceania (New Zealand and Australia, in particular) the use of prescription opioids constitutes the main problem, while the use of heroin is limited. In Europe, in contrast, heroin is the main opiate used, with limited non-medical use of prescription opioids reported.[8]

In traditional opium-cultivating countries and some of their neighbours, opium use is more common than heroin use. This is particularly true in Afghanistan, the Lao People's Democratic Republic, Myanmar and the Islamic Republic of Iran. In Africa and Asia, while heroin is the main opiate used, there are reports indicating that non-medical use of prescription opioids is increasingly common in some countries.

In 2009, heroin users worldwide consumed some 375 mt of pure heroin.[9] In Asia, the vast majority of heroin consumption occurred in China, Pakistan, the Islamic Republic of Iran and India.[10] In the Americas, the United States of America dominated heroin consumption. In Europe, several countries, including the Russian Federation[11], the United Kingdom, Italy, France and Germany, are key heroin consumption countries. In Africa, consumption is mainly concentrated in East, West and Central Africa.

Raw opium consumption is much more limited than heroin consumption, both in terms of number of users and geographic reach. In 2008, there were an estimated 4 million opium users worldwide, who consumed 1.1 mt of opium.[12] Of the total number of global users, the vast majority – accounting for more than 80% of global consumption – was in Asia. Cultural practices and tradition may explain the concentration of opium use in Asia. Opium smoking is a traditional practice in some South-West Asian and South Asian countries, especially the Islamic Republic of Iran, Pakistan, Afghanistan and India, as well as in some areas of South-East Asia, nota-

2 This is a minimum profit margin. It could be much higher, but needs to be studied in detail.

3 This refers to the year prior to which the national estimates were derived and not necessarily the year 2009.

4 Opioid is a generic term applied to alkaloids from opium poppy, their synthetic analogues, and compounds synthesized in the body. In general, a distinction is made between 'opiates' (that is, the various products derived from the opium poppy plant including opium, morphine and heroin) and synthetic opioids. For the purpose of description in this section (and in line with the new Annual Report Questionnaire), 'opiates' in this section only refer to opium and heroin while 'prescription opioids' include morphine and codeine as well as synthetic opioids such as methadone, buprenorphine, propoxyphene, fentanyl, pentazocine, et cetera.

5 The ARQ used by Member States until 2010 included the broad category of opioids and the sub-categories of heroin, opium and 'other opioids.' The new ARQ approved by Member States in 2010 added the category 'misuse of prescription opioids' to the 'other opioids.'

6 Produced by mixing locally grown poppy with acetic anhydride

7 Such as oxycodone, fentanyl, or pethidine and in some instances the use of substitution opioids such as buprenorphine or methadone.

8 The extent of prescription opioid use in Europe needs to be further investigated.

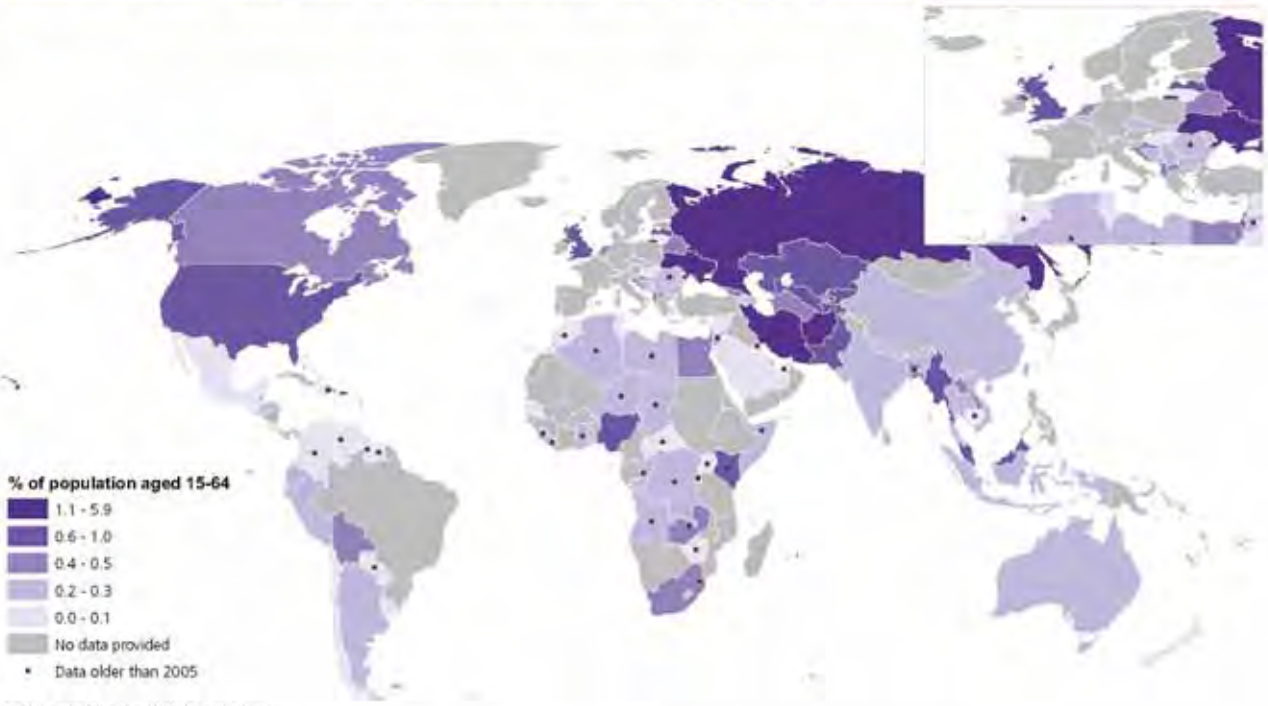
9 'Pure heroin' refers to heroin of 70% purity, which is roughly equivalent to 2,600 mt of heroin of 10% purity.

10 UNODC, *Addiction, Crime and Insurgency: The transnational threat of Afghan opium*, 2009.

11 Based on preliminary estimates by UNODC, since there are no comprehensive studies on prevalence of opiate use in the Russian Federation.

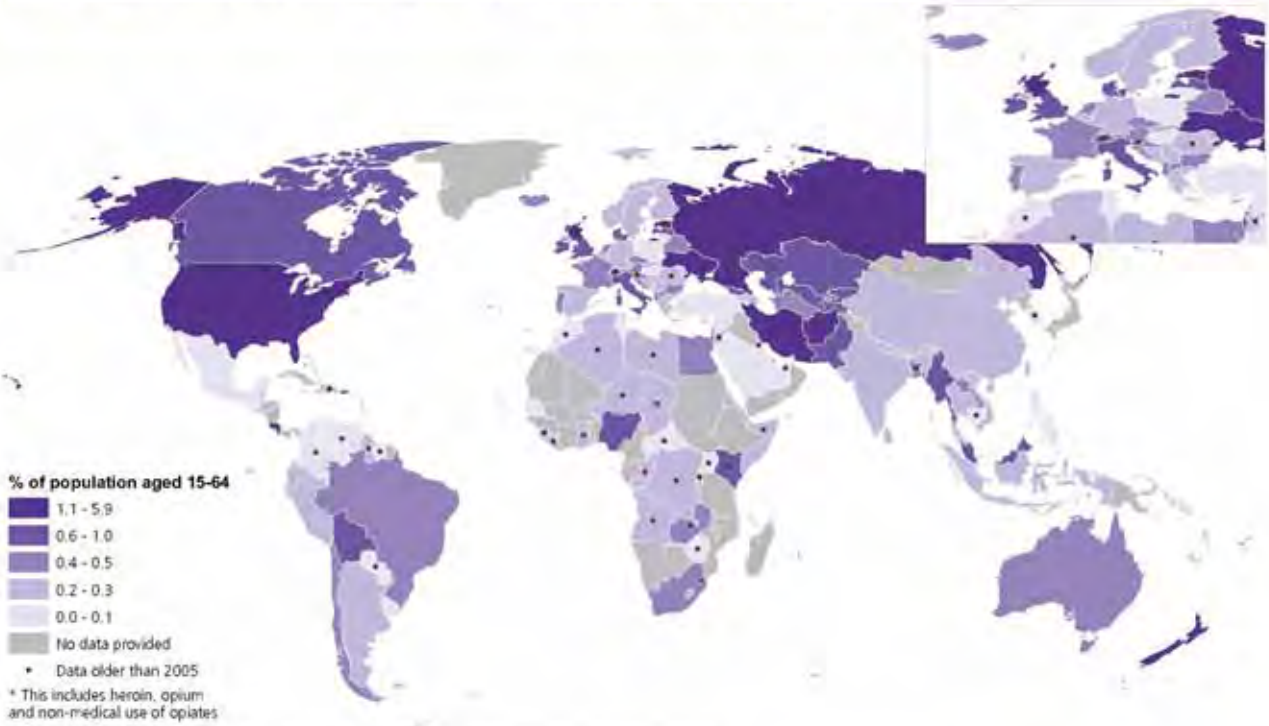
12 UNODC, *Addiction, Crime and Insurgency : The transnational threat of Afghan opium,* 2009.

Map 5: Annual prevalence of opiates use, 2009 (or latest year available)



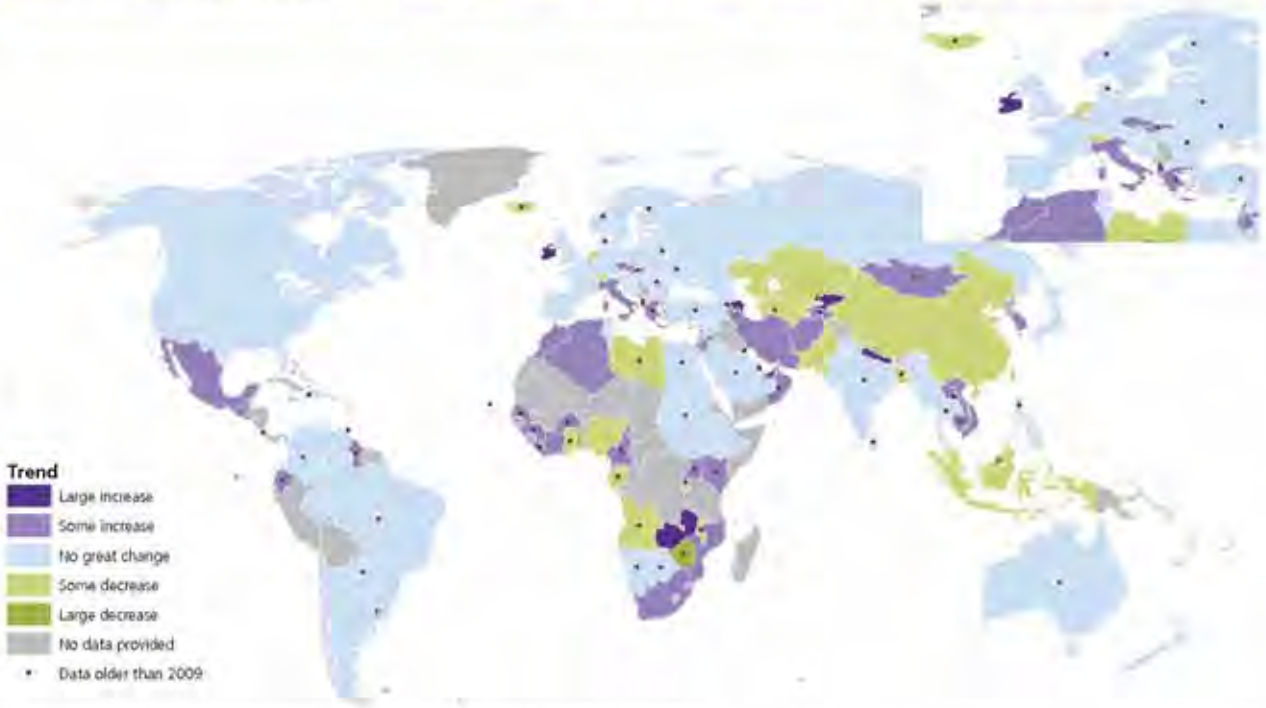
Note: For most West European countries the prevalence estimates are of opioid users without differentiating between opioid types and therefore data for many West European countries do not appear on this map.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Map 6: Annual prevalence of opioids use, 2009 (or latest year available)



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Map 7: Expert perceptions of changes in the use of opioids, 2009 (or latest year available)



bly the Shan State in Myanmar and the northern parts of the Lao People's Democratic Republic.

A number of opiate use trends have emerged over the last couple of years. Compared to 2008, opiate use remained almost stable worldwide. Afghanistan has the highest opiate prevalence rate, with opiate use rates also increasing in almost all of its neighbours. Overall opiate use increased from 1.4% in 2005 to 2.7% of the population aged 15-64 in Afghanistan in 2009. Opium use in Afghanistan increased between 2005 and 2009 by more than 50% to 1.9% of the population and heroin use increased by 140% to 1% of the population – and is thus now higher than in Europe. Although the Islamic Republic of Iran has the second highest opiate prevalence rate in the world, in terms of absolute figures, China and the Russian Federation[13] host the highest numbers of heroin users worldwide.

Fig. 11: Distribution of heroin consumption by region, 2009 (375 mt)

Source: UNODC

Non-medical use of prescription opioids remains a major problem in the Americas

If all opioid use is considered, the annual prevalence rate increases to between 0.5% and 0.8% of the adult population, between 24 and 35 million people. Non-medical use of prescription opioids (normally marketed as pain relievers) is mainly reported from North America.

Estimates of overall annual opioid use in North America range between 3.9% and 4.4% of the population aged 15-64, mainly reflecting the non-medical use of prescription opioids. In 2009, the United States of America reported annual prevalence of opioid use, other than for medical purposes, at 5.6%, compared to 0.5% prevalence for chronic heroin users.[14] In 2009, 1.9 million people in the USA were diagnosed with substance abuse or dependence on prescription opioids.

13 Based on preliminary estimates by UNODC, since there are no comprehensive studies on prevalence of opiate use in the Russian Federation.

14 This is based on an estimate of chronic heroin users by ONDCP in 2000.

Opioids and opiates

There are a number of terms used in this chapter in relation to opiates, opioids, synthetic opioids et cetera. The purpose of this box is to clarify the technical definition of these terms and explain the terminology used in presenting the data in this chapter.

Technical definition

Opium is produced by the poppy plants and it contains psychoactive substances including morphine, codeine, thebaine, papaverine and noscapine. Opium, together with its psychoactive constituents and their semi-synthetic derivatives, for example heroin (derived from morphine) are described as opiates. Opioid is a generic term applied to two main sets of substances: opiates and synthetic substances (called synthetic opioids), with actions similar to those of morphine, in particular the capacity to relieve pain. The synthetic opioids include substances such as fentanyl, methadone, buprenorphine, propoxyphene, pentazocine and oxycodone. Another group of substances included in the generic category of opioids is the endogenous opioids, for example, the endorphins (endogenous morphine) and enkephalins. These are naturally produced by the human body and have actions similar to morphine. Some of these substances, such as the enkephalins, have been synthesized and are available from commercial sources.

Data presented on drug use in relation to opiates and opioids

Data on drug use provided by Member States, have traditionally included the generic category of opioid users and the sub-classification of heroin users, opium users and users of 'other opiates.' In 2010, the Commission on Narcotic Drugs approved a new questionnaire (Annual Report Questionnaire, ARQ) for future data reporting. The ARQ includes the generic category for opioid use and three sub-categories defined as i) use of opiates (heroin and opium), ii) non-medical use of prescription opioids (morphine, codeine and synthetic opioids such as methadone, buprenorphine, propoxyphene, fentanyl, pentazocine and oxycodone) and iii) use of other illicit opioids.

While morphine and codeine are technically classified as opiates, it is important to note that these have been placed under the sub-category of 'prescription opioids' for the purposes of data reporting to UNODC.

Despite far higher levels of non-medical use of prescription opioids, treatment data suggest that the USA is still facing a serious heroin problem: 71% of all opioid-related treatment admissions in 2008 were due to heroin use. But data also showed that treatment for heroin use remained stable over the last decade, while treatment admissions related to prescription opioids increased strongly, raising its share in total opioid-related treatment admissions from 7% in 1998 to 29% in 2008.

With regard to Emergency Department visits, data for 2009 suggest that more visits are related to the non-medical use of prescription opioids (narcotic analgesics: 129.4 visits per 100,000 people) than to the use of heroin (69 visits per 100,000 people).[15]

However, in 2009, data from the US household survey showed a stronger increase in heroin use than non-medical use of prescription opioids. The number of heroin users identified via the household survey rose by 33% compared to 2008, while the number of users of prescription opioids rose by 4%. None of these increases

15 US Department of Health and Human Services, *Highlights of the 2009 Drug Abuse Warning Network (DAWN) Findings on Drug-Related Emergency Department Visits,* 2009.

Fig. 12: National admissions to substance abuse treatment in the USA, 1998-2008

Source: SAMHSA, Treatment Episode Data Set (TEDS), 1998-2008

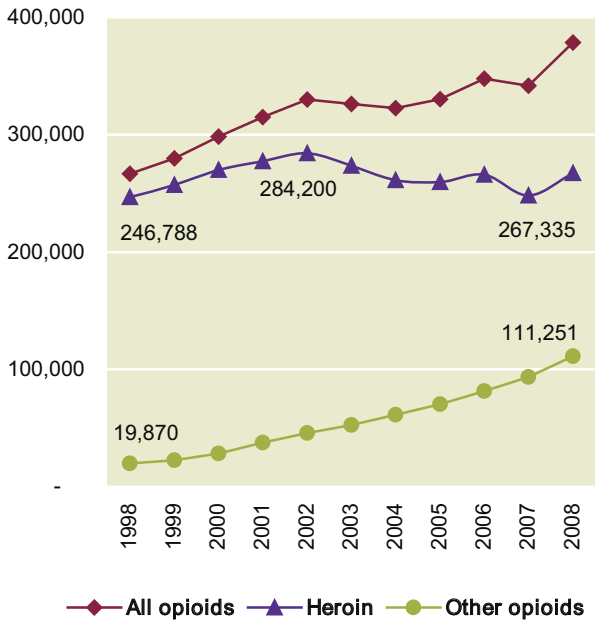


Table 10: Annual prevalence and estimated number of opiate users,* by region, subregion and globally, 2009

*Opiate estimates for Europe - where countries reported only opioid estimates - were derived by using the distribution of opiate users within the overall number of opioid users in treatment.

Region/subregion	Estimated number of users annually (lower)	-	Estimated number of users annually (upper)	Percent of population aged 15-64 (lower)	-	Percent of population aged 15-64 (upper)
Africa	890,000	-	3,210,000	0.2	-	0.6
East Africa	140,000	-	1,310,000	0.1	-	1.0
North Africa	130,000	-	550,000	0.1	-	0.4
Southern Africa	210,000	-	280,000	0.3	-	0.3
West and Central Africa	410,000	-	1,070,000	0.2	-	0.5
Americas	1,180,000	-	1,910,000	0.2	-	0.3
Caribbean	50,000	-	80,000	0.2	-	0.3
Central America	20,000	-	20,000	0.1	-	0.1
North America	1,000,000	-	1,630,000	0.3	-	0.5
South America	110,000	-	170,000	0.0	-	0.1
Asia	6,440,000	-	12,020,000	0.2	-	0.4
Central Asia	320,000	-	320,000	0.6	-	0.6
East/South-East Asia	2,800,000	-	4,990,000	0.2	-	0.3
Near and Middle East	1,940,000	-	3,540,000	0.8	-	1.4
South Asia	1,380,000	-	3,170,000	0.2	-	0.4
Europe	3,110,000	-	3,470,000	0.6	-	0.6
East/South-East Europe	2,100,000	-	2,300,000	0.9	-	1.0
West/Central Europe	1,010,000	-	1,170,000	0.3	-	0.4
Oceania	40,000	-	50,000	0.2	-	0.2
Global	**11,660,000**	**-**	**20,660,000**	**0.3**	**-**	**0.5**

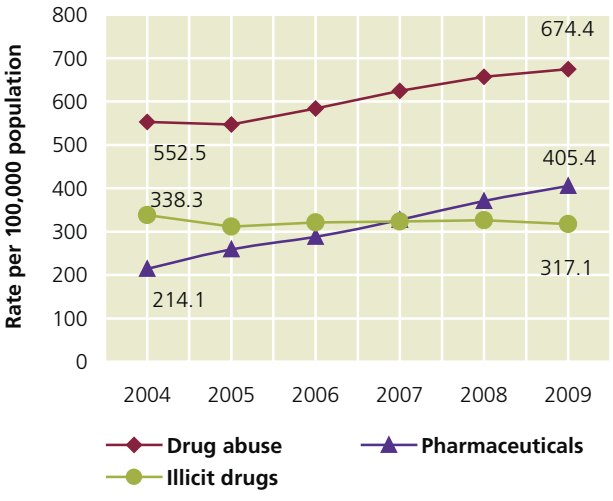
were, however, statistically significant. Nonetheless, the number of first-time heroin users also increased strongly. Around 180,000 persons aged 12 or older had used heroin for the first time within the past 12 months. The number of first-time heroin users in 2009 was significantly higher than the 2002-2008 average, which was slightly above 100,000.[16]

Furthermore, an estimated 2 million people aged 12 years or older had initiated their drug use with prescription pain relievers. Of these, 55.3% obtained the drug from a friend or relative for free, 17.6% from a doctor, 4.8% from a drug dealer or other stranger, and 0.4% bought them on the Internet.[17]

In 2009, non-medical use of prescription opioids in Canada was reported at 0.5%, the same level as 2008,

Fig. 13: Trends in drug-related emergency department visits per 100,000 inhabitants, USA, 2004-2009

Source: US Department of Health and Human Services, Highlights of the 2009 Drug Abuse Warning Network (DAWN) Findings on Drug-Related Emergency Department Visits, 2009.



16 SAMHSA, *National Survey on Drug Use and Health (NSDUH)*, 2009.

17 Ibid.

Fig. 14: Drugs injected by drug users in Canada, 2006

Source: Public Health Agency of Canada, Enhanced Surveillance of Risk Behaviours among injecting drug users in Canada, Phase I Report, 2006.

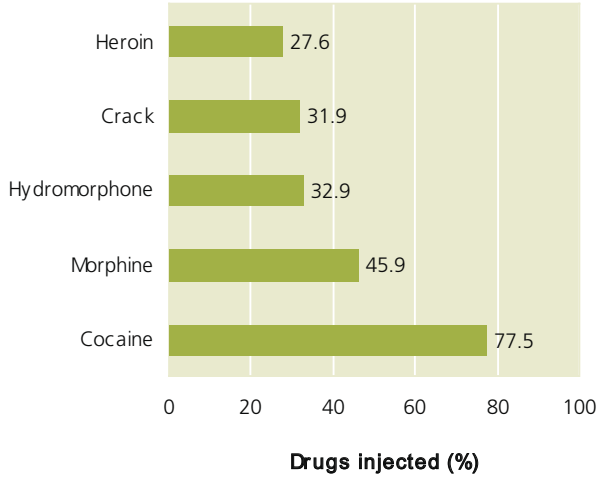
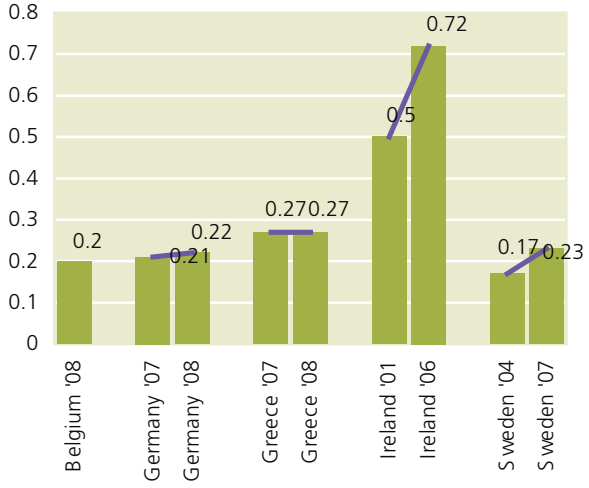


Fig. 15: Countries with revised estimates of annual prevalence of opioid use in Europe, various years

Source: UNODC ARQ.



while heroin use was estimated at 0.36%.[18] Like in many other countries, injecting opioids, including heroin, is reportedly common among problem drug users in Canada. Of the injecting drug users participating in a behavioural surveillance study in Canada in 2006, half of the participants reported injecting non-prescribed morphine, while 27.6% reported injecting heroin in the months prior to the interview.[19] In line with results in other countries, the seroprevalence for HIV among the participants was 13.4% while that of Hepatitis C was 65.7%.[20]

In South America, the annual prevalence of opioid use (mainly non-medical use of prescription opioids) is estimated at between 0.3 - 0.4% of the adult population, or between 850,000 - 940,000 people aged 15 - 64. The Plurinational State of Bolivia (0.6%), Brazil (0.5%) and Chile (0.5%) remain countries with high opioid use rates. In Central America, Costa Rica's rate is higher than the global average (2.8%). In South and Central America, codeine-based preparations are among the most commonly used opioids. Treatment demand in the entire region has remained stable over the past few years. In 2009, 9.6% of treatment cases were related to opioid use.

Despite stabilizing heroin consumption levels in Europe, associated social and health problems are not diminishing

Heroin is the main opiate used in Europe. Opiate (mainly heroin) prevalence in Europe[21] is estimated at 0.6% of the population aged 15-64, or between 3.1 and 3.5 million people. At 0.9% - 1.0%, the opiate use prevalence in East and South-East Europe is higher than in West Europe. Overall, experts from more than half of the countries in Europe reporting through the ARQ perceived opioid trends to be stable. New or updated prevalence estimates for a number of countries in Europe were published in 2010, including Austria, Belgium, Cyprus, Germany, Greece, Ireland, Italy, Luxembourg and Sweden. Among these, Ireland and Sweden reported an increase in the annual prevalence rates, while other countries reported stable opioid use trends.

The highest opioid use prevalence rates in West and Central Europe were reported from the United Kingdom (estimated 350,000 users), Italy (216,000 users) and France (190,000 users). In East Europe, the Russian Federation (1.7 million opiate users)[22] and Ukraine (370,000 opiate users) had high opiate prevalence rates in 2009. Most of the users in the above-mentioned countries are heroin users.

18 Estimated by UNODC, based on 1% prevalence of injecting drug use (estimated 220,690 IDU in 2004) reported by the Reference group to the UN on HIV and injecting drug use, 2008.

19 Public Health Agency of Canada, *Enhanced Surveillance of Risk Behaviours among injecting drug users in Canada, Phase I Report,* 2006.

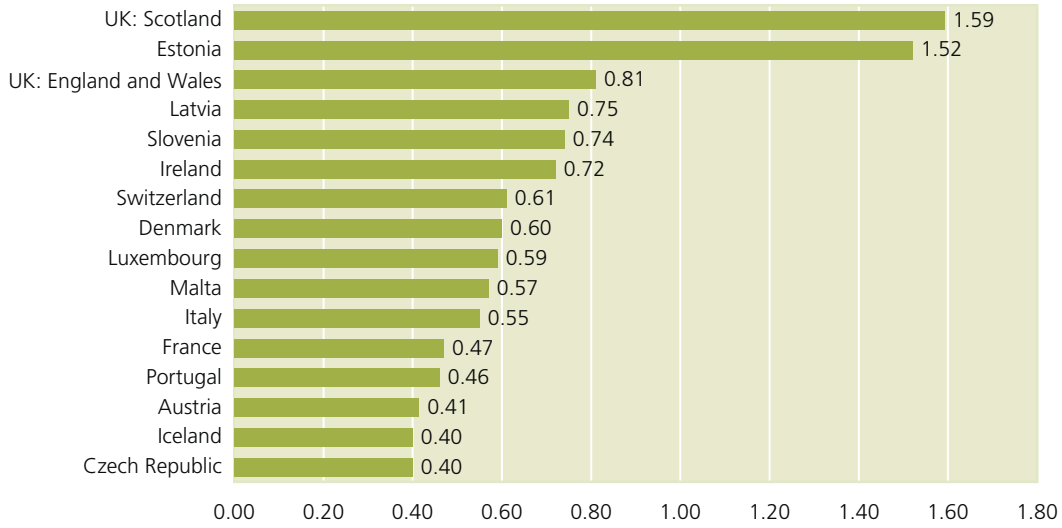
20 Ibid.

21 Opiate estimates for Europe - where countries reported only opioid estimates - were derived by using the distribution of opiate users within the overall number of opioid users in treatment.

22 These estimates are preliminary, since there are no comprehensive studies on prevalence of opiate users in the Russian Federation. The estimate of opiate users ranges from 0.3% - 1.64% of the population aged 15-64. The estimate of 1.64% is based on the number of opiate users in treatment for 2007, using a treatment multiplier of 5.3% taken from a study conducted by the National Addiction Centre of the Russian Federation: *Dynamics of Drug Related Disorders in the Russian Federation, 2007.*

Fig. 16: Prevalence of opioid use in West and Central Europe, 2009 or most recent year available

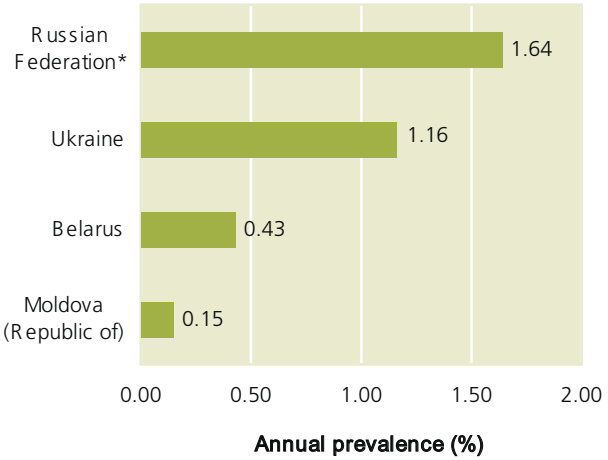
Source: UNODC.



Of the 1 million people in Europe who received treatment for illicit drug use in 2007, more than half received opioid substitution treatment (mainly methadone, to a lesser extent buprenorphine and, in some countries, slow-release morphines). Like in the past, heroin and its metabolites were reported as the main cause of the majority of drug-induced deaths in Europe, accounting for more than two thirds of all cases reported from 20 countries. The average age of those who died due to heroin use was the mid-thirties, suggesting a stabilization or decrease in the number of young heroin users in Europe. The EMCDDA *Annual Report 2010* suggests that for each drug-induced death, there are an estimated 20-25 non-fatal overdose cases.

Fig. 17: Prevalence of opiate use in East Europe, 2009 or most recent year available

*Based on preliminary estimates by UNODC, since there are no comprehensive studies on prevalence of opiate use in the Russian Federation.
Source: UNODC ARQ.



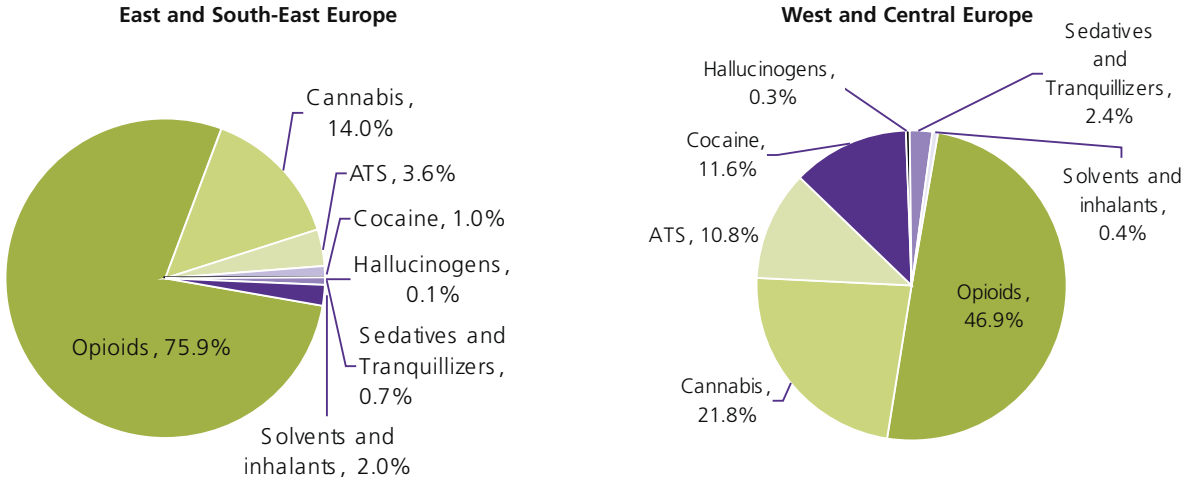
Heroin use is stabilizing in East and South-East Asia, but is perceived to be increasing in some other parts of Asia

Asian opiate prevalence estimates range between 0.2 and 0.5% of the population aged 15-64, or an estimated 6.5 to 13.2 million people. Most of the opiate users in Asia reportedly use heroin or opium, and more than half of the world's estimated opiate users live in Asia. Although recent prevalence estimates are not available for most countries in Asia, less than half (46%) of the countries that responded to the ARQ perceived an increase in opioid use. However, 38% of the responding countries, mostly in South-East Asia, perceived a decrease in 2009.

Countries in South-West Asia continue to have high prevalence rates for opiate use. Together, these countries account for nearly one third of opiate users in Asia. In Afghanistan, around 60% of the estimated opiate users use opium. In the Islamic Republic of Iran, 40% of the estimated opiate users consume opium, and the rest mainly consume heroin. In the Islamic Republic of Iran, 83% of treatment admissions in 2009 were for opiate use, in Pakistan, the share was 41% in 2006/2007. Opiates are also the most common cause of drug-related deaths reported in these countries. In the Islamic Republic of Iran, the rate of drug-related deaths was 91 per 1 million people aged 15-64; the majority of these related to opiate use. Moreover, overall opiate use in Afghanistan increased from 1.4% in 2005 to 2.7% of the population aged 15-64 in 2009. Heroin remains the most problematic illicit drug in Central Asia and the Caucasus. Experts in Central Asia perceived a stabilizing trend of opioid use, but the proportion of officially registered heroin users continued to increase, with 47% of registered drug users in Kyrgyzstan identifying themselves as

Fig. 18: Treatment demand in Europe, 2009 or most recent year available*

Source : UNODC ARQ.
* Treatment definitions and data reporting differ from country to country. Therefore, totals may not sum up to, or may exceed, 100%.



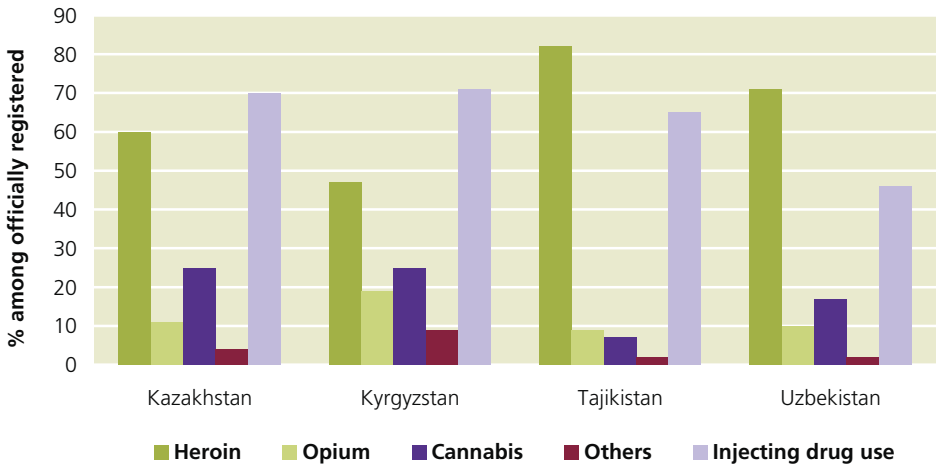
heroin users, and 82% in Tajikistan in 2009.[23] Injecting drug use is also common, with shares ranging from 46% of drug users in Uzbekistan to around 70% in Kyrgyzstan and Kazakhstan.[24] Opiate prevalence in the Caucasus is lower than the world average, ranging from 0.31% in Georgia to 0.22% in Armenia. With the exception of Azerbaijan, opioids is also the main substance group reported in drug-related death cases in the region, with rates ranging from 7 per million people aged 15-64 in Uzbekistan to 115 in Kazakhstan.

Although most of the countries in South Asia lack recent opiate use estimates, use levels seem to vary in the region. A 2006 study of drugs and HIV in South Asia[25] found that 90% of the drug users interviewed in Bangladesh and 2% in Bhutan were currently using heroin (either smoking or injecting). Additionally, among the respondents, the use of prescription opioids ranged from 1% in Bhutan and Sri Lanka to 20% in India. Heroin injection was most common among drug users in Nepal, followed closely by those in India.

In East and South-East Asia, opiates continue to be used at high rates. In 2009, heroin ranked as the main drug used in China, Malaysia, Myanmar, Singapore and Viet Nam. Most countries in the region have reported stable

Fig. 19: Central Asia: Use of different drugs and injecting drug use among officially registered drug users, 2009

Source: UNODC, *Compendium of drug related statistics: 2009*, Regional Office for Central Asia, 2009.



23 UNODC, *Compendium of drug related statistics:* 2009, Regional Office for Central Asia, 2009.

24 Ibid.

25 UNODC, *Rapid Situation and Response Assessment of Drugs and HIV in Bangladesh, Bhutan, India, Nepal and Sri Lanka: A regional Report*, 2006.

Table 11: South Asia: Use of opioids among drug users, 2006

Source: UNODC Rapid Situation and Response Assessment of Drugs and HIV in Bangladesh, Bhutan, India, Nepal and Sir Lanka: A regional report, 2006.

	Opium	Heroin smoked	Heroin injected	Propoxyphene	Buprenorphine
Bhutan (n=200)					
Ever used	0	37	3	32	28
Current users	0	4	3	3	2
% of current users	0	2	1.5	1.5	1
Bangladesh (n=1073)					
Ever used	140	989	46	3	295
Current users	7	961	6	1	154
% of current users	0.7	89.6	0.6	0.1	14.4
India (n=5732)					
Ever used	1535	3017	1623	1713	1466
Current users	858	2123	1228	1103	1115
% of current users	15	37	21.4	19.2	19.5
Nepal (n=1322)					
Ever used	181	1159	606	149	1013
Current users	117	880	456	97	858
% of current users	8.9	66.6	34.5	7.3	64.9
Sri Lanka (n=1016)					
Ever used	107	558	23	39	6
Current users	36	520	4	14	0
% of current users	3.5	51.2	0.4	1.4	0

or decreasing trends in opiate use, except the Lao People's Democratic Republic, Singapore and Viet Nam.[26] Opiate prevalence increased from 0.6% in 2008 to 0.8% in Myanmar in 2010.[27] As in previous years, the prevalence of opium use in the opium-growing villages in Myanmar (1.7%) was higher than in the non-opium growing villages (0.6%). With an estimated prevalence of 0.18% of the population aged 15 and above,[28] heroin use in Myanmar is less widespread than opium use. Treatment demand for heroin dependence remains high across East and South-East Asia, ranging from 50% of all treatment demand in Singapore to around 80% in China and 98% in Viet Nam.

Opiate use remains low in the Middle East

The opiate prevalence rate remains low in countries in the Middle East, with heroin being the main opiate consumed. In terms of treatment demand, heroin and prescription opioids are reported as the primary substances in many countries, including Oman (100%), the Syrian Arab Republic (95%), United Arab Emirates (64%) and Lebanon (57%). Opiates are also ranked as the main substance among drug-related deaths, with rates ranging from 4.6 per million people aged 15-64 in the United Arab Emirates to 44.3 in Bahrain.[29]

Heroin use in Africa is perceived to be increasing

In 2009, the annual prevalence of opiate use in Africa was estimated at between 0.2% and 0.6% of the population aged 15-64, or 890,000-3.2 million people. The wide range reflects missing data from most parts of the continent. Heroin remains the main opiate used in Africa, but there are reports of common non-medical use of prescription opioids in some countries.

The majority of African countries that provided information to UNODC reported that opioid use has increased. In 2009, 60% of the countries that responded to the ARQ reported an increase in the use of opioids in

26 UNODC, *Patterns and Trends of Amphetamine-Type Stimulants and other Drugs: Asia and the Pacific*, Global SMART Programme, 2010

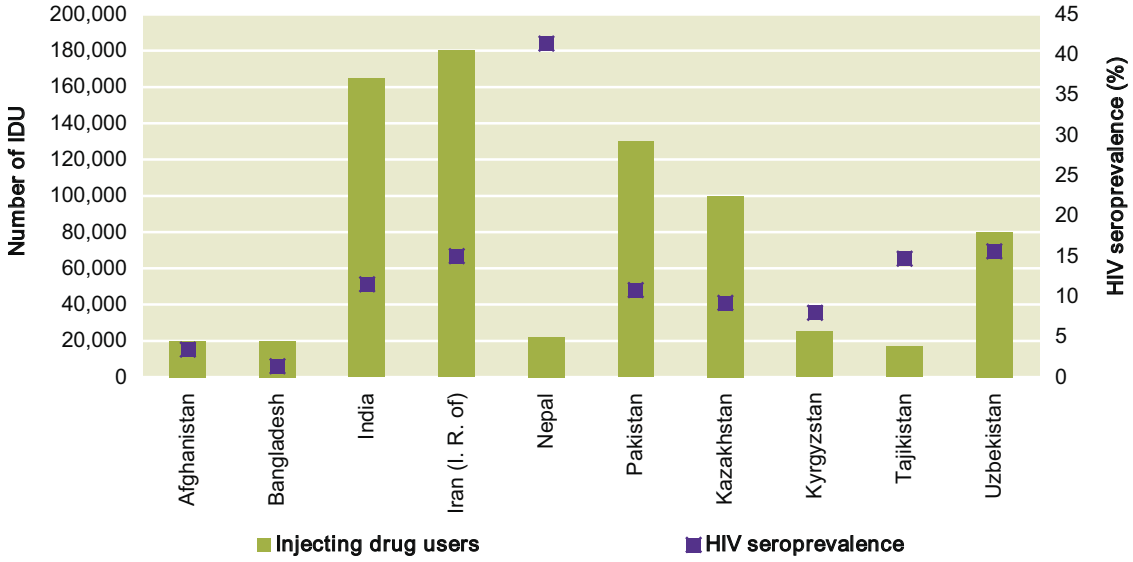
27 UNODC, *South-East Asia Opium Survey 2010: Lao People's Democratic Republic, Myanmar*, 2010.

28 Ibid.

29 UNODC ARQ.

Fig. 20: Number of injecting drug users and HIV seroprevalence in West, Central and South Asia, most recent year available

Source: Reference Group to the United Nations on HIV and Injecting Drug Use.



their country, while just 30% reported a decrease.[30] The annual opiate prevalence rate is higher in East Africa – at 0.1-1% – than other subregions.

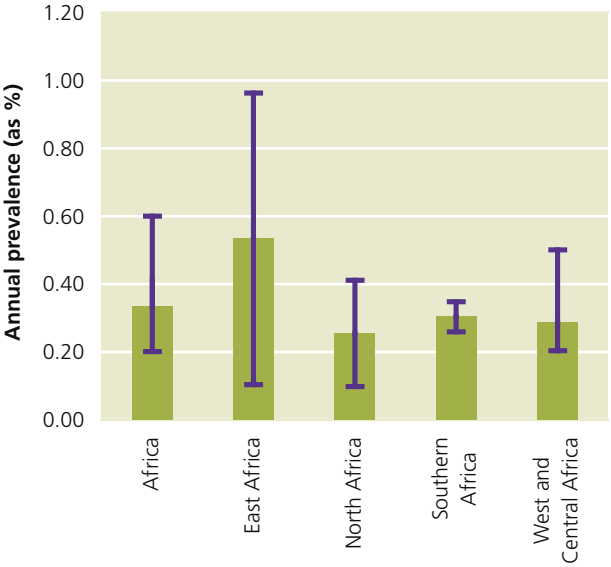
In East Africa, Mauritius (0.91%) and Kenya (0.73%) have high prevalence rates for heroin use. However, at 1.04%, non-medical use of prescription opioids in Mauritius is higher than heroin use. In 2009, a survey of alcohol and drug use was conducted in 4,500 households in the coastal provinces of Kenya; the prevalence of heroin use was reported at 1.9% of the population, with a higher prevalence of 2.5% among young adults aged 18-25.[31] Injecting drug use, especially of heroin, is reportedly common among drug users in Kenya, and the HIV seroprevalence rate for this group was found to be very high, 42.9%.[32]

Although there are currently no reliable estimates of opiate use in the United Republic of Tanzania, increasing trends of injecting heroin have been reported, especially from the coastal areas. An HIV seroprevalence study conducted in 2006 showed HIV seroprevalence levels at 27% among male and 58% among female injecting drug users.[33] Similarly, in a study of HIV among drug users in Zanzibar, injecting drug users accounted for 46% of those interviewed, with 30% HIV infected and 22% showing positive Hepatitis C seroprevalence.[34]

In 2009, the opiate prevalence rate (mainly heroin) was estimated to have increased from 0.57% to 0.70% in Nigeria. This means that Nigeria would host almost 500,000 – 600,000 heroin users.

Fig. 21: Annual prevalence of opiate use in Africa, by region, 2009

Source: UNODC ARQ.



30 UNODC ARQ.

31 NACADA, *Report of Survey on Drugs and Substance Abuse in Coast Province, Kenya,* March 2010.

32 Mathers, B., Degenhardt, L., Phillips, B., Wiessing, L., Hickman, M., Strathdee, A., Wodak, A., Panda, S., Tyndall, M., Toufik, A. and Mattick, R., on behalf of the Reference Group to the United Nations on HIV and Injecting Drug Use, 'Global epidemiology of injecting drug use and HIV among people who inject drugs: a systematic review', *The Lancet,* 2008; 372:1733-1745.

33 Timpson, S., et al, 'Substance abuse, HIV risk and HIV and AIDS in Tanzania,' *African Journal of Drug and Alcohol Studies*, 5(2), 2006.

34 Dahoma , J., et al, 'HIV and substance abuse: the dual epidemics challenging Zanzibar,' *African Journal of Drug and Alcohol Studies*, 5(2), 2006.

Fig. 22: Treatment demand in Africa, 2009 or most recent year available*

* Treatment definitions and data reporting differ from country to country. Therefore totals may not sum up to, or may exceed, 100%.

Source: UNODC ARQ.

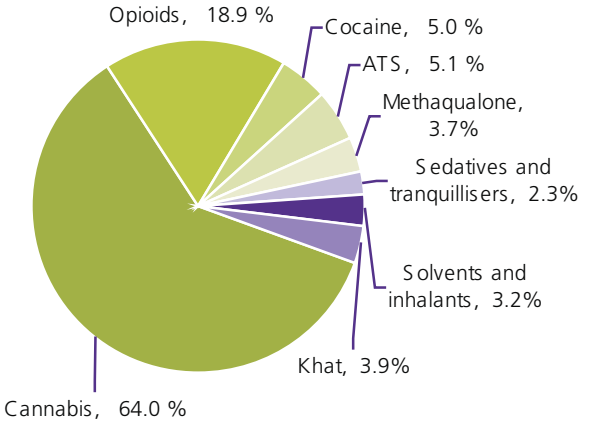
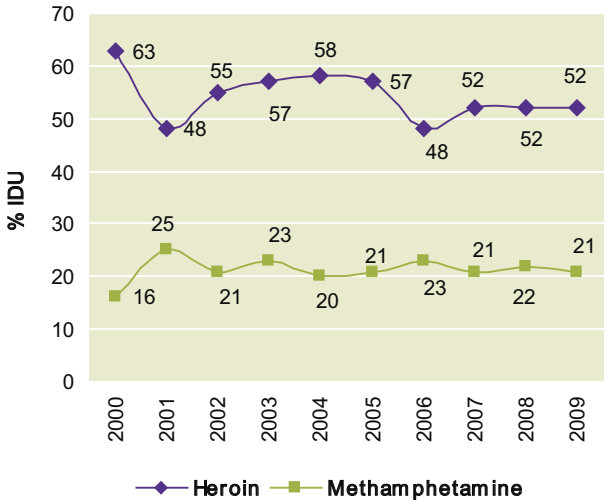


Fig. 23: Drug of choice, Australia, 2000-2009

Source: Illicit Drug Reporting System, Australia.



Opiates already constitute the main drug group users seek treatment for in many countries in the region, ranging from 81% of those treated in Mauritius, 55% in Mozambique, 45% in Seychelles and 33% in the United Republic of Tanzania. Among the limited countries reporting mortality data, opiates were also ranked as the main substance group responsible for drug-related deaths.

Stable trend of heroin use in Oceania

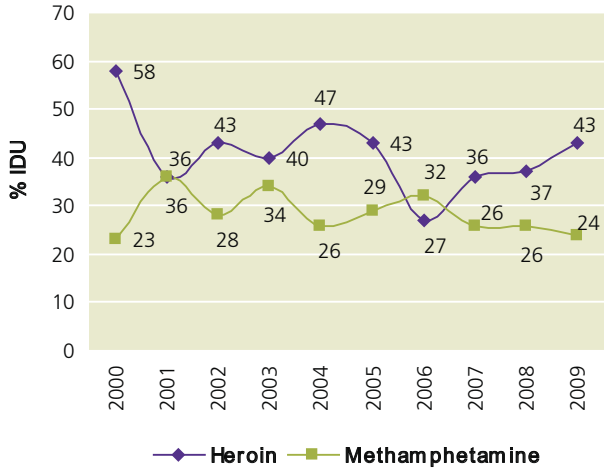
In 2007, 0.4% of the population aged 15-64 in Australia, around 57,000 people, were reported to have used heroin, street methadone and/or other opioids in the preceding 12 months. In 2008, 1.7% of students aged 12-17 who participated in the Australian secondary school survey had used opioids, other than for medical reasons.[35]

The Illicit Drug Reporting System (IDRS) in Australia showed that heroin continues to be the main drug of choice among injecting drug users. After a strong decline in 2001, the proportion of such users reporting heroin as the last drug or the drug injected most often declined again over the 2004-2006 period. Since then, however, there has been a steady increase in heroin use among injecting drug users, from 27% in 2006 to 43% in 2009, which could be an early indication that the stabilization of heroin use in Australia may be coming to an end. The proportions of injecting drug users consuming heroin are, however, still substantially lower than in

35 White V. and Smith, G., *Australian secondary school students 'use of tobacco, alcohol, and over the counter and illicit substances in 2008*, Drugs Strategy Branch, Australian Department of Health and Ageing.

Fig. 24: Drug injected most often in the last month, Australia, 2000-2009

Source: Illicit Drug Reporting System, Australia.



2000 (58%).[36] Furthermore, morphine, followed by oxycodone, remained the most commonly injected prescription opioids among injecting drug users.

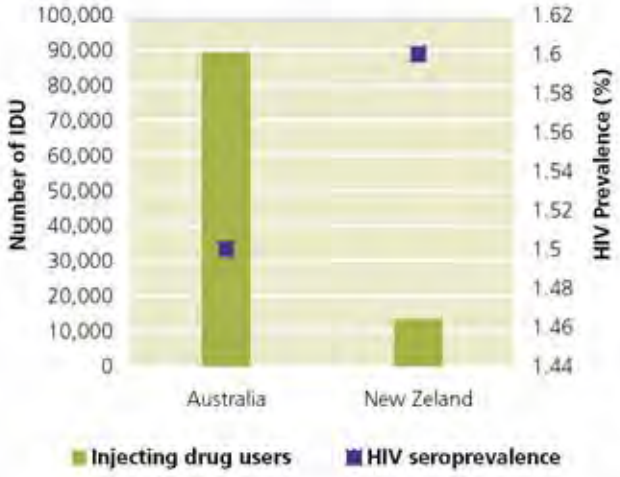
The HIV seroprevalence among injecting drug users in Australia remained low, at 1.5% over the 2005-2008 period, while the Hepatitis C (HCV) seroprevalence was reported at 63%.[37] The rate of HCV seroprevalence was even higher among drug users who reported heroin or

36 Rainsford, C., Lenton, S. and Fetherston, J., 'Indicators of changing trends in heroin and other opioid use in IDRS data nationally and in Western Australia,' *Drug Trends Bulletin*, April 2010, Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

37 UNODC ARQ.

Fig. 25: Number of injecting drug users and HIV seroprevalence, Australia (2005-2009) and New Zealand (2006)

Source: National Centre in HIV Epidemiology and Clinical Research, Australian NSP Survey National Data Report 2005-2009, The University of New South Wales; Reference Group to the United Nations on HIV and Injecting Drug Use

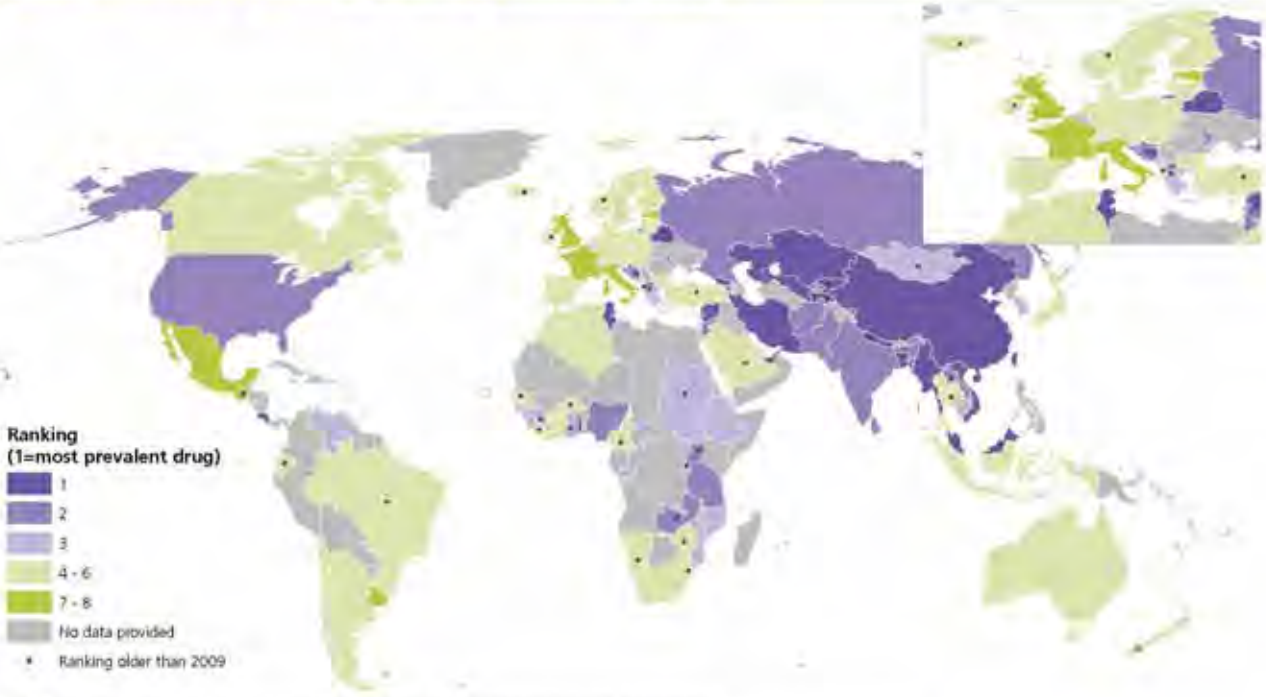


pharmaceutical opioids as the last drug injected.[38] Opioids were also the leading cause of drug-related deaths in Australia, at 118.9 deaths per million people aged 15-64.

According to New Zealand's 2007/08 Alcohol and Drug Use Survey, 1.1% of adults aged 16-64 had used an opioid in the past twelve months. This included heroin and non-medical use of prescription painkillers such as morphine. During the survey period, the non-medical use of prescription painkillers (1%) was much higher than the use of opiates (0.1%).[39] However, among arrestees testing positive for illicit drugs in 2007, 68% tested positive for cannabis, 3.6% for opiates and 1.2% for non-prescription use of methadone.[40] In 2009, the majority of drug users were treated for opioid and cannabis use. The HIV seroprevalence among injecting drug users in New Zealand is reportedly 1.6%, whereas HCV seroprevalence is 70%.

No recent or reliable information is currently available on opioid use for the remaining parts of Oceania, especially the Pacific Island states.

Map 8: Ranking of opiates in order of prevalence, 2009



38 National Centre in HIV Epidemiology and Clinical Research, *Australian NSP Survey National Data Report 2005-2009*, The University of New South Wales, Sydney, 2010.

39 Drug use in New Zealand, Key Results 2007/08, *New Zealand Alcohol and Drug Use Survey*, Ministry of Health 2010.

40 Hales, J. and Manser, J., NZ-ADAM, Health Outcomes International, New Zealand Police, Annual Report 2007.

2.3 Production

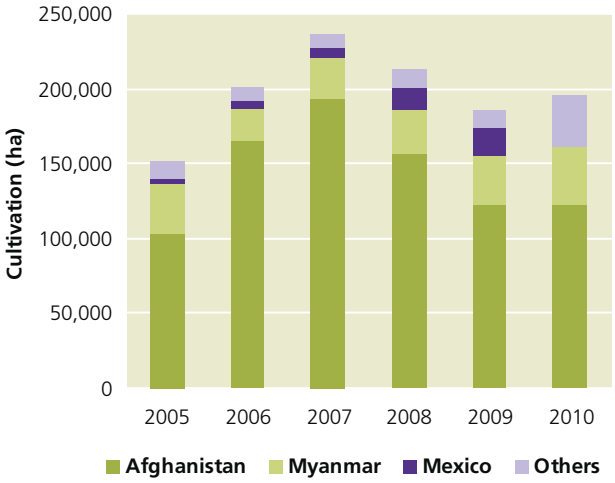
In 2010, the total area under opium poppy cultivation was some 195,700 ha, a 5% increase from 2009. While Afghanistan continued to account for the bulk of the cultivation, some 123,000 ha, increased cultivation in Myanmar was the main driver behind the global increase. In the 3-year period since 2007, opium cultivation in Afghanistan has actually declined, although it remains at high levels. Cultivation in Myanmar and Mexico has increased significantly. In 2006, opium poppy cultivation in Myanmar was 21,500 ha; the lowest since 1996. Since then, it has been steadily increasing. In addition to Myanmar, opium cultivation increased by almost 60% in the Lao People's Democratic Republic in 2010, although it remains at a low level.

A 2010 estimate for opium poppy cultivation in Mexico was not available at the time of writing. Therefore, the 2009 estimate was used to calculate the total global cultivation in 2010. Opium poppy cultivation in Mexico appears to have been steadily increasing over the 2005-2009 period, amounting to 19,500 ha in 2009, the third

Fig. 26: Global cultivation of opium poppy (ha),* 2005-2010

* For Mexico, in the absence of data for 2010, the estimate for 2009 was imputed to 2010.

Source: UNODC ARQ.



Map 9: Security map (as of 30 March 2010) and opium cultivation in Afghanistan by province, 2010

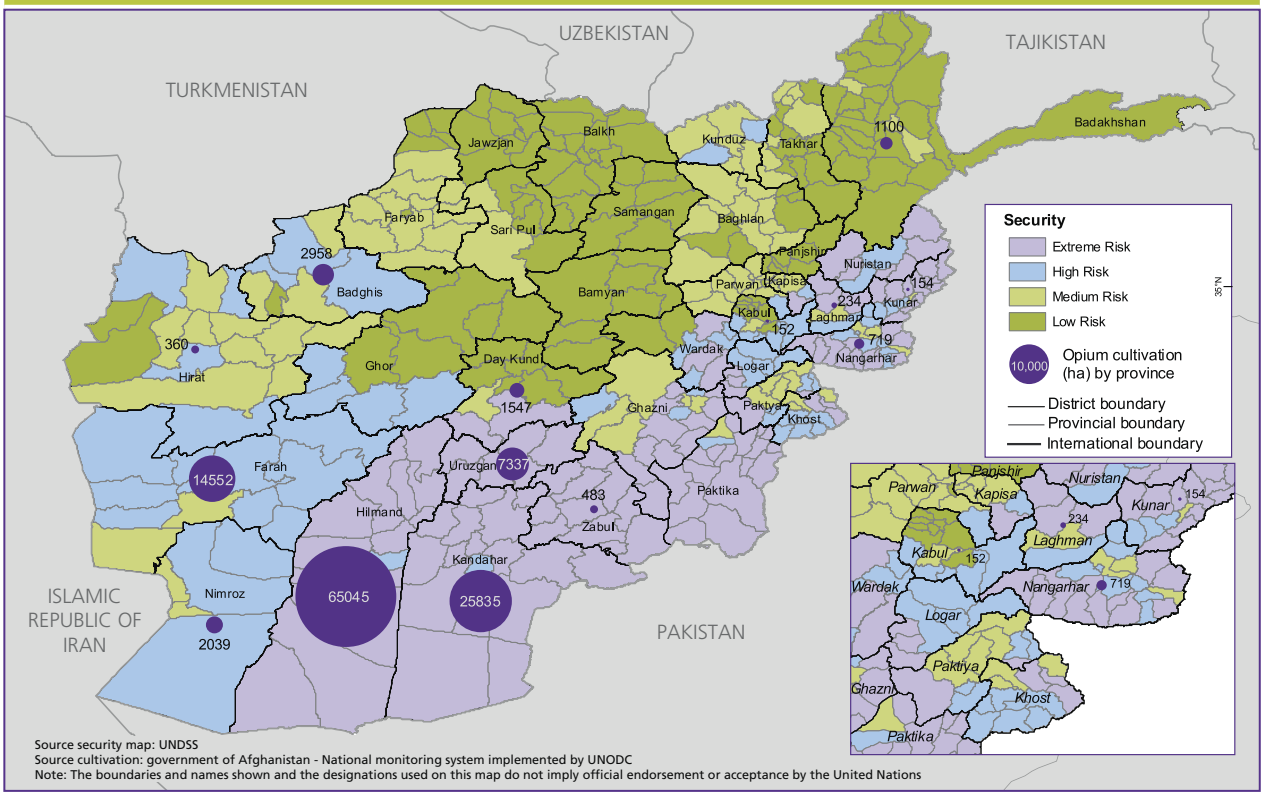


Table 12: Reported opium poppy eradication in selected countries (ha), 1996 to 2010

* Although eradication took place in 2004, it was not officially reported to UNODC.
In this table, only eradication reported in area units is considered. Eradication reported as plant seizures can be found in the seizure annex of the electronic version of the World Drug Report.
Sources: UNODC, Annual Reports Questionnaire, Government reports, reports of regional bodies, INCSR.

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Afghanistan				400	121			21,430	*	5,103	5,300	9,047	5,480	5,351	2,316
Colombia	6,885	6,988	2,901	8,249	9,254	2,385	3,577	3,266	3,866	2,121	1,929	375	381	546	
Egypt							15	34	65	45	50	98	121	89	
Guatemala										489	720	449	536	1,345	918
India		29	96	248	153	18	219	494	167	12	247	8,000	624	2,420	1,022
Lao PDR								4,134	3,556	2,575	1,518	779	575	651	579
Lebanon								4	67	27		8		21	
Mexico	14,671	17,732	17,449	15,461	15,717	15,350	19,157	20,034	15,926	21,609	16,890	11,046	13,095	14,753	
Myanmar	1,938	3,093	3,172	9,824	1,643	9,317	7,469	638	2,820	3,907	3,970	3,598	4,820	4,087	8,268
Nepal							19	19	4		1		21	35	
Pakistan	867	654	2,194	1,197	1,704	1,484		4,185	5,200	391	354	614	0	105	68
Peru			4	18	26	155	14	57	98	92	88	28	23	32	21
Thailand	886	1,053	716	808	757	832	989	767	122	110	153	220	285	201	278
Venezuela	51	266	148	137	215	39	0	0	87	154	0	0	0		
Viet Nam	1,142	340	439		426		125	100	32			38	99	31	

largest area worldwide after Afghanistan and Myanmar. In contrast to the other countries mentioned above, neither the Government nor UNODC has been directly involved in monitoring such cultivation and the estimates thus cannot be confirmed. In 2009, the Mexican Government reported eradication of almost 15,000 ha of opium poppy, the highest reported total worldwide for that year.

In Myanmar, opium poppy cultivation has increased every year since 2006. Cultivation is concentrated in the Shan State, in the eastern part of the country. At 3,000 ha in 2010, opium poppy cultivation in the Lao People's Democratic Republic was higher than in any year since 2005, and has increased significantly since the lowest level (1,500 ha) in 2007. Cultivation seems to be increasingly concentrated in a few provinces in the northern part of the country.

In Pakistan, opium poppy is mainly grown in the Khyber District of the Federally Administered Tribal Area (FATA), but smaller pockets were also found in Balochistan and Sindh provinces. Since 2006, cultivation in Pakistan has remained below 2,000 ha.

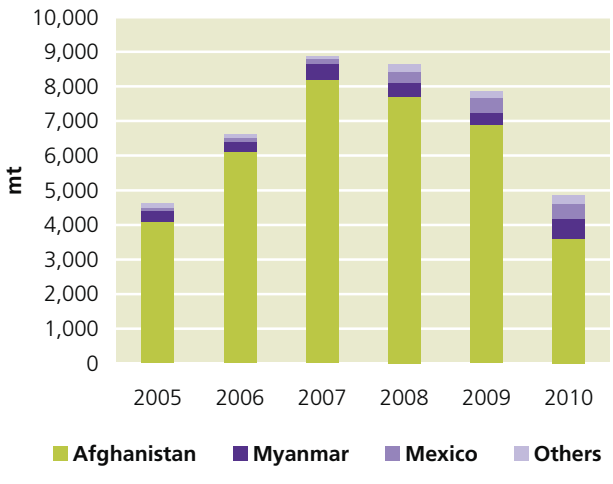
Aside from these countries, reports of opium poppy eradication programmes and seizures of plant material indicate the existence of opium poppy cultivation in many other countries and regions. A considerable level of illegal cultivation is estimated in India, as domestic raw opium consumption and half of domestic heroin demand are met by local production.[41] At least 10,000 ha of opium poppy cultivation is estimated in other countries worldwide, with a 30% increase in 2010.

Overall, in the last five years, global opium poppy cultivation has increased by some 40%. UNODC currently implements programmes to monitor the illicit cultivation of opium poppy in cooperation with the Governments of Afghanistan, Myanmar and the Lao People's Democratic Republic.

In 2010, potential global opium production dropped by at least 38% from 2009, due to significantly reduced opium yield as a result of disease on opium poppy plants in Afghanistan. Although increases in cultivation (and opium yield) in other countries led to an increase in potential opium production outside Afghanistan, this did not offset Afghanistan's decrease. However, opium production may increase if the opium yield returns to

Fig. 27: Global opium production*, 2005-2010

* For Mexico, in the absence of data for 2010, the estimate for 2009 was imputed to 2010.
Source: UNODC.



41 UNODC ARQ.

Table 13: Global illicit cultivation of opium poppy and potential opium production, 1996-2010

GLOBAL ILLICIT CULTIVATION OF OPIUM POPPY AND PRODUCTION OF OPIATES, 1996-2010

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NET CULTIVATION OF OPIUM POPPY IN HECTARES															
SOUTH-WEST ASIA															
Afghanistan	56,824	58,416	63,674	90,583	82,171	7,606	74,100	80,000	131,000	104,000	165,000	193,000	157,000	123,000	123,000
Pakistan	873	874	950	284	260	213	622	2,500	1,500	2,438	1,545	1,701	1,909	1,779	1,721
Subtotal	57,697	59,290	64,624	90,867	82,431	7,819	74,722	82,500	132,500	106,438	166,545	194,701	158,909	124,779	124,721
SOUTH-EAST ASIA															
Lao PDR [a]	21,601	24,082	26,837	22,543	19,052	17,255	14,000	12,000	6,600	1,800	2,500	1,500	1,600	1,900	3,000
Myanmar [a]	163,000	155,150	130,300	89,500	108,700	105,000	81,400	62,200	44,200	32,800	21,500	27,700	28,500	31,700	38,100
Thailand [b]	368	352	716	702	890	820	750								
Viet Nam [b]	1,743	340	442	442											
Subtotal	186,712	179,924	158,295	113,187	128,642	123,075	96,150	74,200	50,800	34,600	24,000	29,200	30,100	33,600	41,100
LATIN AMERICA															
Colombia	4,916	6,584	7,350	6,500	6,500	4,300	4,153	4,026	3,950	1,950	1,023	715	394	356	
Mexico [c]	5,100	4,000	5,500	3,600	1,900	4,400	2,700	4,800	3,500	3,300	5,000	6,900	15,000	19,500	
Subtotal	10,016	10,584	12,850	10,100	8,400	8,700	6,853	8,826	7,450	5,250	6,023	7,615	15,394	19,856	*19,856*
OTHER															
Other countries [d]	3,190	2,050	2,050	2,050	2,479	2,500	2,500	3,074	5,190	5,212	4,432	4,184	8,600	7,700	*10,000*
TOTAL	**257,615**	**251,848**	**237,819**	**216,204**	**221,952**	**142,094**	**180,225**	**168,600**	**195,940**	**151,500**	**201,000**	**235,700**	**213,003**	**185,935**	***195,677***
POTENTIAL PRODUCTION OF OVEN-DRY OPIUM IN METRIC TONS															
SOUTH-WEST ASIA															
Afghanistan	2,248	2,804	2,693	4,565	3,276	185	3,400	3,600	4,200	4,100	6,100	8,200	7,700	6,900	3,600
Pakistan	24	24	26	9	8	5	5	52	40	36	39	43	48	44	43
Subtotal	2,272	2,828	2,719	4,574	3,284	190	3,405	3,652	4,240	4,136	6,139	8,243	7,748	6,944	3,643
SOUTH-EAST ASIA															
Lao PDR	140	147	124	124	167	134	112	120	43	14	20	9	10	11	18
Myanmar	1,760	1,676	1,303	895	1,087	1,097	828	810	370	312	315	460	410	330	580
Thailand [b]	5	4	8	8	6	6	9								
Viet Nam [b]	9	2	2	2											
Subtotal	1,914	1,829	1,437	1,029	1,260	1,237	949	930	413	326	335	469	420	341	598
LATIN AMERICA															
Colombia	67	90	100	88	88	80	52	50	49	24	13	14	10	9	
Mexico [c]	54	46	60	43	21	91	58	101	73	71	108	149	325	425	
Subtotal	121	136	160	131	109	171	110	151	122	95	121	163	335	434	*434*
OTHER															
Other countries [d]	48	30	30	30	38	32	56	50	75	63	16	15	139	134	*185*
TOTAL	**4,355**	**4,823**	**4,346**	**5,764**	**4,691**	**1,630**	**4,520**	**4,783**	**4,850**	**4,620**	**6,610**	**8,890**	**8,641**	**7,853**	***4,860***

Figures in italics are preliminary and may be revised when updated information becomes available. Information on estimation methodologies and definitions can be found in the Methodology chapter of this Report.

Sources: Afghanistan: before 2003: UNODC; since 2003: National Illicit Crop Monitoring System supported by UNODC. Pakistan: ARQ, Government of Pakistan, US Department of State. Lao PDR: 1996-1999: UNODC; since 2000: National Illicit Crop Monitoring System supported by UNODC. Myanmar: before 2001: US Department of State; since 2001: National Illicit Crop Monitoring System supported by UNODC. Colombia: before 2000: various sources, since 2000: Government of Colombia. For 2008 and 2009, production was calculated based on regional yield figures and conversion ratios from US Department of State/DEA. Mexico: Estimates derived from US Government surveys.

(a) May include areas which were eradicated after the data of the area survey.

(b) Due to continuing low cultivation, figures for Viet Nam (as of 2000) and Thailand (as of 2003) were included in the category "Other".

(c) The Government of Mexico reported a gross opium poppy cultivation of 19,147 hectares (2006) and estimated gross opium production at 211 mt (2006), 122 mt (2007), 144 mt (2008), 162 mt (2009) and 170 mt (2010). These gross figures are not directly comparable to the net figures presented in this table. The Government of Mexico is not in a position to confirm the US figures as it does not have information on the methodology used to calculate them.

(d) Eradication and plant seizure reports from different sources between 2006 and 2010 indicate that illicit opium poppy cultivation also exists in the following subregions: North Africa, Central Asia and Transcaucasia, Near and Middle East /South-West Asia, South Asia, East and South-East Asia, East Europe, Southeast Europe, Central America and South America. Starting 2008, a new methodology was introduced to estimate opium poppy cultivation and opium/heroin production in these countries. These estimates are higher than the previous figures but have a similar order of magnitude. A detailed description of the estimation methodology is available in the Methodology section.

Fig. 28: Potential production of opium and manufacture of heroin of unknown purity (mt), 2004-2010

* Although eradication took place in 2004, it was not officially reported to UNODC.
In this table, only eradication reported in area units is considered. Eradication reported as plant seizures can be found in the seizure annex of the electronic version of the World Drug Report. Sources: UNODC, Annual Reports Questionnaire; Government reports; reports of regional bodies; INCSR.

	2004	2005	2006	2007	2008	2009	2010
Total potential opium	4,850	4,620	6,610	8,890	8,641	7,853	4,860
Potential opium not processed into heroin	1,197	1,169	2,056	3,411	3,080	2,898	1,728
Potential opium processed into heroin	3,653	3,451	4,555	5,479	5,561	4,955	3,132
Total potential heroin	529	472	629	757	752	667	396

average levels in Afghanistan in 2011, despite the expectation that overall opium poppy cultivation will remain stable there.

Despite potential global opium production decreasing to 4,860 mt – a significant decline compared to the peak production from 2006-2009 – this level is similar to average production levels over the past two decades. Afghanistan remained the largest opium-producing country in 2010, with 74% of global potential production (down from 88% in 2009). In 2009, Mexico for the first time had a higher potential opium production than Myanmar. In 2010, potential opium production in Myanmar amounted to 580 mt, a 76% increase. This is the highest level since 2004 in that country.

As in previous years, UNODC has estimated the total potential production of opium and heroin (of unknown purity). According to these estimates, the production of opium in 2010 amounted to 4,860 mt, a 38% decrease from 2009. Potential heroin production amounted to 396 mt, a 40% decline from the 667 mt estimated in 2009. 'Potential heroin production' refers to the amount of heroin that would be produced if all the harvested opium would be either introduced to the market as opium or processed into heroin.[42]

The entire amount of opium produced every year may not be either consumed or converted into heroin, however, as seizures of final or intermediate products may take place and opiate stockpiling may be occurring inside and outside of Afghanistan.[43] The amount of heroin available in the market is directly linked with demand and is likely to be less than the potential production levels (which are calculated by multiplying the cultivated area with yield per hectare). Thus, it is necessary to estimate global opiate demand, taking into account seizures as well as consumption. On this basis, it is estimated that some 460-480 mt of heroin were available in the worldwide market in 2009. Of this, some 375 mt reached the consumers, whereas the rest was seized. Further details regarding these estimates are provided in subsequent sections.

In 2009, there were no reports of laboratories involved in manufacturing heroin outside opium-producing countries. The highest number of laboratories intercepted were in Afghanistan (48[44]), three laboratories were reported in Myanmar and only one in Mexico, although there was a much higher number of methamphetamine laboratories – an unspecified number of which also manufactured heroin. Other laboratories processing heroin were discovered in other countries, but these were not involved in manufacturing. One laboratory in the Russian Federation was producing acetylated opium and seven installations in Greece were involved in repackaging and adulterating heroin.

Afghanistan is currently the only country known to be involved in manufacturing heroin from Afghan opium. Neighbouring countries and other countries along known trafficking routes have not reported domestic manufacturing of morphine or heroin from Afghan opium. High levels of morphine seizures were reported outside of Afghanistan in 2010, however. Morphine is primarily used to produce heroin as there is limited illicit morphine use worldwide. Thus, it is likely that heroin processing is also taking place outside Afghanistan. Given the security situation, the vast majority of Afghan heroin is estimated to be produced in the country, especially in the southern provinces. The high number of heroin manufacturing laboratories destroyed in Afghanistan supports this assumption.

42 UNODC estimates heroin production by calculating the proportion of opium that is converted into heroin as a function of seizures and according to information from key informants.

43 Opium stockpiling by opium farmers is an old tradition in Afghanistan.

44 Information from the Ministry of Interior/Counter-Narcotics Police of Afghanistan.

2.4 Trafficking

Seizures

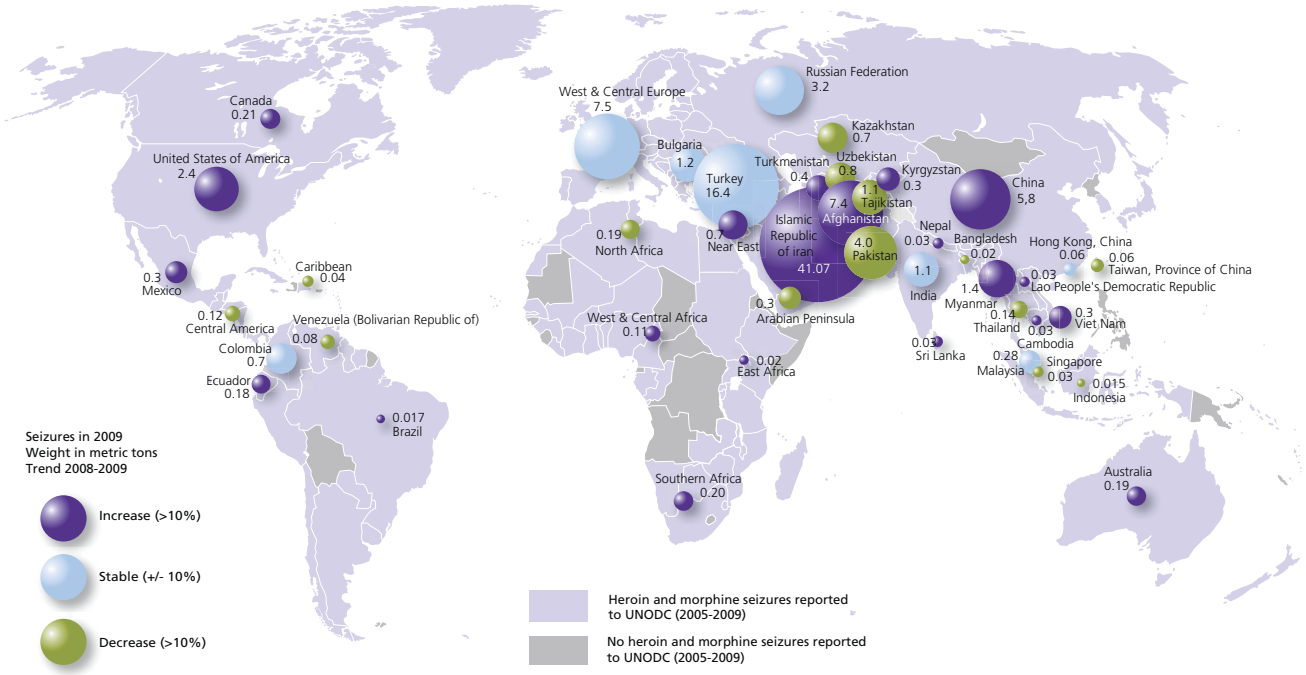
In 2009, global seizures of opium and heroin appeared to stabilize, amounting to 653 mt and 76 mt, respectively. The largest quantities of opiates continued to be seized by Turkey and the Islamic Republic of Iran, countries that serve as transit points for heroin trafficked from Afghanistan on the 'Balkan route' to West and Central Europe.

Although much is known about drug suppliers, consumers, traffickers and routes, interdiction remains difficult. Law enforcement efforts are frustrated by the fact that international traffickers constantly change their methods and routes, high profits may fuel high-level corruption, and international cooperation initiatives take time to become effective.

The trend in global heroin seizures appears to follow that in opium production with a delay of one year. A decline in opium production in 2001 resulted in a drop in heroin seizures in 2002, the stability in opium production over the period 2003-2005 was reflected in a relatively stable three-year span in heroin seizure totals over the period 2004-2006,[45] and a marked increase in opium production over the period 2005-2007 was mirrored in an increase in heroin seizures over the period 2006-2008. The trend in morphine seizures, however, is more erratic.

Illicit drug seizure totals can be susceptible to two main factors: 1) the available supply of the drug, and 2) the effectiveness of law enforcement efforts. Since law enforcement efforts and practices do not necessarily evolve in concert in different countries, at a global level, the law enforcement component plays a smaller role in determining the trend. The increased heroin seizures therefore likely reflect, at least in part, an increased supply of heroin in the world. This is in line with the

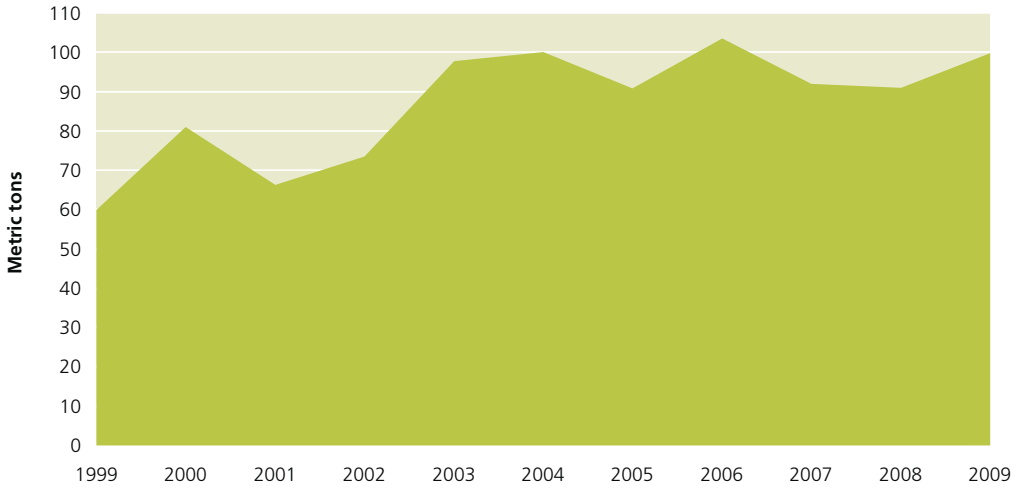
Map 10: Seizures of heroin and morphine, 2009 (countries and territories reporting seizures* of more than 10 kg)



* Seizures as reported (no adjustments made for purity)
Source: UNODC Annual Reports Questionnaires data supplemented by other sources
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

45 Heroin seizure totals fell slightly in 2005 and 2006, but only by 3.5% and 2.7% respectively.

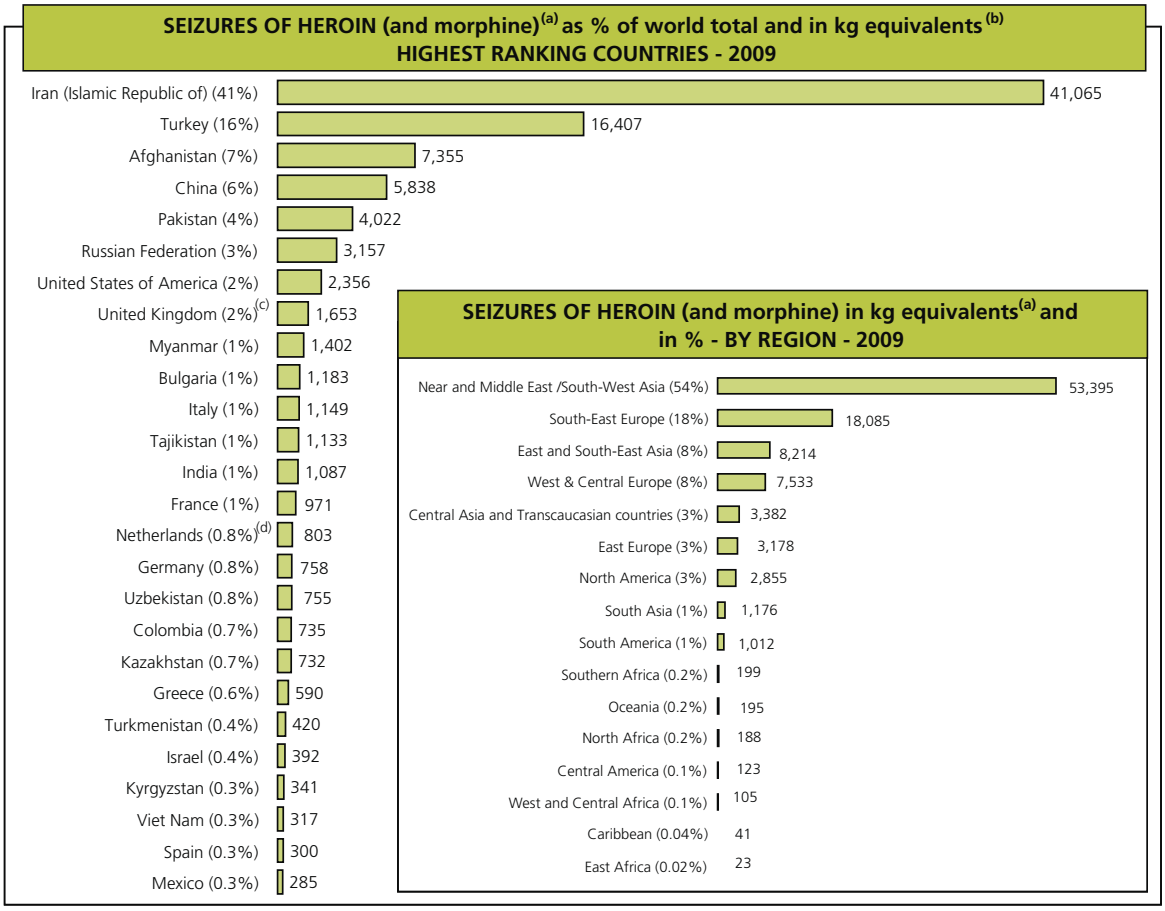
Fig. 29: Global seizures of heroin[a] and morphine[b]: 1999-2009



[a] Seizures as reported (no adjustment for purity).

[b] 1 kg of morphine is assumed to be equivalent to 1 kg of heroin.

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Metric Tons	60	81	66	73	98	100	91	104	92	91	100



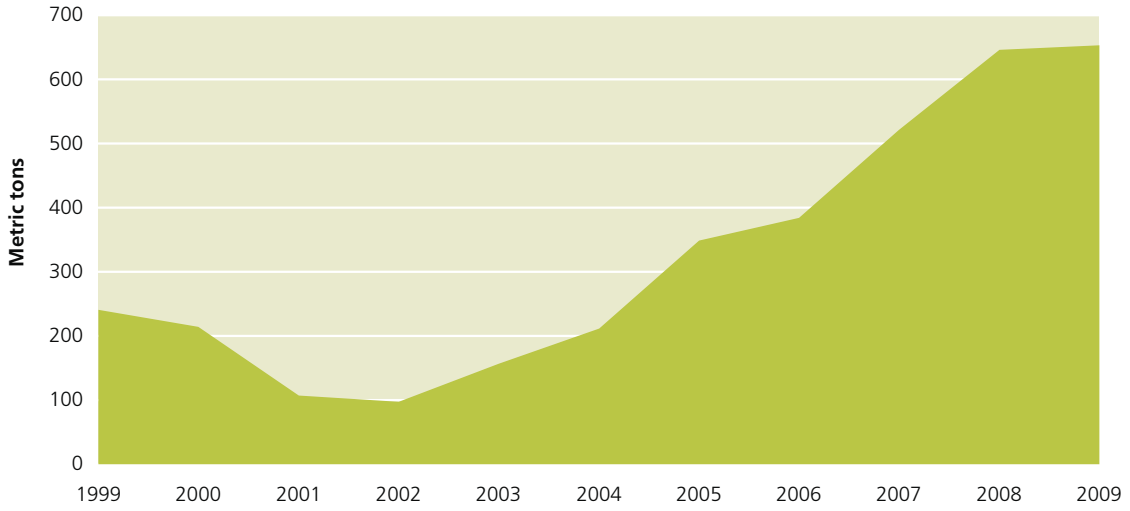
[a] 1 kg of morphine is assumed to be equivalent to 1 kg of heroin.

[b] Seizures as reported (no adjustment for purity).

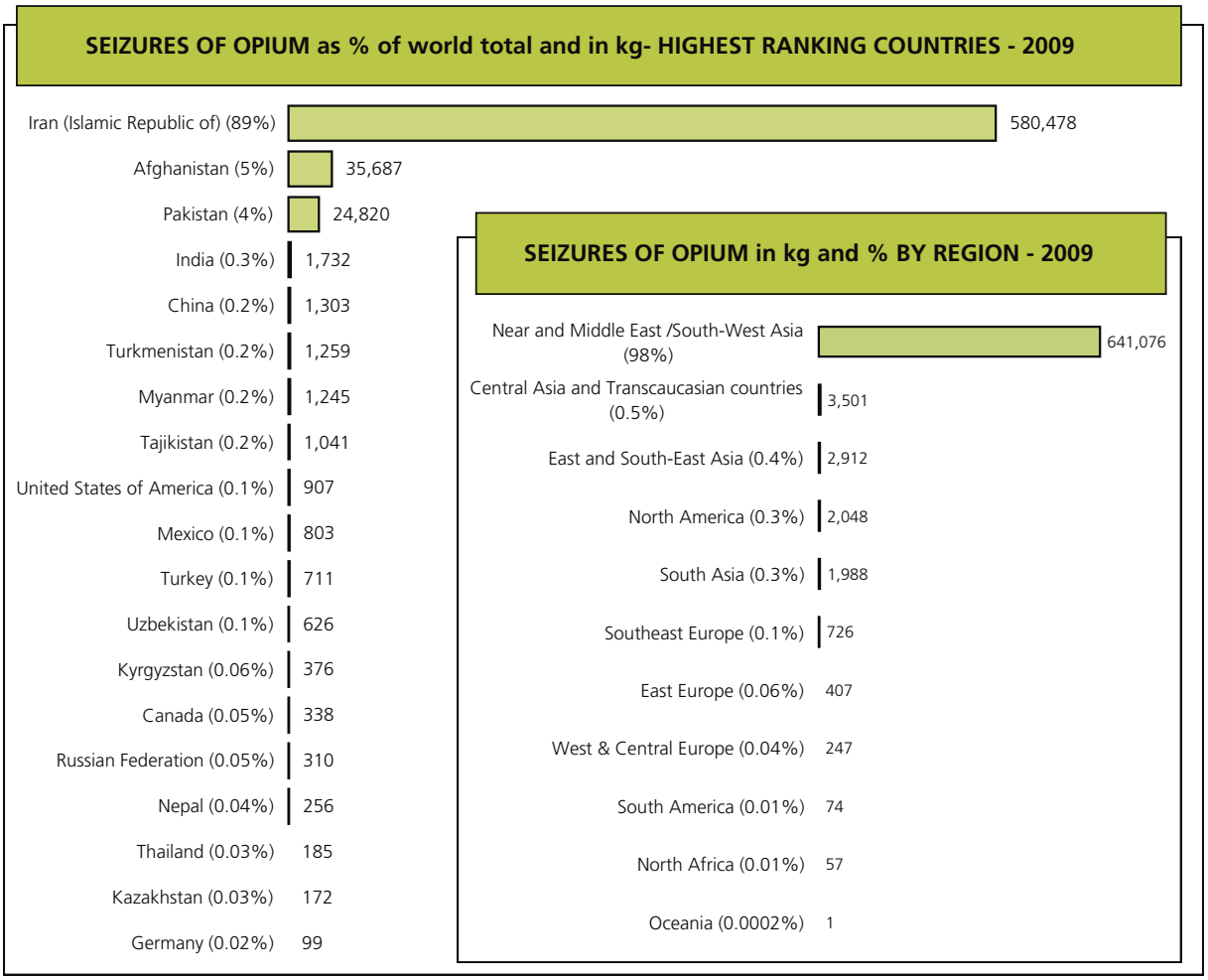
[c] Data for the United Kingdom for 2009 are based on incomplete data for some jurisdictions for the financial year 2009/10, and adjusted for the missing jurisdictions using the latest available complete distribution (relative to the financial year 2006/07)

[d] Data relative to 2008. Data for 2009 from the Netherlands were not available.

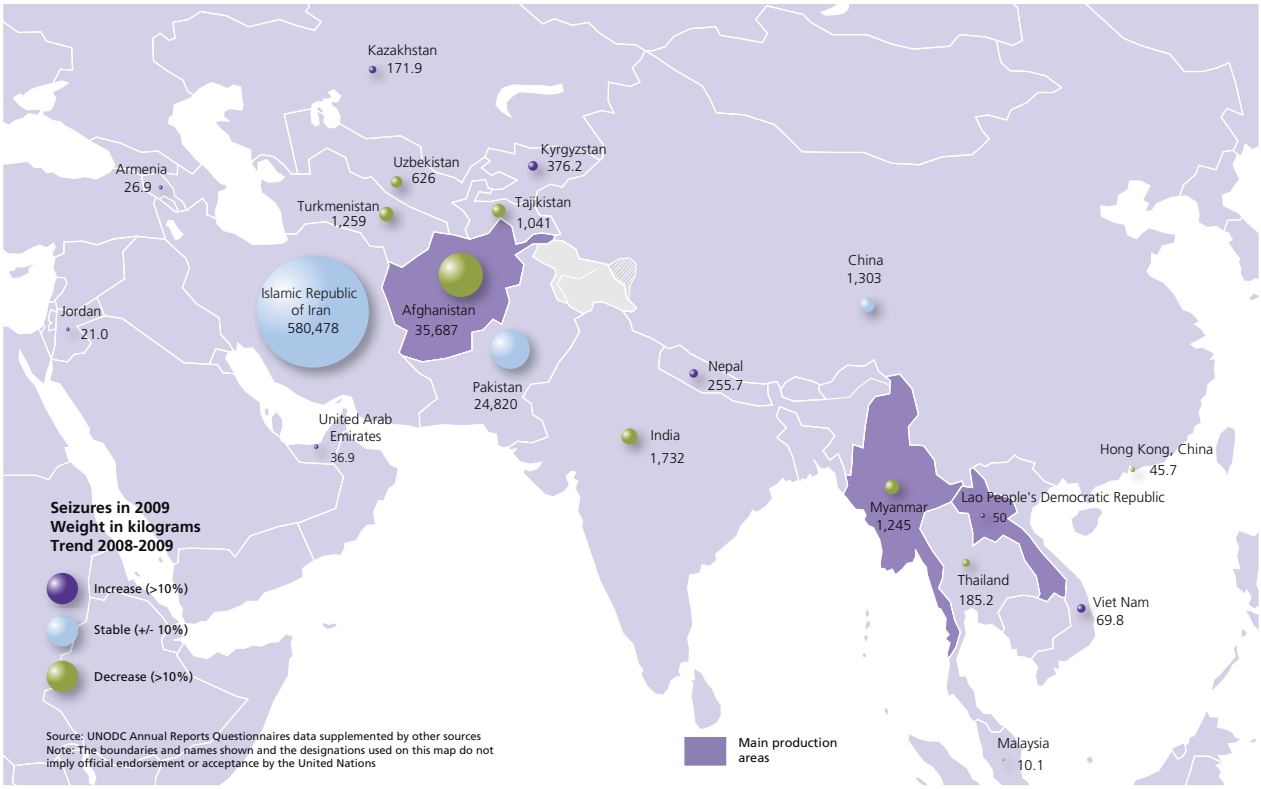
Fig. 30: Global seizures of opium: 1999-2009



Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Metric Tons	240	214	107	97	157	212	349	384	521	646	653



Map 11: Opium seizures in Asia, 2009

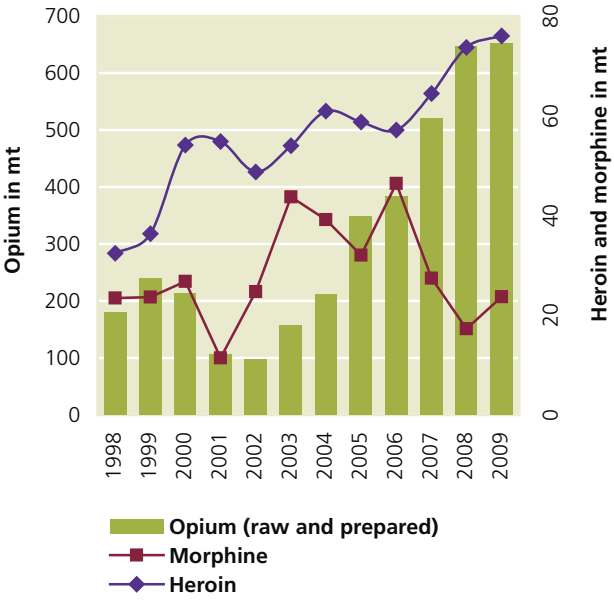


increased levels of opium production. In comparison with 1998,[46] the growth in heroin seizures has kept pace with, and slightly outperformed, the growth in opium production. In 2009, heroin seizures stood at 2.3 times the level in 1998, while opium production in 2008 stood at 1.8 times the 1997 level.[47]

In order to assess the impact of drug seizures on global supply, total seizures of a given drug may be expressed as a percentage of global production; this percentage is often referred to as an 'interception rate.' Such a calculation is subject to a number of caveats, however, the first of which is the time lag between cultivation of an illicit crop and the resulting effect on the availability of the derived drug in the illicit market. Assuming that one kilogram of heroin or morphine is equivalent to 7-10 kg of opium, and comparing total seizures in 2009 with the average opium production in 2008 and 2009,[48] a range of 16-20% for the interception rate for opiates can be derived. Opium seizures in a given year are compared to the average opium production in that year and the previous year. Seizures of opium and morphine are concentrated in Afghanistan and neighbouring countries, but heroin seizures are much more dispersed.

Fig. 31: Global opiate seizures, 1998-2009

Source: UNODC ARQ.



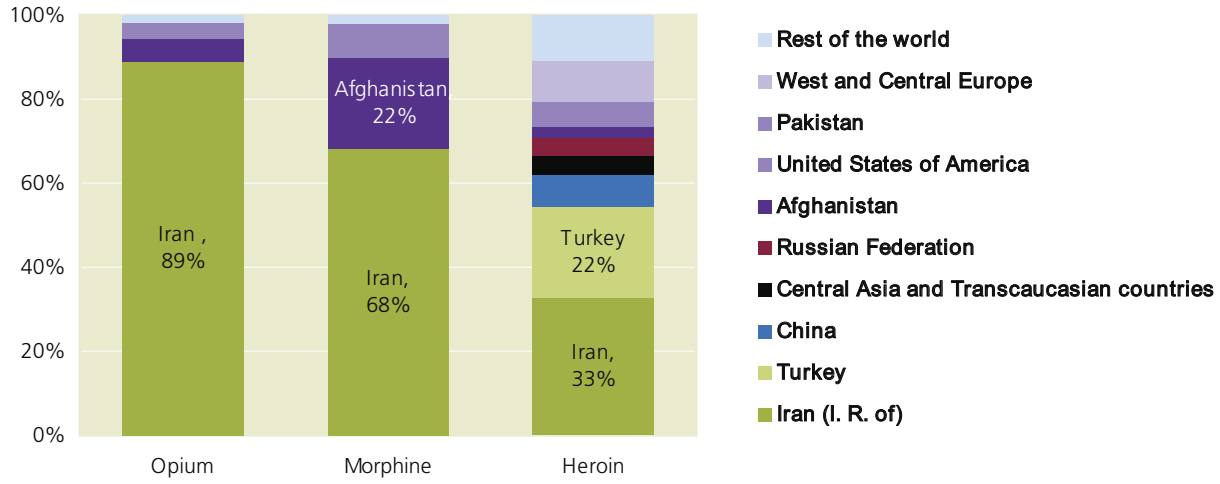
46 The year 2008 is chosen as a baseline because, over the period 1996-1998, seizures of opium and heroin, as well as opium production, were all relatively stable, suggesting that the opiates market was close to equilibrium.

47 Heroin seizures in a given year are compared to opium production in the previous year to allow for the time required for processing opium into morphine and heroin, and for the heroin to reach the markets where it is seized.

48 Opium production in 2008 is considered along with that in 2009 to allow for the time required for processing and for the opiates to reach the markets where they are seized.

Fig. 32: Distribution of global opiate seizures, 2009

Source: UNODC ARQ.



Afghanistan and neighbouring countries

Opium and heroin seizures in Afghanistan remained limited in 2009, amounting to 36 mt of opium and 2.2 mt of heroin. These seizures accounted for 5.5% and 2.9% of global opium and heroin seizures, respectively, in 2009.

Neighbouring Islamic Republic of Iran, however, continued to make large seizures. In 2009, 89% of global opium seizures were made by that country. The global increase in opium seizures since 2002 is mainly due to increasing quantities seized in the Islamic Republic of Iran, which since 1996 have accounted for more than three quarters of annual global opium seizures. In 2006, the Islamic Republic of Iran replaced Turkey as the country reporting the largest heroin seizures worldwide. Since then, the Islamic Republic of Iran and Turkey have seized the largest and second-largest, respectively, annual heroin totals worldwide. Over the period 2002-2008, heroin seizures in both these countries increased markedly, but in 2009, seizures stabilized both in the Islamic Republic of Iran, at 25 mt (compared to 23 mt in 2008) and in Turkey, at 16 mt (compared to 15 mt in 2008).

Heroin seizures in Central Asian and East European countries have been erratic in recent years, but over the long term, a distinct increase has been observed. Over the period 2003-2009, heroin seizures in East Europe were much higher than in previous years.

West and Central Europe

The trend in bulk heroin seizures in West and Central Europe does not mirror the increased supply of Afghan opium or the increased levels of heroin seizures in the Islamic Republic of Iran and Turkey. Indeed, seizures in West and Central Europe peaked at 11.6 mt in 2000 and appear to have stabilized at a lower level, ranging between 7.5 mt and 7.9 mt annually over the 2005-2009 period.

The Asia-Pacific region

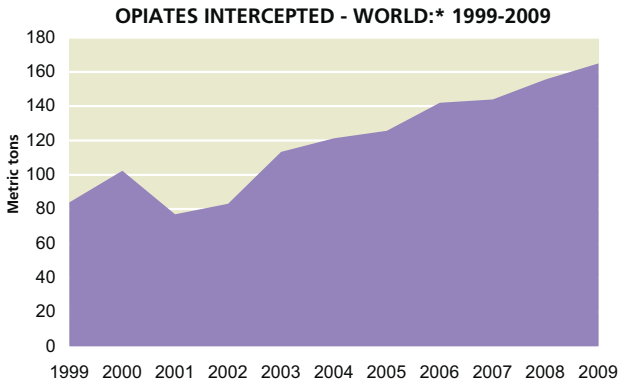
In the past, the supply of heroin in China has been mainly sourced from South-East Asia (notably Myanmar). However, significant quantities of heroin have begun to reach China from Afghanistan.

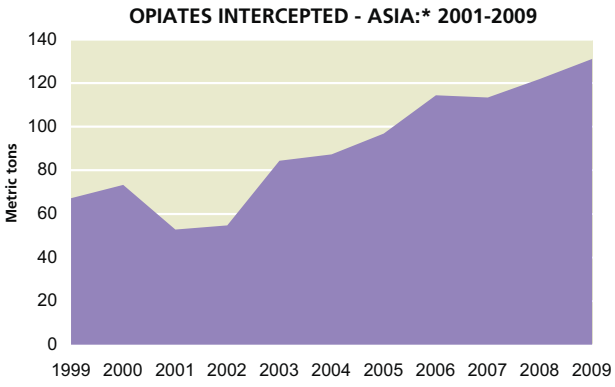
Heroin from northern Myanmar enters China via Yunnan province; according to Chinese authorities, heroin seizures in Yunnan province rose from 2.9 mt in 2008 to 3.3 mt in 2009. Seizures of heroin originating in Afghanistan registered a more pronounced increase, rising from 390 kg (seized in 234 cases) in 2008 to 1.5 mt (seized in 333 cases) in 2009.[49]

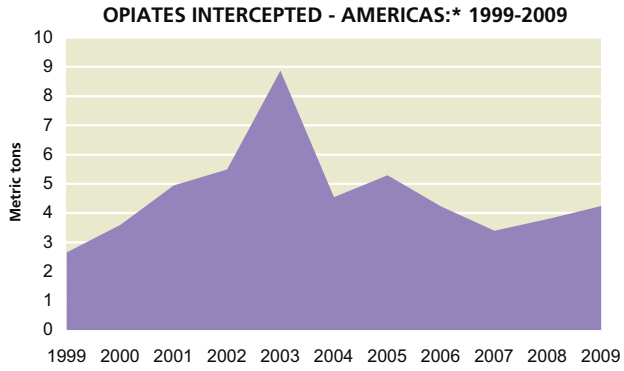
Heroin trafficking from Afghanistan to the Asia-Pacific region is increasing, also supported by drug seizures reported by Pakistan. Among those cases in which the destination of the consignment was identified as a country or region other than Pakistan, the proportion of heroin seizures destined for the Asia-Pacific region increased from around 12% prior to 2006 to 40-44% every year since. The emergence of this new route around 2005-2006 also appears to have caused a drop in heroin seizures in the region, suggesting that regional law enforcement needs time to adapt to the new route. This was also concurrent with a sharp increase in opium production in Afghanistan. This increase may have led to a surplus of opiates, some of which may have found their way to the Asia-Pacific region.

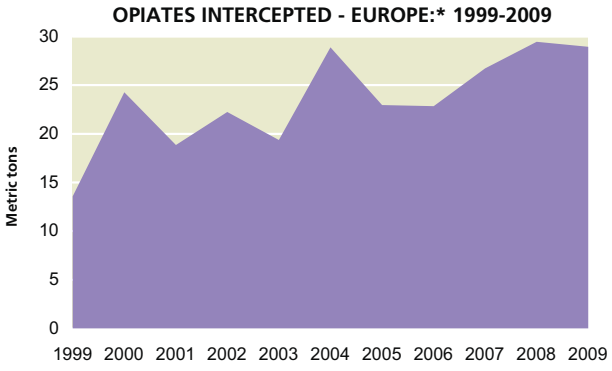
49 National Narcotics Control Commission of China, presentation at the Twentieth Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), October 2010, Seoul, Republic of Korea.

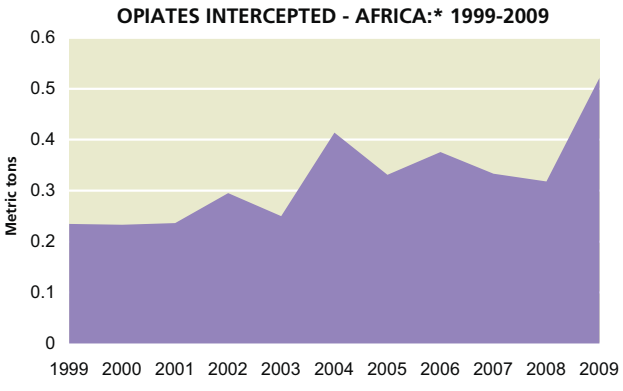
Fig. 33: Global seizures of opiates: 1999-2009

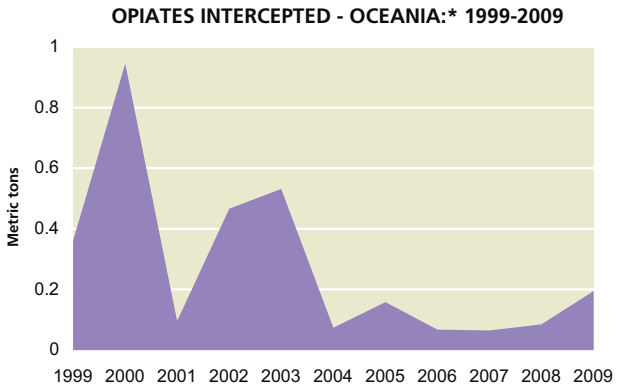












*Aggregate of heroin, morphine and opium. Expressed in heroin equivalents assuming 1kg of heroin to be equivalent to 1 kg of morphine and 10 kg of opium.

Fig. 34: Heroin seizures in selected regions or countries supplied by Afghan opium, 1998-2009

Source: UNODC ARQ/DELTA.

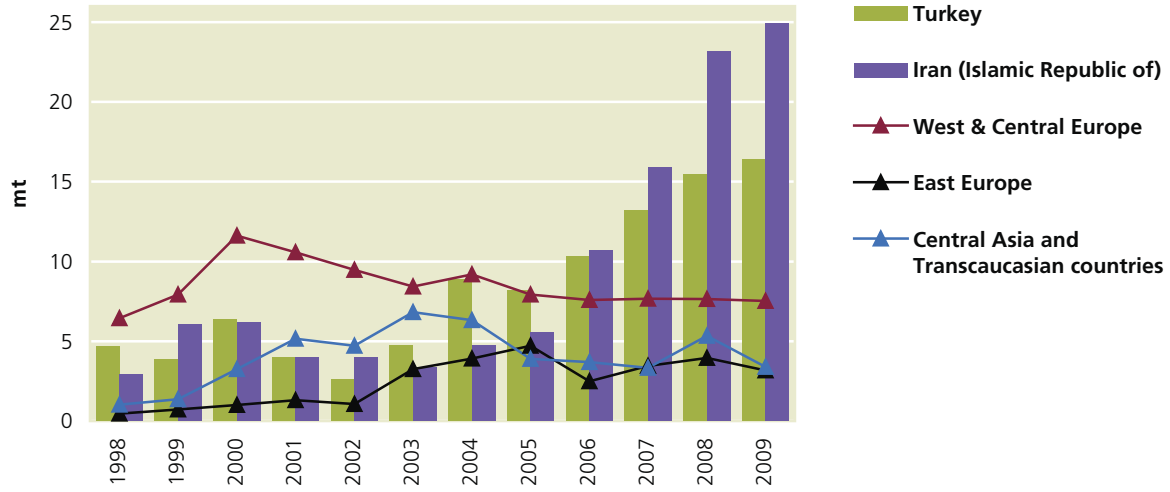
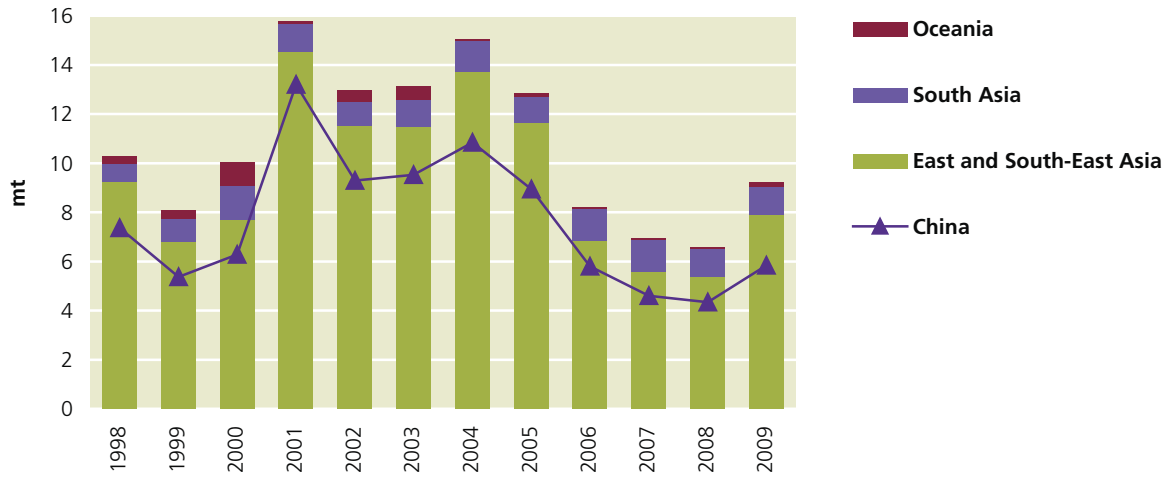


Fig. 35: Heroin seizures in the Asia-Pacific, 1998-2009

Source: UNODC ARQ/DELTA.



The Americas

Heroin seizure totals reported by the United States continued to be the highest in the Americas by far, rising steadily from 1.4 mt in 2007 to 2.4 mt in 2009. The results of the Heroin Signature Program (HSP) of the US Drug Enforcement Agency pointed to an increase in the availability of heroin from Mexico. In 2008, the wholesale purity of heroin of Mexican origin was at its highest (40%) since 2005, while Mexican heroin represented 39% (by weight) of all heroin analysed through the HSP, the highest percentage since 1987. Seizures of heroin by US authorities along the US-Mexico border increased from 404 kg in 2007 to 556 kg in 2008, and the partial total for 2009 amounted to 642 kg.[50] In 2009, large quantities of heroin were also seized in Colombia (735 kg), Mexico (283 kg) and Ecuador (177 kg). Seizures in the Bolivarian Republic of Venezuela have declined significantly since the peak level of 2004 (658 kg), amounting to 81 kg in 2009.

Heroin seizures also increased sharply in Canada, from 16 kg in 2007 to 102 kg in 2008 and 213 kg in 2009. However, the increase in 2009 can be attributed to a single maritime shipment of 108 kg. In contrast with the United States, Canada assessed that 98% of heroin reaching its market in 2009 originated from South Asia. In 2009 Canada also seized 20 mt of a preparation

50 National Drug Intelligence Center, United States Department of Justice, *National Drug Threat Assessment 2010*, February 2010.

Fig. 36: Heroin seizures in selected countries in the Americas,1999-2009

Source: UNODC ARQ/DELTA.

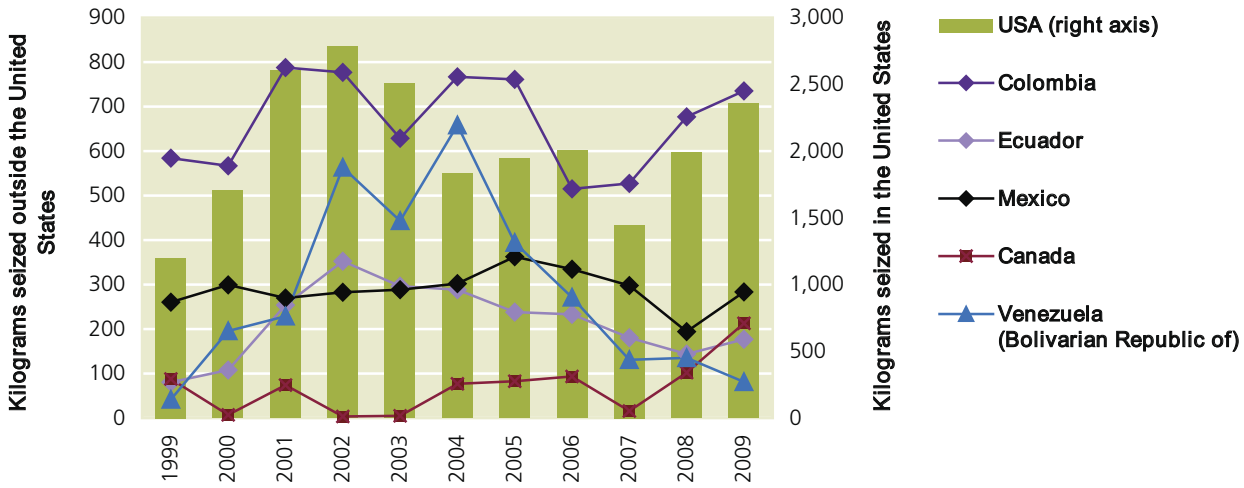
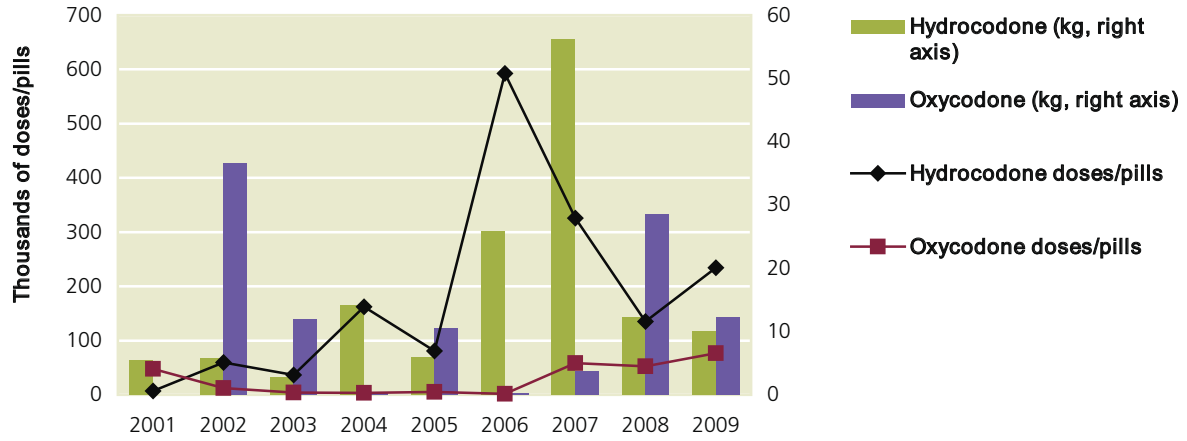


Fig. 37: United States: seizures of hydrocodone and oxycodone, 2001-2009

Note: Seizures quantified in number of pills (left axis) are in addition to those quantified by weight (right axis).
Source: UNODC ARQ.



referred to as 'dode,' a fine powder obtained by grinding dried seed pods of opium poppy. It is most frequently consumed mixed with hot water as a tea. Canada assessed that 94% of the 'dode' that reached its market originated in the United States, with the remaining 6% originating in the Netherlands, and that the affordability of 'dode' had the potential to create a market beyond the traditional cultural groups.

The United States is also affected by non-medical use of prescription opioids, and reported significant seizures of oxycodone and hydrocodone.

Africa

Heroin seizures in Africa rose sharply, from 311 kg in 2008 to 515 kg in 2009. This is the highest level since 1993. South Africa registered the largest seizure total as well as the largest year-on-year increase, with seizures rising from 41 kg in 2008 to 198 kg in 2009.

In recent years, heroin seizures have increased significantly in Egypt. In 2008, Egypt seized 211 kg of heroin, accounting for two thirds of total heroin seizures in Africa, and registering the third consecutive year-on-year increase. In 2009, seizures fell to 159 kg, remaining significantly higher than the levels registered in this country over the period 1995-2006. In the past, Egypt has also reported seizures of opium and opium capsules.

In 2009, significant quantities of heroin were also seized in Nigeria, 104 kg. Although this represents a sharp increase from the level in 2008 (12 kg), seizures were already high in 2007 (121 kg). Reports suggest that Nigeria may serve as a transit point for limited quanti-

Fig. 38: Heroin seizures in Africa, by subregion, 1999-2009

Source: ARQ/DELTA.

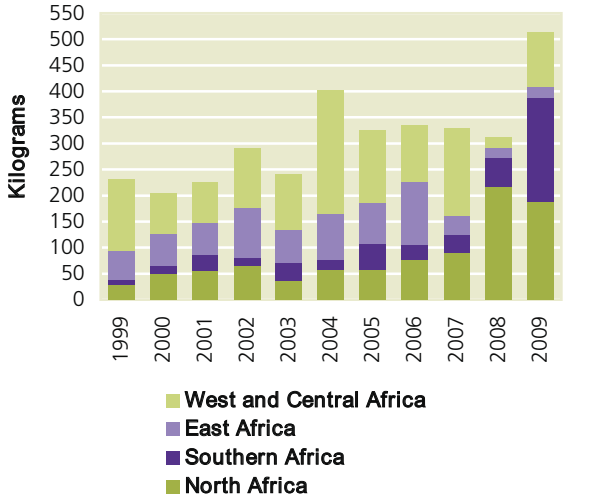
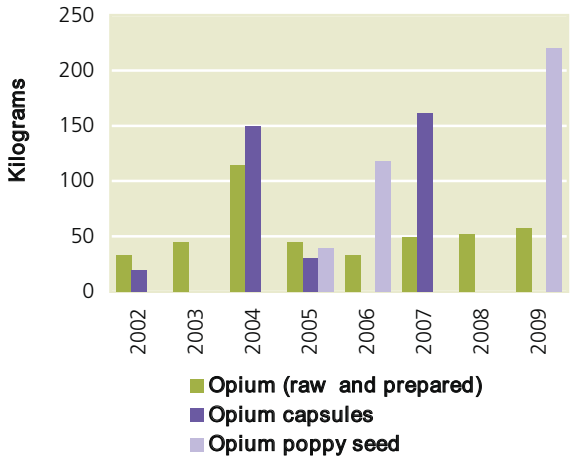


Fig. 39: Seizures of opium (raw and prepared), opium capsules and opium poppy seeds in Egypt, 2002-2009

Source: ARQ/DELTA.



ties of heroin destined for consumer markets in other countries. Over the 2004-2008 period, Pakistan reported significant, albeit declining, numbers of seized heroin consignments intended for Nigeria (36 such seizures in 2008 and 16 in 2009). According to the United States Department of Justice, organizations responsible for trafficking heroin originating in South-West Asia into the United States included some that were based in West Africa. Nigeria has been mentioned as a transit country for heroin by Australia and the United States in recent years. Nigeria assessed that one half of the heroin trafficked on its territory in 2009 was intended for the United States, with 40% intended for Europe and 10% for China.

Trafficking routes and volumes

Global heroin-producing countries supply different markets. Heroin from Myanmar is mainly trafficked to China and Mexican heroin is mainly trafficked to the United States of America. Afghan heroin, however, is trafficked to every region of the world except Latin America. As such, trafficking routes for Afghan heroin are the main focus of this section.

Heroin trafficking routes are complex. Estimating the volumes, that is, the global flow of opiates, requires data on global opiate demand. Global heroin and opium seizures are used to identify opiate trafficking routes and to help estimate the size of the flows in each country. In addition to seizure data, information was drawn from official country reports such as ARQ responses.

Available demand data was used as the key variable to estimate the size of the global heroin and opium flows. The robustness of demand data varies considerably, and the data are subject to frequent revisions and changes. Most countries still lack structured data collection systems capable of producing scientifically sound demand, supply and seizure statistics. Accordingly, the statistics and estimates provided on opiate demand and flows should be viewed as the best current approximations.

Heroin flow figures used in this section are indicative and should be taken with caution. The purpose of producing these statistics is to estimate i) the main flows and changes in the routes over time, and ii) provide threat and risk analysis for production, transit and destination countries. The volumes and routes discussed are not fixed and change according to changes in demand, drug availability, or risk perceptions of drug traffickers. Therefore, it is essential to monitor flows every year to observe changes in the market and routes, which can inform global strategies and policies regarding public health and security ramifications.

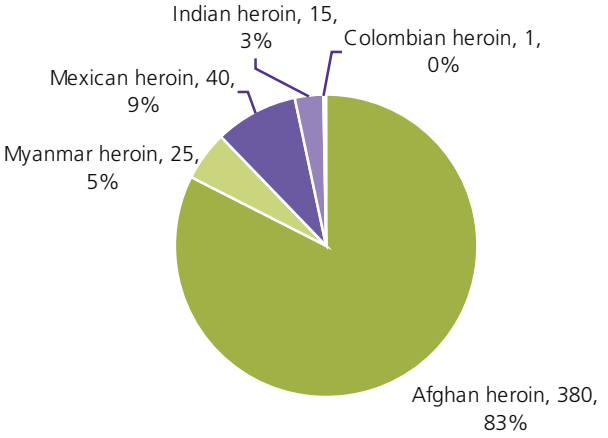
Heroin trafficking from production countries to consumer markets requires a global network of routes and facilitation by domestic and international criminal groups. Although the exact routes are constantly changing, the global movement of heroin from Afghanistan and other producers to international consumers follows well-established paths. Some routes are chosen for geographic reasons, while others are preferred due to a lack of law enforcement.

It is estimated that some 460-480 mt of heroin was available in the global market in 2009. Of this, some 375 mt reached consumers and the rest was seized. Afghanistan continued to be the main supplier for the global heroin market, producing 380 mt (83%).

Despite the complexity of heroin trafficking routes, some global movements can be generalized for Afghan heroin, which flows from Afghanistan through Pakistan,

Fig. 40: Distribution of actual global heroin production, 2009

Source: UNODC.



the Islamic Republic of Iran and some Central Asian countries before moving to the main consumer markets in West and Central Europe, East Europe, and East and South-East Asia.

Heroin flows from Afghanistan…

Afghanistan continues to dominate global heroin supply. In 2009, an estimated 6,900 mt of opium were produced in Afghanistan. Almost 95% of Afghan opium is grown in some of the country's southern provinces, including Hilmand, Kandahar, Farah, Nimroz and Uruzgan. Heroin processing laboratories are also concentrated in these provinces.

From the production areas, heroin is trafficked overland in three main directions: i) to Nimroz, Farah and Hirat provinces along the border with the Islamic Republic of Iran, ii) to eastern and northern Afghanistan, or iii) to Pakistan's Balochistan borders. UNODC estimates that 365 mt of Afghan heroin were trafficked into the international market in 2009. Afghanistan's neighbours received the largest volumes of heroin. Some 160 mt were trafficked to Pakistan, 115 mt to the Islamic Republic of Iran and 90 mt to some Central Asian countries (Tajikistan, Uzbekistan and Turkmenistan).

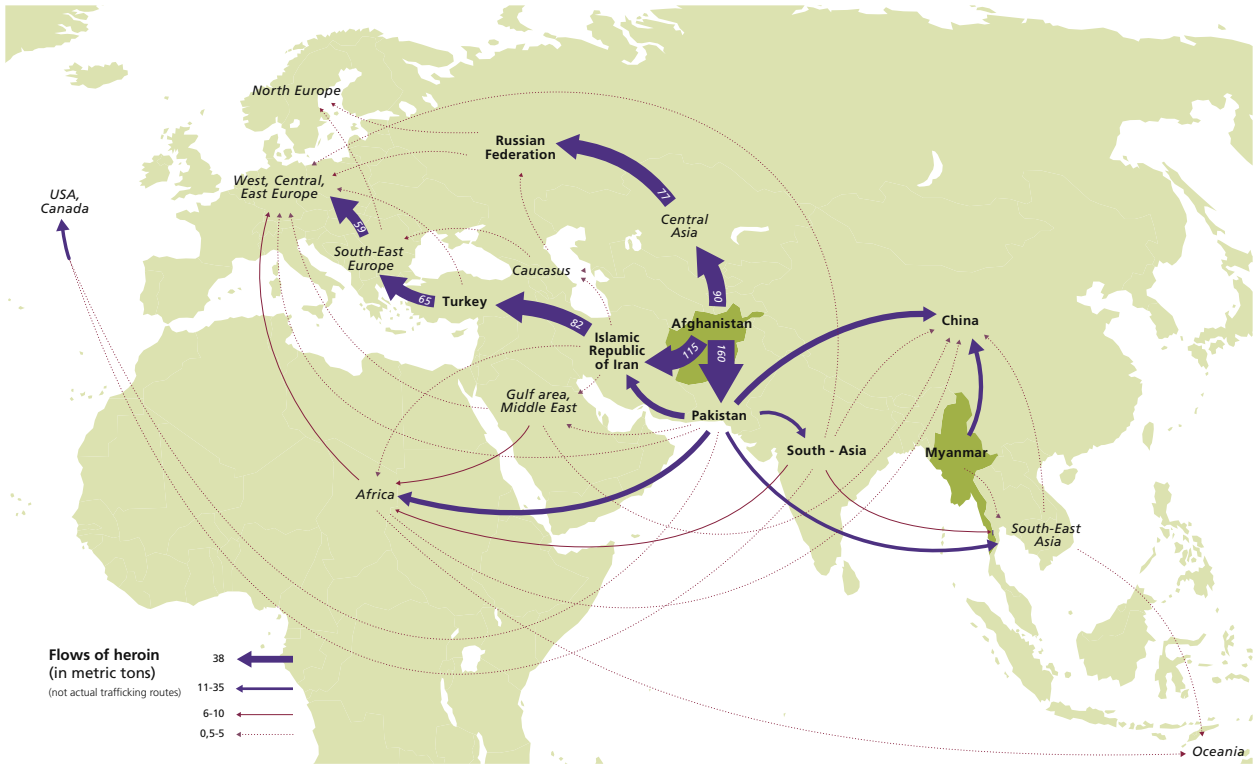
…to Pakistan

An estimated 160 mt of heroin were trafficked from Afghanistan to Pakistan in 2009. The majority is thought to have entered overland into Pakistan's Balochistan province from Afghanistan's Hilmand and Kandahar provinces, facilitated by the limited law enforcement capacity on both sides and the strong presence of the Taliban and other anti-government elements. The borders of Afghanistan's Nangarhar and Kunar provinces with Pakistan's Federally Administered Tribal Area also figure as prominent heroin crossing areas, although to a lesser extent.

Of the 160 mt of heroin that entered Pakistan, 138 mt

Map 12: Afghan heroin trafficking routes and volumes, 2009

Source: UNODC.



were trafficked onward. At least 30 mt were trafficked from Balochistan to the Islamic Republic of Iran. The remaining 108 mt were moved internally to Pakistan's industrial capitals, Karachi and Lahore, as well as to other coastal or border locations for onward trafficking to Europe, South-East Asia, South Asia and Africa by sea and air. The declining opium production in Myanmar has increased heroin trafficking via Pakistan to South-East Asia, especially in 2009.

…to the Islamic Republic of Iran

An estimated 145 mt of heroin were trafficked into the Islamic Republic of Iran from Afghanistan and Pakistan in 2009. Although the majority of heroin enters from Afghanistan, increasing security along the Islamic Republic of Iran - Afghanistan border is likely to cause an increase in heroin flows through Pakistan.[51] According to heroin seizures, once heroin enters the Islamic Republic of Iran, it is transported in four main directions: i) through central parts of the country to the border with Turkey, ii) to the seaports and coastline, iii) to the border with Iraq, or iv) to the border with Azerbaijan.

Despite high levels of domestic consumption, the majority of the heroin that enters the Islamic Republic of Iran is trafficked onwards, especially along the 'Balkan Route' towards West and Central Europe. In 2009, an estimated 82 mt were trafficked to Turkey, 6 mt to Africa, 3 mt to countries of the Caucasus and small quantities directly to Europe.

…to Central Asia

In 2009, 90 mt of Afghan heroin were trafficked into Central Asia, namely Tajikistan, Uzbekistan, Turkmenistan, Kyrgyzstan and Kazakhstan from Afghanistan. Afghan heroin enters the region mainly via the porous Tajikistan-Afghanistan border, delineated by the Pianj River.[52] Afghan heroin also enters via Uzbekistan, although in smaller quantities. Once in Tajikistan, heroin generally moves through Uzbekistan and Kyrgyzstan before transiting Kazakhstan into the Russian Federation.

Of the 90 mt that entered the region, the majority – 75 mt – was trafficked onwards to the Russian Federation. Given that the only land border between the Russian Federation and Central Asia is Kazakhstan, almost the entire amount of heroin trafficked by land to the Russian Federation passed through that country. Central Asia forms the gateway for heroin destined for the Russian Federation and onwards to East Europe, a route known as the 'Northern Route.'

51 According to Pakistan's ANF, 2010.

52 Drug Control Agency (DCA) of Tajikistan.

Main destination markets

Once Afghan opiates have entered neighbouring Pakistan, Islamic Republic of Iran and Central Asia, it is trafficked to the main international consumption markets – West and Central Europe, East Europe, East and South-East Asia and South Asia. Limited amounts also reach other smaller consumption markets.

West and Central Europe

In 2009, users in West and Central Europe consumed some 70 mt of pure heroin. An additional 7.5 mt were seized by law enforcement institutions. Thus, an estimated 75-80 mt of heroin were trafficked to West and Central Europe. The bulk, some 60 mt, were trafficked from the countries of South-East Europe (via the Balkan route). Moreover, some 7 mt were trafficked from Africa, 4 mt from Pakistan, 3 mt from the Near and Middle East/South-West Asia (mainly the Islamic Republic of Iran, Qatar and Jordan) and 1 mt from South Asia (mainly India, Bangladesh and Nepal). The source and route of the remaining 3 mt are undetermined.

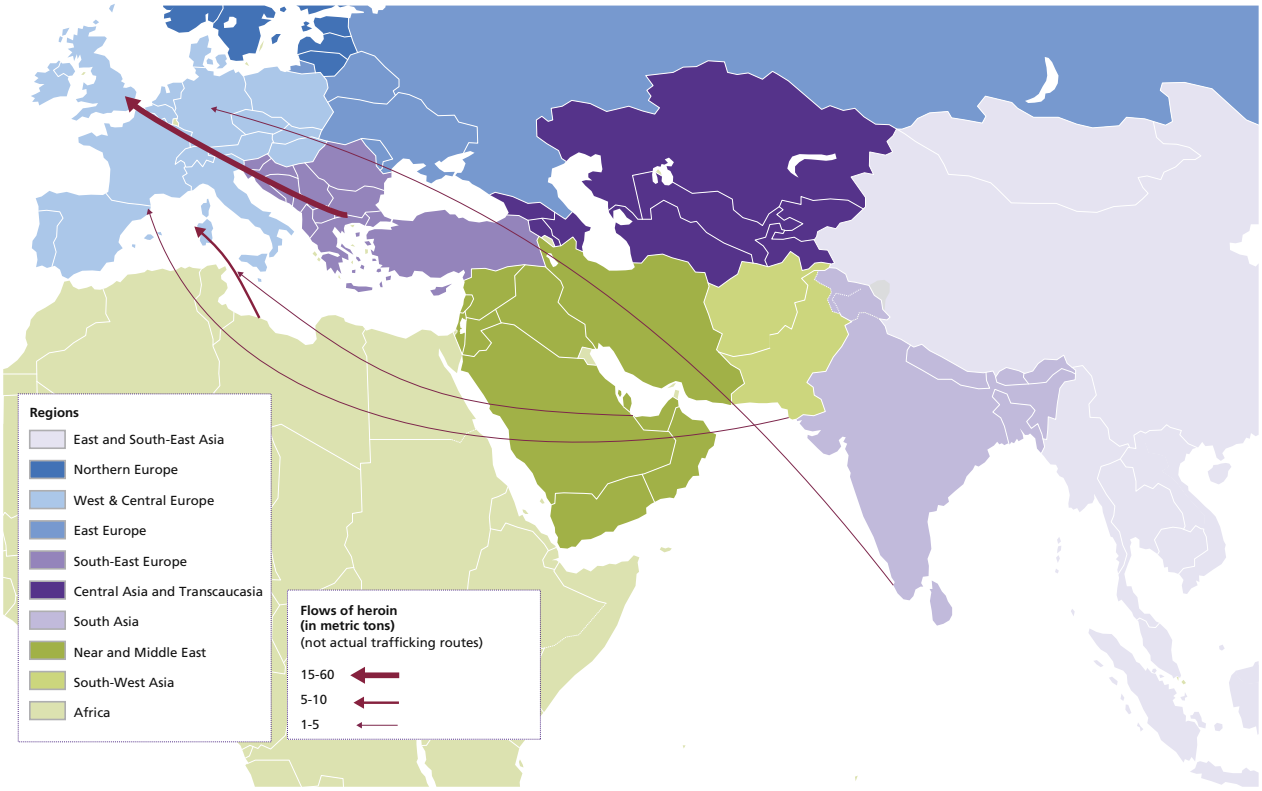
Heroin is trafficked into West and Central Europe by land, sea and air. The Balkan route dominates land and sea shipments, while Africa is now emerging as the leading origin of air shipments. One reason for this is that law enforcement capacity in East Africa is scarce and trafficking heroin by sea from Pakistan poses few challenges to experienced traffickers.

The Balkan route originates in Afghanistan, passes through the Islamic Republic of Iran and Turkey, and reaches the Balkans via Bulgaria, with a smaller flow through Greece. Once the heroin enters Turkey, most is trafficked to Istanbul and then onwards to the borders with Bulgaria and Greece. Traffickers are able to take advantage of the lack of visa requirements between the Balkan countries. In 2009, an estimated 65 mt of heroin reached the Balkan countries, of which some 60 mt were trafficked onwards to West and Central Europe, mainly to the United Kingdom, Italy, Netherlands, Germany, France and Belgium. Limited heroin trafficking also occurred via air directly from Turkey to West and Central European countries.

The majority of the heroin trafficked through the Islamic Republic of Iran and Turkey is believed to be intended for western Europe. Recent seizures at seaports indicate that maritime transportation might be used more than estimated for heroin trafficking worldwide. In the first three months of 2011, there were big heroin seizures reported in East Africa (Kenya and the United Republic of Tanzania). In addition, recent reports indicate that the average seizure per case has decreased in the Islamic Republic of Iran and Turkey, two countries that have strengthened their law enforcement capacity in recent years. This might force heroin traffickers to find alternative routes to Europe.

Map 13: Heroin flows to West and Central Europe in 2009

Source: UNODC.



East Europe

In 2009, users in East Europe consumed an estimated 73 mt of heroin. In the Russian Federation, the opiate prevalence rate for the adult population was 1.64% in 2009.[53] This is equivalent to around 1.7 million opiate users, who consumed some 70 mt of pure heroin.

In total, including the 3.1 mt of heroin seized and 2-3 mt of heroin trafficked onward, an estimated 75-80 mt of heroin were trafficked into the Russian Federation in 2009. The route through Central Asia, the Russian Federation and into East Europe is known as the 'Northern Route.' The majority of heroin trafficked to the Russian Federation came from Central Asia, and to a lesser extent Azerbaijan.[54] East Europe received the majority of its heroin from the Russian Federation, as well as from Turkey and countries of the Caucasus.

Table 41: Mentions of the Islamic Republic of Iran and Turkey as transit countries for heroin, 2007-2009

* Excluding Turkey.
Source: UNODC ARQ.

	Iran (I.R. of)	Turkey
Caucasus	1	6
Middle East	4	9
East Europe	1	2
Rest of Europe*	6	58
Africa	3	1
Rest of the world	0	2

East and South-East Asia

In 2009, opiate demand in East and South-East Asia was met by both local production and Afghan supply. Myanmar and the Lao People's Democratic Republic are the main producing countries, exporting an estimated 25 mt of heroin. The total estimated heroin demand was 90 mt (including seizures and onward trafficking) in East and South-East Asia in 2009.

An estimated 65 mt of pure Afghan heroin was trafficked to the region to fill the gap in local production – 25 mt to South-East Asia and 40 mt to China. Given that the majority of heroin from Myanmar is trafficked

53 These estimates are preliminary, since there are no comprehensive studies on prevalence of opiate users in the Russian Federation. The estimate of opiate users ranges from 0.3% - 1.64% of the population aged 15-64. The estimate of 1.64% is based on the number of opiate users in treatment for 2007, using a treatment multiplier of 5.3% taken from a study conducted by the National Addiction Centre of the Russian Federation: *Dynamics of Drug Related Disorders in the Russian Federation, 2007.*

54 UNODC ARQ.

Map 14: Heroin flows to the Russian Federation and East Europe, 2009

Source: UNODC.

to China, most of the heroin reaching South-East Asia was likely transported from Afghanistan via Pakistan. However, exact drug trafficking routes and sources in 2009 are difficult to determine due to a lack of seizures. Given the low prices of heroin in Pakistan, it may be cheaper for drug trafficking networks to transport Afghan heroin to China and South-East Asia rather than use heroin from Myanmar.

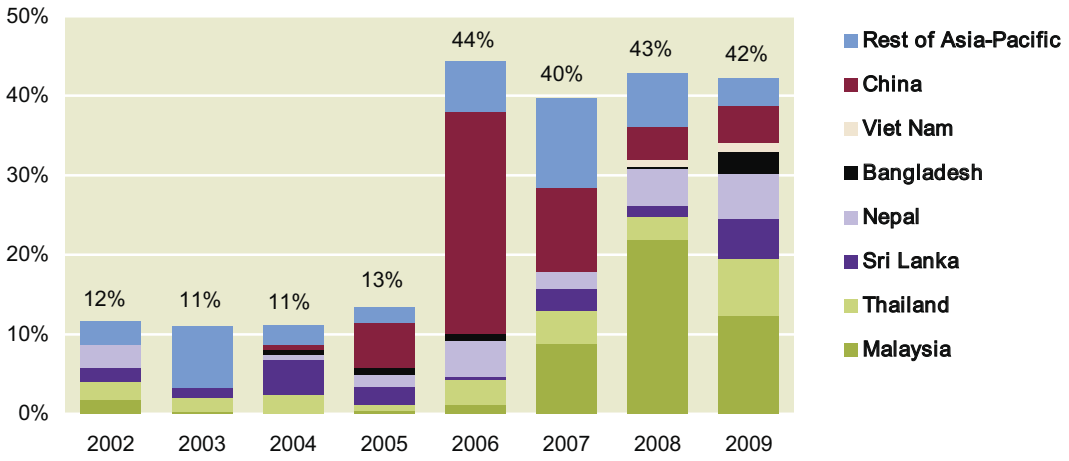
Heroin trafficking from Afghanistan to the Asia-Pacific region is an increasing trend, visible in individual drug seizures reported by Pakistan. Among those cases in which the destination of the consignment was identified as a country or region other than Pakistan, the proportion destined for the Asia-Pacific region underwent a distinct change in the transition from 2005 to 2006. This proportion (by number of seizure cases) was relatively stable over the period 2002-2005 (ranging between 11 and 13%), rose distinctly to 44% in 2006, to remain relatively stable since then, ranging between 40 and 44%. It is likely that a significant proportion of these consignments was intended for China. The proportion of cases in which China was identified as the country of destination rose sharply from less than 1% in 2004 to 28% in 2006, possibly reflecting the route identified by Chinese authorities involving direct shipments to north-western China. Since 2006, these shipments appear to have been gradually replaced by shipments to other countries in the Asia-Pacific region, possibly for further trans-shipment to their final destinations (which may include China as well as other countries in South-East Asia and Oceania).

This proportion also reached record levels in the case of several other countries in this region, such as Malaysia (22% in 2008), Thailand (7% in 2009), Nepal (6% in 2009) and Sri Lanka (5% in 2009). The shipments may reflect the recent trafficking route to south-eastern China. Indeed, although limited quantities of Afghan heroin were trafficked by air from South-West Asia to the north-west of China (notably Urumqi), an increasingly important route went from Afghanistan and neighbouring countries to the south-eastern Chinese province of Guangdong, via transit countries such as Malaysia, Singapore, the Philippines and Viet Nam. Five of the seizure cases in Guangdong province in 2009 together accounted for 1 mt of heroin.[55] The emergence of this new route around 2005-2006 also appears to have caused a drop in heroin seizures in this region, suggesting that law enforcement needed time to adapt.

55 National Narcotics Control Commission of China, presentation at the Fifteenth Asia-Pacific Operational Drug Enforcement Conference, February 2010, Tokyo, Japan, and National Narcotics Control Commission of China, presentation at the Twentieth Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), October 2010, Seoul, Republic of Korea.

Fig. 42: Heroin consignments seized in Pakistan intended for the Asia-Pacific, as a percentage of all seized heroin consignments with known destination (by number of cases), 2002-2009

Note: Consignments where the destination was identified as Pakistan itself are excluded from the total.
Source: UNODC IDS.



Heroin trafficking from East and South-East Asia is limited. In 2009, 3-4 mt of heroin were trafficked from South-East Asia to Australia and, to a lesser extent, New Zealand. There are no reports of onward heroin trafficking from China in 2009.

South Asia

South Asia was an important consumption and transit point for Afghan heroin in 2009. Some 25 mt of pure heroin were consumed in the region and 15 mt were trafficked onwards. Of this, some 6 mt went to South-East Asia, 6 mt to Africa, 1-2 mt to North America and 1 mt each to China and Europe. Although the majority of users in India use Indian heroin, drug traffickers prefer to export Afghan heroin due to its higher purity.

Of the 40 mt of heroin that were available in South Asia, an estimated 25 mt were trafficked from Afghanistan to South Asia, and a further 15 mt were manufactured domestically. Indian heroin supplied regional markets including Bangladesh,[56] Nepal[57] and Sri Lanka.

Africa

In 2009, an estimated 40-45 mt of Afghan heroin were trafficked to Africa, of which some 25 mt were likely trafficked from Pakistan, 5-6 mt from the United Arab Emirates, 5-6 mt from India and 5 mt from the Islamic Republic of Iran. The majority of heroin is still smuggled into South Africa, mainly from South-West Asia and, to a lesser extent, South-East Asia. Major hubs in Africa include Nigeria and South Africa.

The majority of heroin that reached the continent was consumed there, although Africa is now emerging as a heroin trafficking hub. In 2009, an estimated 7 mt of heroin were trafficked from Africa to Europe, almost 1 mt to China and a small amount to Australia.

Heroin flows to other destinations

Aside from the above-mentioned destination markets, there are other international consumption markets, including the Americas and Oceania.

In 2009, an estimated 40 mt of heroin were available in the Americas, the majority of which was grown and produced regionally. Only a limited amount of Afghan heroin was available in the market, as production in Mexico was higher than regional demand. However, the heroin market in Canada is mainly supplied by Afghan heroin.

In 2009, Mexico produced 426 mt of opium, which may be converted into 40 mt of Mexican (black tar) heroin. However, such a level of heroin production in Mexico would be equivalent to almost double the estimated consumption in its main destination market of North America (22 mt). In the absence of regional opiate stocks, either production figures are over-estimated or consumption is under-estimated.

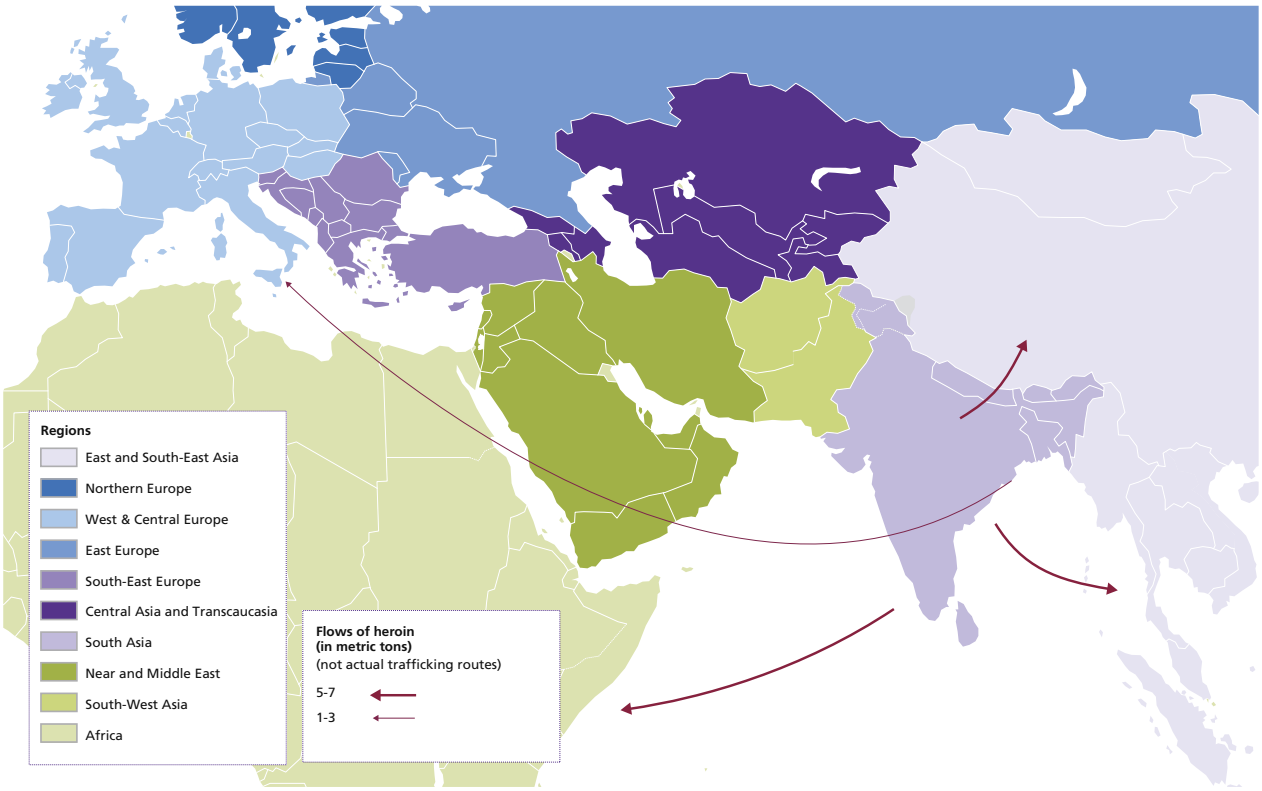
Production in Colombia is similarly opaque. Almost 58% of the heroin seized in the United States of America is reportedly of Colombian origin.[58] However, Colombia's total opium production was 9 mt in 2009, with a maximum yield of 1 mt of heroin. As Colombian law enforcement bodies seized 650 kg of heroin in 2009, 350 kg of heroin were left for trafficking. This would

56 Interviews with Bangladeshi officials, March 2009.

57 Interviews with Nepalese officials, March 2009.

58 USA Drug Enforcement Administration, Heroin Signature Program.

Map 15: Heroin trafficking from South Asia, 2009



not even satisfy heroin consumption in South America (2 mt), and nothing would be left for trafficking to the US. The currently available data is insufficient to properly understand heroin supply and demand in the Americas.

In 2009, almost 4 mt of heroin were trafficked to Oceania, mainly to Australia. Of this, 3.2 mt were consumed in Australia and 0.6 mt in New Zealand. Heroin use was almost negligible in other countries of the region. Afghan heroin dominated the markets in Australia and New Zealand, likely trafficked via Pakistan and South-East Asian countries. Indeed, Australia registered a significant diversification in the countries of departure for heroin trafficking into the country (of which there were 11 in 1999-2000 and 29 in 2008-2009),[59] and identified Cambodia, Malaysia, Pakistan, Thailand and Viet Nam as the most common departure countries in 2008-2009. Although heroin trafficking from South and East Africa to Australia was limited in 2009, shipments from Africa are emerging as a new trend, according to the Australian Government.[60]

59 Both reporting periods from July 1 to June 30 of the following year.

60 UNODC ARQ.

2.5 Market analysis

The findings in this section were calculated by examining a range of indicators, including demand statistics, opiate seizure databases of the World Customs Organization and UNODC, ARQ responses and individual country reports. Experts from international organizations, Member States and UNODC field offices have been consulted.

Heroin and opium prices depend on a number of factors, including purity, supply and demand, distance from the source and risk of interception. For example, one gram of good quality heroin costs around US$2-3 in Afghanistan, whereas the price is between US$40 – US$400 at consumption markets. Although farmers in Afghanistan supply much of the world's opiates, it is the international criminal networks along trafficking routes that earn billions of dollars every year.

Heroin market values for each main consumption country or region were calculated by using the amount of estimated heroin consumption as well as the average price. Regional/country-level heroin consumption and average prices are detailed elsewhere in this chapter.

Heroin consumption amounts for each country/region were calculated by multiplying the estimated number of opiate users by the average heroin consumption per capita per year. The average heroin consumption figures reported in the 2005 *World Drug Report* have been updated with the help of several Member States, UNODC field offices and other relevant organizations since 2008.[61]

In order to compare the market values between regions and countries, all prices were adjusted for purity. This information was collected through ARQ responses or bilateral meetings with officials. However, there is limited information available about purity levels.

To calculate the amount of opiate flows through a country or a region, analyses of both opiate use and seizure data from 2009 were carried out to track the patterns and estimate the magnitude of opiate flows. The total amount of heroin used was calculated for each country, then combined with official seizure data and balanced against total manufacture. Manufacture, consumption and seizure data were analysed together. For example, the size of estimated heroin flows from Afghanistan or Pakistan to country 'X' should be similar to the amount of heroin used and intercepted in country 'X' and the destination and transit countries receiving heroin via country 'X'. First, heroin or opium demand in the main destination regions or countries was calculated. Then, by drawing on seizure statistics from each country, the amounts of heroin or opium flowing between the countries were estimated.

Regarding the analysis on groups that benefit from the heroin trade, arrestee statistics provided by Member States were analysed, supplemented by extensive consultations with various Government experts and institutions.

As this report aims to provide global insights as well as orders of magnitude, the flows represented on maps should be considered broadly indicative rather than definitive. Flows may deviate to other countries along the routes and there are numerous secondary flows that may not be represented. Moreover, trends respond rapidly to changes in law enforcement and demand. Opiate flow estimations would, therefore, need to be revised if demand statistics were to change. The estimates will be updated periodically as new drug use data is provided by Member States.

Purity and prices

Both heroin (wholesale) and opium (farm-gate) prices in Afghanistan have increased in the last year, despite a steady decline from 2006 to 2009. At the end of March 2011, the national average price for one kilogram of dry opium in Afghanistan at the farm-gate level was US$274/kg, 180% higher than the US$98/kg reported in March 2010.[62] The dry opium price at the farm-gate level has been increasing since July 2009. The current farm-gate price is the highest price reported since November 2004. Similarly, at the end of March 2011, heroin cost US$3,815/kg, compared to US$2,506/kg in March 2010, an increase of 52%.[63] Afghan heroin has, on average, a purity level of around 70%, much higher than that what reaches global consumption markets.

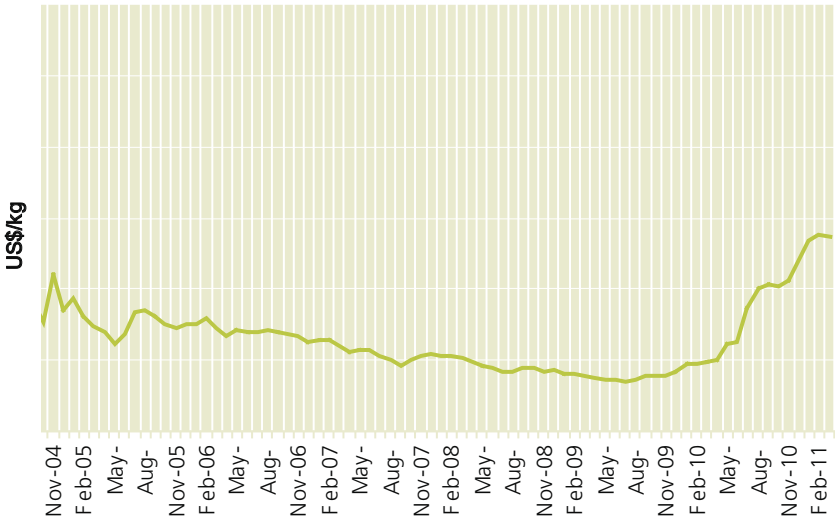
61 UNODC, *Addiction, Crime and Insurgency: The Transnational Threat of Afghan Opium*, 2009.

62 Ministry of Counter Narcotics Islamic Republic of Afghanistan and UNODC, *Afghanistan Opium Price Monitoring Monthly Report*, February 2011.

63 *Ibid.*

Fig. 43: Average price of dry opium at farm-gate level, September 2004 to March 2011

Source: Afghanistan Ministry of Counter Narcotics and UNODC Country Office in Afghanistan, *Afghanistan Opium Price Monitoring Monthly Report,* March 2011.



Heroin prices in western Europe do not show a clear response to opiate prices in Afghanistan. A long-term comparison of the trader price of opium in Afghanistan with heroin prices in Europe shows that, despite a marked hike in opium prices between early 2000 and late 2002, which coincided with a marked drop in opium production in 2001, the retail heroin price, measured in euros, did not decrease in western Europe. In view of the large mark-up between prices in Afghanistan and western Europe (the price per pure gram of heroin in Afghanistan is approximately 1% of the retail price in western Europe), one possible explanation for this is that the impact on the final price of price changes at the source is only cumulative, rather than proportional, resulting in a non-discernible effect at the much higher order of magnitude of retail prices. For example, an increase in the wholesale price of heroin in Afghanistan from US$2 to US$3 per gram (a spike of 50%) would bring about, if the impact is indeed cumulative, an increase of US$1 per gram in the final retail price, e.g. from US$70 to US$71 per gram (an increase of 1.4 %). If the impact were proportional, a 50% hike in the

Fig. 44: Accrual of purity-adjusted heroin prices, 2009 (or latest year available)

Sources: UNODC Country Office in Afghanistan; UNODC DELTA, UNODC Estimates.

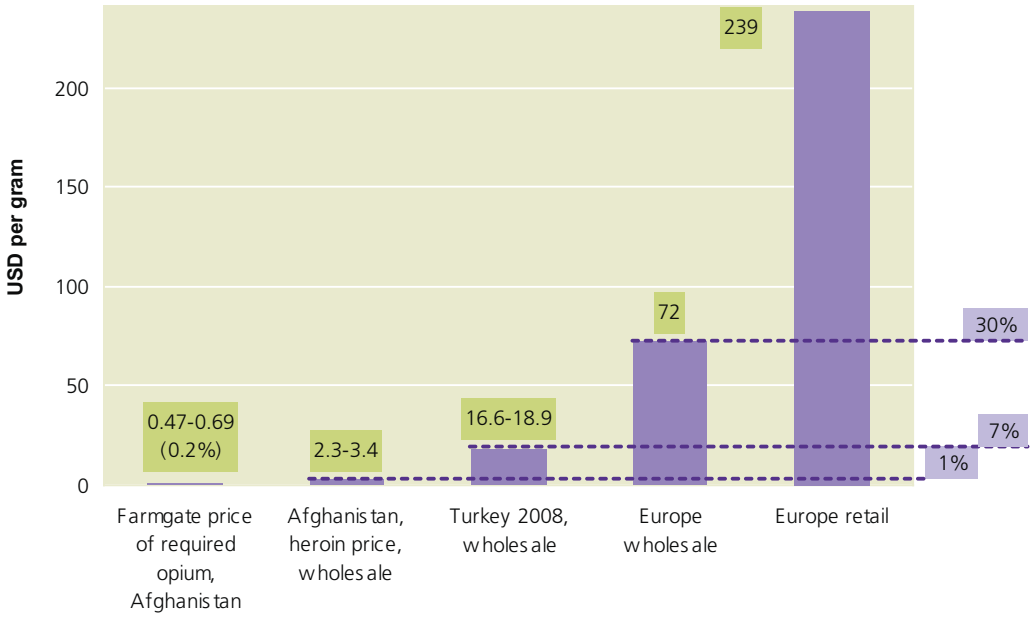
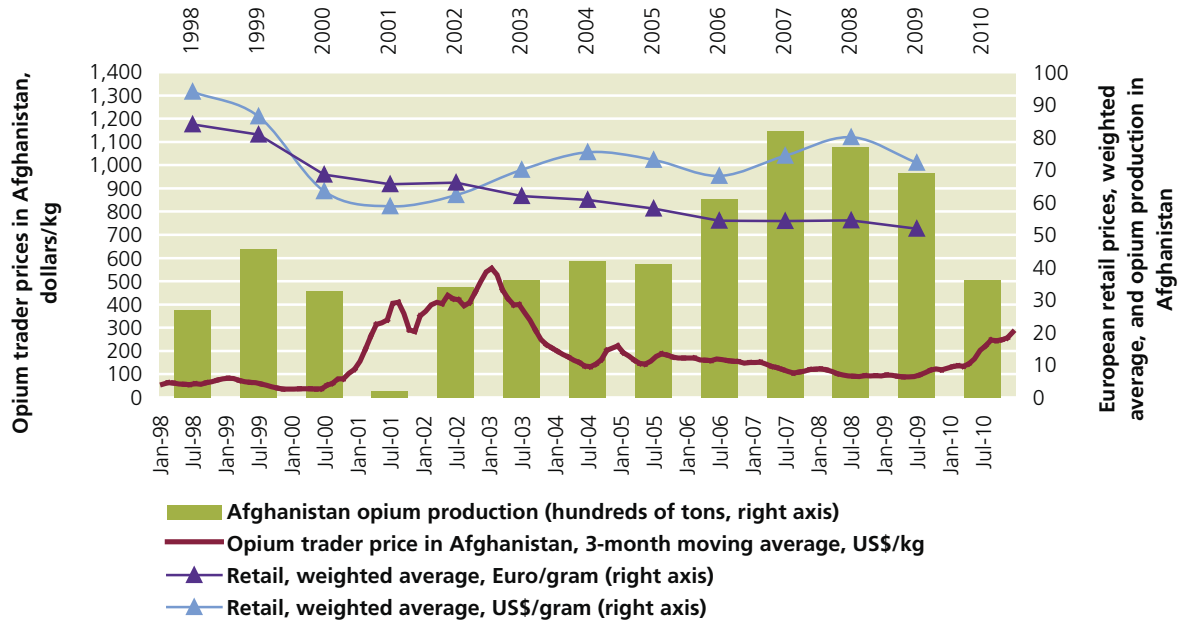


Fig. 45: Opium price and production in Afghanistan compared to heroin retail process in western Europe, 1998-2010

Sources: UNODC DELTA; UNODC Country Office in Afghanistan; UNODC estimates.



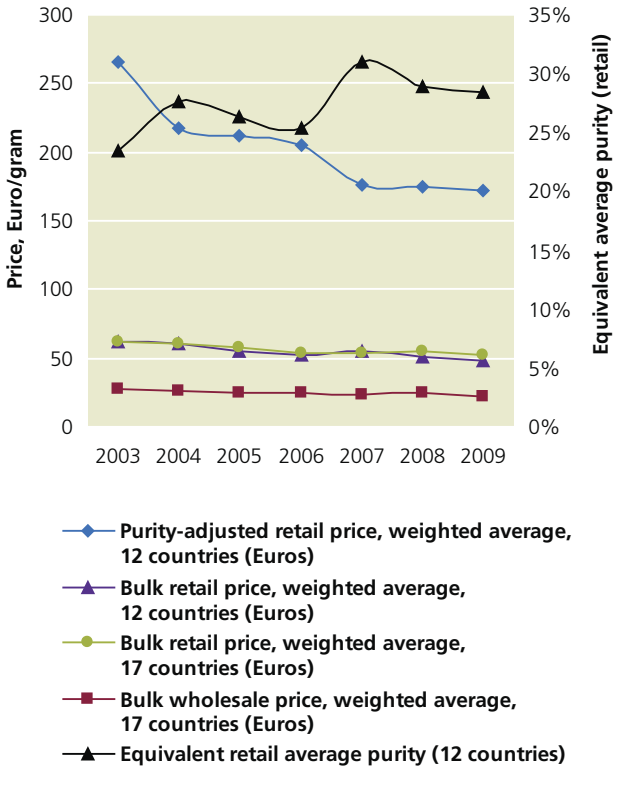
wholesale price of heroin in Afghanistan would lead to a similar hike in the final retail price, from US$70 to US$105.

Although seizures in West and Central Europe do not mirror the increased supply of Afghan opium or the increased levels of heroin seizures in the Islamic Republic of Iran and Turkey, heroin price data for western Europe are compatible with increased supply. UNODC estimates of purity-adjusted heroin retail prices based on 12 countries in western Europe indicate a decrease of 35% between 2003 and 2009 in the price per pure gram of heroin, measured in euros and unadjusted for inflation.[64] The decrease is less evident in bulk retail prices, suggesting that the increase in heroin supply may have translated into increased purity. The equivalent average purity rose from 23% in 2003 to 28% in 2009.

Heroin from Mexico and heroin from South America are rather distinct products in the main consumer market, the United States of America. Heroin from South America is more expensive and of higher purity. In 2009, the US reported typical wholesale purity of 52% for heroin from South America, compared to 40% for heroin from Mexico, and a price range of 44,000-113,333 US$/kg for heroin from South America, compared to 32,880-70,000 US$/kg for heroin from Mexico. Based on all heroin purchases performed by law enforcement in the United States, in the last quarter of 2009, the average price per pure gram of heroin was at the highest level over the period 2006-2009, while the average purity was the lowest over the same period.

Fig. 46: Heroin prices and purity in West and Central Europe, 2003-2009

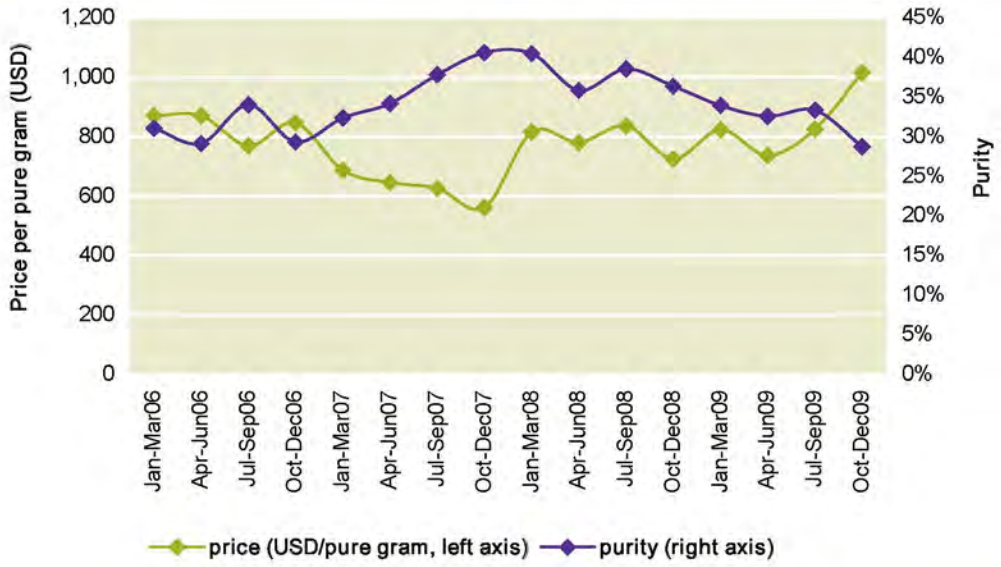
Sources: UNODC DELTA; UNODC estimates.



64 Adjusting for inflation using Eurostat's euro area index would result in a further 11% decrease.

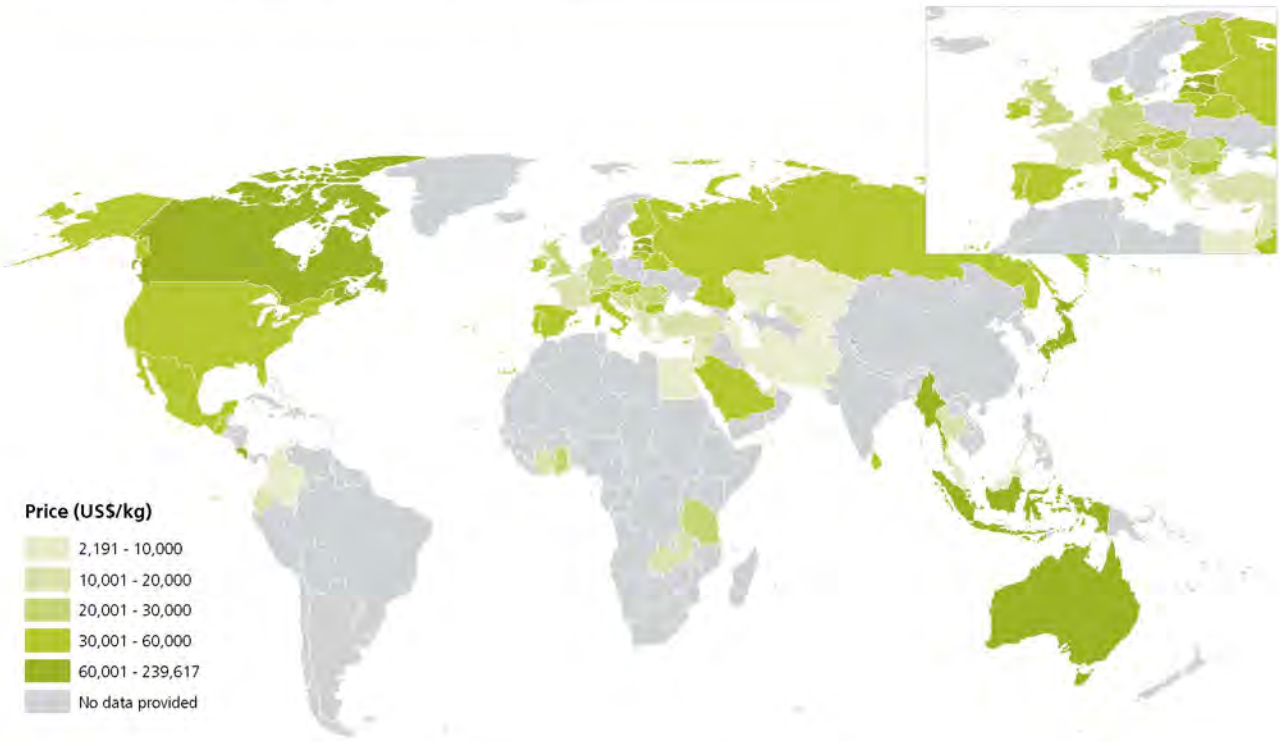
Fig. 47: USA: mean price and purity of heroin purchases by law enforcement agencies, 2006-2009

Source: UNODC ARQ.



Map 16: Wholesale heroin prices (US$/kg), 2009 (or 2008 where 2009 were not available)

Sources: UNODC ARQ; EUROPOL; UNODC estimates.



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Values represent reported typical prices. In cases where a range is reported without a typical price, the midpoint is considered. In cases where countries distinguish between different kinds of heroin the lower price is considered, usually corresponding to "heroin no. 3" or "brown heroin".

Table 14: Heroin prices, 2009

Sources: UNODC ARQ; EUROPOL; UNODC estimates.

Retail prices (street price), US$/gram

EUROPE	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Austria	270	*250*	203	132	138	103	87	70	94	57	75	44	92	68	75	74	69	99	*110*	97
Belgium	*90*	105	105	77	75	75	56	37	41	41	37	27	29	31	32	*31*	32	33	36	33
Denmark	287	265	151	139	228	191	157	188	147	175	116	111	126	122	94	123	100	92	*158*	148
Finland	*800*	696	770	724	606	455	414	257	254	250	207	121	188	*195*	*195*	182	125	151	235	*223*
France	*145*	153	150	135	144	170	156	113	119	111	*32*	34	47	57	68	69	67	55	*66*	56
Germany	105	75	96	74	91	90	74	51	43	45	39	38	38	46	49	48	46	48	53	51
Greece	120	175	63	44	105	88	77	80	55	55	55	53	45	65	51	31	75	75	*59*	*54*
Ireland	*196*	*180*	*180*	*168*	*161*	179	275	228	213	204	176	170	179	179	248	252	251	274	294	209
Italy	167	148	140	29	55	41	115	98	120	95	71	68	59	63	69	68	66	66	*78*	*72*
Luxembourg	*172*	*150*	*150*	*150*	172	202	138	141	133	126	69	67	*67*	45	101	102	*102*	96	*96*	*96*
Netherlands	49	*50*	55	49	*55*	61	48	55	34	30	25	43	35	40	57	38	38	33	53	*53*
Norway	1,680	525	510	275	349	300	282	198	186	166	128	157	165	198	148	220	*220*	240	*170*	*170*
Portugal	83	82	72	63	65	79	68	55	74	37	45	45	41	54	52	52	52	52	49	51
Spain	*175*	*185*	*180*	*126*	132	120	112	88	82	75	59	57	61	75	81	80	78	86	92	86
Sweden	*225*	*210*	*195*	*180*	*165*	337	346	135	130	126	113	129	133	128	119	*149*	*138*	*185*	*234*	*201*
Switzerland	312	221	248	126	164	190	116	81	96	167	53	45	39	*48*	*48*	*48*	39	42	37	46
United Kingdom	157	144	*144*	134	129	125	108	118	120	108	107	86	91	100	110	93	71	101	83	69
Average unweighted in US$	296	213	201	154	167	165	155	117	114	110	83	76	84	89	94	98	92	101	112	101
inflation adjusted 2009 US$	**486**	**335**	**307**	**229**	**241**	**232**	**211**	**157**	**150**	**142**	**103**	**92**	**101**	**104**	**107**	**107**	**98**	**105**	**111**	**101**
Weighted average in US$	173	149	146	106	118	119	117	93	94	86	63	59	62	70	75	73	68	74	80	72
Inflation adjusted in 2009 US$	**284**	**234**	**224**	**158**	**171**	**167**	**160**	**124**	**124**	**111**	**79**	**71**	**74**	**82**	**86**	**80**	**73**	**77**	**80**	**72**
Weighted average in Euro	**136**	**120**	**113**	**91**	**99**	**91**	**93**	**82**	**84**	**81**	**69**	**66**	**66**	**62**	**61**	**58**	**54**	**54**	**54**	**52**
Adjusted for inflation in 2009 Euro	**212**	**179**	**161**	**125**	**133**	**119**	**119**	**103**	**105**	**99**	**83**	**77**	**76**	**70**	**67**	**63**	**57**	**56**	**55**	**52**

Sources: UNODC ARQ data, EUROPOL and UNODC estimates (in italics)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
USA - street price	141	171	201	192	196	188	160	180	162	158	160	140	137	133	130	130	128	131	*173*	*157*
Inflation adjusted in 2009 US$	**231**	**270**	**307**	**285**	**283**	**264**	**219**	**241**	**214**	**203**	**199**	**170**	**163**	**155**	**147**	**143**	**137**	**136**	***172***	***157***
Purity adjusted	640	612	542	468	477	436	422	409	369	376	381	369	351	360	381	362	377	364	*456*	*491*
Purity & inflation adjusted in 2009 US$	**1051**	**965**	**829**	**695**	**691**	**614**	**577**	**547**	**485**	**484**	**474**	**447**	**419**	**420**	**433**	**397**	**402**	**377**	***454***	***491***

Wholesale, US$/kg

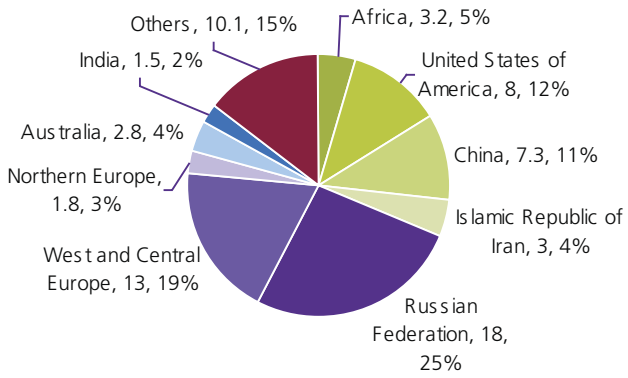
EUROPE	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Austria	*55,244*	*46,145*	63,000	36,000	37,752	30,491	30,222	28,831	34,565	31,087	25,026	19,553	23,547	33,900	37,260	36,168	37,640	54,810	*58,824*	41,715
Belgium	*30,000*	30,000	28,500	26,600	29,586	32,580	24,307	21,761	20,847	18,557	18,360	20,292	22,229	20,960	23,040	23,336	18,820	20,554	14,706	15,991
Denmark	*110,000*	*100,000*	85,000	95,000	117,625	106,805	86,806	100,465	65,693	61,507	23,585	32,889	20,803	41,770	32,820	37,741	35,967	33,091	*52,335*	49,066
Finland	*353,774*	*353,774*	*353,774*	*353,774*	*353,774*	353,774	*321,586*	*199,442*	*197,856*	*194,357*	*161,034*	*44,840*	51,804	*51,800*	68,314	69,192	*69,192*	54,810	58,824	*58,824*
France	180,000	72,250	80,000	63,750	*75,000*	66,035	46,603	32,230	25,885	25,596	22,158	26,906	23,547	28,250	31,050	31,450	35,550	*34,246*	*36,743*	*17,385*
Germany	45,244	36,145	41,667	35,206	36,448	35,256	27,890	25,686	25,608	24,770	20,263	17,816	20,325	21,510	25,723	25,765	22,510	25,810	26,471	26,717
Greece	90,000	70,000	35,000	28,000	29,536	34,362	39,090	28,775	21,020	20,714	17,320	16,592	17,425	18,650	17,540	14,782	19,450	19,450	*22,413*	*21,205*
Ireland	*63,940*	*53,940*	*53,500*	*53,210*	*52,500*	81,479	77,643	36,531	34,396	43,478	37,600	36,441	36,441	*30,510*	*30,510*	33,967	33,967	33,967	44,120	41,725
Italy	67,500	60,000	108,000	42,581	47,690	35,786	48,152	37,795	36,459	36,894	31,163	32,979	33,669	29,830	30,109	30,496	28,830	31,676	*46,300*	*44,044*
Luxembourg	*86,000*	*75,000*	*75,000*	49,500	*86,000*	57,079	59,852	54,786	52,630	50,368	*48,000*	50,369	*50,369*	*24,700*	43,473	44,030	*44,030*	31,451	*31,451*	*31,451*
Netherlands	23,850	*25,000*	26,550	23,850	*23,850*	24,384	20,572	13,810	14,056	16,985	14,703	15,757	29,199	17,730	*17,730*	18,240	16,625	16,957	19,841	*19,841*
Norway	*220,000*	*200,000*	212,500	151,099	101,744	*85,000*	72,520	62,209	64,918	49,872	44,561	35,874	37,676	48,234	52,790	53,490	53,325	58,235	*47,766*	*47,766*
Portugal	50,000	55,000	46,667	31,500	32,428	43,171	45,902	38,841	30,483	29,339	25,398	31,310	25,839	31,000	34,075	34,512	34,512	20,554	*27,206*	*38,239*
Spain	160,000	*125,000*	*122,500*	*91,000*	74,418	79,880	84,395	63,880	52,755	53,820	43,596	32,000	41,202	48,420	46,350	47,055	47,371	47,671	50,697	46,621
Sweden	*140,000*	*130,000*	*115,000*	*95,000*	*117,625*	62,655	64,829	65,771	63,190	61,022	41,626	33,702	34,738	41,900	31,648	35,970	35,970	37,059	57,508	*57,508*
Switzerland	124,000	153,800	228,875	47,460	52,823	54,850	41,665	37,234	34,294	33,422	29,568	16,082	19,149	*22,340*	23,580	25,420	21,470	23,180	25,584	*25,190*
United Kingdom	53,940	43,940	*43,500*	43,210	*42,500*	42,004	34,846	39,491	41,667	29,126	26,718	25,926	30,620	34,340	39,041	33,249	28,320	27,163	29,569	24,628
Average unweighted in US$	109,029	95,882	101,120	74,514	77,135	72,094	66,287	52,208	48,019	45,936	37,099	28,784	30,505	32,108	34,415	34,992	34,326	33,570	38,256	35,760
Inflation adjusted, 2009 US$	**179,604**	**151,569**	**155,177**	**111,025**	**112,061**	**101,850**	**90,961**	**69,786**	**63,201**	**59,154**	**46,220**	**34,869**	**36,378**	**37,437**	**39,086**	**38,439**	**36,538**	**34,734**	**38,120**	**35,760**
Weighted average in US$	93,234	68,009	77,411	54,785	56,285	52,423	47,894	39,440	36,513	34,257	28,494	25,809	28,211	30,386	32,381	31,925	30,823	31,513	36,020	31,443
Inflation adj. (kg) in 2009 US$	**153,039**	**107,125**	**118,371**	**81,339**	**81,479**	**73,798**	**65,488**	**52,719**	**48,058**	**44,114**	**35,499**	**31,265**	**33,642**	**35,429**	**36,776**	**35,070**	**32,809**	**32,607**	**35,892**	**31,443**
Inflation adj. (gram) in 2009 US$	**153**	**107**	**118**	**81**	**81**	**74**	**65**	**53**	**48**	**44**	**35**	**31**	**34**	**35**	**37**	**35**	**33**	**33**	**36**	**31**
Weighted in Euro (g)	**73**	**55**	**60**	**47**	**47**	**40**	**38**	**35**	**33**	**32**	**31**	**29**	**30**	**27**	**26**	**25**	**25**	**23**	**25**	**23**
Adjusted for inflation in 2009 Euro (g)	**114**	**82**	**85**	**65**	**64**	**53**	**48**	**44**	**41**	**39**	**37**	**34**	**34**	**30**	**29**	**27**	**26**	**24**	**25**	**23**

Market value and beneficiaries

The global opiate market was valued at US$68 billion in 2009, with heroin consumers contributing US$61 billion. The value of the world heroin market tends to increase according to the number of international borders crossed by traffickers. That is, heroin is generally cheaper in Afghanistan, a production country, than in West and Central Europe, where the drugs have been transported by various means across long distances and changed hands a number of times. However, this pattern can be deceptive, as heroin prices and consumption levels vary significantly across countries and regions.

Fig. 48: Shares of the global opiate market value, 2009 (in billions of US$)

Source: UNODC.



Heroin prices fluctuate significantly across the globe, and Australia is the starkest example of global price variation. Although Australian users represent just 0.85% of total global heroin consumption, they contribute 4% of the global market value. The street value per gram of heroin is between US$230–370 in Australia whereas one gram of heroin was worth around US$170-200 in the USA and northern Europe, and consumers in West and Central Europe paid US$40-100 per gram. Overall, the Russian Federation and West and Central Europe contributed almost half of the total global market value, accounting for US$31 billion in 2009.

Beneficiaries

Given the geographic spread of heroin users and the fact that heroin prices increase roughly according to distance from the source, it is not surprising that criminal networks in Europe, the Russian Federation and South-East Asia pocketed most of the profits in 2009. Indeed, beneficiaries in Afghanistan, for example, earned significantly less than international criminal networks. Although international organized crime groups dominate transnational trafficking, local sales in each country are conducted almost entirely by local groups, including domestic illegal armed groups and separatist movements.

There is a strong link between insecurity and the opiate trade in Afghanistan, as opiates constitute the main income source for anti-government elements like the Afghan Taliban. Almost all of the opium produced in Afghanistan was grown in the provinces of southern Afghanistan where anti-government elements are active. Although the Afghan Taliban's role in drug trafficking is not clear, opium poppy farmers, drug traffickers and heroin lab owners paid the group up to 10% of the value of their opiate shipments as 'tax' or protection fees. In 2009, the Taliban's total income from the opiate trade was likely around US$155 million. However, Afghan opium farmers likely earned US$440[65] million and Afghan drug traffickers almost US$2.2 billion.

In total, Pakistan's opiate market was worth US$1.2 billion in 2009 – counting both transnational trafficking and domestic consumption. The exact beneficiaries of the opiate trade through Pakistan are difficult to specify, although it appears that extremist groups in the Federally Administered Tribal Areas (FATA) and criminal groups in Balochistan are key recipients. Opiates enter Pakistan via these areas, which border Afghanistan.

In 2009, the opiate market in the Islamic Republic of Iran was estimated at around US$3 billion. The majority of the profits went to Iranian criminal groups and, to a lesser extent, foreign drug traffickers based in the country.

Although each Central Asian country has domestic criminal groups, it is possible that Tajik and Russian criminal groups organize heroin trafficking all the way from Afghanistan to the Russian Federation. Russian is the common language along this route. In 2009, the heroin trafficking market in Central Asia was worth an estimated US$1.4 billion, most of which went to regional criminal groups.

In 2009, the total value of the heroin trafficked via South-East Europe was around US$2 billion, whereas the domestic heroin markets in the region were worth US$500 million. Thus, the total value of the opiate trade was US$2.5 billion in South-East Europe in 2009. Turkish, Kurdish and Balkan-based organized crime groups benefited from this trade.

West and Central Europe remains one of the most lucrative drug markets, worth an estimated US$13 billion in 2009. The heroin market in the United Kingdom was estimated at US$3 billion in 2009, facilitated by British, Dutch and Turkish organized crime groups, and, to a lesser extent, South Asian groups. The heroin market in Italy was worth US$3 billion, which mainly went to Italian and Albanian organized crime groups. The value of the French heroin market was estimated at US$2 bil-

65 UNODC and Afghanistan Ministry of Counter Narcotics, *Afghanistan Opium Survey, 2009.*

lion, which was pocketed almost entirely by France-based distributors. The heroin market in Germany yielded a profit of approximately US$1.3 billion, with heroin mainly trafficked by Turkish and Balkan groups.

In 2009, Russian criminal networks made an estimated US$18 billion from heroin. Based on drug-related arrests, the Russian drug market is dominated by Russian citizens, followed by Tajiks as the most active foreign nationals. Drug trafficking in East Europe is most likely conducted by local groups; however, the picture regarding criminal activity in this region is not very clear.

In 2009, China's 2.3 million opiate users consumed some 55-60 mt of pure heroin and paid US$7.3 billion to local drug dealers. In other South-East Asian countries, the total heroin market was worth US$2.4 billion. Chinese and other local organized crime groups control the South-East Asian heroin market at both retail and wholesale levels. The heroin trade in Indonesia is predominantly controlled and directed by West Africans, particularly Nigerians.[66]

In 2009, the total value of the South Asian heroin market – estimated at US$1.9 billion – mostly went to Indian local criminal groups. With a value of US$1.4 billion, the biggest market is in India.

In 2009, Africa's drug trafficking market was worth an estimated US$3.2 billion – most of which went to Nigerian organized crime groups. Nigerian groups likely dominate the African drug trade and are active in many countries around the world, including destination countries in Europe. However, drug trafficking in Africa involves both African networks, including Nigerians and Tanzanians, as well as foreign networks, including Chinese and Pakistanis.

The United States of America dominated regional demand for heroin, with a heroin market worth an estimated US$8 billion in 2009. North America-based organized crime groups (such as Mexican drug cartels) are the main beneficiaries.

In 2009, Oceania's heroin market was worth an estimated US$3.5 billion as Australia and New Zealand had the highest heroin prices in the world. In 2009, both South-East Asian and African – mainly Nigerian – drug traffickers were involved in shipping heroin to Australia. Although information is limited, domestic sales were likely conducted by local groups.

Heroin traffickers continue to adapt their techniques and alter trafficking routes to exploit international paths of least resistance. Numerous global vulnerabilities remain and some new areas are emerging.

Removal of trade barriers in many parts of the globe has not only facilitated the movement of illicit goods, but also closer interaction between organized criminal groups from different locations and cultures. In 2009, many international borders became more transparent due to international trade agreements. Drug traffickers are likely to exploit this situation and make connections with other criminal networks to facilitate the smooth movement of heroin.

Given the ongoing removal of trade barriers globally, traditional methods of border control may become increasingly unable to stem the flow of opiates into destination markets. In particular, traffickers' use of maritime transportation and seaports has been identified as a key emerging threat. Traffickers are already capitalizing on increased global trade along sea routes. In 2009, only a tiny fraction of the more than 400 million containers that were shipped worldwide were inspected. In 2009, just 6% of global heroin seizures made by customs departments occurred at seaports. There are indications that drug traffickers are utilizing maritime transportation much more intensively than currently believed. Drug trafficking through international seaports must be further studied and monitoring mechanisms enacted.

In 2009, Africa emerged as a cost-effective heroin trafficking route to Europe, North America and Oceania. Drug seizures and the arrest of traffickers indicated that Africans – particularly West African networks – are increasingly transporting Afghan heroin from Pakistan into East Africa for onward shipment to Europe and elsewhere. The emergence of Africa as a heroin trafficking hub is likely due to corruption, limited law enforcement capacity and increased pressure on 'traditional' drug trafficking routes. The most fragile African states are particularly vulnerable. East Africa's minimal law enforcement at ports of entry has encouraged drug traffickers to transit heroin through that region. Increasing flows of heroin to Africa have also led to increases in drug use across the continent.

Sporadic reports indicate a heroin shortage in Europe, particularly in the United Kingdom, where good-quality heroin was in short supply in the market. Indeed, the mean purity of heroin seizures made by UK police forces and analysed by the UK Forensic Science Service dropped from 46.4% in the third quarter of 2009 to 33.7% in the third quarter of 2010, while the mean purity of seizures made by the UK Border Agency fell from 58.2% to 46.2%. Anecdotal information points to a shortage in some countries, but not in all, suggesting that increased law enforcement efforts and decreased opium production in Afghanistan have played a role.

66 US Department of State, Bureau of International Narcotics and Law Enforcement Affairs, *International Narcotics Control Strategy Report,* 2009.

3. The coca/cocaine market

3.1 Introduction

Most indicators and research suggest that cocaine is – after heroin – the second most problematic drug worldwide in terms of negative health consequences and probably the most problematic drug in terms of trafficking-related violence.

The overall prevalence and number of cocaine users globally remain at stable levels. There are regional differences in recent trends, however, with significant decreases reported in North America, stable trends in West and Central Europe and increases in Africa and Asia. The estimated consumption of cocaine in terms of the quantities consumed appears to have declined, mainly due to a decrease in the United States and low levels of per capita use in the emerging markets. The most developed cocaine market outside of the Americas continues to be Europe, notably West and Central Europe, while cocaine use in East Europe is still limited. While demand in the United States was more than four times as high as in Europe in 1998, just over a decade later, the volume and value of the West and Central European cocaine market (US$33 billion) is approaching parity with that of the US (US$37 billion). The volume of cocaine consumed in Europe, however, has doubled in the last decade, even though data for the last few years show signs of stabilization at the higher levels.

Harm associated with cocaine use in terms of treatment demand, overdose cases and deaths, complications in health status due to polydrug use among cocaine users and from adulterants in cocaine, remain substantial in the major regions of consumption.

There has been a decline in the area under coca cultivation, as well as in cocaine production. Global seizures of cocaine have been generally stable over the period 2006-2009. Since 2006, seizures have shifted towards the source areas in South America and away from the consumer markets in North America and West and Central Europe. Some secondary distribution countries in South America seem to have acquired increasing importance as cocaine trafficking transit countries. Trafficking through West Africa continues to be significant, in spite of a reduction of seizures since 2007 (from 25% of European cocaine seizures that transited countries of West and Central Africa in 2007 to 13% in 2009). The area remains vulnerable to a resurgence. Some countries in the Asia-Pacific - with large potential consumer markets - have registered increasing cocaine seizures in 2008 and 2009.

The expansion of the cocaine market across the Atlantic and, more recently, in South America and beyond, highlights the need to treat cocaine as a global problem, and to develop strategies on the scale of the threat. Efforts must be increasingly coordinated and integrated into an international approach that adapts to new developments and trends.

3.2 Consumption

UNODC estimates the annual prevalence of cocaine use in 2009 at between 0.3% and 0.5% of the world population aged 15-64, corresponding to some 14.3 to 20.5 million people in this age range who used cocaine at least once in the preceding year. The lower and upper

Table 15: Annual prevalence and estimated number of cocaine users, by region, subregion and globally, 2009

Region/subregion	Estimated number of users annually (lower)	-	Estimated number of users annually (upper)	Percent of population age 15-64 (lower)	-	Percent of population age 15-64 (upper)
Africa	940,000	-	4,420,000	0.2	-	0.8
East Africa	-	-	-	-	-	-
North Africa	30,000	-	50,000	0.03	-	0.04
Southern Africa	270,000	-	730,000	0.3	-	0.9
West and Central Africa	550,000	-	2,300,000	0.3	-	1.1
Americas	8,280,000	-	8,650,000	1.4	-	1.4
Caribbean	110,000	-	330,000	0.4	-	1.2
Central America	120,000	-	140,000	0.5	-	0.6
North America	5,690,000	-	5,690,000	1.9	-	1.9
South America	2,360,000	-	2,480,000	0.9	-	1.0
Asia	400,000	-	2,300,000	0.02	-	0.2
Central Asia	-	-	-	-	-	-
East/South-East Asia	400,000	-	1,070,000	0.03	-	0.2
Near and Middle East	40,000	-	650,000	0.01	-	0.3
South Asia	-	-	-	-	-	-
Europe	4,300,000	-	4,750,000	0.8	-	0.9
East/South-East Europe	310,000	-	660,000	0.1	-	0.3
West/Central Europe	3,990,000	-	4,090,000	1.2	-	1.3
Oceania	330,000	-	400,000	1.4	-	1.7
Global	**14,250,000**	**-**	**20,520,000**	**0.3**	**-**	**0.5**

Table 16: Expert perceptions of trends in cocaine use, by region, 2009

Source: UNODC ARQ.

Region	Member States providing perception data	Member States perception response rate	Use problem increased*	Percent use problem increased	Use problem stable	Percent use problem stable	Use problem decreased*	Percent use problem decreased
Africa	8	15%	4	50%	2	25%	2	25%
Americas	15	43%	5	33%	7	47%	3	20%
Asia	13	29%	7	54%	3	23%	3	23%
Europe	27	60%	14	52%	13	48%	0	0%
Oceania	1	7%	0		1		0	
Global	**64**	**33%**	**30**	**47%**	**26**	**41%**	**8**	**13%**

* Identifies increases/ decreases ranging from either some to strong, unweighted by population.

ranges of cocaine users in 2009[1] have widened, suggesting some increase in the estimated number of users, but also the increasing uncertainty in these estimates. The main difference from previous years is the widening of the ranges, arising from a lack of recent or reliable information in Africa - particularly West and Central Africa[2] - and East and South-East Asia, where starting from low levels, the use of cocaine may have increased. There is no information on the extent of cocaine use in South or Central Asia. In 2009, a substantial decrease in the estimates of cocaine users was recorded for North America, while cocaine use in Europe appeared to have stabilized.

In geographical terms, however, cocaine use appears to have spread. In 2009, nearly half of the Member States

1 In 2008, the estimated annual prevalence number of cocaine users ranged between 0.3% and 0.4% of the population aged 15-64, or between 15.1 and 19.4 million people.

2 This is partly due to the fact that in previous years, estimates for the Democratic Republic of the Congo were included in the Southern Africa subregion and for consistency were moved to the West and Central Africa subregion

Fig. 49: Expert perception of trends in cocaine use, 2000-2009

Source: UNODC ARQ.

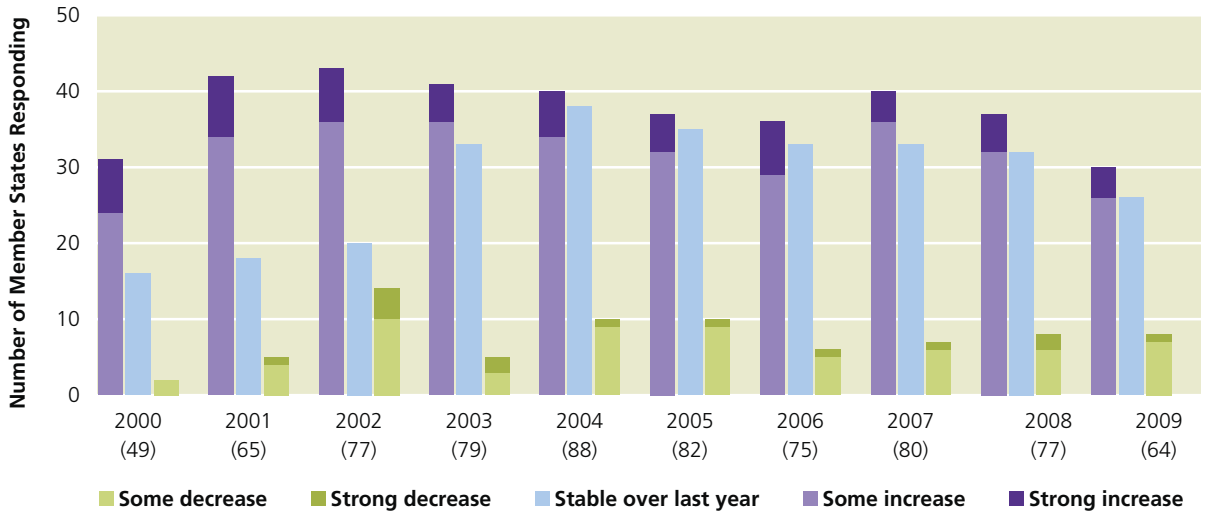


Fig. 50: Annual prevalence of cocaine use in North America, 2006-2009

Sources: UNODC World Drug Report 2010 and previous years; update based on ARQ data.

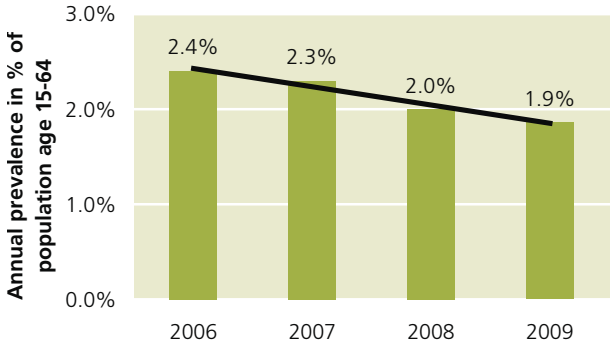
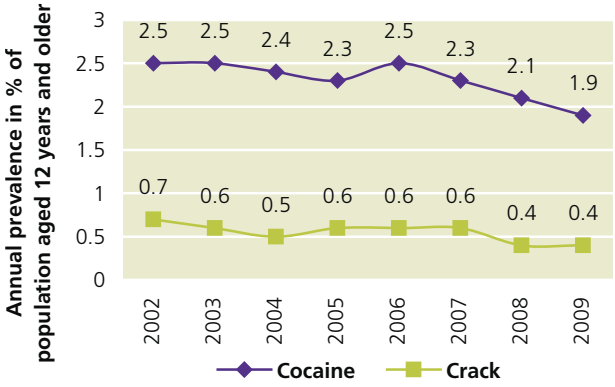


Fig. 51: United States: Trends in annual prevalence of cocaine use in the population aged 12 years and older, 2002-2009

Source: Substance Abuse and Mental Health Services Administration, Results from the 2009 National Survey on Drug Use and Health: Volume I, Summary of National Findings.



reporting expert opinion through the ARQ considered that cocaine use had increased in their countries. This was particularly noticeable in Africa and Asia, where increasing seizures of cocaine, though still at low levels, have also been reported in countries that had never reported any in the past. The long-term trends in expert perceptions officially reported to UNODC also point to a continuing perceived increase in the use of cocaine in Africa and Asia. Experts from half of the countries in Europe, especially West and Central Europe, considered cocaine use to be stable, while the other half of the countries perceived an increase. The main stabilization or decrease in cocaine use trends is perceived to be taking place in the Americas.

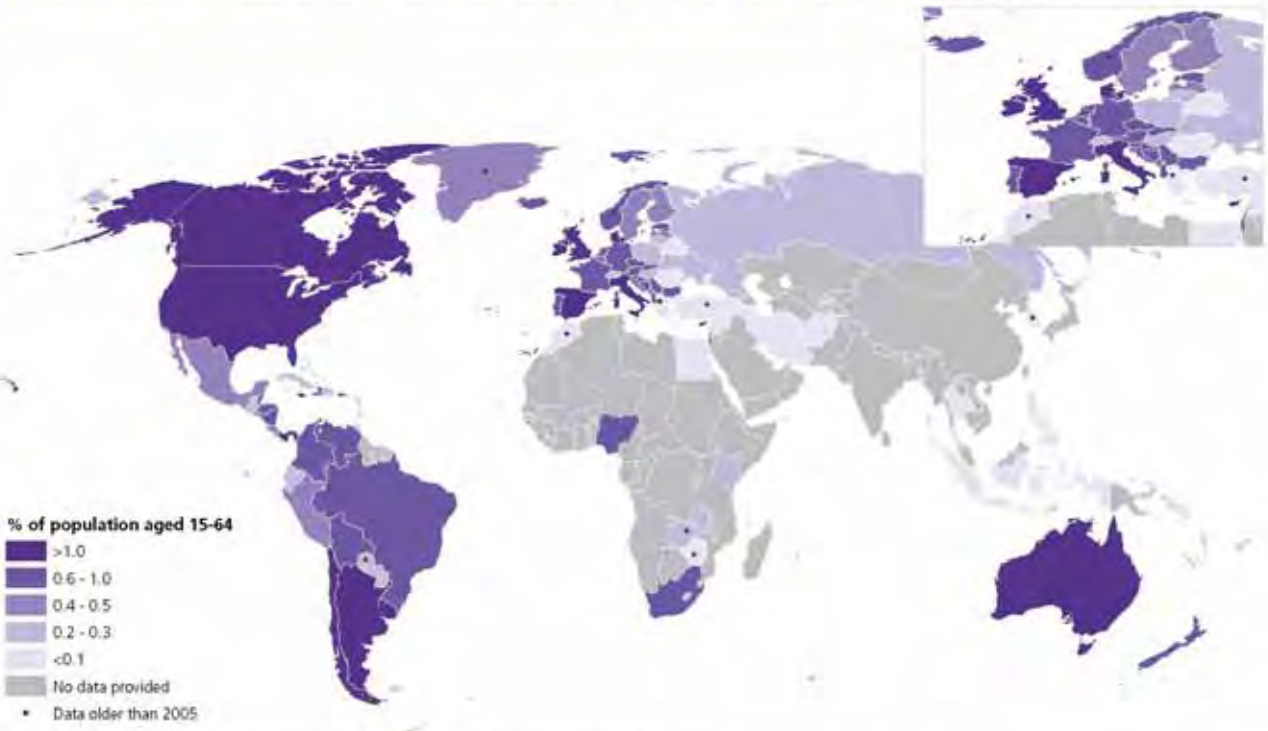
Cocaine use is decreasing in North America – one of the major regions of cocaine consumption

North America is still the subregion with the largest number of cocaine users worldwide (5.7 million in 2009), accounting for more than a third of all cocaine users worldwide. Household surveys in the countries of North America reveal a prevalence rate of annual cocaine use affecting 1.9% of the population aged 15-64 in 2009, down from 2.4% in 2006.

The United States of America has the highest prevalence of cocaine use in the region (2.4% of the population, or 5 million people aged 15-64), but there are indications of cocaine use declining over the past few years.

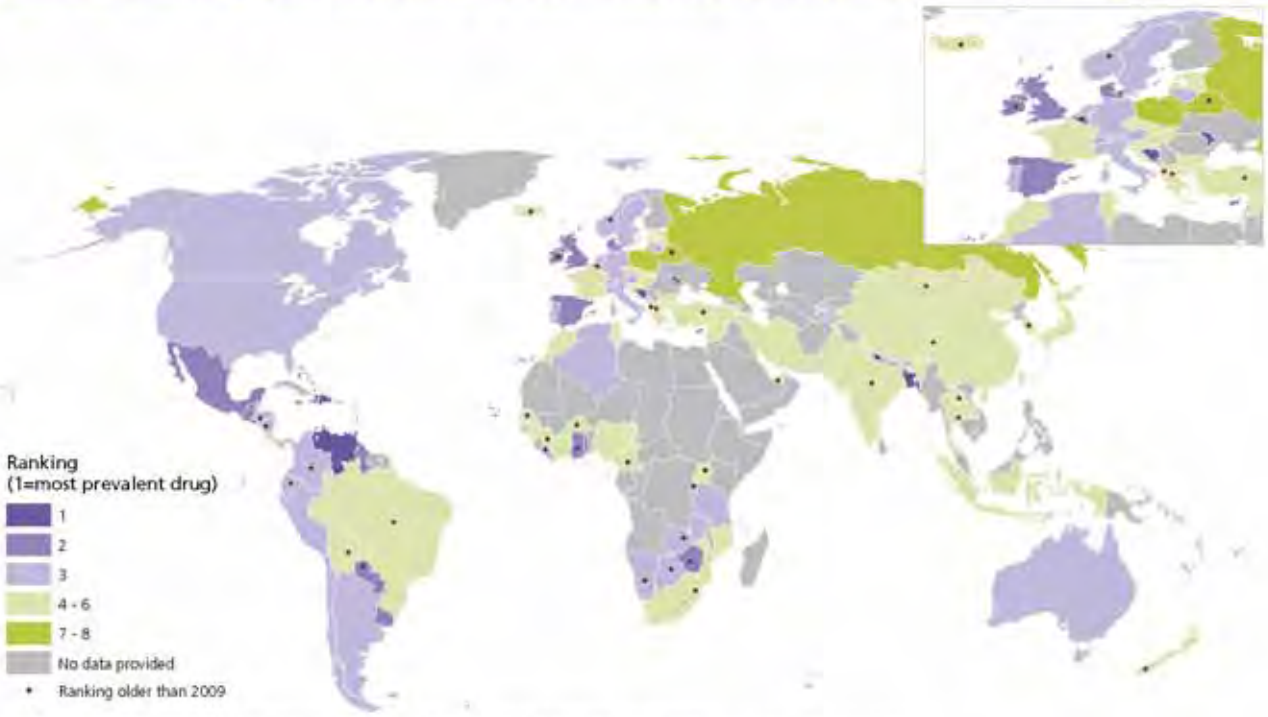
Since 2006, among the population aged 12 years and older, there has been a continuing decline in the annual prevalence of cocaine use (from 2.5% in 2006 to 1.9% in 2009), though crack use shows a less rapidly declining trend. The reduction coincided with a supply squeeze in the US cocaine market as less cocaine arrived via Mexico. Purity-adjusted cocaine prices rose by more than 80% between 2006 and 2009.

Map 17: Annual prevalence of cocaine use, 2009 (or latest year available back to 2005)



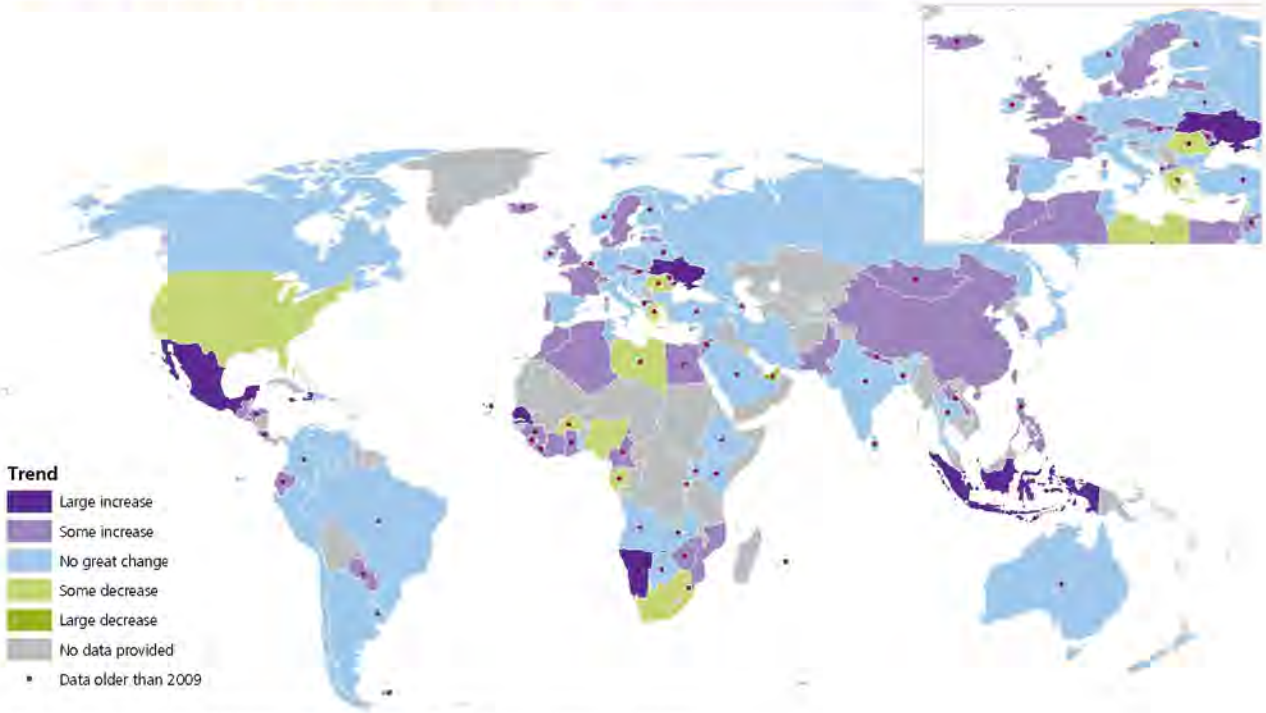
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Controlin Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Map 18: Ranking of cocaine in order of prevalence, 2009 (or latest year available back to 2005)



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Controlin Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Map 19: Expert perception of trend changes in the use of cocaine, 2009 (or latest year available back to 2005)



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

In addition to significant drops in both annual and past-month cocaine use prevalence, the initiation of new cocaine use also fell. Some 617,000 people aged 12 or older used cocaine for the first time in the past 12 months in the United States in 2009, down from 722,000 a year earlier.

Among high school students in grades 8 to 12 in the United States, there has also been a substantial and steady decline in the annual prevalence of cocaine and crack use, especially since 2006. For both cocaine and crack use, the annual prevalence in 2010 among 12th grade students was 2.9% and 1.4%, respectively, which declined from 5.7% and 2.1% respectively in 2006.[3]

Cocaine remains a problem drug in the United States, however. Among the 7.1 million people aged 12 or older who were classified with 'dependence on or abuse of illicit drugs' in 2009, 1.1 million were classified with 'dependence on or abuse of cocaine.'[4] This is nearly one fifth of the annual cocaine users in 2009 – a higher proportion than for all other illicit substances except heroin.

In the United States, there were 4.6 million drug-related emergency department visits in the 2009. Among these total visits, the highest rate related to the use of illicit drugs was for cocaine use (137.7 visits per 100,000 inhabitants),[5] followed by cannabis (122.6 per 100,000) and heroin (69.4 per 100,000). Compared to other illicit drugs, the rate of cocaine-related emergency department visits was much higher among the patients who were 21 years or older (80.9%),[6] indicating continuing problematic use among the older population.

Positive cocaine use hair tests among the general workforce also fell, from 5.3% in 2007 to 2.3% over the first two quarters of 2010. These tests reflect cocaine use over the past three months. Urine tests among the US workforce - reflecting cocaine use over the past two to three days – showed the same, strongly decreasing trend.

In Canada, the annual prevalence of cocaine use in 2009 was 1.4% among the population aged 15-64, corresponding to some 327,000 people who had used cocaine

3 Johnston, L. D., O'Malley, P. M., Bachman, J. G., and Schulenberg, J. E., *Monitoring the Future, national results on adolescent drug use: Overview of key findings, 2010*, 2011, Institute for Social Research, The University of Michigan, Ann Arbor, USA.

4 Substance Abuse and Mental Health Services Administration, *Results from the 2009 National Survey on Drug Use and Health: Volume I*, Summary of National Findings, 2010, Rockville, Maryland, USA.

5 Overall, taking into account emergency department visits related to misuse or abuse of drugs, the highest rate was for prescription opioids and pain killers with 405.4 visits per 100,000 inhabitants while the rate for ED visits related to cocaine use were second highest.

6 Substance Abuse and Mental Health Services Administration, Centre for Behavioural Health Statistics and Quality, *The DAWN Report: Highlights of the 2009 Drug Abuse Warning Network (DAWN) Findings on Drug-Related Emergency Department Visits*, 2010, Rockville, Maryland, USA.

Fig. 52: Annual prevalence of cocaine use among secondary school students in the United States, 2000-2010

Source: United States Monitoring the Future: national results on adolescent drug use.

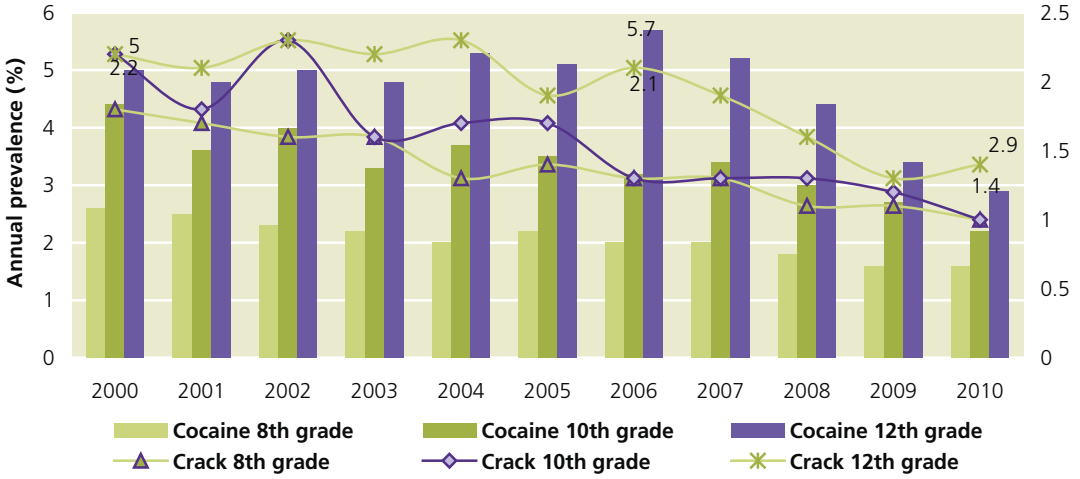


Fig. 53: United States: Emergency department visits related to illicit drugs, by age, 2009

Source: SAMHSA Drug Abuse Warning Network (DAWN).

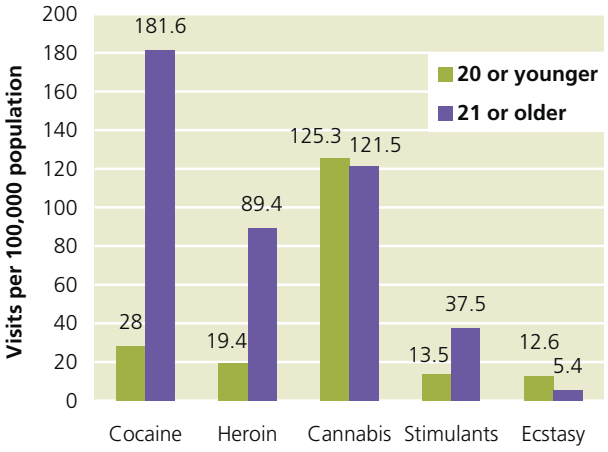
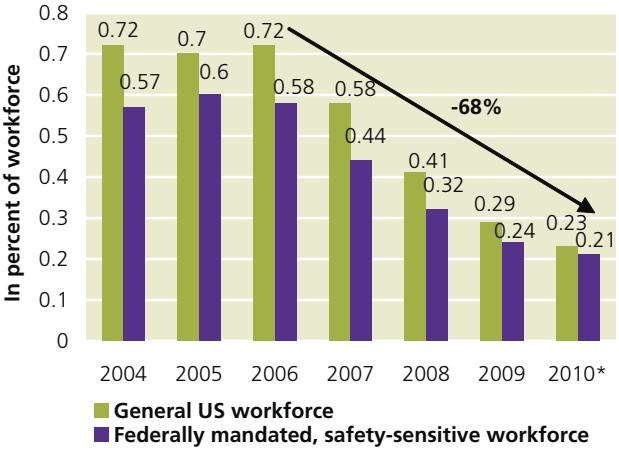


Fig. 54: Positive urine tests for cocaine use among the US workforce,* 2004-2010

*Positive tests for cocaine use among the general US workforce (4.2 million tests in 2009) and among the federally mandated, safety-sensitive workforce (1.3 million tests in 2009). Data for 2010 refer to the first two quarters.

Source: Quest Diagnostics, Drug Testing Index.



at least once in the past year. As in the United States, cocaine use has also been decreasing considerably in Canada since 2004, when it was reported as 2.3%. In 2008, it was 1.9% among the 15-64 age group. The past-year prevalence of cocaine use in 2009 was nearly the double (3.0%) among young people (15-24 years old); a rate that has also declined since 2008, when it was reported at 5.9%.[7]

In Mexico, compared to Canada and the United States, the annual prevalence of cocaine use is much lower, at 0.4%. Experts in Mexico perceived an increase in cocaine use from the previous year, whereas the treatment demand for cocaine as the primary substance of concern has declined to 7.9% of the total demand in 2009 from 20.6% in 2008.[8]

Cocaine use is now generally perceived to be stable in South and Central America

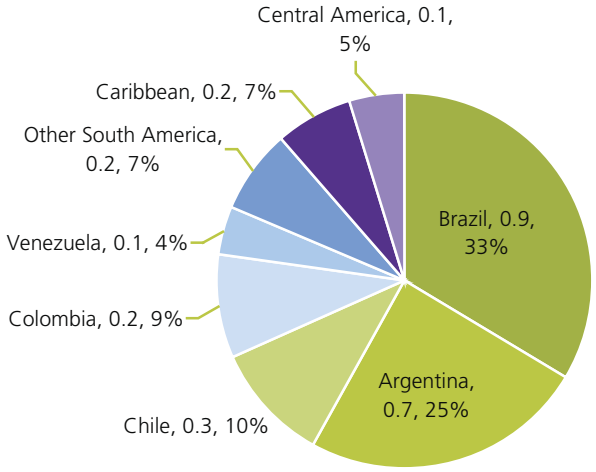
The estimated number of annual cocaine users in South and Central America and the Caribbean ranges between 2.6 and 2.9 million people aged 15-64. Cocaine use in South and Central America remains at levels higher than

7 Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey*, 2009.

8 This decline in treatment demand may stem from a change in treatment reporting.

Fig. 55: Cocaine use in South and Central American and Caribbean countries, in million persons and % of total (N = 2.7 million in 2009)

Source: UNODC ARQ.



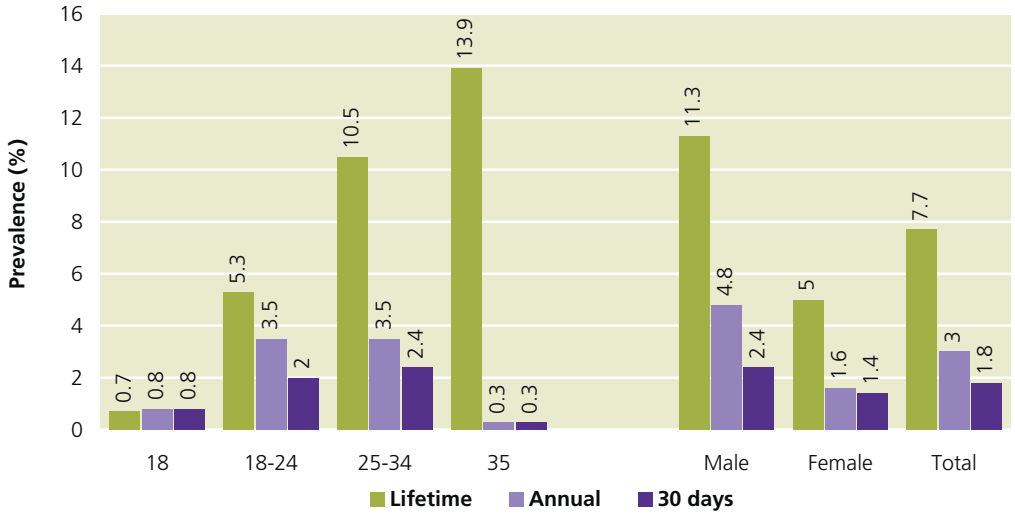
the global average. The estimated annual prevalence among the adult population ranges between 0.9% and 1% in South America and 0.5% to 0.6% in Central America. The prevalence of cocaine use in South America, though much lower than North America, is comparable to that in Europe. The upward trend of cocaine use reported in previous years did not continue in 2009. Except for Ecuador and Guatemala, which reported increases, experts from most of the other South and Central American countries perceived stable trends. Nearly 50% of all treatment demand reported from South and Central America (including the Caribbean) is reportedly for cocaine use, while cocaine is also ranked as the number one substance causing drug-induced or related deaths in the subregion.

There is no update on the extent of cocaine use in South and Central America. Argentina (2.6%), Chile (2.4%) and Uruguay (1.4%) remain countries with high prevalence of cocaine use among the general population in these subregions. The three Southern Cone countries, Brazil, Argentina and Chile, together account for more than two thirds of all cocaine users of South America, Central America and the Caribbean. The Caribbean countries account for 7% of the total and Central America for 5%.

Although Brazil has a lower prevalence rate of 0.7% of the population aged 15-64, because of its large population, the country has the highest number of cocaine users (900,000) in South America. According to a national survey conducted in 2009 among university students in Brazil, the annual prevalence of cocaine use was 3% of students aged 18 to 35. Cocaine use was much lower among female students than male. Among the students aged 18-24 and 25-34, comparable levels of recent and current cocaine use were reported, which was much higher than compared to cocaine use reported among the students 18 or 35 years old.[9]

Fig. 56: Brazil: Cocaine use among university students, 2009

Source: Nacional Sobre O Uso De Álcool, Tabaco E Outras Drogas Entre Universitarios Das 27 Capitais Brasileiras, Secretaria Nacional Politicas sobre Drogas.



9 Andrade, A.G., Duarte, P. and Oliveira, L.G., *I Levantamento Nacional Sobre O Uso De Álcool, Tabaco E Outras Drogas Entre Os Universitarios Das 27 Capitais Brasileiras*, Secretaria Nacional Politicas sobre Drogas, Brasilia, 2010.

Polydrug use among cocaine users

Polydrug use – the use of multiple drugs at the same time, in combination or consecutively – is commonly observed among drug-using populations. In Europe and the United States of America, cocaine use is commonly reported among polydrug users.

In Europe, the prevalence of polydrug use has been reported as being higher among cocaine users than cannabis users, while cocaine users also reported higher rates of concurrent stimulant use. A study conducted in 14 European countries in 2006 revealed that around 62% of cocaine users were polydrug users. Alcohol, cannabis and heroin were the three main substances reportedly used by cocaine users.

Polydrug use among cocaine and cannabis users*

* The table compares polydrug use among long-term cocaine users and cannabis users entering treatment.

Source: EMCDDA, Annual report 2009: the state of the drugs problem in Europe.

Cocaine users	% of total
Alcohol	42
Cannabis	28
Heroin	16
Overall polydrug use among cocaine users	62
Cannabis users	**% of total**
Alcohol	65
Cocaine	13
Heroin	12
Overall polydrug use among cannabis users	85

Among the clients entering treatment in Europe, the most frequently reported secondary drug - by nearly one third - was cocaine (including crack). Among cocaine users in treatment, two main groups were identified: the socially integrated individuals using powder cocaine, often during the weekend, at parties or other social occasions. These users typically snort cocaine, sometimes in conjunction with alcohol or cannabis. The second group is a more marginalized group of clients, often injecting and using cocaine or crack-cocaine in combination with opioids. The marginalized group of cocaine users also presented precarious health and social conditions and included former opioid users re-entering treatment for cocaine use.

In a study conducted in the United States, after alcohol, cocaine was the second most used substance in combinations. It was included in combinations with alcohol, cannabis, alcohol and cannabis, and alcohol and opioids.

Speedballing – the concurrent or simultaneous use of cocaine and heroin – has also been commonly reported in countries with high prevalence of cocaine use including the United States, Canada, the United Kingdom, Italy and Spain. In 14 European countries, more than a quarter of clients seeking treatment in 2006 reported concurrent use of cocaine and heroin. In a Canadian study, equal proportions of drug users were using cocaine and heroin sequentially, within the same hour or simultaneously – as in combination. A Mexican study among drug users in prison settings reported that nearly all of them (92%) were injecting drugs and less than half were speedballing.

Some reasons for speedballing suggested in the literature are: 1) when cocaine and heroin are used together, no new or novel subjective effect is experienced. Instead it simultaneously induces effects that are typical to both drugs; 2) using cocaine and heroin in low doses simultaneously could mutually reinforce their effects; 3) cocaine enhances some effects of opioids (as a group) and reduces some adverse effects of heroin or other opioids while maintaining the 'rush' induced by heroin use; 4) for some opioid users, including those on substitution or maintenance therapy, the use of opioids would be considered normal or 'medicinal' to prevent withdrawals and maintain normalcy while crack would be used to get a high.

As for subsequent use of heroin or cocaine, it is suggested that heroin use could occur after cocaine to induce a depressant effect to deal with the over-excitement caused by cocaine, while cocaine could be used to reduce unpleasant side-effects of heroin, such as adverse symptoms of withdrawal.

Risks and consequences

The main consequences of polydrug use, as in the case of cocaine use, are higher risks of overdose and chronic health damage. Using alcohol with cocaine can increase the levels of cocaine in the blood, enabling a longer psychoactive effect, but also increasing the risk of cardiovascular problems caused by increased heart rate and blood pressure. Cocaine can also decrease the perception of alcohol intoxication effects. Suicidal ideation and violent behaviour have been linked with the concurrent use of alcohol and cocaine. When alcohol and cocaine are combined, the liver produces a third substance called cocaethylene which intensifies the euphoric effects of cocaine. It has been associated with higher risk of heart attacks in users under 40 or even sudden death.

Similarly, when cocaine is mixed with opioids, the negative cardiovascular effects of cocaine are expanded, which can induce respiratory depression and hide the sedative effects related to opioids, thus leading to higher overdose risks. In Europe, deaths caused by the use of cocaine with other drugs represented 21% of drug-induced deaths, with opioids involved in 8% of these cases (2009).

The concurrent use of cocaine and heroin has also been related with a higher probability of dropping out from treatment, relapse and co-morbidity with psychopathol-

ogy than only opioid use. Users of opioids and cocaine experience more depression, anxiety and related symptoms than users of cocaine only. There is also a higher frequency of injecting among heroin and cocaine users that may result in more sharing of contaminated injecting equipment. Additionally, the reported use of citric acid to prepare the injection, and flushing,* increase the risk of HIV and other blood-borne infections such as hepatitis B and C as well as more soft tissue and vein damage at the injecting site.

Polydrug use – particularly with cocaine - and its associated risks therefore has important public health and policy implications in terms of prevention, treatment and care for heroin and cocaine users.

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* Flushing is a term used to describe an injecting behaviour in which the plunger is pulled back and the fluid (mostly blood and in cases blood only) is re-injected. This is also referred to as booting and kicking in some literature

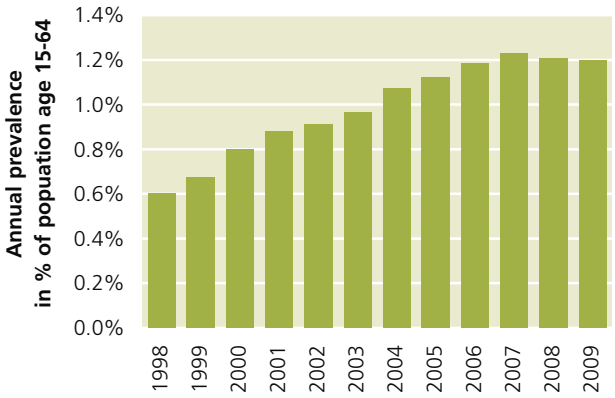
Most countries in Europe now report a stable trend in cocaine use

The annual prevalence of cocaine use in Europe is estimated at between 0.8% and 0.9% of the population aged 15-64, corresponding to some 4.3 to 4.8 million people who used cocaine at least once in the past year. These estimates are slightly lower than those for the previous year. Cocaine use is reportedly much higher in West and Central Europe (1.2%-1.3%) than in East and South-East-Europe (0.1%-0.3%). In 2009, many countries in Europe - mainly West and Central Europe - that provided expert opinion on trends reported a perceived stabilization in cocaine use for the year 2009.

Estimates of the prevalence rate for the 27 EU[10] and 4 EFTA[11] countries suggest that the number of cocaine users doubled over the 1998-2006 period. Between 2006 and 2009 consumption appears to have stabilized. Despite the increase over the last decade in Europe and the decline in North America, overall cocaine use levels in the EU/EFTA region (annual prevalence of 1.2%) are still only half as high as in the USA (2.4% of the population aged 15-64 in 2009).

Fig. 57: Annual prevalence of cocaine use among EU and EFTA countries, 1998-2009

Sources: Annual Reports Questionnaire data; Government reports; UNODC, *World Drug Report 2009*; EMCDDA, Statistical Bulletin 2009.



High prevalence rates of cocaine use limited to a number of countries in western Europe

Two thirds of European cocaine users live in just three countries: the United Kingdom, Spain and Italy. With Germany and France, these countries represent 80% of European cocaine consumption. In terms of annual

10 EU countries: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

11 EFTA countries: Iceland, Liechtenstein, Norway and Switzerland.

Fig. 58: Europe: Trends in cocaine use in countries that reported new data

Source: UNODC ARQ; EMCDDA.

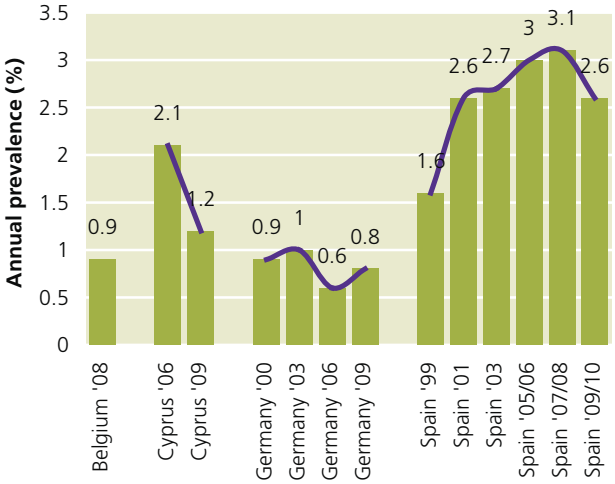
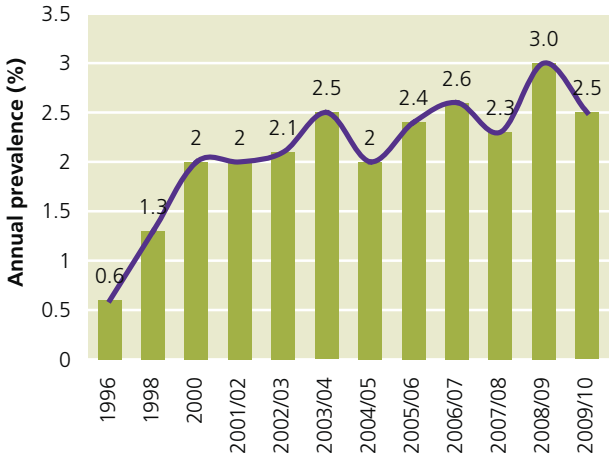


Fig. 59: England and Wales (UK): Trends in annual prevalence of cocaine use, 1996-2009/10

Source: UNODC ARQ; EMCDDA.



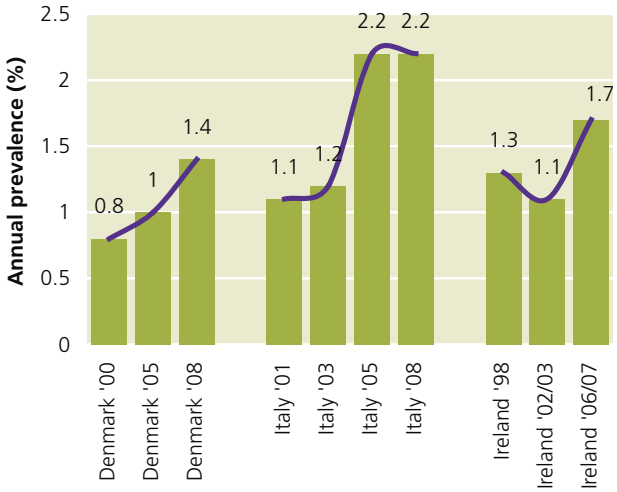
prevalence rates, Denmark, Ireland, Italy, Spain and the United Kingdom remain countries with rates higher than the West and Central European average. Cocaine use is considered to be particularly high among young people, especially males aged between 15 and 34. In the five high prevalence countries, annual prevalence among those aged 15-34 ranged from 4% to 8.4%. In these countries, cocaine is also reportedly used by opioid users who are undergoing substitution treatment.[12]

In 2009, Belgium, Cyprus, Germany, Spain and the United Kingdom (England and Wales) reported new prevalence data on cocaine use. Among these countries,

12 EMCDDA, *Annual Report 2010: The state of the drugs problem in Europe*, Lisbon, 2010

Fig. 60: Europe: Trends in cocaine use in some high prevalence countries

Source: UNODC ARQ; EMCDDA.



Cyprus and Spain reported a substantial decrease in cocaine use. The overall trend in England and Wales over the last few years has been fluctuating, following major increases since the late 1990s.

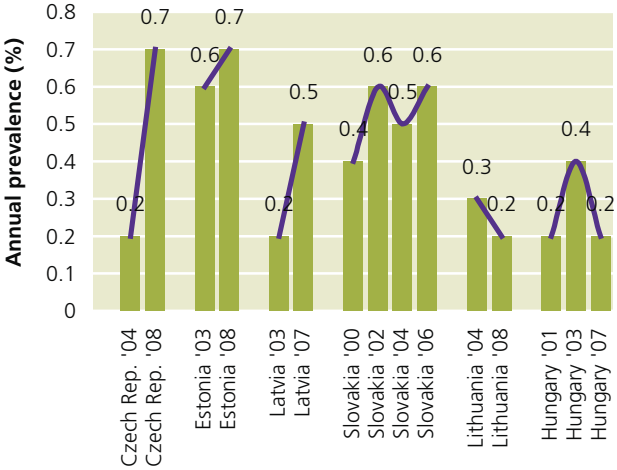
Among the other countries with high cocaine prevalence rates, Italy showed a stabilizing trend, but preliminary data from a survey undertaken in 2009 may indicate a decline. In contrast, older data for Denmark (2008) and Ireland (2007) showed rising trends in cocaine use over the previous survey period.

The situation in Central Europe is mixed, where countries such as the Czech Republic, Estonia, Latvia and Slovakia showed increases in cocaine use while others, such as Hungary and Lithuania, reported decreases in the latest surveys.

In West and Central Europe, cocaine was reported as the

Fig. 61: Trends in cocaine use in selected Central European countries

Source: UNODC ARQ and EMCDDA.



Cocaine adulterants

A general phenomenon in recent years has been the decline of cocaine purity in the main consumer markets of North America and Europe. This went in parallel with an increasing role played by adulterants, which are changing the pharmacological properties of the white powder that is being sold as 'cocaine.'

While diluents or cutting agents (such as lactose) are simply used to increase the weight of the drugs, adulterants are typically psychoactive substances used to compensate for some of the pharmacological effects of the drug lost by lower levels of purity. The mixing of the drug with adulterants can lead to additional health problems for the users.

In the case of cocaine, different substances have been used as adulterants, including the following:

Common cocaine adulterants	
Levamisole	Likely stimulatory synergy between cocaine and levamisole
Lidocaine	Local anaesthetics, similar anaesthetic effects to cocaine
Procaine	Local anaesthetic
Benzocaine	Local anaesthetic
Caffeine	Stimulant
Boric acid	Looks like cocaine and acts as an anaesthetic
Hydroxyzine	Antihistamine
Phenacetin	Painkiller related to paracetamol

One of the adulterants that has been increasingly reported in cocaine samples in the United States and Europe since 2004 is levamisole. This is an anti-parasitic agent used in veterinary medicine in South America. In the United States, this was also used for the treatment of colon cancer and rheumatoid arthritis, but due to its adverse side effects, was removed from the market.

When levamisole is used for longer period and in high doses, it may cause serious adverse effects, one of which is agranulocytosis. This is a condition that results in a lowering of the white blood cell count, thereby impeding the body's mechanism to fight infection.

In Europe and the United States, up to 70% of the analysed cocaine samples were reported to contain levamisole. This led the European Early Warning System to issue a warning and initiate additional data collection. In 2009, SAMHSA also issued a public health warning on the risks of cocaine adulterated with levamisole.

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primary drug of abuse in 11% of treatment cases, on average, compared to just 1% of treatment demand in East and South-East Europe. Within West and Central Europe, treatment demand for cocaine use also varied considerably. The highest treatment demand for cocaine-related problems was in Spain (46% as a proportion of all drug-related treatment) and the Netherlands (30%). In Germany, Italy, Switzerland and the United Kingdom, treatment demand for cocaine as a proportion of all treatment was around 15%.

Limited information on the extent of cocaine use is reported from Africa, however, experts from the countries that have reported information perceive increases

Information on the extent of cocaine use is only available from a limited number of countries in Africa. The annual prevalence of cocaine use is estimated between 0.2% and 0.8% of the population aged 15-64, corresponding to between 940,000 and 4.4 million people estimated to have used cocaine in the past year. The actual number of cocaine users in Africa is probably close to the lower end of the estimates. The wide range in the estimates points to an increase in the uncertainty of the data available from Africa.

Among the eight countries that provided expert opinion on trends of cocaine use in Africa, four reported increases. In North Africa, where cocaine use is considered to be low (0.03% - 0.04%), Algeria and Morocco reported perceived increases. The other two countries that reported an increase in cocaine use in 2009 were Côte d'Ivoire and Mozambique. Nigeria and South Africa reported decreases in cocaine use as perceived by the experts.

In Kenya, a household survey conducted in the coastal provinces of the country in 2009 showed a lifetime prevalence of cocaine use of 1.6% and current[13] prevalence of 1.2% among the population aged 12-51. The small difference between current and lifetime use indicates that cocaine use in these coastal provinces might be

13 Current use of drugs was defined as use in the four weeks prior to the interview.

Fig. 62: Range of the estimated number of cocaine users in Africa, 2009

Source: UNODC.

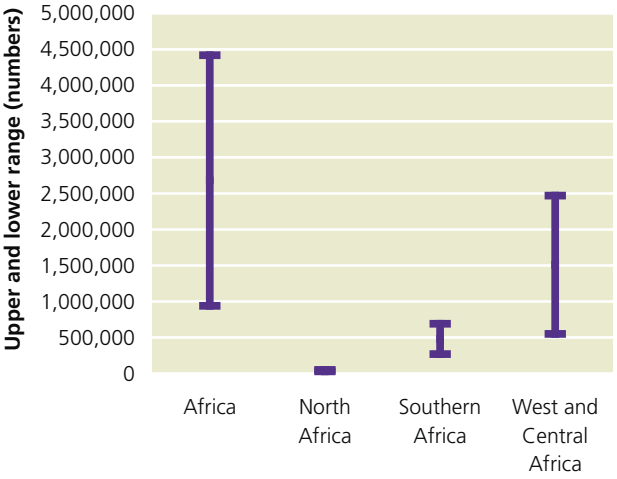


Fig. 63: Range of the annual prevalence of cocaine use in Africa, 2009

Source: UNODC.

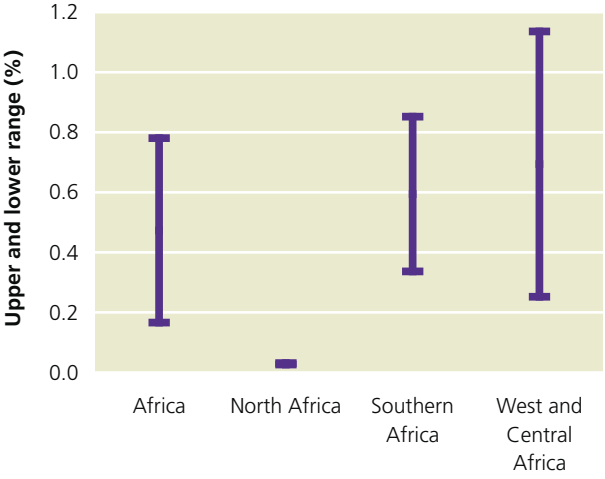


Fig. 64: Kenya (coastal provinces): Lifetime and current use of cocaine, by age, 2009

Source: NACADA, Report of Survey on Drug and Substance Abuse in Coast Province Kenya.

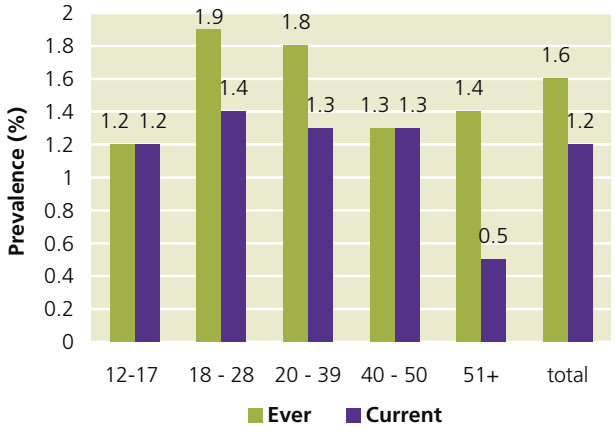


Table 17: Africa: Cocaine as primary drug of abuse as a proportion of all treatment admissions, recent years

	Year	Cocaine
Namibia	2006	24%
Burkina Faso	2008	21%
Mozambique	2004	11%
Kenya	2005	10%
Eritrea	2006	8%
South Africa	2009	8%
Togo	2009	8%
Senegal	2005	2%
Ghana	2008	1%
Swaziland	2004	1%
Nigeria	2004	1%

a new phenomenon. The extent of current cocaine use was comparable among all age groups in the 12-50 years age range, but, as in other countries, much higher among male (2.7%) than female (0.4%) survey respondents.[14]

Treatment demand for cocaine-related problems in Africa, from the countries that have provided data, is reported at around 5% of all treatment admissions. The highest treatment demand for cocaine-related problems, as a proportion of all treatment, was reported from Namibia and Burkina Faso. In South Africa, as reported by the South African Community Epidemiology Network on Drug Use, treatment demand for cocaine use appears to have declined over the past few years, following increases in the previous years. Cocaine was reported by 5%-15% of clients in treatment as either a primary or secondary drug of abuse in the different reporting regions in the first half of 2010.[15]

Several countries in Asia - especially in East and South-East Asia - perceive cocaine use to be increasing

Information on the extent of cocaine use in Asia is scant and limited mainly to some countries in East and South-

14 National Campaign Against Drug Abuse Authority (NACADA), *Report of Survey on Drug and Substance Abuse in Coast Province Kenya – Main Report,* March 2010.

15 Plüddemann A. et al, *Monitoring Alcohol & Drug Abuse Trends in South Africa (July 1996 – June 2010), Phase 28,* SACENDU research brief, Vol. 13 (2), 2010, South African Community Epidemiology Network on Drug Use.

Table 18: Expert perception of trends in cocaine use in Asia, 2008 and 2009

Source: UNODC ARQ.

	2008	2009
Armenia		↔
Bahrain	↑	↑
China	↑	↑
Israel	↔	↑
Indonesia	↓	↑
Japan	↑	
Republic of Korea		↑
Hong Kong, China	↓	↓
Macao, China		↑
Mongolia	↑	
Pakistan	↑	↑
Philippines	↑	
Kuwait		↓
Lebanon	↔	↓
Syrian Arab Republic	↑	↔
United Arab Emirates	↓	

Legend: ↑ Increase; ↓ Decrease; → Stable

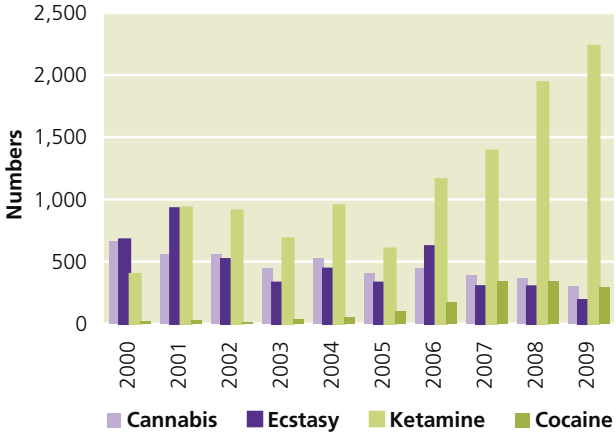
East Asia. Nevertheless, with this information gap, the annual prevalence of cocaine use in Asia is estimated between 0.02% and 0.2% of the population aged 15-64, or between 400,000 and 2.3 million people who may have used cocaine in the past year. The actual number of cocaine users in Asia is probably closer to the lower end of the range.

In Asia, most of the countries that provided expert perception on cocaine use, perceived that use had been increasing over the past year. In 2009, 7 out of 13 countries or territories reported a perceived increase in cocaine use. Many of the countries that had previously not identified any cocaine use now perceive an increase. Most of the countries that have perceived an increasing trend (starting from low levels of use) are located in East and South-East Asia; notably, China is among them. Some countries in other subregions have also perceived an increase.

Hong Kong, China, is one territory - although with a very small number of cocaine users - that has been reporting continuous decreases in cocaine use over the past years. This is also reflected in the decreasing number of cocaine users registered by the authorities between 2007 and 2009, reversing the upward trend noted between 2004 and 2007. In a limited study among cocaine users and key informants conducted in 2008, the pattern of cocaine use in Hong Kong, China, showed that nearly two thirds of respondents were using crack-

Fig. 65: Hong Kong, China: Trends for cocaine and other registered drug users, 2000-2009

Source: Central Registry Drug Abuse, Narcotics Division, Security Bureau, Hong Kong, China.



cocaine. Respondents strongly associated their cocaine use with night life and entertainment – clubs, discos and karaoke.[16]

Cocaine use in New Zealand and Australia appears to be stable following a period of strong increases

Cocaine use in the Oceania region appears generally stable following strong increases over the 2004-2007 period in Australia and over the 2003-2006 period in New Zealand. Information on cocaine use from Oceania essentially comprise survey data from Australia and New Zealand. The annual prevalence in Oceania is estimated to range between 1.4% and 1.7% of the population aged 15–64. The estimates are still lower than the levels reported from North America, but higher than those found for West and Central Europe.

In Australia, the annual prevalence of cocaine use in 2007 was estimated at 1.9% of the population aged 15-64, which is comparable to the level reported from North America. As reported in the Australian Illicit Drug Data Report (2008-2009), "recent increases in cocaine arrests and reported use, as well as considerable seizures of the drug in recent years, indicate a potential expansion of the Australian cocaine market."[17]

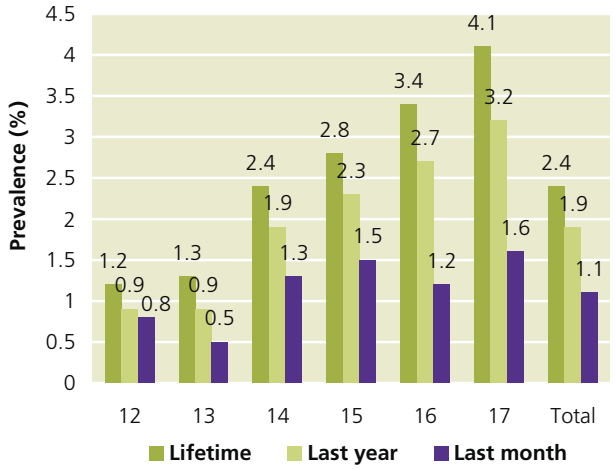
There are indications that this rise did not continue, however. Cocaine use among students has shown a decline in recent years. In 2008, among the 12-17 year old students, the lifetime prevalence of cocaine use was reported at 2.4%, while the past month prevalence was 1.1%. Among the students who participated in the

16 Yueying, L., Wing, D. and Fai, J., *Study of Cocaine Abuse in Hong Kong*, Report to the Narcotics Division, Department of Applied Social Studies, City University of Hong Kong, November 2008.

17 Australian Crime Commission, *Illicit Drug Data Report 2008-2009* June 2010.

Fig. 66: Australia: Cocaine use among secondary school students, 2008

Source: Australian secondary school students' use of tobacco, alcohol, and over the counter and illicit substances in 2008.



survey, cocaine use across all time periods, that is, lifetime, last year and past month use, increased by age and was highest among the 17-year-old students.[18]

Lifetime prevalence of cocaine use among 12-15-year -old students in Australia decreased significantly between 2002 and 2008 as well as between 2002 and 2005. The past month prevalence among this group was lower in 2008, but this was not statistically significant. The lifetime and past month prevalence among 16-17-year-old students has been at similar levels and has not significantly decreased over the three survey periods.[19]

In 2008, among the detainees tested for drug use in Australia, cocaine was found in 1% of urinalysis results. Male detainees were more likely to test positive, while the highest rates of positive urinalysis was among detainees aged 21 and 35 years. The prevalence of cocaine use among the detainees tested for drug use has remained consistently low over the previous years[20] which is in contrast to the high prevalence of cocaine use among the general population. Similarly, among the injecting drug users, relatively small proportions (2%-3%) have reported cocaine as the last drug injected,[21] while cocaine accounted for less than 1% of the total treatment demand in 2007-2008.[22] This also indicates that cocaine use in Australia remains more common among the socially integrated groups of mostly recreational users.

Table 19: Trends in cocaine use among secondary school students in Australia, 2002, 2005 and 2008

* Significantly different from 2008 at p <.01.

Source: Australian secondary school students' use of tobacco, alcohol, and over the counter and illicit substances in 2008.

	12-15 years		
	2002	2005	2008
Lifetime	3*	2.6*	1.9
Past month	1.4	1.4	1
	16-17 years		
	2002	2005	2008
Lifetime	3.6	3.5	3.7
Past month	1.1	1.1	1.4
	12-17 years		
	2002	2005	2008
Lifetime	3.1*	2.9	2.4
Past month	1.3	1.3	1.1

The latest information on cocaine use from New Zealand dates back to 2008, when it was estimated that 0.6% (range 0.3% - 0.8%) of the population aged 16-64 had used cocaine in the year prior to the survey. The highest annual prevalence of cocaine use (1.8%) was found among youth aged 25-34.[23] As reported by New Zealand, experts perceive cocaine use to have been stable over the past couple of years.

For the remaining parts of Oceania, there is no recent or reliable information on the extent or pattern of cocaine use.

18 White V. and Smith G., *Australian secondary school students' use of tobacco, alcohol, and over the counter and illicit substances in 2008*, Drugs Strategy Branch, Australian Department of Health and Ageing.

19 Ibid.

20 Gaffney A., Jones W., Seeney J. amd Payne J., *Drug Use monitoring in Australia:2008 annual report on drug use among police detainees,* Monitoring Reports 09, Australian Institute of Criminology.

21 National Centre in HIV Epidemiology and Clinical Research, *Australian NSP Survey National Data Report 2005-2009*, National Centre in HIV Epidemiology and Clinical Research, The University of New South Wales, Sydney, 2010.

22 UNODC ARQ.

23 Drug use in New Zealand, *Key Results 2007/08 New Zealand Alcohol and Drug Use Survey*, Ministry of Health, 2010.

3.3 Production

Cultivation

The global coca cultivation estimate for 2010 is based on the 2009 figures for the Plurinational State of Bolivia and the 2010 figures for Colombia and Peru. The 2010 coca cultivation figure for Bolivia was not yet available at the time of printing of this report.

In 2010, the global area under coca cultivation decreased by 6%, mainly due to a significant reduction in Colombia which was not entirely offset by a small increase in Peru. The reduction of the global area under coca cultivation since 2007 has been driven by significant decreases in Colombia, which have been only partially offset by increases in the Plurinational State of Bolivia and Peru over the same period.

A major difference between coca and other narcotic plants such as opium poppy and cannabis is that the coca bush is a perennial plant which can be harvested several times per year. This longevity of the coca plant should, in principle, make it easier to measure the area under coca cultivation. In reality, the area under coca cultivation is dynamic, changes all the time and it is difficult to determine the exact amount of land under coca cultivation at any specific point in time or within a given year. There are several reasons why coca cultivation is dynamic: new plantation, abandonment of fields, reactivation of previously abandoned fields, manual eradication and aerial spraying. There are different methods to measure the area under coca cultivation which can be affected by some or all of these factors. From a government's perspective, it may be desirable to monitor illicit cultivation in a given year by measuring all coca fields, irrespective of whether they were being used for the whole year or only part of it (gross cultivation area). For estimating potential coca leaf and cocaine production, however, it is necessary to measure the *productive* area. This can only be done by determining the period in the year that the coca fields were productive before being, for example, eradicated or abandoned (net productive area). The area under cultivation at a specific cut-off date may be chosen for other reasons, for example, to monitor the effect of law enforcement activities implemented in a specific period (net area under cultivation at date x).

The national monitoring systems supported by UNODC currently in place in the Plurinational State of Bolivia, Colombia and Peru have developed different ways of tackling the challenge of measuring the dynamics of coca cultivation, depending on specific country factors, the availability of auxiliary information on eradication, as well as practical and financial considerations. While this approach helps to adjust the monitoring systems to the specificities of each country, it also limits the comparability of the area under cultivation across countries.

Table 20: Global illicit cultivation of coca bush, 1999-2010

Source: Bolivia: 2002 and before: CICAD and US Department of State, INCSR. Since 2003: National monitoring system supported by UNODC. Colombia: National Illicit Crop Monitoring System supported by UNODC. Peru: 1999: CICAD and US Department of State, INCSR; since 2000: National Illicit Crop Monitoring System supported by UNODC.

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Bolivia	21,800	14,600	19,900	21,600	23,600	27,700	25,400	27,500	28,900	30,500	30,900	(30,900)*
Colombia[a]	160,100	163,300	144,800	102,000	86,000	80,000	86,000	78,000	99,000	81,000	68,000	57,000
Colombia[b]											73,000	62,000
Peru	38,700	43,400	46,200	46,700	44,200	50,300	48,200	51,400	53,700	56,100	59,900	61,200
Total	**220,600**	**221,300**	**210,900**	**170,300**	**153,800**	**158,000**	**159,600**	**156,900**	**181,600**	**167,600**	**158,800***	**149,100***

* The figure for Bolivia was not available at the time of printing of this report. Total area under coca cultivation in 2010 is based on the 2009 figure for Bolivia and will be revised once the 2010 figure becomes available. For Colombia, the series without adjustment for small fields was used to keep comparability.

[a] Area without adjustment for small fields.

[b] Area with adjustment for small fields.

Table 21: Reported cumulative eradication of coca bush (ha), 1996-2010

Sources: Governments of Colombia, Peru, the Plurinational State of Bolivia, Ecuador and the Bolivarian Republic of Venezuela.

		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Bolivia*	manual	7,512	7,000	11,620	15,353	7,653	9,395	11,839	10,089	8,437	6,073	5,070	6,269	5,484	6,341	8,200
Colombia	manual	4,057	2,262	3,126	1,046	3,495	1,745	2,762	4,219	6,234	31,980	43,051	66,805	95,634	60,544	43,792
	spraying	18,519	41,861	66,029	43,112	58,073	94,153	130,364	132,817	136,552	138,775	172,026	153,134	133,496	104,771	101,939
Peru**	manual	1,259	3,462	7,834	14,733	6,208	6,436	7,134	11,312	10,399	12,237	12,688	12,072	10,143	10,025	12,253
Ecuador	manual									4	18	9	12	12	6	
Venezuela	manual	18	0	0	0	38	47	0	0	118	40	0	0	0	0	

* Bolivia: Since 2006, voluntary and forced eradication.
** Peru: includes voluntary and forced eradication.

Since 1999, when the first coca cultivation survey started as a joint activity between UNODC and the Government of Colombia, the attention of experts has shifted from being primarily concerned with the area under coca cultivation to getting a better understanding of how much cocaine is being produced. This is partly due to more appreciation of the fact that eradication, whether carried out manually or by aerial spraying, does not necessarily translate into a corresponding reduction of the coca area. The impact of eradication carried out between date A and date B may or may not be seen by comparing the area under coca at these two points in time but it will certainly be noticeable in the coca yield as farmers lose harvests or have to replant their fields. Eradication has evolved from a tool to reduce the area under coca to one component of a complex counter-narcotics intervention system, geared towards reducing the productivity of the cocaine production chain from coca leaf to cocaine HCl at different levels.

Such a reduction in yield and production is captured by the *productive area* approach, where each hectare under coca cultivation is considered for the number of months the field is actually productive. For estimating cocaine production, the productive area approach seems to be the most appropriate but it is also the most demanding in terms of data requirements. Currently, the monitoring systems used in the three coca cultivating countries contain elements of both approaches, net area and productive area. In the Plurinational State of Bolivia and Peru, the area estimated from satellite imagery represents the average coca cultivation situation in the second half of the year, and it is used directly to estimate production. In Colombia, where a cut-off date at the end of the year is used for the area estimation, additional information is used to model the total productive area that contributes to the production of coca leaf and cocaine.

Efforts are being made in all three countries to improve the cocaine production estimates and the concepts of the net area and the productive area - detailed below - are an important part of that process.

Colombia

In 2010, the area under coca cultivation in Colombia decreased significantly, by 15%. Cultivation of coca bush decreased in all major growing regions of the country. The Pacific region remained the region with the largest coca cultivation, representing 42% (25,680 ha) of the national total, followed by the Central (25% or 15,310 ha) and Meta-Guaviare regions (14% or 8,710 ha).[1]

Table 22: Approaches to measure coca cultivation (ha), 2010

	Net cultivation on 31 Dec 2010	Productive coca area 2010
Bolivia	n.a.	30,900*
Colombia[(a)]	57,000 [(a)] / 62,000 [(b)]	62,000-77,000 [(b)]
Peru	n.a.	61,200
Total	**n.a.**	**154,100-169,100**

* The 2010 figure for Bolivia was not available at the time of printing of this report. Total area under coca cultivation in 2010 is based on the 2009 figure for Bolivia and will be revised once the 2010 figure becomes available.

(a) Area without adjustment for small fields.

(b) Area with adjustment for small fields.

Since the first coca cultivation survey implemented by the national monitoring system supported by UNODC, the average size of coca fields has decreased from around 2 ha in 1999 to about 0.7 ha - 0.9 ha since 2006. An increasing proportion of coca was cultivated on small fields. This raised concerns because the type of satellite imagery used to detect coca fields in Colombia works best for field sizes over 0.25 ha and is not suitable for identifying very small fields.

Thus, a study using very high resolution imagery was conducted to determine the proportion of coca grown on fields below the 0.25 ha threshold. Based on this

1 All figures in this paragraph refer to the area adjusted for small fields.

Table 23: Colombia, adjustment of coca area for small fields, 2009-2010 (ha)

Source: National monitoring system supported by UNODC.

	2009	2010	Change from 2009
Without adjustment for small fields	68,000	57,000	-16%
With adjustment for small fields	73,000	62,000	-15%

study, an adjustment factor for small fields was introduced. This adjustment allows for the inclusion of coca cultivated fields that are smaller than the detectable threshold, and thereby improves the accuracy of the coca area estimate in Colombia.

In 2010, the area under coca cultivation was estimated at 57,000 ha without the adjustment for small fields. This was corrected to 62,000 ha after including the small field factor. To facilitate a comparison with 2009, the 2009 figure was also corrected, from 68,000 ha without to 73,000 ha with the adjustment for small fields.

Peru

In Peru, in 2010, the area under coca cultivation amounted to 61,200 ha, a 2% increase (+1,300 ha) on 2009, indicating an overall stable situation. However, the coca-growing regions showed diverging cultivation trends. Upper Huallaga, the largest growing region in recent years, experienced a strong decline of almost 4,500 ha due to intense eradication. In Apurímac-Ene, the second largest growing region until 2009, a significant increase in the area under coca of more than 2,200 ha was registered, and with 19,700 ha, it became the largest growing region in 2010.

Other growing regions such as Palcazú-Pichis-Pachitea (+59%) as well as Marañon, Putumayo and some smaller growing areas in the Amazon basin grew dramatically (+90%) and contributed to the overall increase.

Some smaller growing regions such as Aguatiya and Inambari-Tambopata, which have experienced a significant increase in the area under coca in recent years, remained relatively stable in 2010.

Production

Due to the ongoing review of conversion factors, no point estimate of the level of cocaine production can be provided for 2009 and 2010. Because of uncertainties about the level of total potential cocaine production and about the comparability of the estimates between countries, the 2009 and 2010 figures were estimated as ranges (842-1,111 mt and 786-1,054 mt, respectively).[2]

High levels of cocaine seizures worldwide support the hypothesis that global cocaine production could be at a much higher level than previously estimated, mainly because traffickers have found ways to improve the efficiency of clandestine laboratories in extracting cocaine alkaloids from coca leaves. The lack of precise measurements of laboratory efficiency in the different countries increases the level of uncertainty, but does not affect the trend, which shows a clear decline in global cocaine production since 2007. A recent study (PRELAC) conducted jointly by UNODC and Governments of the coca cultivation countries confirmed that laboratory efficiency had improved and indicated that traffickers in the Plurinational State of Bolivia and Peru may have already reached efficiency levels comparable to Colombia.[3] Thus, in other parts of this Report, the upper end of the global cocaine production range has been used. This, despite the uncertainty associated with the estimate, is considered to be a better approximation of reality.

Peru

Cocaine production in Peru has been going up since 2005 due to an increase in the area under coca cultivation. It is necessary, however, to add a caveat. Coca leaf yields in Colombia have been regularly studied and updated since 2005, and part of the decline in Colombian cocaine production is due to declining yields. In Peru, on the other hand, information on coca leaf yields dates back to 2004, and for some of the smaller cultivating regions, which experienced significant increases in the area under coca, no information on region-specific coca leaf yields is available. There are additional challenges involved in estimating the yield of new or reactivated coca fields as opposed to mature, well-maintained ones, as well as the effects of continued eradication pressure. As noted above, there are indications that the level of cocaine production in Peru could be higher than previously estimated due to improvements in laboratory efficiency, but more research is needed to improve the cocaine estimate for the country.

Colombia

Cocaine production in Colombia decreased to 350 mt in 2010. The drop since 2005 is the result of a decrease in the area under coca cultivation and a reduction of

2 More information on the review of conversion ratios is available in the Methodology chapter of this Report and in the *World Drug Report 2010* (p. 249 ff.).

3 PRELAC ('Prevention of the Diversion of Drugs Precursors in the Latin American and Caribbean Region') is a project financed by the European Commission and implemented by UNODC and Governments in Latin America and the Caribbean. Within this framework, several studies analysed coca leaf to cocaine conversion methods . For more information see http://www.prelac.org.

coca leaf yields. There are also indications of structural changes in the way the processing of coca leaves is organized. Unlike in the Plurinational State of Bolivia and Peru, where farmers sun-dry the coca leaves to increase their shelf life and facilitate transport, in Colombia, farmers typically process the fresh leaves into coca paste or cocaine base immediately after harvest. In 2005, only 24% of the coca leaf produced in that year was sold as fresh leaf, whereas in 2009, this proportion had almost doubled and reached 45%. Expressed in absolute terms, in 2005, farmers sold about 133,000 mt of fresh coca leaf to intermediaries, whereas in 2009, the same figures amounted to almost 155,000 mt, an increase by 16%. This increase is even more remarkable when considering that it happened despite an overall decline in coca leaf production in Colombia over this period.

Studies show that farmers can increase their profit when processing coca leaf into coca paste and/or cocaine base rather than selling it. What could lead farmers to stop processing coca leaves themselves and sell them instead?

A study on cocaine precursors conducted in 2009/2010 (PRELAC) in South America and additional studies by UNODC and the Government revealed that in Colom-

Table 24: Global production of coca leaf and cocaine HCl (mt), 2005-2010

Source: Governments of Colombia, Peru and the Plurinational State of Bolivia.

	2005	2006	2007	2008	2009	2010
POTENTIAL PRODUCTION OF SUN-DRIED COCA LEAF IN METRIC TONS						
Bolivia	28,200	33,200	36,400	39,400	40,200	n.a.
Range			*34,200-38,300*	*37,300-41,800*	*37,900-42,500*	n.a.
Peru	97,000	105,100	107,800	113,300	119,000	120,500
Range	*85,400-108,600*	*91,000-119,200*	*93,200-122,000*	*97,600-127,800*	*102,400-134,200*	*103,000-136,300*

Source: Bolivia: Potential sun-dry coca leaf production available for cocaine production, National Illicit Crop Monitoring System supported by UNODC. Leaf yield source: UNODC (Yungas de Paz), Chapare (DEA scientific studies). The estimated amount of coca leaf produced on 12,000 ha in the Yungas of La Paz where coca cultivation is authorized under national law, was deducted. Range: Upper and lower bound of the 95% confidence interval of coca leaf yield estimate.
Peru: Potential sun-dried coca leaf production available for cocaine production, estimated by the National Illicit Crop Monitoring System supported by UNODC. 9,000 mt of sun-dry coca leaf were deducted, which, according to Government sources, is the amount used for traditional purposes. Range: Upper and lower bound of the 95% confidence interval of coca leaf yield estimate.

POTENTIAL PRODUCTION OF FRESH COCA LEAF IN METRIC TONS						
Colombia	*555,400*	*528,300*	*525,300*	*389,600*	*343,600*	305,300
Range						*305,300-349,600*
POTENTIAL PRODUCTION OF COCA LEAF IN OVEN-DRIED EQUIVALENT IN METRIC TONS						
Colombia	*164,280*	*154,130*	*154,000*	*116,900*	*103,100*	91,600
Range						*91,600-104,880*

Source: National monitoring system supported by UNODC. National Illicit Crop Monitoring System supported by UNODC.
Due to the introduction of an adjustment factor for small fields, 2010 estimates are not directly comparable with previous years.

The ranges express the uncertainty associated with the estimates. In the case of Bolivia and Peru, the ranges are based on confidence intervals and the best estimate is the mid-point between the upper and lower bound of the range. In the case of Colombia, the range represents the two approaches taken to calculate the productive area, with the lower bound being closer to the estimation used in previous years. The methodology to calculate uncertainty ranges for production estimates is still under development and figures may be revised when more information becomes available.

POTENTIAL MANUFACTURE OF 100% PURE COCAINE IN METRIC TONS						
Bolivia	80	94	*104*	*113*	n.a.	n.a.
Colombia	680	660	630	450	410	350
Range						*350-400*
Peru	*260*	*280*	*290*	*302*	n.a.	n.a.
Total	***1,020***	***1,034***	***1,024***	***865***	*	*

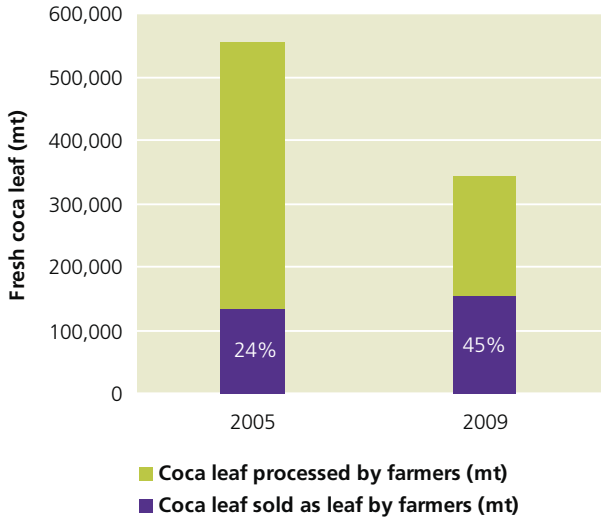
* Due to the ongoing review of conversion factors, no point estimate of the level of cocaine production could be provided for 2009 and 2010. Because of the uncertainty about the level of total potential cocaine production and about the comparability of the estimates between countries, the 2009 and 2010 figures were estimated as ranges (842-1,111 mt and 786-1,054 mt, respectively).

Source: Bolivia: UNODC calculations based on UNODC (Yungas of La Paz) and DEA scientific studies (Chapare) coca leaf yield surveys. Colombia: National Illicit Crop Monitoring System supported by UNODC and DEA scientific studies. Due to the introduction of an adjustment factor for small fields, 2010 estimates are not directly comparable with previous years. Peru: UNODC calculations based on coca leaf to cocaine conversion ratio from DEA scientific studies.
Detailed information on the ongoing revision of conversion ratios and cocaine laboratory efficiency is available in the World Drug Report 2010 (p. 249).

Figures in italics are being reviewed. Information on estimation methodologies and definitions can be found in the Methodology chapter of this Report.

Fig. 67: Colombia: Fresh coca leaf production (mt), 2005 and 2009

Source: UNODC/Government of Colombia, Coca cultivation surveys 2005 and 2009.



bia, quality differences in the coca paste and cocaine base provided by coca farmers reportedly became a problem for clandestine cocaine laboratories in recent years. A strategy employed by traffickers to obtain cocaine base of better or more homogeneous quality could be to try to execute more control over the cocaine alkaloid extraction process. Skilled 'cooks' with better know-how, equipment and precursor chemicals may be in a better position than farmers to produce cocaine base with the sought-after properties. It is not yet known how the purchasing of coca leaf from farmers is organized and who the actors are. Neither is sufficient information available on the chemical properties of coca paste or cocaine base produced in Colombia to verify this hypothesis.

What could have caused the apparent quality differences in the cocaine base produced by farmers?

Since 2005, probably due to increased counter-narcotics pressure, the per-hectare yields of coca fields went down in many growing regions of Colombia and there is a tendency towards smaller fields. This may make the assembly of amounts of coca leaves large enough for cocaine processing more difficult at the farm level. As coca leaf is not sun-dried in Colombia, storing the leaves until a sufficient amount is accumulated is not an option, as fresh coca leaves deteriorate rapidly in quality. An additional reason might be that, in 2009, it was more risky for farmers to engage in coca-processing in areas where the Government has increased its presence compared to 2005. Selling coca leaf rather than keeping processing chemicals and equipment on the farm may be part of a risk-aversion strategy employed by farmers.

On the other hand, field reports indicate the strong link between armed groups and coca cultivation and cocaine production. Thus, farmers may also have changed their sales strategy because of pressure from these groups.

Another measure taken by traffickers was the introduction of a previously unknown process called re-oxidation of cocaine base. This process is apparently an additional step used to homogenize and improve the quality of cocaine base of different quality received from different sources and geographic areas by using potassium permanganate. According to the information available, re-oxidation is linked to clandestine laboratories producing cocaine HCl, called 'cristalizaderos' in Colombia, which presumably have a wide geographic area from where they source cocaine base. The introduction of this process into the clandestine cocaine production chain suggests that differences in the quality of cocaine base provided by farmers, and maybe partly also the low quality provided, indeed became a problem for traffickers producing cocaine HCl in recent years in Colombia.

Plurinational State of Bolivia

It can be assumed that, following the trend in cultivation, cocaine production in Bolivia increased between 2005 and 2009. 2010 figures were not available at the time of printing of this Report. There are indications that since about 2007, clandestine laboratories in Bolivia have benefited from a transfer of know-how from Colombia. Laboratories using the 'Colombian' method are much more efficient in extracting cocaine from coca leaves. More research is needed to better understand the current efficiency of clandestine laboratories in Bolivia.

Clandestine processing installations

In 2009, as in previous years, the extraction of cocaine alkaloids and manufacture of cocaine HCl remained geographically concentrated in South America. The illicit extraction of cocaine alkaloids from coca leaves takes place exclusively in the three countries cultivating coca bush, namely, the Plurinational State of Bolivia, Colombia and Peru. In 2009, the destruction of 8,691 installations involved in the production of coca paste or base was reported. This figure does not include the destruction of maceration pits, a typical feature of coca paste production in the Plurinational State of Bolivia and Peru.

Coca leaf: fresh – sun-dried – oven-dried

In this report, coca leaf production is presented in different ways: as fresh coca leaf, as sun-dried coca leaf and as coca leaf in oven-dried equivalents.

There are two main reasons. First, coca leaf is processed or traded in Colombia as fresh coca leaf, immediately after the harvest, whereas in Peru and the Plurinational State of Bolivia, farmers dry the fresh coca leaf before selling, by spreading the leaves on the ground and exposing them to air. The result is coca leaf with a much reduced moisture, which makes transport easier and allows storage of the leaves. Sun-dried leaves are also referred to as air-dried leaf.

The second reason is that the moisture content of both fresh and sun-dried coca leaf varies considerably, depending on the biological properties of the leaf as well as environmental factors such as the humidity of the air. A fresh coca leaf harvested in the early morning, for example, will have a different moisture content than leaves from the same bush plucked at noon. Coca leaves sun-dried after a heavy rainfall at a low altitude will have a different moisture content than leaves sun-dried in the dry season at a high altitude.

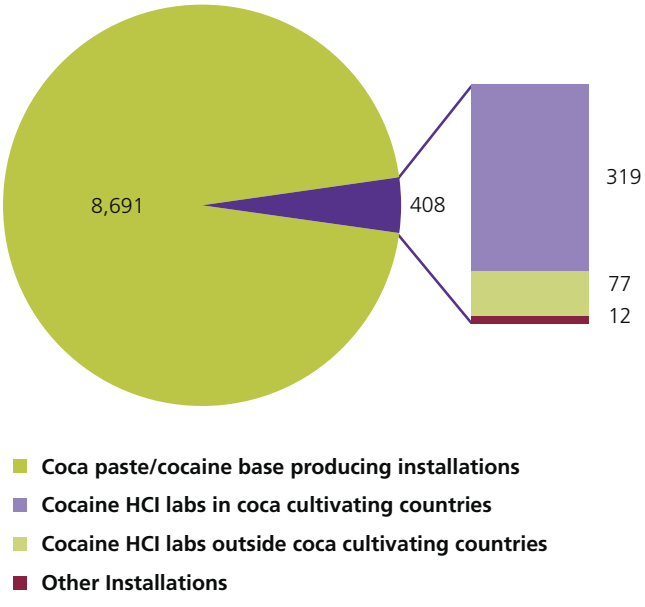
While differences may not matter much to farmers selling coca leaves, it matters from a scientific point of view, when comparing coca leaf production in different countries and estimating how much cocaine can potentially be extracted from the leaves. In other words, scientists are interested in how much dry plant matter is in the leaves, and which proportion of that dry matter consists of cocaine alkaloids. The water content of the leaves is not of interest in that context and has to be taken out of the calculation.

Like other live plant material, fresh coca leaves consist mainly of water (~70%). A kilogram of fresh coca leaves would typically lose over half of its weight through sun-drying. Even sun-dried leaves contain residual moisture. When drying in a laboratory oven to remove all moisture from the leaves, sun-dried coca leaves would still lose another third of their weight. In other words, a kilogram of fresh coca leaves weighs only about 300 grams after leaving the drying chamber, which is the weight of dry plant matter. Only a tiny proportion (around 0.5%) of that plant matter is actually cocaine.

Thus, when comparing coca leaf production, the weight in oven-dried coca leaf equivalent is the most appropriate. However, currently, not enough information on the moisture content of coca leaf in different regions of coca cultivating countries is available. Therefore, a direct comparison between fresh coca leaf in Colombia and sun-dried coca leaf in the Plurinational State of Bolivia and Peru by converting all figures into oven-dry equivalents is therefore not possible.

Fig. 68: Seizures of clandestine installations processing coca/cocaine, 2009

Source: UNODC ARQ.



In addition to coca paste or cocaine base processing installations, countries reported the destruction of 396 cocaine HCl production laboratories in 2009, 319 or 81% of which were located in coca cultivating countries. This confirms reports from previous years that most of the cocaine base produced in coca cultivating countries is converted into cocaine HCl in the same countries.

There are indications of some cross-border trafficking of cocaine base for further processing in other countries in the region: Argentina (36 laboratories), Ecuador (10) and the Bolivarian Republic of Venezuela (26) all reported destruction of cocaine producing facilities. Often reports did not to specify if the installations detected were involved in producing cocaine base or HCl. It is assumed that most installations reported as being cocaine-producing were producing cocaine HCl, not cocaine base. Only a few installations involved in cocaine base or HCl manufacture were reported outside Latin America, for example, in Mexico (4) and Spain (1).

Spain also reported the detection of clandestine installations involved in secondary extraction of cocaine.

Cocaine is sometimes dissolved in other substances to prevent detection. Traffickers use secondary extraction laboratories to revert that process and recover the cocaine. Most of the clandestine installations detected in Spain in 2008 and 2009 were involved in secondary extraction (24 in 2008 and 11 in 2009). Greece also reported detection of clandestine installations involved in cocaine processing. These installations were involved in repackaging and adulterating cocaine. One installation handled only cocaine and four more were also handling heroin (reported under 'heroin').

More information on the detection of clandestine secondary extraction installations and repackaging and adulteration sites from other countries would be useful to understand potential changes in trafficking strategies. It would also indicate the development of trafficking hubs.

3.4 Trafficking

Global seizures of cocaine, including cocaine salts, cocaine base and crack-cocaine, increased strongly between 2000 and 2005 and were then generally stable over the 2006-2009 period, ranging between a minimum of 690 mt in 2007 and a maximum of 732 mt in 2009. Since 2006, seizures have shifted towards the source area of South America away from the consumer markets of North America and West and Central Europe, reflecting better international cooperation and exchange of information. South America accounted for a total of 317 mt in 2006 (44% of the global total for that year) and 442 mt in 2009 (60% of the global total). Over the same period, seizures declined by almost one third in North America (from 194 mt in 2006 to 132 mt in 2009) and by more than one half in West and Central Europe (from 121 mt in 2006 to 55 mt in 2009).

Slightly more than 60% of cocaine seizures in 2009 took place in South America. North America accounted for 18% and Europe for 8% of the total. Seizures outside the Americas and Europe accounted for just 0.3% of the total.

Fig. 69: Global cocaine seizures (mt), 1999-2009

Source: UNODC DELTA.

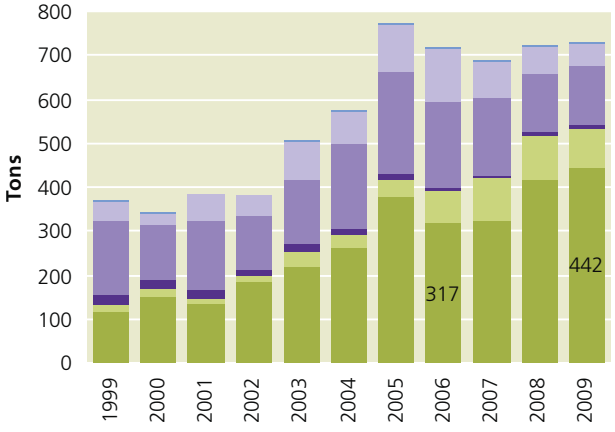
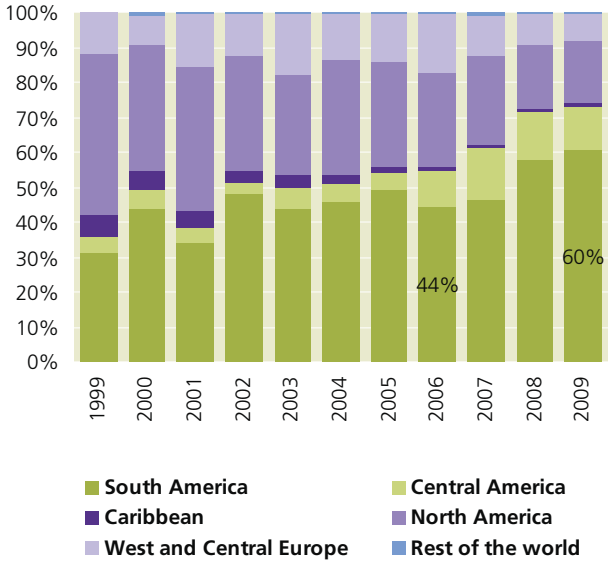


Fig. 70: Distribution of global cocaine seizures, 1999-2009

Source: UNODC DELTA.



The three main markets for cocaine – in volume terms - are North America, notably the United States of America, followed by Europe, notably the EU and EFTA countries, and South America.

The US authorities have estimated for the last couple of years that some 90% of the cocaine consumed in North America comes from Colombia,[1] supplemented by some cocaine from Peru and limited amounts from the Plurinational State of Bolivia. For the year 2009, results of the US Cocaine Signature Program, based on an analysis of approximately 3,000 cocaine HCl samples, revealed that 95.5% originated in Colombia[2] (down from 99% in 2002[3]) and 1.7% in Peru; for the rest (2.8%), the origin could not be determined. The trafficking of cocaine into the United States is nowadays largely controlled by various Mexican drug cartels, while until the mid-1990s, large Colombian cartels dominated these operations.

The origin of cocaine consumed in Europe seems to be more evenly distributed. In terms of cocaine seizure

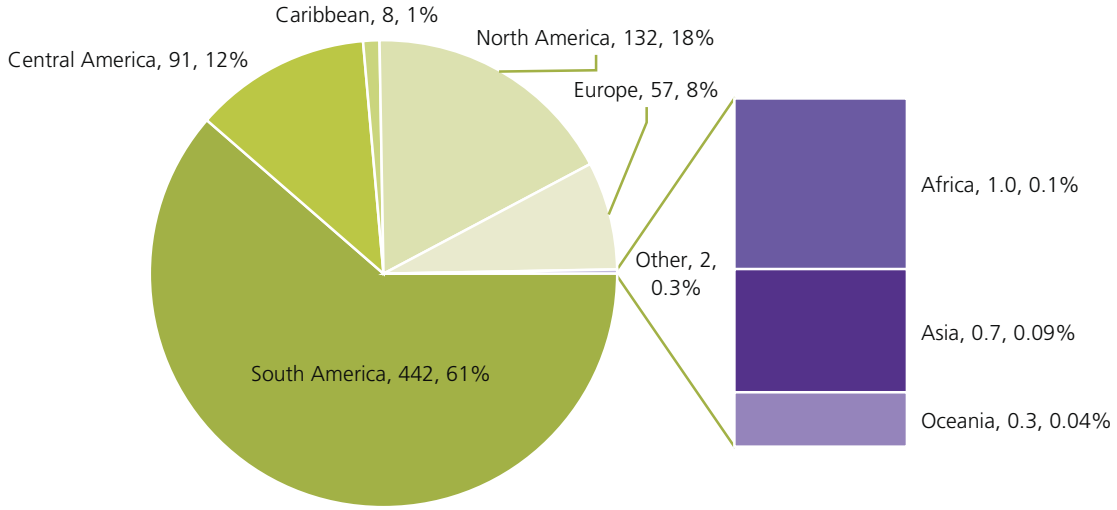
1 US Department of State, *2011 International Narcotics Control Strategy Report*, Washington D.C., 2011.

2 US Department of Justice, Drug Enforcement Administration, Special Testing and Research Laboratory, *Cocaine Signature Program Report,* January 2010, quoted in Inter-American Drug Abuse Control Commission (CICAD), DEA Special Testing and Research Laboratory and DEA Intelligence Division Briefing, OEA/Ser.L/XIV.2.47, CICAD/doc.1802/10, 3 May 2010.

3 US Department of Justice, Drug Enforcement Administration, Selected Intelligence Brief, 'Cocaine Signature Program Report,' January 2003, *Microgram Bulletin*, Vol. XXXVI, February 2003.

Fig. 71: Distribution of global cocaine seizures by region, 2009

Source: UNODC ARQ.



cases, cocaine from Colombia accounted for 8% of the cocaine seized in Europe over the 2008-2010 period, Peru for 7% and the Plurinational State of Bolivia for 5% (based on information from 13 European countries).[4] The rest (80%) can only be traced back to various transit countries in the Americas (notably Argentina, the Dominican Republic, Brazil, Costa Rica, Panama, Ecuador and Paraguay), Africa (notably Senegal, Mali, Guinea and Nigeria) and Europe (notably Spain, the Netherlands and Portugal).

The importance of Colombia is more pronounced in terms of the origin of the quantities of cocaine seized in Europe. Cocaine from Colombia accounted for 25% of all cocaine seizures in volume terms in Europe over the 2008-2010 period, Peru for 6% and the Plurinational State of Bolivia for 2%. If cocaine that could be traced back to the Bolivarian Republic of Venezuela, Ecuador and Panama were added to the cocaine from Colombia, the 'Colombia-linked' cocaine seizures in Europe would rise to 69% of the total (2008-2010 period).[5]

Cocaine produced in Colombia is mainly destined for consumption in overseas markets. Cocaine produced in Peru and the Plurinational State of Bolivia, in contrast, is used more within South America, notably in countries of the Southern Cone. Even though cocaine produced in Peru seems to be playing a growing role in Europe, the criminal groups organizing the trafficking from South America to Europe are still primarily Colombian (notably for trafficking operations targeting Spain, the main entry point of cocaine into Europe) and – to a lesser extent - from other Latin American countries and from various African and European countries. The influence of the Mexican drug cartels, which dominate cocaine sales to the United States, seems to be limited when it comes to trafficking to Europe or trafficking to countries in South America.

The global seizure total of 732 mt in 2009 refers to cocaine seizures as reported, that is, unadjusted for purity. Although precise purity adjustments at the level of individual countries are not feasible with the current available data, a range can be calculated for global purity-adjusted seizures of cocaine.[6] By expressing this quantity as a percentage of the global supply of cocaine, one obtains the interception rate. In order to account for the time lag incurred between cultivation and trafficking, one may consider the average production in the preceding two years (2007 and 2008) as a proxy for global supply. This calculation yields a range of 46%-60% for the interception rate. However, this range should be interpreted with caution, as it depends on the current estimates of cocaine production, which are currently being reviewed.

Americas

In 2008 and 2009, the Americas accounted for more than 90% of global seizures of cocaine, with seizures amounting to 656 mt in 2008 and 673 mt in 2009. The largest seizures continued to be made by Colombia and the United States. Large quantities of cocaine continue to be trafficked from South America to the United States, with Mexico being the key transit country. Over

4 Austria, Belgium, Bulgaria, France, Germany, Ireland, Poland, Portugal, Romania, Spain, Switzerland, Turkey and the United Kingdom.

5 UNODC, Individual Drug Seizures database.

6 Considering data for 2009 only, global estimates indicate a range of 431-562 mt. The upper end of the range is obtained by considering purities at wholesale level only, which accounts plausibly for the vast majority of seizures by weight, while the lower end is obtained using both retail and wholesale purities and assuming that the retail level accounts for no more than one half of seizures by weight.

Fig. 72: Cocaine seizures in the Americas, 1999-2009

Source: UNODC DELTA.

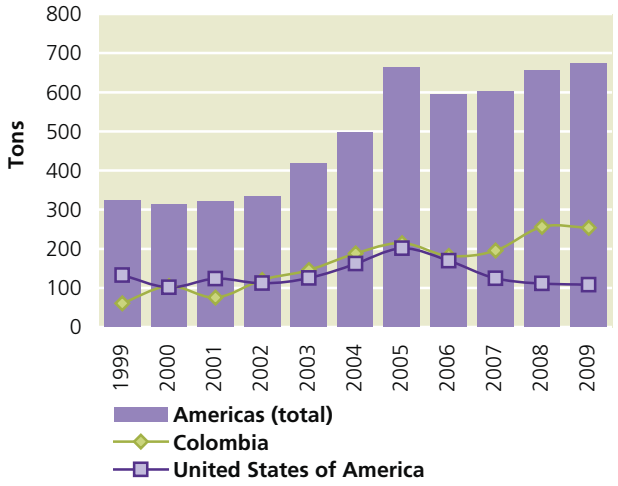
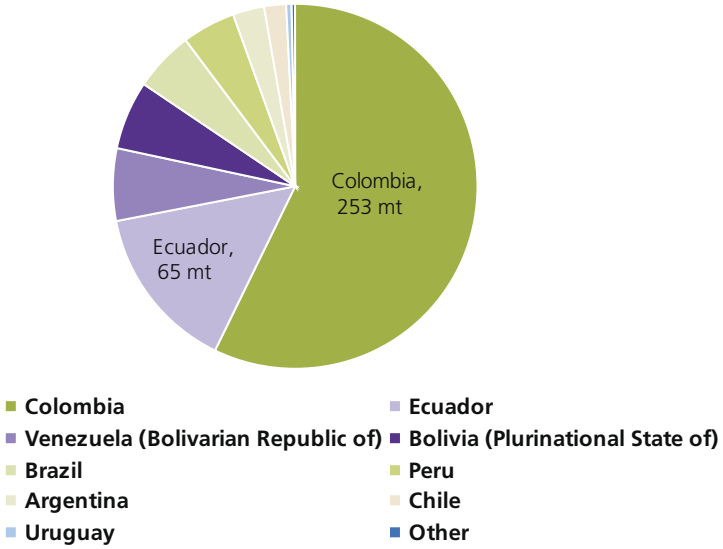


Fig. 73: Cocaine seizures in South America, by country, 2009

Source: UNODC DELTA.



the 2002-2006 period, Colombia and the United States seized similar quantities of cocaine; however, the seizure totals started to diverge in 2007, with Colombia seizing more than twice that seized in the US in 2008 and 2009. This can be attributed to intensified efforts by the Colombian authorities to fight cocaine trafficking and to improved international cooperation, notably with law enforcement authorities of key countries such as the United States, the United Kingdom and Spain

Every year from 2002 to 2009, Colombia registered the highest national cocaine seizure total worldwide. In 2009, seizures amounted to 253 mt,[7] essentially sustaining the record level of 2008 (256 mt). According to Colombian authorities,[8] in 2009, 48% of cocaine seizures in Colombia were made in territorial waters. Colombia also continued to seize large quantities of substances that may be used in the extraction and processing of naturally occurring alkaloids.[9]

It appears that Ecuador, which shares borders with both Colombia and Peru, may have acquired increased importance as a hub for cocaine trafficking. In 2009, seizures in Ecuador reached a record level of 65 mt,[10] the second highest level in South America. According to Ecuadorian authorities,[11] seizures of drugs and precursor chemicals by the Ecuadorian law enforcement agencies suggest that drug traffickers are increasingly seeking to use Ecuador for the stockpiling, storage and trans-shipment of vast quantities of cocaine. Cocaine is trafficked into Ecuador across the Colombia-Ecuador border, into the provinces of Esmeraldas, Carchi and Sucumbios, as well as across the Peru-Ecuador border, into the provinces of El Oro, Loja and Zamora Chinchipe,[12] and is then trafficked on to the consumer markets in North America and Europe. The country's more prominent role was also visible in reports of cocaine consignments seized in Europe involving Ecuador in the trafficking route, which rose from 6 seizure cases in 2005 (amounting to a total of 25 kg of cocaine) to 67 in 2009 (amounting to a total of 2.5 mt).

In the Bolivarian Republic of Venezuela, seizures peaked at 59 mt in 2005, and have fallen to approximately one half that level since then, amounting to 28 mt in 2009. According to preliminary data, this trend continued into 2010, with seizures falling to 20 mt.[13] The decrease was also reflected in reports of significant individual drug seizures made in Europe; considering reports from nine countries[14] which provided data on the provenance of

7 Data from the *Observatorio de Drogas de Colombia,* August 2010. Excludes seizures of 'basuco' (1.9 mt). The replies to the ARQ from Colombia for 2009 were not available at the time of preparation of the present report.

8 Presentation by Colombia to the Twentieth Meeting of Heads of National Drug Law Enforcement Agencies, Latin America and the Caribbean, Lima, Peru, 4-7 October 2010.

9 Country report by Colombia to the Twentieth Meeting of Heads of National Drug Law Enforcement Agencies, Latin America and the Caribbean, Lima, Peru, 4-7 October 2010.

10 Country report by Ecuador to the Twentieth Meeting of Heads of National Drug Law Enforcement Agencies, Latin America and the Caribbean, Lima, Peru, 4-7 October 2010. The replies to the ARQ from Ecuador for 2009 were not available at the time of preparation of the present report.

11 Country report by Ecuador to the Twentieth Meeting of Heads of National Drug Law Enforcement Agencies, Latin America and the Caribbean, Lima, Peru, 4-7 October 2010.

12 Presentation by Ecuador to the Twentieth Meeting of Heads of National Drug Law Enforcement Agencies, Latin America and the Caribbean, Lima, Peru, 4-7 October 2010.

13 Presentation by the Bolivarian Republic of Venezuela to the Twentieth Meeting of Heads of National Drug Law Enforcement Agencies, Latin America and the Caribbean, Lima, Peru, 4-7 October 2010.

14 Austria, Belgium, France, Germany, Ireland, Portugal, Romania,

Fig. 74: Cocaine seizures in Europe transiting selected countries in the Americas, by number of cases, 2005-2009

Source: UNODC IDS.

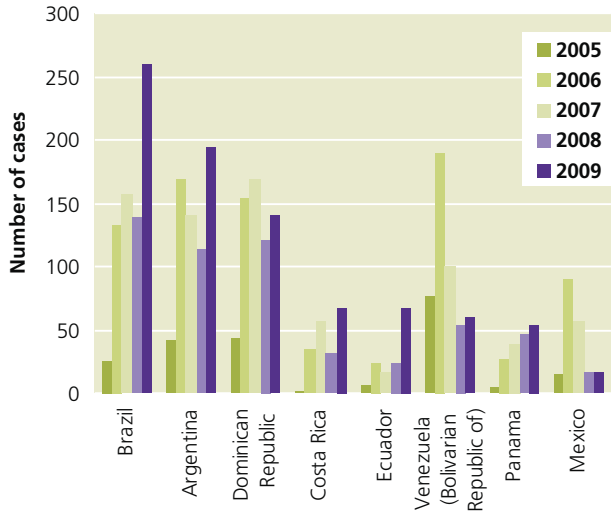
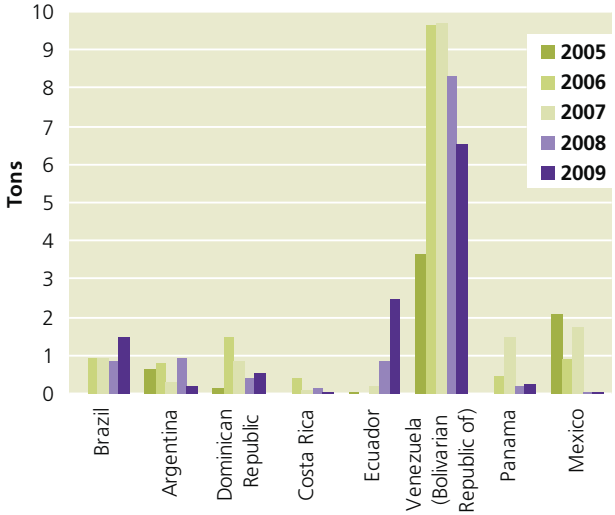


Fig. 75: Cocaine seizures in Europe transiting selected countries in the America, by quantity seized, 2005-2009

Source: UNODC IDS.



individual cocaine seizures in both 2006 and 2009, the number of seizures involving the Bolivarian Republic of Venezuela in the trafficking route fell from 151 (amounting to a total of 9.4 mt) in 2006 to 59 in 2009 (amounting to a total of 6.6 mt). Expressed as a proportion of the total cocaine seizures made in Europe (where information on provenance was included), these cases fell from 12% to 4% in terms of the number of seizures, but increased from 36% to 41% in terms of quantity.

In 2008, seizures of cocaine reached relatively high levels in both the Plurinational State of Bolivia and Peru, compared to previous years. Since then, seizures in Bolivia essentially sustained the high level, amounting to 27 mt in 2009 and 29 mt[15] in 2010, while seizures in Peru receded to 21 mt (from 28 mt in 2008) and rose back to 31 mt[16] in 2010. The Plurinational State of Bolivia assessed that, in 2009, more than 95% of cocaine trafficking on its territory occurred by land; moreover, according to Bolivian authorities,[17] cross-border trafficking occurred from Bolivia into Argentina, Brazil and Chile and also from Peru into Bolivia. In contrast, according to Peruvian authorities,[18] international trafficking organizations operating in Peru preferred maritime routes, with the ports of Callao, Chimbote and Paita being the main points of departure. A variety of other trafficking methods are also used in Peru, including land routes, rivers, couriers, postal services and flights from clandestine airfields.

In recent years, seizures of cocaine have also increased significantly in Brazil, going from 8 mt in 2004 to 24 mt in 2009, of which 1.6 mt were seized in five aircraft interceptions.[19] In 2009, Brazil was the most prominent transit country in the Americas - in terms of number of seizures - for cocaine consignments seized in Europe. The number of seizure cases which involved Brazil as a transit country rose from 25 in 2005 (amounting to 339 kg of cocaine) to 260 in 2009 (amounting to 1.5 mt).

According to the World Customs Organization, in 2009 the most important secondary distribution countries (apart from the Plurinational State of Bolivia, Colombia and Peru) were the Bolivarian Republic of Venezuela, Ecuador, Brazil and Argentina (ranked in order of the total weight of seized consignments departing from a given country).[20] With regard to cocaine reaching Europe, the World Customs Organization also noted the high quantity of cocaine arriving from Ecuador and the growing significance of Brazil and Suriname. With regard to cocaine reaching Africa, WCO noted that Brazil was the only South American country mentioned as a departure country for customs seizures made in Africa in 2009.

In Argentina, cocaine seizures rose steadily from 1.6 mt

Spain and Switzerland.

15 Preliminary data from the Government of the Plurinational State of Bolivia.

16 Preliminary data from the Government of Peru.

17 Presentation by the Plurinational State of Bolivia to the Twentieth Meeting of Heads of National Drug Law Enforcement Agencies, Latin America and the Caribbean, Lima, Peru, 4-7 October 2010.

18 Country report by Peru to the Twentieth Meeting of Heads of National Drug Law Enforcement Agencies, Latin America and the Caribbean, Lima, Peru, 4-7 October 2010.

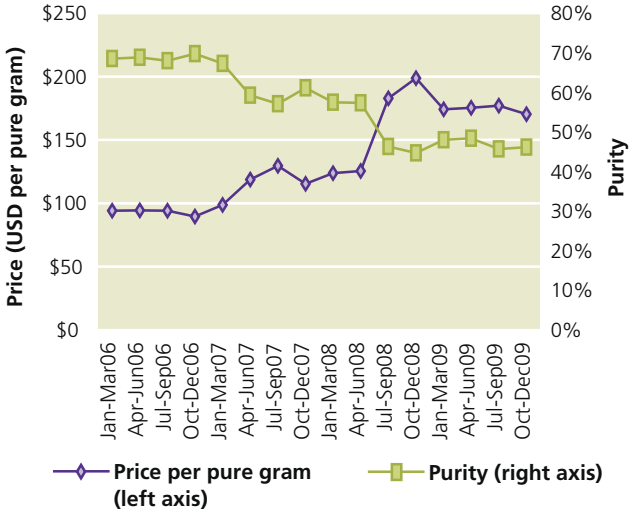
19 Presentation by Brazil to the Twentieth Meeting of Heads of National Drug Law Enforcement Agencies, Latin America and the Caribbean, Lima, Peru, 4-7 October 2010.

20 Based on seizures recorded in the Customs Enforcement Network database.

Fig. 76: Mean price and purity of all* cocaine purchases by law enforcement in the United States, 2006-2009

* The values represented here represent averages of all cocaine purchases, irrespective of the size of the transaction, and thus may correspond neither to wholesale nor to retail price levels. Although not collected as a representative sample of the US market, these data reflect the best information available on changes in cocaine price and purity in the US market.

Source: UNODC ARQ.



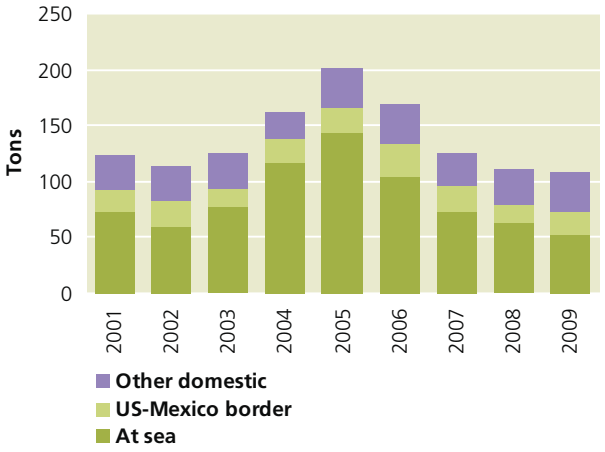
in 2002 to 12.1 mt in 2008, and in 2009 sustained the increased level, at 12.6 mt. Trafficking of cocaine from Argentina to Chile was reported by both countries in 2009; Argentina also assessed that, in 2009, some of the cocaine trafficked on its territory was intended for Europe, apart from Argentina itself. Seizures in Chile rose markedly in 2007, and have since then declined slightly, amounting to 8.4 mt in 2009. Argentina was also prominent - in terms of number of seizures - as a transit country for cocaine consignments seized in Europe, with 194 such cases reported in 2009. However, these seizures tended to be small in comparison with seizure cases transiting other countries, amounting to a total of 217 kg of cocaine.

Other prominent transit countries included countries in Central America and the Caribbean such as the Dominican Republic, Costa Rica and Panama. In 2009, seizures in Panama were the third largest in Latin America and the Caribbean (53 mt). The Dominican Republic assessed that, in 2009, 18% of cocaine trafficked on its territory was intended for Spain, with the majority intended for the United States. Although the seizures involving the Dominican Republic in Europe were not large in comparison with other transit countries, some large seizures were made in the Dominican Republic itself: five of the seizures in 2009 accounted for almost two thirds of the total seized in the country that year (4.7 mt). According to Costa Rican authorities,[21] in

21 Country report by Costa Rica to the Twentieth Meeting of Heads of National Drug Law Enforcement Agencies, Latin America and the Caribbean, Lima, Peru, 4-7 October 2010.

Fig. 77: Cocaine seizures in the United States by location and quantity (mt), 2001-2009

Source: UNODC ARQ.



recent years, there has been a significant increase in the quantities of cocaine seized on the sea route, involving Costa Rican nationals mostly working in the fishing industry and operating under the direction of Colombian nationals, using fishing boats with Costa Rican flags to transport illicit drugs. Seizures in Costa Rica reached 21 mt in 2009.

Mexico continued to be a key transit country for cocaine trafficked into the United States. Cocaine seizures in Mexico fell sharply in 2008 (19 mt, down from 48 mt in 2007), in line with the trend in the United States, and increased slightly in 2009, amounting to 22 mt. The vast bulk - almost three quarters - was seized on the maritime route.

The decreased level of seizures was reflected in cocaine seizures by US authorities along the border with Mexico, which followed a generally decreasing trend between the last quarter of 2005 and the second quarter of 2008.[22] In 2009, seizures along the US-Mexico border rose slightly, from 17.8 mt in 2008 to 20.5 mt, but remained below the peak level of 28 mt registered in 2006. It appears that several factors have contributed to a shift in the trafficking routes from Mexico to the United States, including high levels of inter-cartel violence in Mexico and efforts by Mexican authorities to confront the drug cartels.

Seizures by the United States peaked at 201 mt in 2005, and have since fallen considerably. In 2009, seizures appeared to stabilize at slightly more than half the 2005 level – 109 mt. Together with other indicators, this suggests that the availability of cocaine in the United States has stabilized at a reduced level.

22 US Department of Justice, National Drug Intelligence Center, *National Drug Threat Assessment 2009*, December 2008.

Fig. 78: Cocaine seizures in the United States by location and number of seizures, 2001-2009

Source: UNODC ARQ.

The mean purity-adjusted price of cocaine, calculated from all cocaine purchases by law enforcement agencies in the United States,[23] more than doubled between the last quarter of 2006 to the last quarter of 2008 (from US$90 to US$199 per pure gram), and have remained relatively high since then (amounting to US$170 per pure gram in the last quarter of 2009). This was largely due to a decline in purity, which fell from an average of 70% in the last quarter of 2006 to 45% in the last quarter of 2008 and 46% in the last quarter of 2009.

Seizures by the United States include large quantities of cocaine seized at sea. They accounted for approximately one half of the total for the United States in 2009. In terms of seizure cases, the majority continued to be smaller domestic cases.

A comparison of purity-adjusted cocaine prices at key points along the cocaine trafficking route in the Americas confirms that the mark-up in price occurs largely towards the end of the supply chain. The price at the wholesale level is about one quarter of the price at the retail level, while the price in producing countries only amounts to 1% of the final (retail) price.

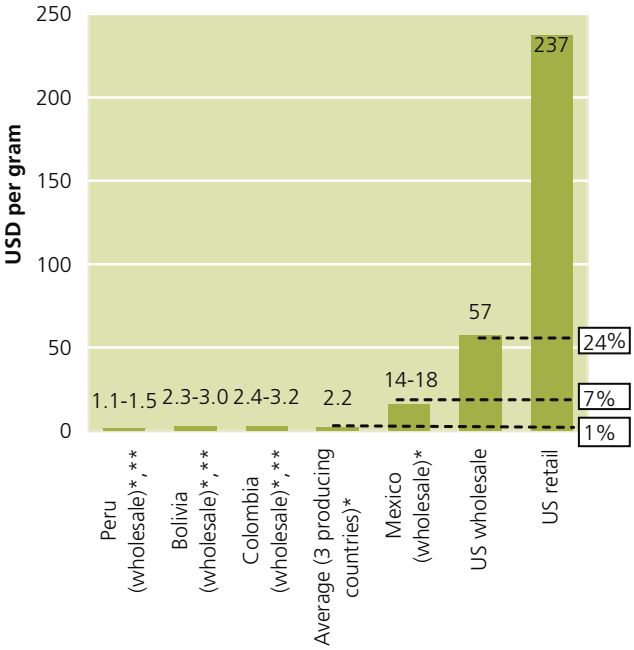
At the global level, the total reported quantity of crack-cocaine seizures is negligible in comparison with seizures of cocaine base and cocaine salts. This may partly be due to the fact that some countries do not report seizures of crack-cocaine, but also because individual seizures of crack-cocaine, possibly made at street levels, tend to be much smaller.

Fig. 79: Accrual of purity-adjusted cocaine prices in the Americas, 2009

* For these countries, the calculation assumes a wholesale purity of 70%-90%; the vertical bars represent the midpoint of the resulting range.

** The value for Peru represens the price in producing regions, while the values for Bolivia and Colombia represent the price in major cities

Source: Data from UNODC field offices; UNODC ARQ.



Several countries in the Americas, notably in Central America and the Caribbean, as well as Brazil, the United States and the Bolivarian Republic of Venezuela, report seizures of crack-cocaine as well as cocaine base or cocaine salts. In 2009, seizures of crack-cocaine amounted to 194 kg in Panama, 163 kg in the United States and 80 kg in the Bolivarian Republic of Venezuela; in 2008, the largest quantity was seized in Brazil (374 kg).[24] In 2009, the largest number of such seizures worldwide were reported by the Dominican Republic (4,173 seizure cases), Canada (1,822) and the Bolivarian Republic of Venezuela (1,643).

Europe

Europe is the world's second largest consumer market for cocaine and continues to account for the majority of cocaine seizures made outside the Americas. Seizures peaked at 121 mt in 2006, then declined for three years in a row, falling to less than half this level – 57 mt – in 2009. The decreasing trend was observed in the West European countries that account for the biggest seizures in Europe, though several other countries have registered increases.

23 This includes all purchases, irrespective of the size of the transaction, and thus may correspond neither to retail nor wholesale price levels.

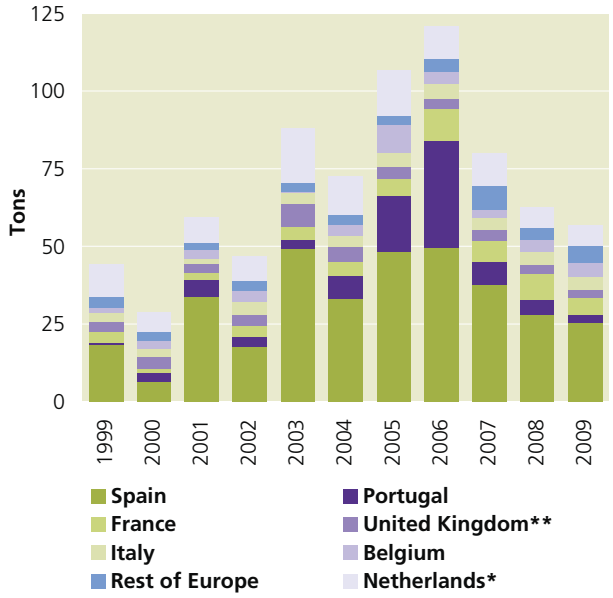
24 A breakdown of cocaine seizures in Brazil for 2009 was not available.

Fig. 80: Cocaine seizures in Europe (mt), 1999-2009

* Data for 2009 for the Netherlands were unavailable; the value used is that corresponding to the year 2008, and is only included to estimate the regional total.

** Data for the United Kingdom for 2007, 2008 and 2009 are based on incomplete data for some jurisdictions for the financial years 2007/08, 2008/09 and 2009/10 respectively, and adjusted for the missing jurisdictions using the distribution in 2006/07.

Source: UNODC DELTA.



The Iberian peninsula is an important point of entry for cocaine reaching continental Europe. Spain consistently reports the highest cocaine seizures in Europe, though seizures fell from 50 mt in 2006 to 25 mt in 2009. In neighbouring Portugal, the decrease has been more pronounced, from 34 mt in 2006 (the second largest in Europe for that year) to 2.7 mt in 2009 (the seventh largest). Significant declines have also been registered in the Netherlands, where seizures fell from the peak level of 14.6 mt in 2005 to 6.8 mt in 2008.[25]

In relative terms, seizure trends across Europe in recent years appear to fall broadly along a continuum ranging from strong declines close to the trafficking hubs that serve as the major points of entry or distribution in Europe to strong increases in countries, notably further east, that historically have not been associated with trafficking of cocaine in large amounts. When comparing average seizures over 2005-2006 with 2008-2009, marked declines (in both relative and absolute terms) were registered in Portugal, Spain, Belgium and the Netherlands;[26] more moderate declines were registered in the United Kingdom and France, while seizures were essentially stable in Italy and Germany. On the other hand, increases of more than 30% were observed in several countries further east, including the Russian Federation, Turkey, Poland, Greece, Ukraine and Romania. In Ireland, seizures peaked in 2007, and have also declined significantly since then. This pattern suggests that, while the established trafficking routes for cocaine entering Europe continue to be important, cocaine may be entering Europe along new routes.

Romania reported cocaine seizures of 1.3 mt in 2009; this appears to include a single seizure of 1.2 mt at the port of Constanta, from two containers that arrived from the port city of Paranagua, Brazil in January 2009. The ensuing investigation also led to the seizure of 3.8 mt of cocaine in Paranagua in February 2009, also destined for Romania.[27]

Purity-adjusted cocaine retail prices in West and Central Europe rose markedly in 2006, the year when seizures peaked; this was mainly due to a drop in purity. One possible explanation could be that heightened law enforcement efforts impacted on the availability of cocaine in the European cocaine market, and traffickers responded to this by selling the drug at reduced purities rather than raising the bulk price. Since 2006, the purity has remained relatively low, with adjusted prices. The purity-adjusted price – expressed in euros - declined between 2006 and 2008, and appeared to stabilize in 2009.

When adjusted for inflation, the purity-adjusted retail price in 2009, expressed in euros, was equal to (within 1%) that in 2005, prior to the increase in 2006. While these data need to be interpreted with caution, it is plausible that alternative cocaine trafficking methods and routes adopted by traffickers to counter more effective law enforcement efforts have corrected a short-term drop of cocaine availability in the European market. Moreover, the decline of cocaine prices expressed in euros over the 2006-2008 period went hand in hand with strongly falling value of the US dollar during that period, thus rendering imports, including cocaine imports, cheaper for the consumers.

Africa

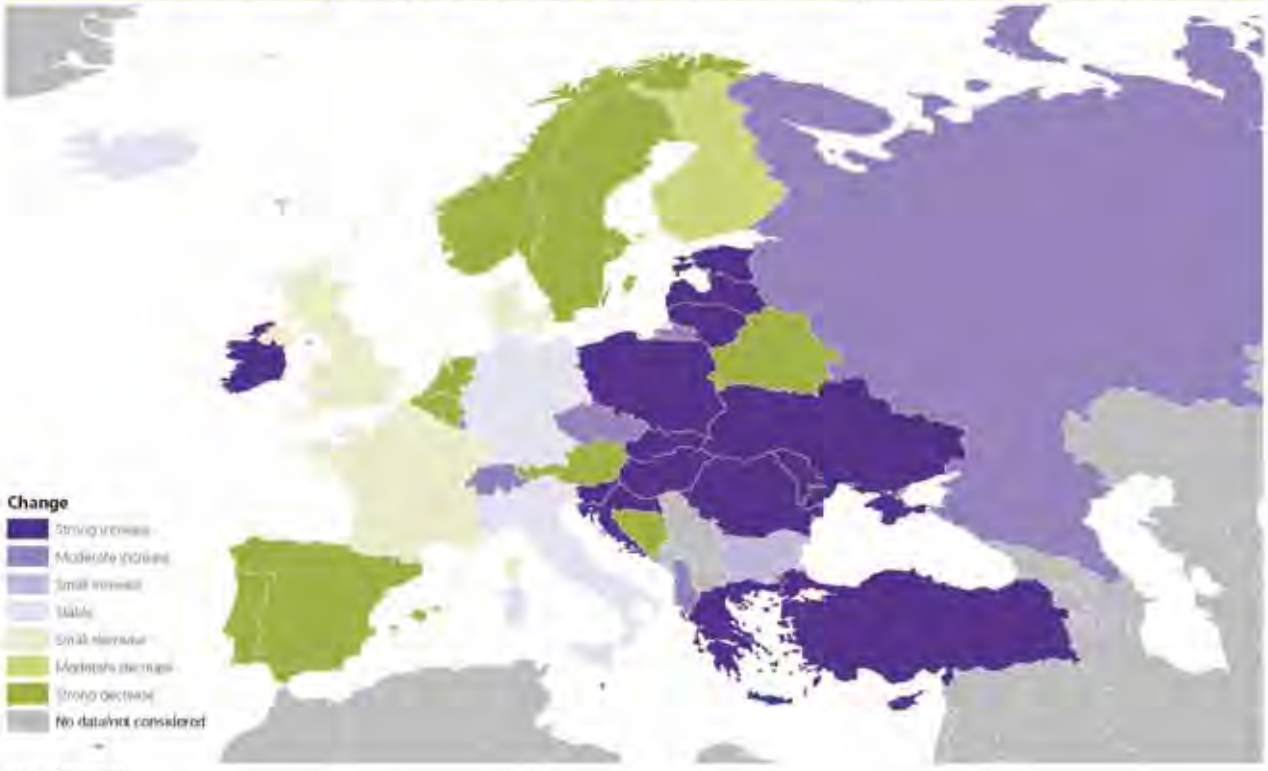
Cocaine seizures remained limited in Africa, amounting to less than 1 mt in 2009, down from 2.6 mt in 2008 and 5.5 mt in 2007. Although this quantity is very small in comparison with the quantities likely to be trafficked in and via Africa, seizure data from other regions also point to a decreasing trend for Africa, notably West Africa, for cocaine trafficking from South America to Europe. Nevertheless, cocaine trafficking in West Africa persisted, and Africa, especially West Africa, remained vulnerable to a resurgence. Benin, Burkina Faso, Ethiopia, the Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Mali, Niger, Nigeria, Senegal, South Africa and Togo

25 Seizure data for the Netherlands for 2009 were not available.

26 Considering data for 2008 only for the Netherlands.

27 Embassy of the United States to Romania, *DEA and Romanian Police work together in stopping second cocaine shipment from Brazil to Romania*, press release, 9 February 2009.

Map 20. Cocaine seizure trends in Europe, average of 2008-2009 compared to average of 2005-2006



were all mentioned as transit countries[28] for cocaine trafficking in 2008 or 2009.

In 2008, the largest annual seizures of cocaine in Africa were registered by Ghana (841 kg), Sierra Leone (703 kg[29]), Togo (393 kg, falling to 34 kg in 2009), Nigeria (365 kg, rising to 392 kg in 2009) and South Africa (156 kg, rising to 234 kg in 2009). On January 29, 2009, 230 kg of cocaine were seized by South African authorities on a vessel at Durban harbour.[30] In 2009, significant quantities – by African standards - were also seized in Angola, Senegal, Egypt and Morocco. In 2009, Senegal accounted for more than half (30) of cocaine seizure cases in Africa recorded in the WCO Customs Enforcement Network database. These customs seizures amounted to a total of 65 kg. The situation was different a year later. In 2010, 2.1 mt of cocaine were seized as part of an operation in the Gambia.[31]

One factor contributing to the declining cocaine seizures in Africa may be the diversification of trafficking routes and methods, possibly in response to law enforcement efforts but also as a way of exploring new markets. Togo reported the emergence of new cocaine trafficking routes to Europe in 2009. Nigerian authorities estimated that half of the cocaine trafficked via its territory in 2009 might have been intended for the United States. This is possibly a reaction to the apparent shortage of cocaine on the US cocaine market, which is providing traffickers with incentives to look for alternative routes. Some reports also suggested a link between East and West Africa in cocaine trafficking. Swaziland reported an increase in cocaine trafficking in 2009.

Cocaine is also trafficked directly from South America to South Africa, a country with a sizeable consumer market for this drug. South Africa assessed that, in 2008 and again in 2009, 40% of cocaine trafficked on its territory was intended for Europe, and the remainder for its domestic market. South Africa was also mentioned as a transit country for cocaine reaching several other African countries in 2009. According to Angolan authorities,[32] cocaine usually reached Angola by air from Brazil via South Africa, Namibia and the Democratic Republic of the Congo.

28 This includes references to African countries as countries of 'origin,' which likely refers to the origin of the trafficked drug as far back as it could be traced by the reporting country, rather than the country of manufacture.

29 This quantity was seized from a plane in July 2008, in a single case. (Country report by Sierra Leone to the Nineteenth Meeting of Heads of National Drug Law Enforcement Agencies, Africa.)

30 Country report by South Africa to the Fifteenth Asia-Pacific Operational Drug Enforcement Conference, Japan, 2-5 February 2010. The 2009 ARQ from South Africa was not available at the time of preparation of the present report.

31 EUROPOL, quoted in *European Cocaine Situation*, presentation at the Conference on combating the threat of illicit drugs and strengthening control of precursor chemicals, Vienna, 8-9 July 2010.

32 Country report by Angola to the Nineteenth Meeting of Heads of National Drug Law Enforcement Agencies, Africa.

Fig. 81: Cocaine prices and purity in West and Central Europe, 2003-2009

Source: UNODC ARQ.

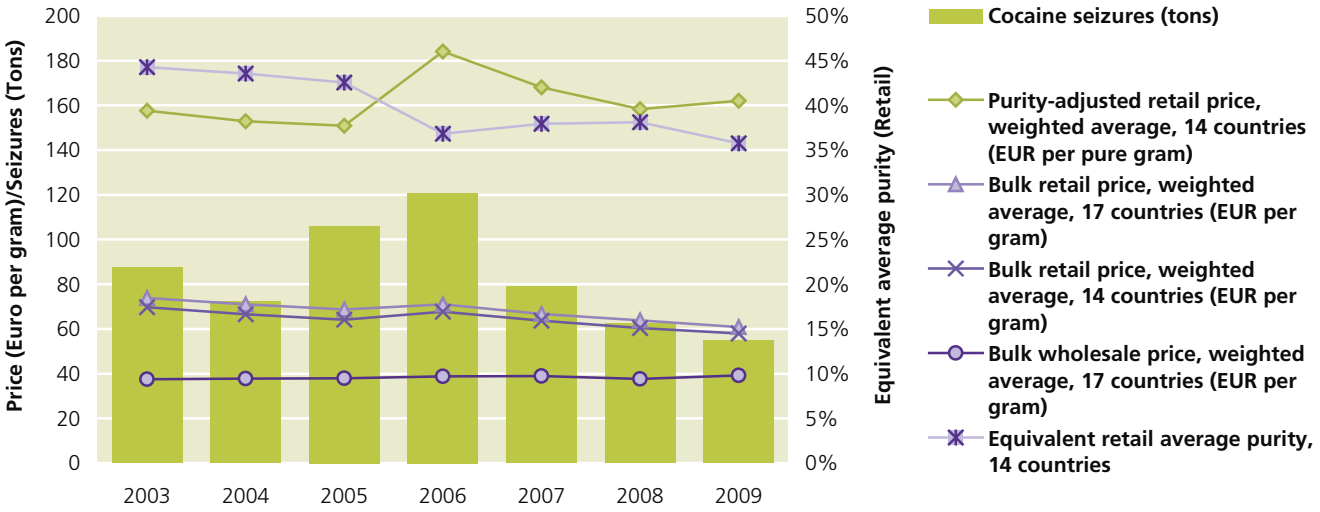
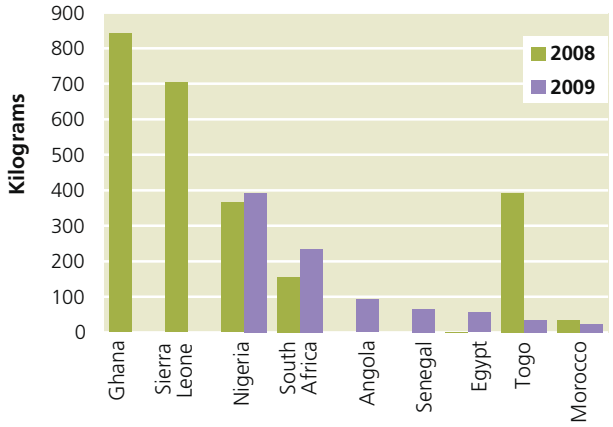


Fig. 82: Cocaine seizures in selected countries in Africa (kg), 2008-2009

Source: UNODC DELTA.



The Asia-Pacific

The Asia-Pacific region continued to account for less than 1% of global cocaine seizures. However, there were signs that cocaine trafficking might be making inroads into new consumer markets. Seizures in the Asia-Pacific reached a record 1.6 mt in 2008, and stood at 766 kg in 2009.

In Australia, seizures rose from 626 kg in 2007 to 930 kg in 2008. In 2009, seizures in this country fell to 288 kg, but in 2010, two large seizure cases alone brought the partial total to more than 700 kg.[33] With reference to the period 1 July 2008 to 30 June 2009, Australia reported that nearly 70% of cocaine detections (by number) occurred in the postal stream, and that Mexico, Colombia, Panama, Argentina, Canada, the United States, Brazil, the United Arab Emirates, Singapore, South Africa, the Plurinational State of Bolivia, Kenya and the Netherlands were all embarkation countries for the import of cocaine consignments larger than 1 kg. Moreover, Australia pointed to a possible shift away from imports of small quantities of cocaine.

In 2008 seizures rose to 664 kg [34] in China, including the 69 kg that were seized in Hong Kong, China and the 64 kg[35] in Taiwan Province of China. In 2009, China reported seizures of 163 kg, including 112 kg in Hong Kong, China. According to Chinese authorities, cocaine was mainly smuggled from South America across the Pacific ocean to cities on China's south-east coast.[36]

In 2009, the Philippines registered a record level of cocaine seizures of 259 kg; in contrast, seizures in this country amounted to less than 3 kg annually over the period 2003-2008. The increase was partly due to a large quantity of cocaine that was jettisoned in December 2009 close to the Eastern Samar province from a vessel on its way from South America to China. Two other significant cases resulted in the seizure of a total of 15.5 kg of cocaine in the Port of Davao. The Philippines assessed that 30% of the total reached the Philippines via Germany, and an additional 30% via Malaysia, and that the cocaine was intended for China (40% was intended for Hong Kong, China).

33 Australian Federal Police, *Drug syndicate smashed, 464 kg of cocaine seized*, media release, 14 October 2010.

34 UNODC, data collated by DAINAP,

35 Food and Drug Administration of Taiwan Province of China

36 National Narcotics Control Commission of China, presentation at the Twentieth Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), October 2010

Table 25: Cocaine prices in Europe and the United States (not purity adjusted), 1990-2009

Retail price (street price), US$/gram

EUROPE	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Austria	198	*180*	167	120	126	156	138	118	113	93	94	78	71	90	103	101	78	99	110	97
Belgium	*80*	90	68	95	82	93	90	57	55	60	55	51	50	51	*51*	*51*	60	67	72	71
Denmark	144	135	111	90	*150*	176	169	108	119	165	106	120	91	122	82	82	81	74	99	93
Finland	*159*	*150*	*126*	*105*	*165*	*191*	*184*	*123*	179	*157*	*138*	121	111	151	146	125	100	110	154	139
France	99	119	140	153	151	174	125	87	84	82	50	87	75	90	99	94	97	96	103	83
Germany	120	103	111	95	109	103	90	77	72	68	57	58	57	68	73	79	74	86	91	87
Greece	*150*	*120*	105	54	116	111	144	91	54	82	69	72	75	96	93	79	110	110	110	104
Ireland	*141*	*137*	*120*	*110*	*100*	119	32	34	32	30	*28*	*28*	*94*	79	87	88	88	96	103	97
Italy	108	120	164	90	104	113	129	109	129	*135*	*100*	89	90	101	113	114	104	112	111	99
Luxembourg	*150*	*150*	*150*	*150*	172	194	127	115	110	119	*119*	119	*107*	96	114	105	106	89	*89*	*89*
Netherlands	66	*70*	74	66	*60*	79	52	64	38	33	*33*	*33*	*33*	50	*59*	*59*	*60*	59	63	*63*
Norway	176	170	255	156	145	*150*	153	177	133	128	114	157	165	170	155	*155*	*151*	164	154	*154*
Portugal	63	57	60	57	59	66	64	57	51	43	56	48	36	47	49	55	56	55	*66*	66
Spain	110	100	100	63	78	91	72	68	68	63	52	52	56	70	76	76	76	83	89	83
Sweden	*160*	*152*	*183*	*123*	*148*	118	118	98	88	97	77	79	87	99	93	92	*101*	96	138	104
Switzerland	178	144	188	136	146	148	127	117	110	*109*	77	69	74	89	*86*	*86*	*74*	75	65	82
United Kingdom	131	127	69	123	113	111	102	124	128	104	94	94	84	90	91	79	*87*	91	74	62
Unweighted average, US$	131	125	129	105	119	129	113	95	92	92	78	80	80	92	92	89	88	92	99	93
Inflation adjusted, 2009 US$	**215**	**197**	**197**	**156**	**172**	**181**	**154**	**128**	**121**	**119**	**97**	**96**	**95**	**107**	**105**	**98**	**94**	**95**	**99**	**93**
Weighted average, US$	117	115	118	104	112	118	105	92	92	88	70	74	72	84	88	86	86	91	94	85
Inflation adjusted, 2009 US$	**192**	**180**	**180**	**154**	**162**	**166**	**144**	**123**	**121**	**113**	**88**	**90**	**85**	**97**	**100**	**95**	**91**	**95**	**94**	**85**
Weighted average in Euro	92	92	91	88	94	91	83	81	82	82	76	83	76	74	71	69	71	67	64	61
Inflation adjusted, 2009 Euro	**144**	**138**	**130**	**122**	**126**	**119**	**106**	**102**	**102**	**101**	**92**	**98**	**87**	**83**	**78**	**74**	**75**	**69**	**64**	**61**

Sources: UNODC ARQ data and EUROPOL; UNODC estimates in italics

USA	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Street price in US$	97	93	81	84	79	91	91	81	81	81	96	96	83	90	84	85	94	104	119	120
Inflation adjusted, 2009 US$	**159**	**147**	**123**	**125**	**115**	**128**	**124**	**108**	**106**	**104**	**119**	**116**	**99**	**105**	**96**	**93**	**100**	**107**	**118**	**120**
Purity adjusted	**167**	**148**	**120**	**122**	**119**	**149**	**124**	**125**	**117**	**125**	**155**	**166**	**119**	**131**	**122**	**124**	**127**	**157**	**215**	**237**
Purity and inflation adjusted, 2009$	**274**	**233**	**184**	**181**	**172**	**209**	**170**	**167**	**154**	**161**	**193**	**201**	**142**	**153**	**139**	**137**	**135**	**163**	**214**	**237**

Sources: for 1990-2006, ONDCP, National Drug Control Strategy Data Supplement 2010; for 2007-2009, UNODC estimates based on ARQ (STRIDE data) and prices for 2006.

Wholesale price, US$/kg

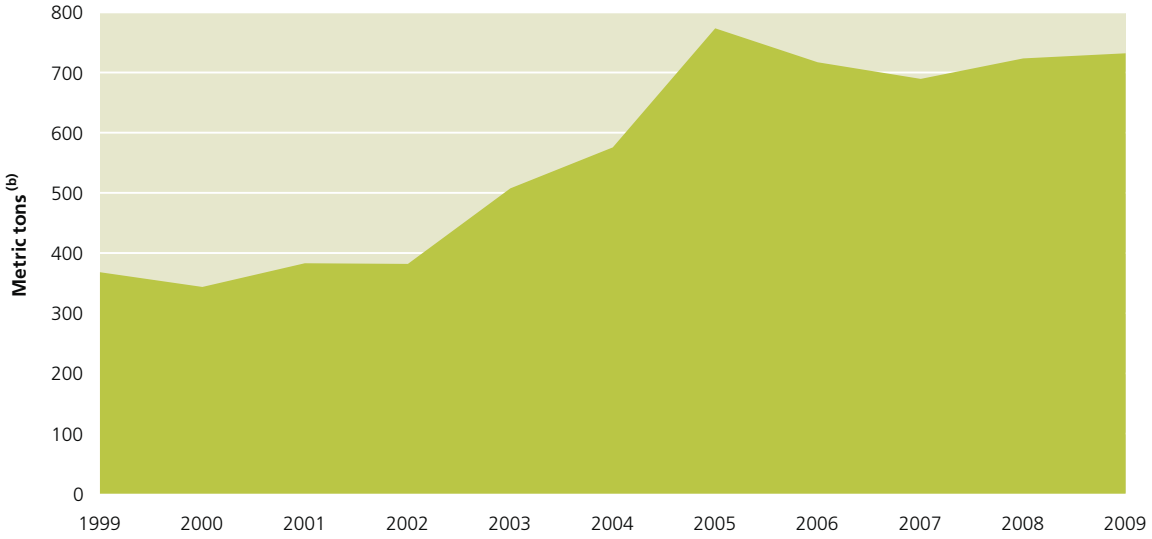
EUROPE	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Austria	*66,000*	*66,000*	54,000	40,000	41,946	52,084	45,875	56,723	54,440	38,859	47,094	43,995	42,385	59,300	55,894	59,757	50,185	61,661	66,176	48,668
Belgium	*25,000*	24,000	38,250	28,000	26,920	30,560	21,927	17,025	19,167	23,859	22,376	26,771	28,111	29,610	32,480	*32,480*	*32,480*	47,958	53,757	46,675
Denmark	*80,000*	85,000	85,000	82,500	58,516	60,034	46,141	38,640	44,517	78,900	43,462	47,839	37,823	53,160	45,896	50,321	40,520	40,445	43,447	40,730
Finland	*79,500*	75,000	*62,750*	*52,500*	*82,500*	*95,450*	*91,750*	*61,550*	*89,350*	*78,460*	*68,321*	*59,492*	*51,804*	62,150	68,315	*68,315*	*56,611*	61,660	66,176	*62,573*
France	117,000	38,250	45,000	38,250	40,000	39,877	48,077	43,554	42,159	27,714	*27,000*	34,978	37,676	45,200	49,683	50,321	50,190	61,661	44,118	41,715
Germany	69,000	53,100	60,300	54,142	57,692	54,676	53,925	45,294	41,210	39,639	33,752	33,235	34,476	40,110	44,243	46,525	45,320	48,826	54,114	57,171
Greece	*75,000*	*90,000*	95,000	36,000	46,413	53,098	72,015	43,795	49,180	49,320	41,237	40,359	42,385	53,680	57,446	62,902	62,735	62,735	69,853	63,964
Ireland	45,000	*45,000*	*40,000*	*50,000*	*45,000*	*42,000*	31,646	33,733	31,530	29,891	*29,891*	*29,891*	*29,891*	30,510	*38,557*	*38,506*	*39,636*	41107	44,118	36,161
Italy	54,000	48,000	94,000	41,935	51,097	51,455	55,633	50,629	49,091	47,250	*46,000*	40,529	41,412	47,440	51,759	52,188	52,920	56,029	63,514	57,153
Luxembourg	*93,919*	95,939	113,521	50,847	157,593	141,343	47,625	43,103	41,072	47,718	*47,718*	*47,718*	*47,718*	*47,718*	31,052	31,450	*31,450*	31,451	*31,451*	*31,451*
Netherlands	26,500	*28,000*	29,500	26,500	24,680	33,232	23,894	29,698	22,355	27,500	*27,500*	*27,500*	*27,500*	27,400	33,775	*33,775*	*35,000*	42,409	46,691	*46,691*
Norway	120,000	*120,000*	127,500	*110,000*	39,971	*50,000*	41,670	60,028	81,699	57,545	51,417	51,569	54,159	56,500	65,209	*65,209*	*56,400*	61,661	51,471	*51,471*
Portugal	39,500	39,285	33,000	27,000	27,950	34,483	42,591	37,908	33,447	30,000	*28,000*	29,080	*31,046*	32,410	36,399	*36,399*	*31,365*	34,256	44,118	*41,716*
Spain	65,000	60,000	55,000	35,000	36,434	41,322	38,760	36,806	38,924	38,898	30,882	38,898	31,511	38,830	42,167	41,321	41,210	46,274	48,709	45,941
Sweden	*80,000*	*85,000*	*91,375*	*61,450*	*73,825*	55,556	59,255	45,573	50,484	48,508	38,394	34,693	35,763	43,130	39,560	40,068	*39,270*	51,883	72,844	45,459
Switzerland	63,900	94,250	116,250	50,847	72,012	75,949	51,587	40,780	41,152	*41,000*	35,482	23,392	19,274	37,230	44,008	*44,008*	*41,090*	44,351	49,307	*50,379*
United Kingdom	47,850	46,475	20,625	43,210	*45,000*	46,774	40,625	47,500	47,500	33,981	38,168	36,008	35,848	40,880	50,036	*50,036*	*50,943*	60,362	64,682	76,963
Average unweighted	67,481	64,312	68,298	48,717	54,562	56,347	47,823	43,079	45,722	43,473	38,629	37,997	36,987	43,839	46,263	47,270	44,549	50,278	53,797	49,699
Inflation adjusted, 2009 US$	**110,766**	**101,301**	**104,437**	**72,329**	**78,985**	**79,320**	**65,391**	**57,582**	**60,179**	**55,982**	**48,126**	**46,029**	**44,108**	**51,114**	**52,542**	**51,926**	**47,407**	**52,023**	**53,605**	**49,699**
Weighted average, US$	67,639	51,835	57,493	44,032	47,117	48,204	47,823	44,011	43,456	38,510	35,592	36,089	35,941	42,308	46,898	47,739	46,963	53,390	55,261	54,577
Weighted average, US$ per gram	68	52	57	44	47	48	48	44	43	39	36	36	36	42	47	48	47	53	55	55
Inflation adjusted, 2009 US$	**111,026**	**81,648**	**87,915**	**65,373**	**68,208**	**67,858**	**65,391**	**58,829**	**57,195**	**49,591**	**44,343**	**43,718**	**42,861**	**49,330**	**53,262**	**52,442**	**49,977**	**55,242**	**55,065**	**54,577**
Inflation adjusted, 2009 US$/gram	**111**	**82**	**88**	**65**	**68**	**68**	**65**	**59**	**57**	**50**	**44**	**44**	**43**	**49**	**53**	**52**	**50**	**55**	**55**	**55**
Weighted average,Euro/gram	**53**	**42**	**44**	**38**	**40**	**37**	**38**	**39**	**39**	**36**	**38**	**40**	**38**	**37**	**38**	**38**	**39**	**39**	**38**	**39**
Inflation adjusted, 2009 Euro/gram	**83.1**	**62.2**	**63.4**	**52.0**	**53.3**	**48.4**	**48.4**	**48.6**	**48.3**	**44.3**	**46.3**	**47.4**	**43.9**	**42.2**	**41.7**	**41.0**	**41.1**	**40.4**	**37.7**	**39.2**

Sources: UNODC ARQ, EUROPOL; UNODC estimates in *italics*

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
US wholesale price	34	32	31	29	27	28	27	28	25	25	26	24	24	24	24	24	23	23	26	27
Purity-adjusted	52	42	41	39	36	41	37	41	35	40	46	44	41	38	37	34	31	37	53	57
Inflation and purity adjusted, 2009 dollars	**85**	**66**	**62**	**59**	**51**	**57**	**50**	**54**	**46**	**52**	**57**	**53**	**49**	**44**	**42**	**38**	**33**	**39**	**53**	**57**

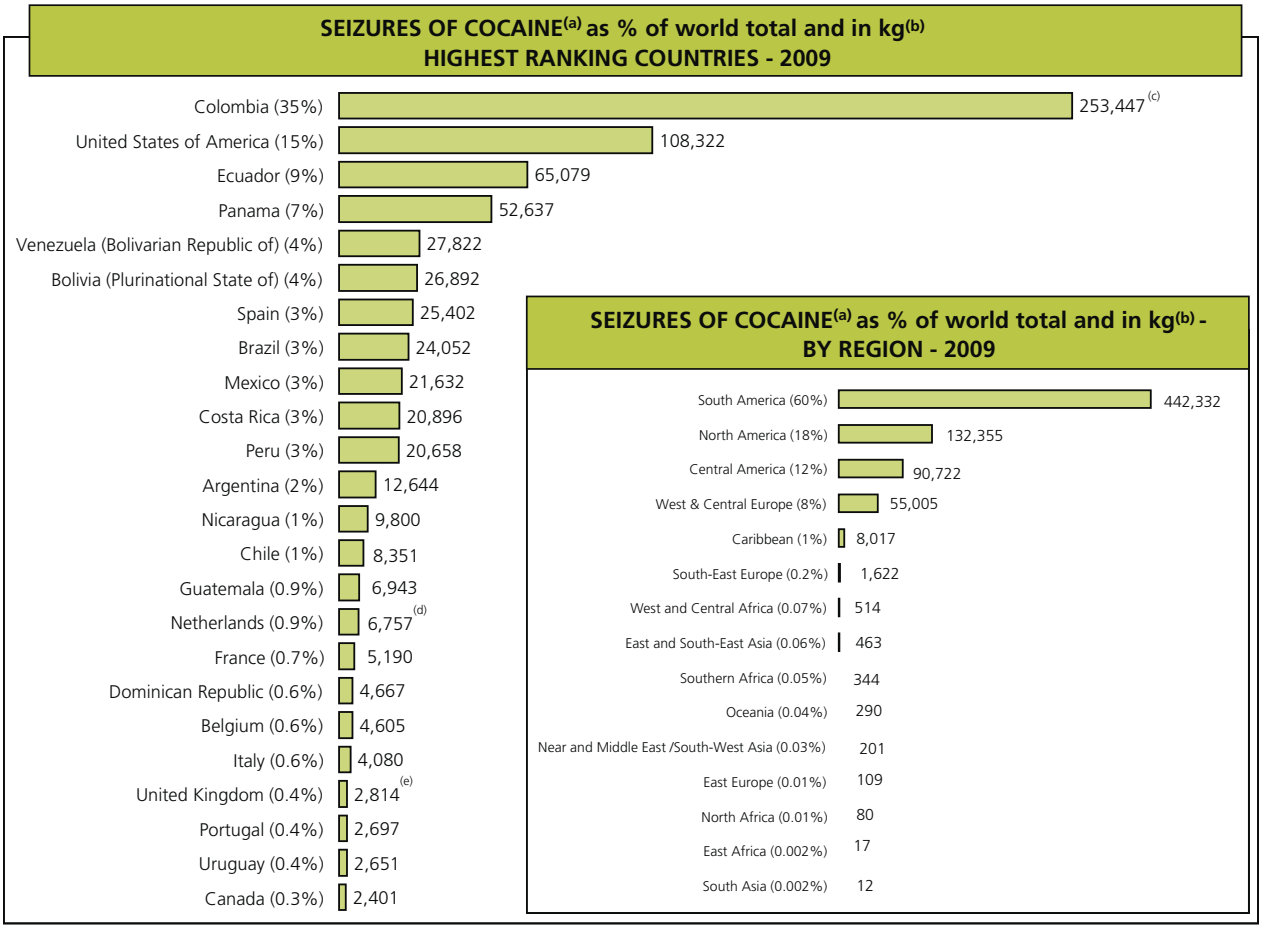
Source: ONDCP, transactions in excess of 50 grams, based on Expected Purity Hypothesis

Fig. 83: Global seizures of cocaine[a], 1999-2009



[a] Includes cocaine HCl, cocaine base and crack-cocaine

[b] Seizures as reported (no adjustment for purity).



[a] Includes cocaine HCl, cocaine base and crack-cocaine.

[b] Seizures as reported (no adjustment for purity).

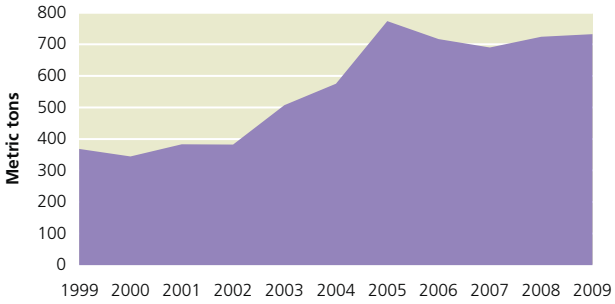
[c] Excluding 1.9 tons of "basuco".

[d] Data relative to 2008. Data for 2009 from the Netherlands were not available.

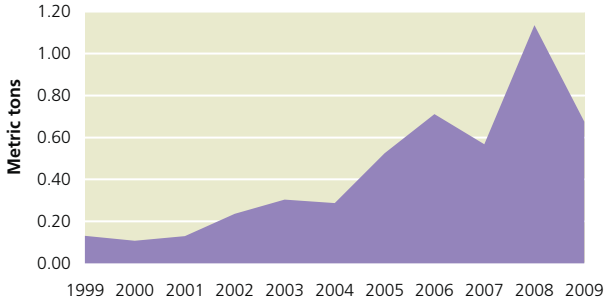
[e] Data for the United Kingdom for 2009 are based on incomplete data for some jurisdictions for the financial year 2009/10, and adjusted for the missing jurisdictions using the latest available complete distribution (relative to the financial year 2006/07).

Fig. 84: Global seizures of cocaine, 1999-2009

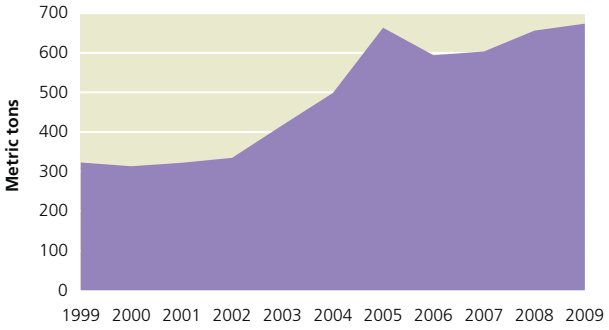
COCAINE[(a)] INTERCEPTED - WORLD: 1999-2009



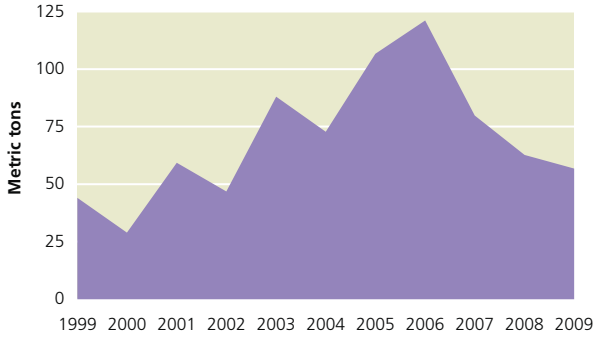
COCAINE INTERCEPTED - ASIA: 1999-2009



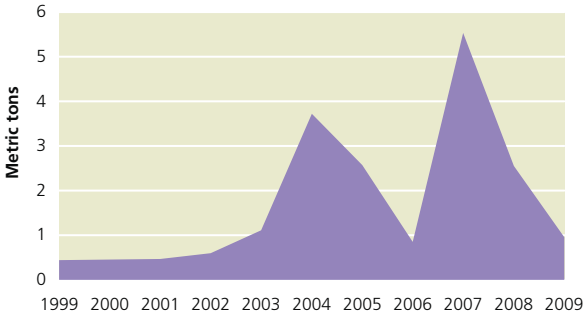
COCAINE[(a)] INTERCEPTED - AMERICAS: 1999-2009



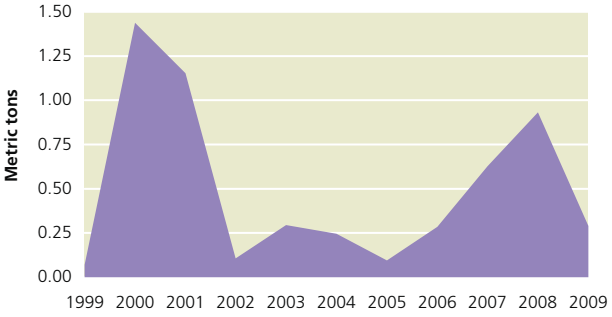
COCAINE[(a)] INTERCEPTED - EUROPE: 1999-2009



COCAINE[(a)] INTERCEPTED - AFRICA: 1999-2009

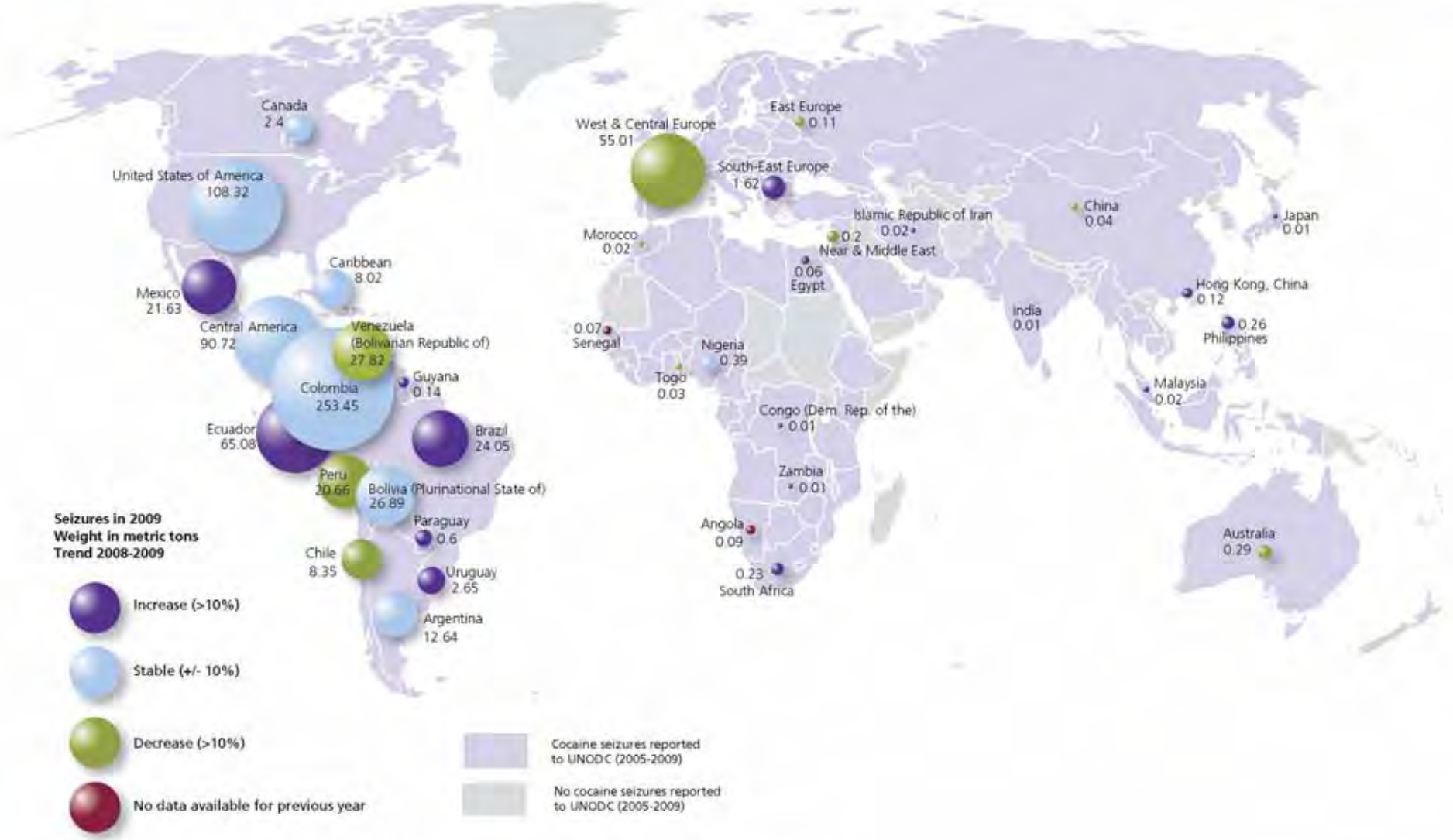


COCAINE[(a)] INTERCEPTED - OCEANIA: 1999-2009



[(a)] Includes cocaine HCl, cocaine base and crack-cocaine

Map 21: Seizures of cocaine, 2009 (countries and territories reporting seizures of more than 10 kg)



* Seizures as reported (no adjustments made for purity). Includes cocaine base, cocaine hydrochloride and crack-cocaine.
Source: UNODC Annual Reports Questionnaires data supplemented by other sources
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

3.5 Market analysis

Transnational cocaine trafficking has been affecting the Americas for the last 40 years. The size of the United States' market – the single largest cocaine market for decades – has been shrinking in recent years, mainly due to a reduction of the cocaine flows from Mexico to the United States. The massive decline of the US cocaine market has been partly offset by a rise of cocaine use in new destination markets (mainly in areas with above average purchasing power) and countries caught in the transit flow. Cocaine trafficking and use have started to affect countries in the Oceania region (already showing high annual cocaine use prevalence rates by international standards), countries in western and southern Africa affected by the transit flow, and in some parts of Asia (some countries in the Near and Middle East as well as some emerging pockets in a few countries in the Far East).

The most developed cocaine market outside of the Americas continues to be Europe, notably West and Central Europe. Cocaine use in East Europe, in contrast, is still limited. The volume of cocaine consumed in Europe has doubled over the last decade, even though data for the last few years show signs of stabilization at the higher levels.

While European law enforcement agencies have increased their efforts, traffickers continue to innovate, seeking novel ways of getting their product to the consumer. Around 2004, South American traffickers began to experiment with some new trafficking routes via West Africa. In a few years, they managed to undermine security and sow high-level corruption in a number of West African states. Recognizing the threat, the international community undertook a variety of interventions to address this flow. The novelty aspect was lost, the political instability proved self-defeating, and some very large seizures were made. By 2008, there was a remarkable decline in the number of both large maritime seizures and the number of cocaine couriers detected flying from West Africa to Europe. Criminal intelligence work indicates that the flow may have declined, but it did not stop. This raises the possibility that traffickers had simply modified their techniques, finding new methods for bringing cocaine to Europe, including through West Africa, without detection. Statistical data support this scenario: European cocaine seizures decreased from 121 mt in 2006 to 57 mt in 2009. But demand has not dropped by half during this period. Some (but not all) of the decline may be explained by improved upstream interception efforts as a result of improved sharing of intelligence with counterparts in South America.[37]

Cocaine consumption estimates

One of the most challenging tasks is to transform estimates on the number of cocaine users into quantities of cocaine consumed. Information on per capita use is still limited (a few studies conducted in North America, South America, Europe and Australia) and any calculated results must be treated with caution (and results are subject to change, whenever more reliable information becomes available). The best reading of existing data and estimates suggests that some 440 mt of pure cocaine were consumed in 2009. This would be in line with a production estimate of some 1,111 mt of cocaine, wholesale purity-adjusted seizures of 615 mt and global losses of some 55 mt (5% of production).

Of the 440 mt available for consumption, around 63% were consumed in the Americas, 29% in Europe, 5% in Africa, 3% in Asia and less than 1% in Oceania. The largest subregional markets were found in North America (close to 180 mt or 41% of the total), West and Central Europe (123 mt or 28%) and South America (85 mt or 19%). These three subregions account for 63% of global cocaine consumption. The single largest cocaine market – despite strong declines in recent years - continues to be the United States of America, with an estimated consumption of 157 mt of cocaine, equivalent to 36% of global consumption, which is still higher than the cocaine consumption of West and Central Europe.

Cocaine consumption in volume terms appears to have declined by more than 40% over the 1999-2009 period in the United States to some 157 mt (range: 133-211 mt), with most of the decline (more than a third) having taken place between 2006 and 2009. As compared to estimates for 1989, cocaine consumption in the United States seems to be now some 70% lower (range: -63% to -77%), in parts reflecting the increase in treatment and successes in prevention, while the latest decline over the 2006-2009 period was attributed more to reduced supply.

37 UNODC, *The Transnational Cocaine Market*, April 2011.

Fig. 85: Estimates of the amounts of cocaine consumed, by region, subregion and globally, 2009

Source: UNODC estimates based on ARQ data and the 2005 World Drug Report, as well as updates based on selected scientific studies.

Region/subregion	Best estimates				
	Users		Per capita use	Consumption	
	in million	in % of total	grams per year	in metric tons	in % of total
Americas	8.4	54%	32.6	275	63%
of which					
South America	2.4	15%	35.0	85	19%
Central America	0.1	1%	35.0	5	1%
Caribbean	0.1	1%	35.0	6	1%
North America	5.7	36%	31.5	179	41%
Europe	4.5	29%	28.4	129	29%
of which					
West and Central Europe	4.1	26%	30.3	123	28%
East and South-East Europe	0.5	3%	12.3	6	1%
Africa	1.7*	11%	12.0	21	5%
of which					
West and Central Africa	1.1	7%	12.0	13	3%
Southern Africa	0.3	2%	12.0	4	1%
North Africa	< 0.1	<1%	12.0	< 1	< 1%
East Africa	0.2	1%	12.0	3	< 1%
Asia	0.7*	4%	20.0	14	3%
Oceania	0.3	2%	7.3	2	< 1%
Total	**15.6***	**100%**	**28.1**	**440**	**100%**

* Given the uncertainty of data from Asia and Africa, for the purpose of consumption estimates, a lower level of cocaine use is assumed for these regions.

Fig. 86: Estimates of cocaine consumption in the United States (mt), 1988-2009

Source: UNODC, *World Drug Report 2010* and UNODC update for 2009.

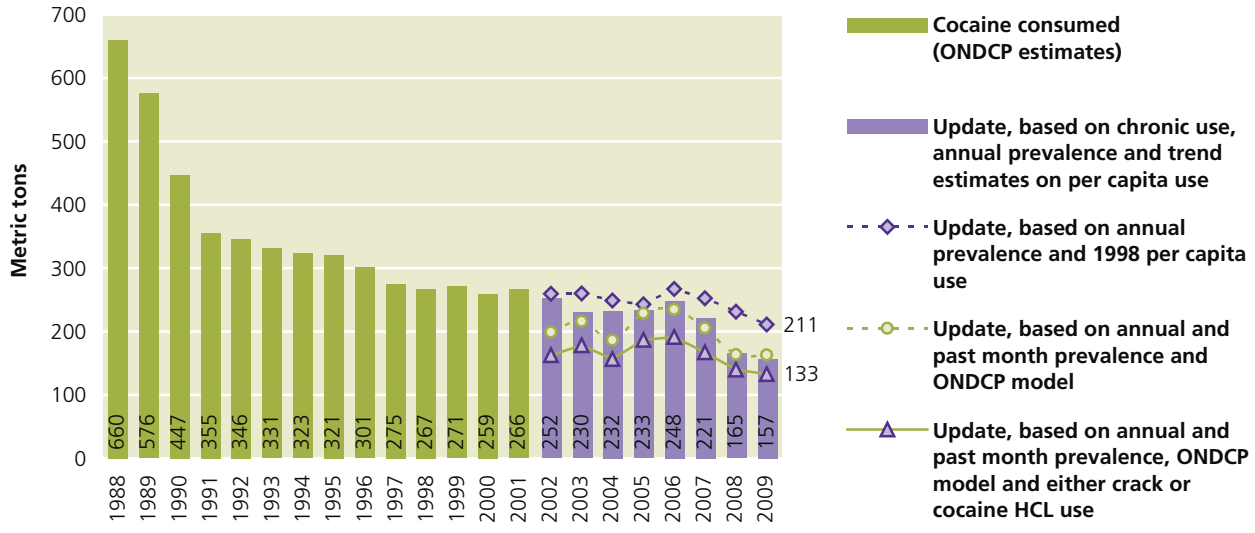
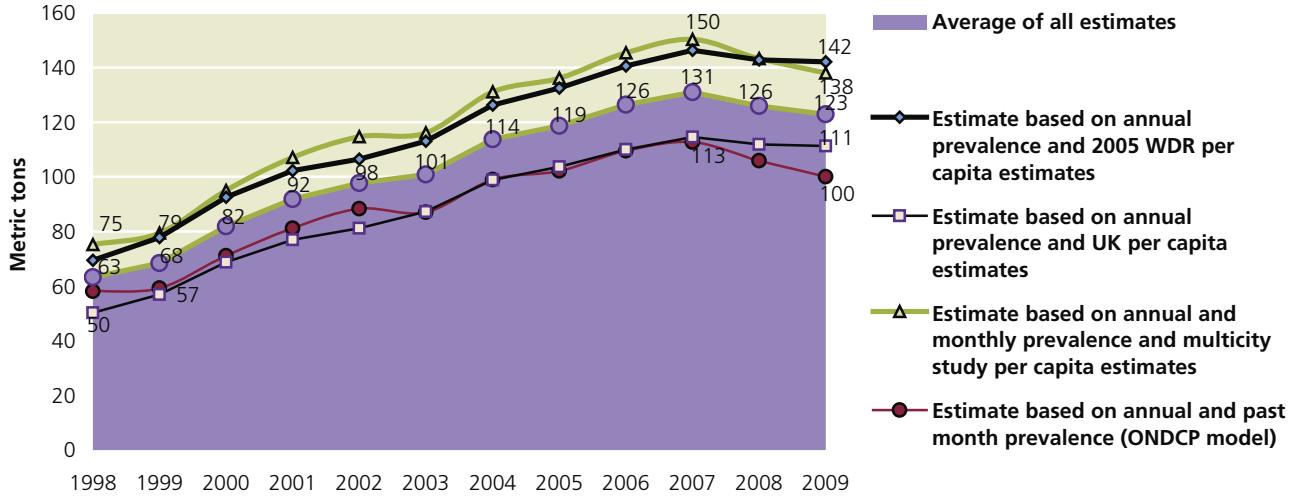


Fig. 87: Estimates of cocaine consumption in the EU and EFTA countries (mt), 1998-2009

Source: UNODC ARQ; Government reports; UNODC, *World Drug Report 2010*; EMCDDA, *Statistical Bulletin 2009*.



The opposite trend has been observed in Europe. Cocaine consumption in the EU and EFTA countries is estimated to have almost doubled, from 68 mt in 1999 (range: 57-79 mt) to 123 mt in 2009 (range: 100-142 mt). Between 2006 and 2009, cocaine consumption stabilized, and between 2007 and 2009, it may have slightly declined.

Evolution of trafficking flows

These shifts in demand have also had an impact on the nature of transnational cocaine trafficking. In the late 1990s, the bulk of the world's cocaine was shipped to the United States, increasingly controlled by Mexican groups. The Caribbean, which was the preferred transit zone when the Colombian cartels dominated the market, saw decreased trafficking as a growing share was moved via the Pacific through Mexico into the United States. Colombian traffickers, who had largely been driven from the more lucrative portions of the supply chain to North America by the Mexican cartels, increasingly focused on the growing European market.

Traditionally, there have been several parallel streams of cocaine flowing into Europe. Commercial air couriers, sometimes directed by West African groups in the new millennium, have flown to Europe from various intermediate countries in the Caribbean. Colombian groups also made use of commercial air carriers, often in cooperation with groups from the Dominican Republic, with whom they have a long-standing relationship. Larger maritime consignments were often stored on board 'mother ships' and transported to shore by smaller vessels. The primary maritime points of entry were Spain (due to proximity and cultural links) and the Netherlands (due to the large port). These vessels typically transited the Caribbean.

Some time around 2004, the Colombian groups began experimenting with routing their cocaine shipments through West Africa. From 2005 to 2008, a series of very large cocaine seizures took place in or near West Africa. Many of these involved 'mother ships' intercepted by European navies. There were also incidents where modified small aircraft were used. High-level officials were involved in some countries. There was also a sharp increase in the number of cocaine couriers found on flights from West Africa to Europe.

Around 2008, local political events (leading to the toppling of some of the regimes in West Africa that cooperated closely with the narco-traffickers)[38] coupled with international attention to the issue, led to in a dramatic reduction in the number and volume of seizures, including both maritime shipments and commercial air couriers. In parallel, the proportion of individual cocaine seizures in Europe that transited countries of West and Central Africa declined from around 25% in 2007 (range: 21%-30%) to some 13% in 2009 (range: 11%-17%).

In 2008, only four large (over 100 kg) seizures were made, and in 2009, only one. According to IDEAS, an air courier database, in the second quarter of 2007, 59% of cocaine couriers detected were from West Africa, while in the third quarter of 2009, there were none. Since then, some increases - up to 5% of couriers detected - were again reported in the fourth quarter of 2009 and, on average, 11% in 2010.

Despite this apparent reduction or even disruption, informal reports indicated that the trafficking continued. The use of jet aircraft, which can fly deeper inland in Africa, might have become an alternative method of moving cocaine through West Africa to Europe.

38 UNODC, *The Transnational Cocaine Market*, April 2011.

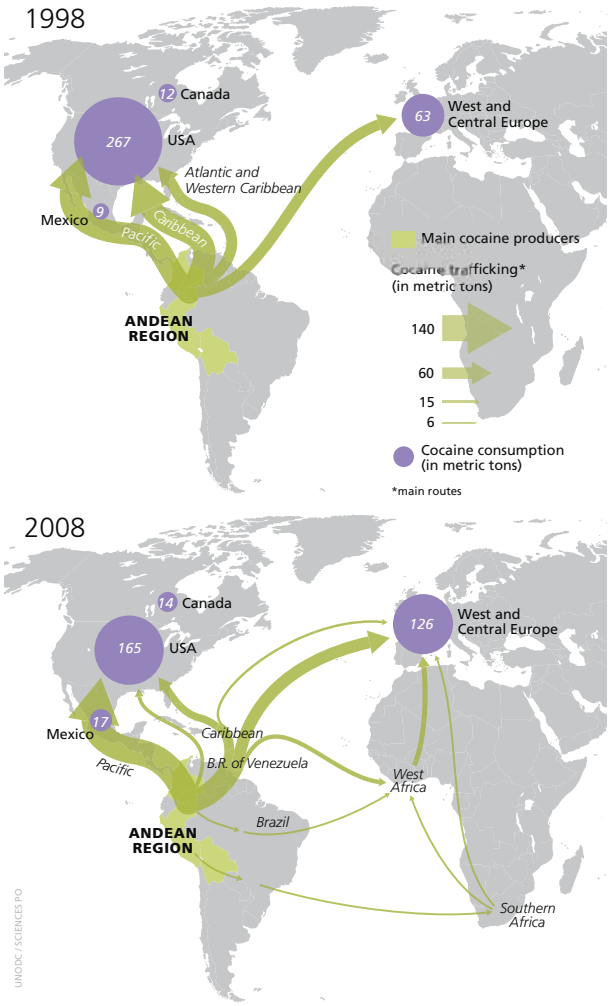
Table 26: Proportion of cocaine trafficked via West and Central Africa to Europe (based on individual drug seizures in Europe where the 'origin' of the shipment was known)

Source: UNODC IDS.

	2004	2005	2006	2007	2008	2009
Cocaine seizure cases	2.9%	14.7%	16.4%	29.5%	23.8%	16.0%
Amounts of cocaine seized	1.1%	2.7%	13.4%	21.3%	3.6%	10.7%
Mid-point ('best estimate')	2.0%	8.7%	14.9%	25.4%	13.7%	13.4%

Map 22: Global cocaine flows, 1998 and 2008

Source: UNODC World Drug Report 2009 and UNODC calculations informed by US ONDCP, Cocaine Consumption Estimates Methodology, September 2008 (internal paper).



Current trafficking flows to main consumer markets

It is estimated that almost 380 mt or 45% of the total cocaine exports from the Andean region leave for North America, a region with a population of some 460 million people. The bulk of cocaine shipments are still by sea across the Pacific to Mexico and on to the United States. In addition, Central American countries have gained prominence in recent years as trans-shipment locations. The Caribbean, in contrast, has lost significance as a trans-shipment hub over the last decade. More recent data suggest that the downward trend did not continue in 2009 and some early indications for 2010 suggest that the importance of the Caribbean may have started to rise again. Seizures made in South American countries outside the Andean region, in Central America and the Caribbean in relation to shipments towards North America are estimated at slightly less than 100 mt (purity-adjusted). A further 100 mt of purity-adjusted cocaine seizures are made in North America. Thus, out of 380 mt exported to North America, only some 180 are available for consumption, of which the bulk (88%) is consumed in the United States.

The second largest flow is to Europe. The global shift in demand has also affected trafficking routes to Europe, with much greater volumes crossing the Atlantic by air and sea. Some 220 mt or 26% of total cocaine exports left the Andean countries for West and Central Europe in 2009. Of this, close to 60 mt (purity-adjusted) were seized in other South American countries or in the Caribbean. Thus, close to 160 mt left South America for West and Central Europe in 2009.

The seizures in West and Central Europe (including seizures on the open sea off the shores of Europe) amounted to some 35 mt (purity-adjusted), leaving 123 mt for consumption in this region (range: 100–138 mt). This is in line with an overall prevalence rate of 0.8% of the population aged 15-64 and per capita use levels of around 30 grams of pure cocaine per user per year, for a total population of around 480 million people in West and Central Europe (EU and EFTA countries). The overall amount consumed in Europe is estimated at 129 mt, suggesting that West and Central Europe (123 mt) accounts for 95% of the total European cocaine market.

An analysis of individual drug seizures reported in Europe suggests that more than 86% of the drugs were trafficked directly to West and Central Europe, while around 13% were trafficked via West Africa. Trafficking via West and Central Africa would have amounted to some 21 mt.[39] In addition, cocaine is trafficked for local demand to West and Central Africa – a subregion with a combined population of more than 400 million people, which may consume some 13 mt. Trafficking flows to

39 158 mt * 13.4% = 21 mt; range: 158*10.7% to 158*16% = 17-26 mt.

Table 27: Flows of cocaine, purity-adjusted*, to major consumer markets (mt), 2009

Source: UNODC estimates based on Annual Reports Questionnaire data and other government or scientific sources.

Production**	1,111
Less seizures in Andean countries	-254
Less domestic consumption in Andean region	-13
Potential amounts available for export out of the Andean countries	844
Less losses in production and/or losses in global trafficking which cannot be attributed to specific regions	-56
Actual exports out of Andean countries	788

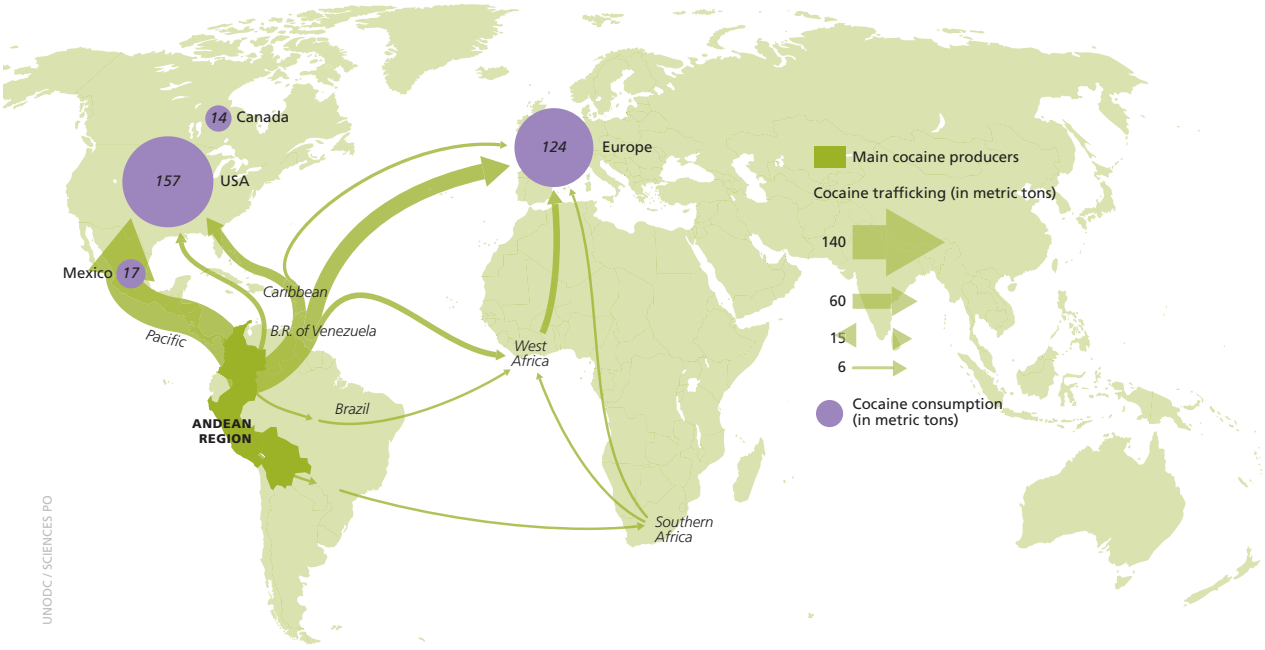
	West and Central Europe	North America	Non-Andean South America / Caribbean, Central America, Africa, Asia, Oceania
Amounts of cocaine leaving the Andean countries	217	378	193
Less amounts seized in non–Andean South America, Caribbean and Central America linked to trafficking flows	-59	-98	-64
Less domestic consumption in non-Andean South America / Caribbean / Central America			-83
Amounts leaving South America, Caribbean and Central America	158 (incl. 21 mt via West Africa)	280	46
Less amounts seized in consumer countries outside South America / Central America / Caribbean	-35	-101	-3
Amounts of cocaine consumed in countries outside South America / Central America / Caribbean	123	179 (incl. 157 in the USA)	43 (incl. 21 Africa, 14 Asia, 6 East and South-East Europe; 2 Oceania)

*Purity levels tend to decline along the trafficking chain. All numbers in this table have been adjusted to pure cocaine equivalents. Seizure data were adjusted based on reported wholesale purity data.

** The global cocaine production in 2009 was estimated to amount to between 842 mt and 1,111 mt. Actual cocaine consumption for 2009 was estimated at 440 mt. Seizures, not adjusted for purity, amounted to 732 mt in 2009.Considering purity-adjusted seizures of cocaine (unweighted average of all purities at retail and wholesale level reported by Member States in 2009), some 481 mt would be available for consumption and losses if the lower cocaine production estimate were used. If the higher cocaine production estimate were used, deducting seizures adjusted for wholesale purity (based on 2009 purity data or the latest year available), some 496 mt would be left for consumption and losses. The upper and the lower production estimates could be thus sufficient to cover consumption (440 mt). For the calculation shown above, the higher production estimates and seizures adjusted at wholesale purities were used. This reflects the observation that wholesale seizures account for the bulk of seizures in volume terms and would support the higher production estimates. However, one cannot exclude the possibility that seizures may be over-estimated due to possible double-counting once several law enforcement agencies within or across countries have been involved in cocaine interceptions.

Map 23: Main global cocaine flows, 2009

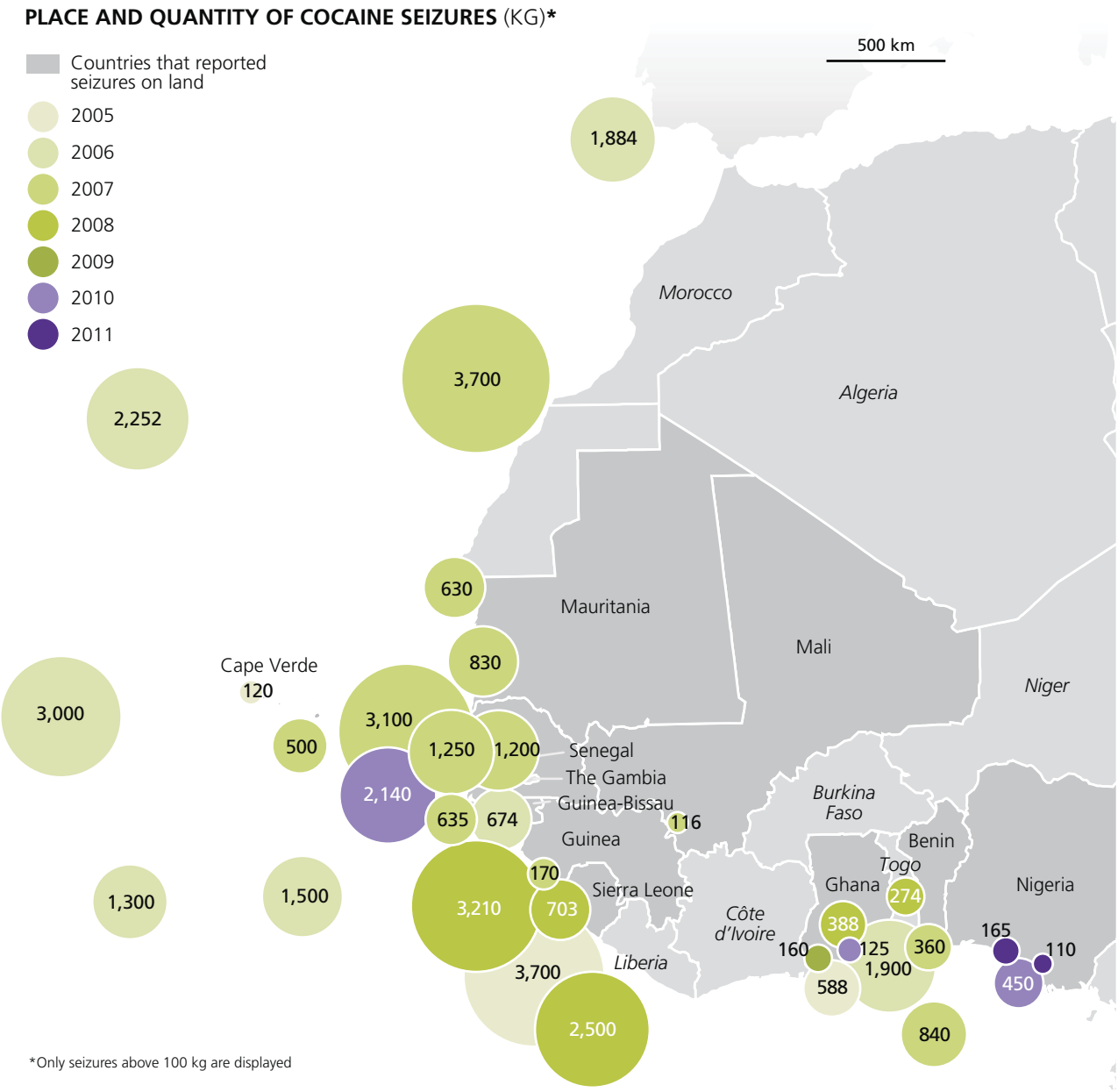
Source: UNODC, World Drug Report 2010, updates for 2009.



Map 24: Significant cocaine seizures affecting West Africa, 2005-2011*

* January 2011

Source: UNODC IDS; Government sources.



West Africa could have thus amounted to some 35 mt in 2009 (range: 21-55 mt), equivalent to 4% (range: 2%-6%) of total cocaine exports out of the three Andean countries - of which almost two thirds was for subsequent onward transit traffic to West and Central Europe.

Current value and money flows

The value of the global cocaine market is most certainly lower than it was in the mid-1990s, when prices were much higher and the US market was strong. In 1995, the global market was worth some US$165 billion, which had been reduced to just over half of this by 2009 (US$85 billion; range: US$75-US$100 bn).

North America and West and Central Europe accounted for 86% of the global cocaine market in economic terms in 2009. North America accounted for 47% and West and Central Europe 39% of the total.

While the North American market shrank over the last two decades – due to lower volumes and lower prices - the European market expanded. Nonetheless, the US market remains the largest market globally, but the market of the countries of West and Central Europe (US$33 billion at retail level in 2009) is – in economic terms – now nearly as large as the US market (US$37 billion in 2009).

Fig. 88: Value of the global cocaine retail market (in billion constant 2009 US$), 1995, 2008 and 2009

Sources: UNDCP, Economic and Social Consequences of Drug Abuse and Illicit Trafficking, 1997 (re-valued based on US consumer price index); UNODC estimates on the size of the global cocaine market for 2009, based on ARQ data and other Government sources.

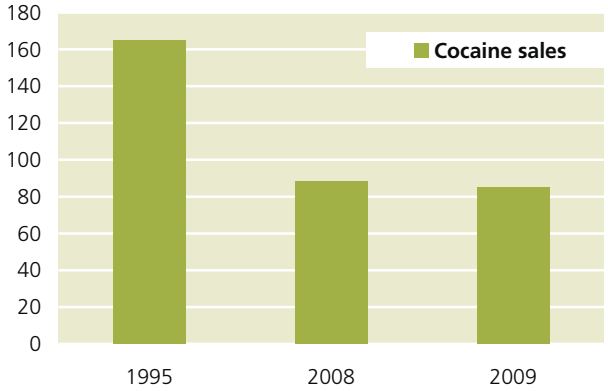
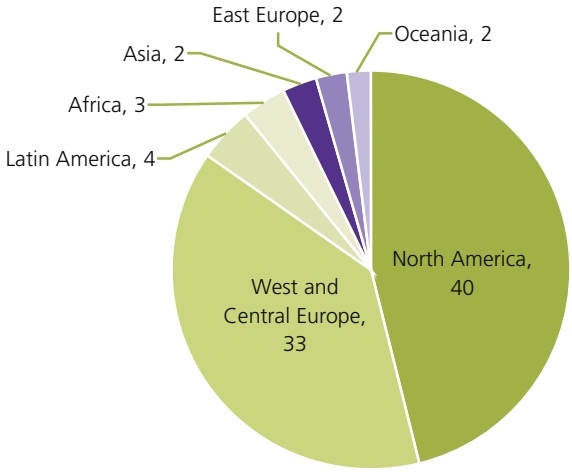


Fig. 89: Regional breakdown of the value of the global cocaine market in 2009 in billions of US$ (N = US$85 bn)

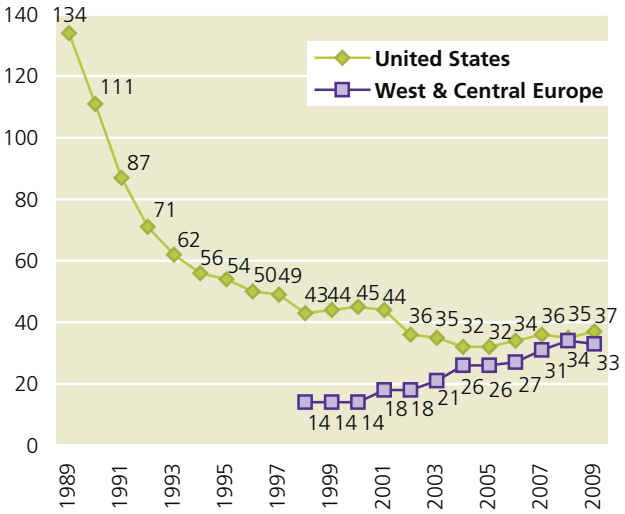
Source: UNODC estimates on the size of the global cocaine market for 2009, based on ARQ data and other Government sources.



Out of the US$85 billion in income from global cocaine retail sales in 2009, traffickers are estimated to have reaped some US$84 billion (almost 99%). The rest went to farmers in the Andean region. The largest gross profits were reaped from cocaine sales in North America (some US$34 billion), followed by countries of West and Central Europe (some US$23 billion). Expressed as a proportion of GDP, the cocaine profits were rather small (0.2% of GDP in North America and 0.1% in West and Central Europe). Profits from international trafficking to North America and Europe amount to some US$15 bn. This suggests that more than 85% of global cocaine profits were related to demand for cocaine

Fig. 90: Value of the US and West and Central European cocaine markets, 1989-2009 (constant 2008 US$ billions)

Source: UNODC, World Drug Report 2010 and updates for 2009.



in North America and West and Central Europe. Cocaine-related profits generated in South America, Central America and the Caribbean from trafficking cocaine to North America and West and Central Europe amounted to some US$18 billion in 2009, equivalent to 0.6% of the total GDP of South America, Central America and the Caribbean.

Of the cocaine trafficked to meet demand in West and Central Europe, UNODC estimates – based on an analysis of reported individual drug seizures in terms of volumes and number of seizure cases - that some 13% (range: 11%-16%) transited West Africa in 2009. Reports indicated that up to one third of the shipments is paid in kind to service providers in West Africa, who then traffic most of this cocaine to Europe on their own behalf. In addition, profits are made in supplying the West African cocaine market. The potential wholesale profits affecting West Africa in 2009 amount to US$0.8 billion, equivalent to 0.2% of GDP in West and Central Africa. These figures do not include profits made by West African citizens engaged in European cocaine retail sales (often European residents, illegal immigrants or asylum seekers). European retail profits amount to some US$20 billion. Arrest statistics of West African citizens in relation to cocaine trafficking (for example, more than 23% in Portugal in 2008 and more than 16% in France in 2006) suggest that West African groups play an important role in cocaine street sales in several (mainly continental) European countries. Assuming that the West African groups reap, on average, between 5% and 10% of the European cocaine retail profits, this would amount to another US$1-2 billion in potential cocaine-related income.

Table 28: Estimates of gross profits made by cocaine traffickers (billion US$), by region, 2009

Sources: UNODC estimates based on ARQ data and other Government or scientific sources.

	In billion US$	In % of GDP
South America, Central America, Caribbean		
local market	3	0.1%
export to North America*	6	0.2%
export to Europe**	9	0.3%
Subtotal South America, Central America, Caribbean	18	0.6%
North America (USA, Mexico, Canada)	34	0.2%
West and Central Europe (EU-25 and EFTA)	23	0.1%
West and Central Africa (local demand and export to Europe)	0.8	0.2%
Other	8	0.04%
Total trafficking profits	**84*** **	**0.1%**

* Trafficking from producing areas in the Andean region to Mexico.

** All trafficking to transit countries (US$4.9 bn) and from transit countries to Europe (US$6.1 bn) of which 70% (US$4.3bn) is assumed to be generated by trafficking groups from South America and the Caribbean; gross profits for trafficking to Europe are higher as prices in Spain (the main entry point into Europe) are much higher than prices in Mexico (the main entry point into North America).

*** The difference between the total size of the global cocaine market (US$85 bn) and gross trafficking profits (US$84 bn) is income of farmers; farmers are estimated to earn less than US$1 bn.

Table 29: Tentative estimates of the profits reaped by West African groups out of cocaine trafficking, 2009

Source: UNODC estimates based on ARQ and IDS data.

	Gross profits	Proportion of (assumed) West- African involvement	West African cocaine related trafficking income
Profits made by importing cocaine from South America to West Africa for domestic use	US$ 0.2 bn	10%	US$ 0.02 bn
Profits made by selling cocaine to West African customers	US$ 0.4 bn	100%	US$ 0.4 bn
Profits made in shipping cocaine to countries in West and Central Europe and selling it to mid-level drug dealers	US$ 9.2 bn	13.4%*33%	US$ 0.4 bn
Subtotal			≈ US$ 0.8 bn
Retail profits made in West and Central Europe	US$ 20 bn	5% - 10%	US$ 1 bn – US$ 2 bn
Total			**US$ 1.8 – US$ 2.8 bn**

4. The ATS market

4.1 Introduction

The term amphetamine-type stimulants (ATS) refers to a group of synthetic substances comprised of amphetamines-group substances (primarily amphetamine, methamphetamine and methcathinone) and ecstasy-group substances (MDMA and its analogues).

ATS are available in diverse forms and purities. Methamphetamine or amphetamine can be in powder, tablet, paste or crystalline form while 'ecstasy' is usually available in tablet or powder form.

4.2 Consumption

For the past two decades, the use of amphetamine type stimulants (ATS) has been one of the most significant drug problems worldwide. This section describes the trends in the use of amphetamines-group and ecstasy-group substances in the different regions.

Amphetamines-group substances

In 2009, UNODC estimates that, with an annual prevalence ranging between 0.3% and 1.3%, between 13.7 and 56.4 million people aged 15-64 globally had used amphetamines-group substances at least once in the past year. While these numbers reflect a slight increase over estimates for previous years, they do not essentially indicate a significant difference in the prevalence of amphetamines-group substances.

The type of amphetamines-group substances used in different regions varies considerably. In East and South-East Asia, methamphetamine is the primary substance consumed within this group, while in the Near and Middle East, the use of tablets sold as Captagon is reportedly more common. In Europe, amphetamine is the main substance used within this group with the exception of Czech Republic and Slovakia, where methamphetamine has traditionally been the predominant amphetamines-group substance used.

In North America as well as Australia and New Zealand, the use of prescription stimulants[1] is as common as methamphetamine. In South America and the Caribbean, prescription stimulants are more commonly used. In Africa, especially in West, Central and East Africa and some parts of Southern Africa, the use of amphetamines-groups substances may comprise use of prescription stimulants. In South Africa, methamphetamine and methcathinone are the most commonly used ATS.

In 2009, out of the 69 Member States that reported expert perception on amphetamines-group use trends through the Annual Reports Questionnaire, an equal number of countries perceived increasing and stable trends in the use of ATS over the past year. In Asia, however - particularly in South and South-East Asia - the majority of countries reported a perceived increase in the use of ATS in their countries.

Trends over the past 12 years in the perceived increase in use of ATS as reported by Member States indicate that since 2001, the rate of increase has been much higher and more substantial in the developing (non-OECD) countries than in the developed (OECD) countries. In developing countries and especially emerging econo-

1 Prescription stimulants may include substances such as amfepramone, fenetylline, methylphenidate, phenmetrazine, et cetera.

Table 30: Annual prevalence and estimated number of amphetamines-group substances users, by region, subregion and globally, 2009

Region/subregion (amphetamines-group)	Estimated number of users annually (lower)	-	Estimated number of users annually (upper)	Percent of population age 15-64 (lower)	-	Percent of population age 15-64 (upper)
Africa	1,180,000	-	8,150,000	0.2	-	1.4
East Africa						
North Africa						
Southern Africa	280,000	-	780,000	0.4	-	1.0
West and Central Africa						
Americas	5,170,000	-	6,210,000	0.8	-	1.0
Caribbean	30,000	-	530,000	0.1	-	1.9
Central America	320,000	-	320,000	1.3	-	1.3
North America	3,460,000	-	3,460,000	1.1	-	1.1
South America	1,340,000	-	1,890,000	0.5	-	0.7
Asia	4,330,000	-	38,230,000	0.2	-	1.4
Central Asia						
East/South-East Asia	3,480,000	-	20,870,000	0.2	-	1.4
Near and Middle East	460,000	-	4,330,000	0.2	-	1.7
South Asia						
Europe	2,540,000	-	3,180,000	0.5	-	0.6
East/South-East Europe	510,000	-	1,050,000	0.2	-	0.5
West/Central Europe	2,030,000	-	2,120,000	0.7	-	0.7
Oceania	470,000	-	640,000	2.0	-	2.8
Global	**13,690,000**	**-**	**56,410,000**	**0.3**	**-**	**1.3**

Fig. 91: Range of estimated number of amphetamines-group substance users by region

Source: UNODC.

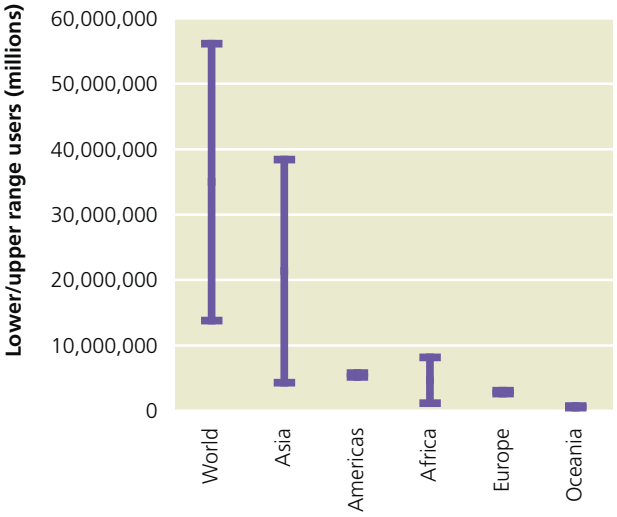
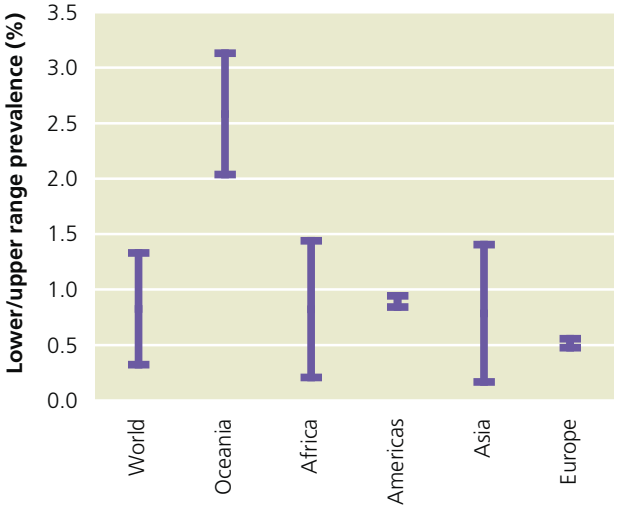


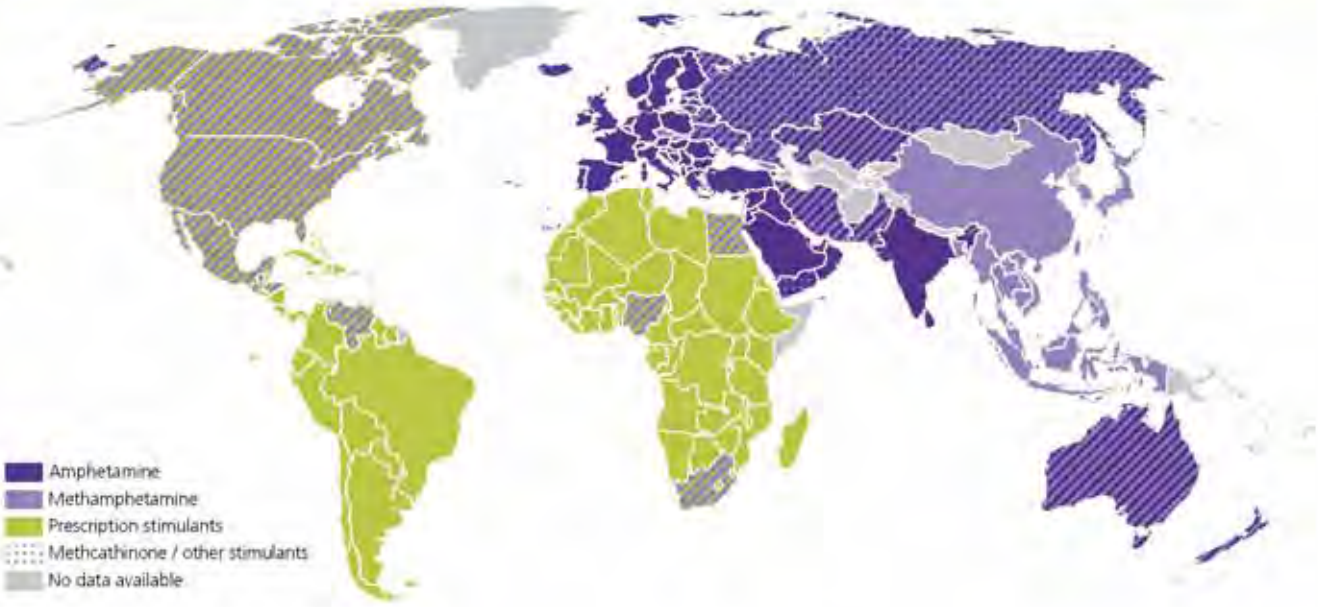
Fig. 92: Range annual prevalence of amphetamines-group substance users by region

Source: UNODC.



mies, there is an expanding middle class with more disposable income. The association in developed countries of synthetic drugs, especially stimulants, with modernization and affluent lifestyles, combined with increasing demands for higher performance and the availability and reported common use of stimulants in recreational and entertainment settings, may be contributing to an increase in the use of stimulants in developing countries where young people within the growing middle class may want to emulate these lifestyles.

Map 25: Use of different types of amphetamines-group substances



Source: ARQ, Government Control and UNODC field offices.
Note: The colours do not represent the level of use, only the category of stimulants used.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Table 31: Expert perceptions of trends in amphetamines-group substance use, 2009

Source: UNODC ARQ

Region	Member States providing perception data	Member States perception response rate	Use problem increased*	Percent use problem increased*	Use problem stable	Percent use problem stable	Use problem decreased*	Percent use problem decreased*
Africa	5	9%	2	40%	2	40%	1	20%
Americas	11	31%	4	36%	6	55%	1	9%
Asia	24	53%	14	58%	5	21%	5	21%
Europe	28	62%	10	36%	16	57%	2	7%
Oceania	1	7%	0		1		0	
Global	**69**	**36%**	**30**	**43%**	**30**	**43%**	**9**	**13%**

* Identifies increases/decreases ranging from either some to strong, unweighted by population.

North America: Increased use of amphetamines-group substances reported in United States and Mexico; decrease reported in Canada

With an estimated 3.5 million people who had used amphetamines-group substances at least once in the previous year, this region has probably the third highest prevalence of amphetamines-group substance use (1.1% of the population aged 15-64) globally.

In the United States of America, the annual prevalence of amphetamines-group substances was reported as 1.5% of the population aged 15-64 in 2009. The non-medical use of prescription stimulants is higher in the United States compared to the use of methamphetamine, whose annual prevalence reached 0.6% of the population aged 15-64. Between 2002 and 2006, there was a steady increase in the use of amphetamines and methamphetamine among the population 12 years or older, followed by a decrease between 2007 and 2008. In 2009, the annual prevalence showed an increase, but at levels below the ones observed between 2002 and 2006.

The number of people aged 12 years or older who had initiated drug use with methamphetamine was 154,000

Fig. 93: Expert perceptions of the trends in amphetamines-group substance consumption, 2000-2009

Source: UNODC ARQ.

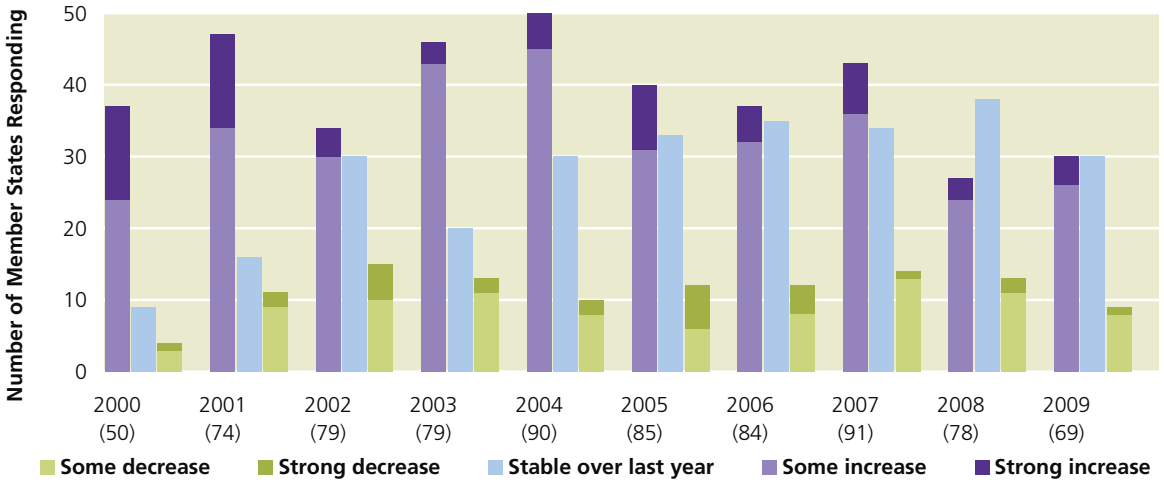


Fig. 94: Amphetamines-group substance use trends as perceived by experts of developed (OECD) and developing countries, 1998-2009 (baseline: 1998 =100)

Source: UNODC ARQ.

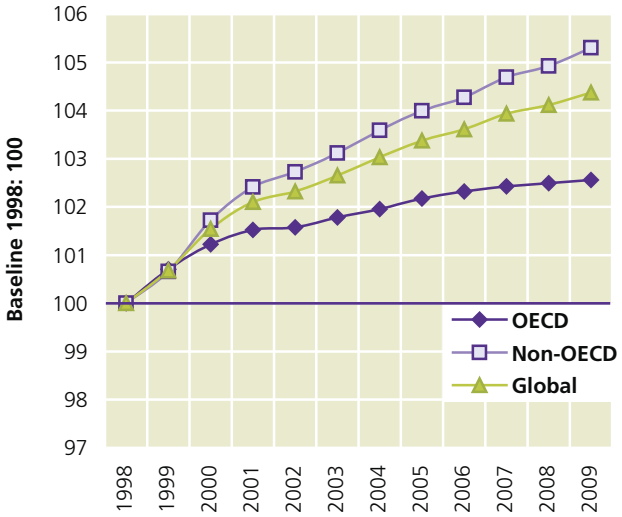
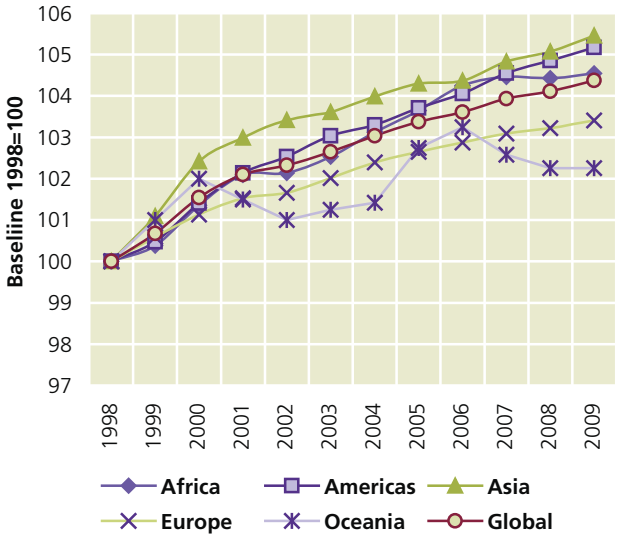


Fig. 95: Experts' perceptions on global and regional trends in the use of amphetamines-group substances, 1998-2009

Source: UNODC ARQ.



in 2009 in the United States. While this estimate was significantly higher than the estimate in 2008 (95,000), it is still substantially lower than the estimate for 2002 (299,000),[2] and far lower than the reported initiates for most other illicit drugs (except for PCP). In line with the annual prevalence, the number and proportion of people who had reported non-medical use of stimulants in the past 30 days (prior to the survey) increased significantly from 904,000 (0.4%) in 2008 to 1.3 million (0.5%) in 2009. This increase in the prevalence of stimulants use is attributed in part to an increase in the number of methamphetamine users.[3]

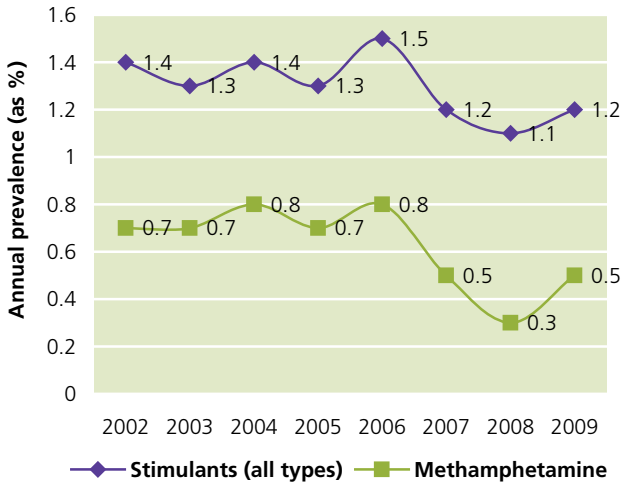
The recent increase in stimulant and notably in methamphetamine use among the general US population was not reflected in prevalence data for high school students for 2009. Among secondary school students in the United States, there has been a declining trend in the annual prevalence of amphetamine and methamphetamine use between 2002 and 2008, and stable trends in

2 Substance Abuse and Mental Health Services Administration, *Results from the 2009 National Survey on Drug Use and Health: Volume I.* Summary of National Findings, Rockville, Maryland, USA, 2010.

3 Ibid.

Fig. 96: United States: Annual prevalence of stimulants and methamphetamine use in the population aged 12 and older, 2002-2009

Source: Substance Abuse and Mental Health Services Administration, Results from the 2009 National Survey on Drug Use and Health: Volume I, Summary of National Findings, 2010.



2009.[4] In 2010, annual prevalence of amphetamines use rose among 10th and 12th graders while it continued to decline among 8th graders. Use of methamphetamine, in contrast, increased among 8th graders, remained stable among 10th graders but declined among 12th graders in 2010. Despite some increases in amphetamines use and a stable level of methamphetamine use among US high school students in 2010, the overall level in 2010 remained substantially lower than over the 2002-2006 period.

In contrast to an overall rising trend of ATS use in the United States, the annual prevalence of ATS use among the general population in Canada (0.7%) was significantly lower in 2009 than in 2008 (1.5%). The annual prevalence of both amphetamine and methamphetamine was substantially lower in 2009 than a year earlier (0.5% and 0.1% compared to 1.3% and 0.2% respectively).

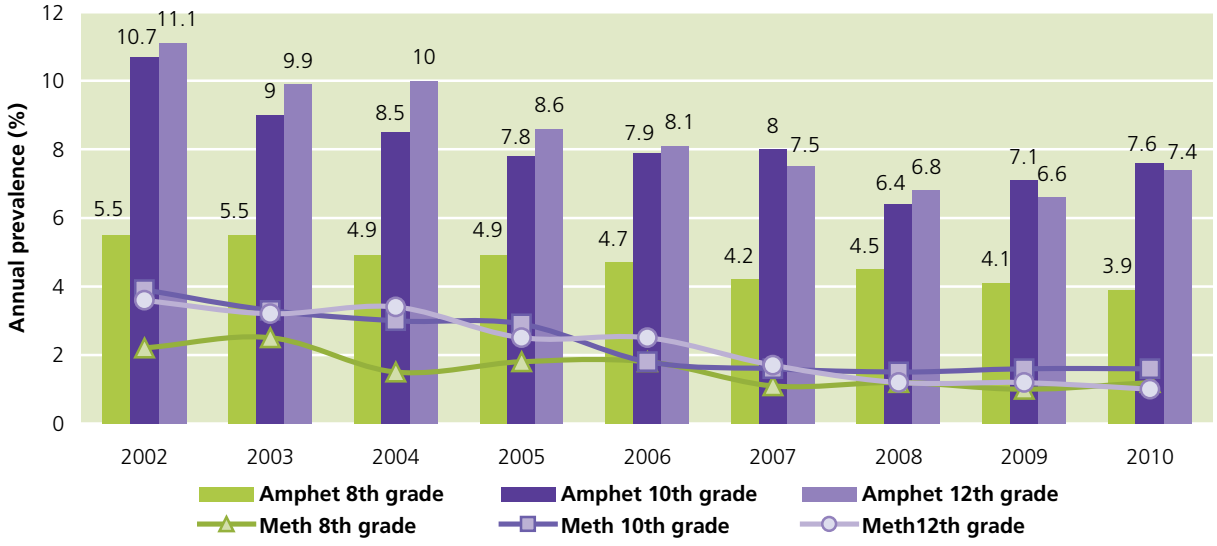
In Mexico, while there has been no update in the annual prevalence of amphetamines-group substance use since the last household survey in 2008, the expert perception in 2009 indicates stable trends for amphetamines use but a great increase in the use of methamphetamine over the past year. In 2009, among school students aged 12-19 in Mexico, the reported lifetime prevalence of amphetamine and methamphetamine use was 1.9% and 0.7% respectively.[5] In previous years, however, the lifetime prevalence among youth aged 12-17 was reported as 0.07% for amphetamine and 0.35% for methamphetamine.[6]

Amphetamines-group substance use in South America appears to remain stable

There is no updated information on the prevalence of amphetamines-group substance use in South America. Existing information shows that the annual prevalence

Fig. 97: Annual prevalence of amphetamines use among secondary school students in the United States, 2002-2009

Source: United States Monitoring the Future: national results on adolescent drug use.



4 Johnston, L. D., O'Malley, P. M., Bachman, J. G., and Schulenberg, J. E., *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2010*, Ann Arbor, Institute for Social Research, The University of Michigan, USA, 2011.

5 UNODC ARQ.

6 The information on annual prevalence in the ARQ for Mexico in 2008 was based on the national survey conducted among the general population aged 12-65 with the breakdown of the estimates among the ages 12-17 years

Fig. 98: Annual prevalence of amphetamines-group substances use in South America among the population aged 15-64, latest year available

Source: UNODC ARQ.

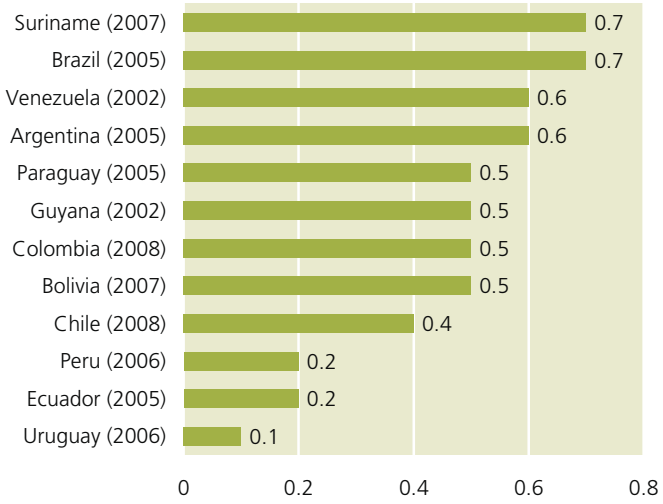
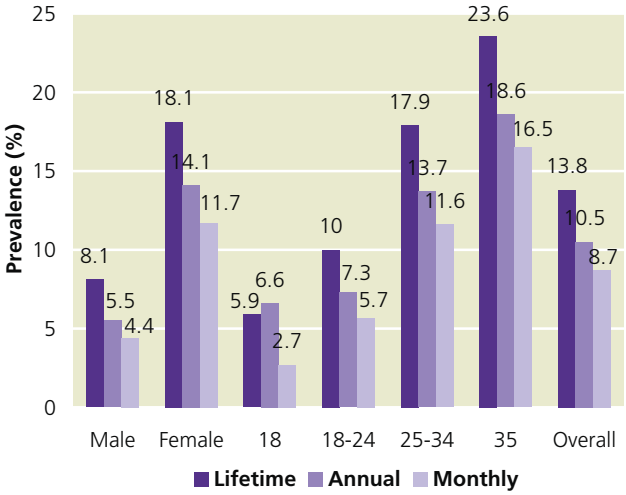


Fig. 99: Brazil: Prevalence of amphetamine use among university students, 2009

Source: I Levantamento Nacional Sobre O Uso De Álcool, Tabaco E Outras Drogas Entre Universitarios Das 27 Capitais Brasileiras, Secretaria Nacional Politicas sobre Drogas, Brasilia, 2010.



of amphetamines-group substance use in South America remains close to the world average, with estimates ranging between 0.5% and 0.7% of the population aged 15-64 or between 1.34 and 1.89 million people in that age group who had used these substances in the previous year. Compared to 2008, most of the countries reporting from the region perceive trends of amphetamine and methamphetamine use as being stable in 2009. Brazil, the Bolivarian Republic of Venezuela and Argentina remain countries with a high prevalence and absolute number of users of amphetamine and methamphetamine in South America.

In a national survey conducted among university students in Brazil in 2009, the annual prevalence of amphetamines use among the students was reported as 10.5%. The annual prevalence was higher among female students (14.1%) than male students (5.5%), and was also higher among the older students, that is, those who were 35 years or older (18.6%), followed by students aged between 25-34 years (13.7%).[7] The use of amphetamine-like substances is reportedly more common among women due to their anorexic effects and a prevalent culture to use medications for weight loss purposes.[8]

Although there are no recent updates on the prevalence of amphetamine and methamphetamine in Central America, as a region, it has a high prevalence of amphetamines-group substance use (1.3% of the adult population), with El Salvador (3.3%), Belize (1.4%) and Panama (1.2%) as the three countries with high annual prevalence among the general population. A large proportion of the ATS use in these countries is related to the use of prescription stimulants.

While most countries in Europe show stabilizing trends in the use of amphetamines-group substances, high levels of injecting amphetamines use are reported by a few

In 2009, more than half of European countries reported stable trends of ATS use in their countries. The countries that reported data show a mixed trend from previous years. The annual prevalence of amphetamines-group substance use in Europe is estimated between 0.5% and 0.6%, which corresponds to an estimated 2.6 to 3.3 million people who had used these substances in the past year. Like in other regions, the majority of amphetamine users fall within the 15-34 years age group, with a much higher estimated annual prevalence of 1.2%.

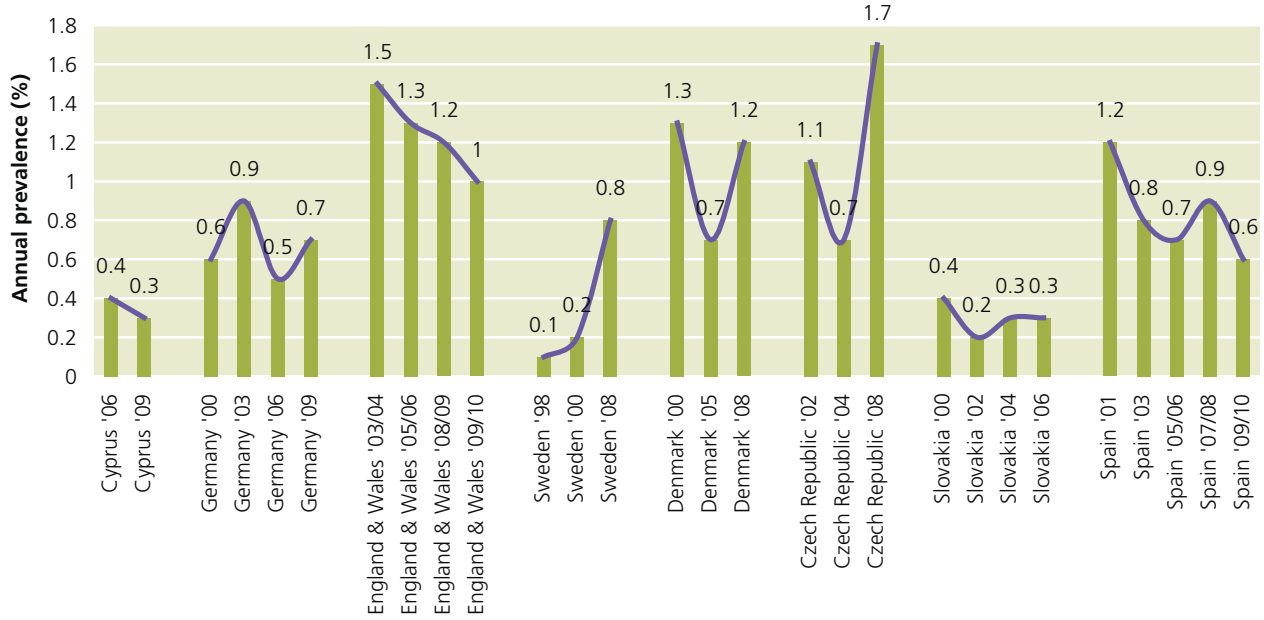
The amphetamines-group substance prevalence is, overall, higher in West and Central Europe than in East and South-East Europe. In most parts of Europe, amphetamine is the more commonly used substance within this group, while the use of methamphetamine remains limited and has historically been highest in the Czech Republic and Slovakia. In 2009 and 2010, countries that reported new data on ATS prevalence include Cyprus, Germany, Spain, Sweden and the United Kingdom (England and Wales). Except for Germany and Sweden, many of these countries are showing stabilizing or decreasing trends in the use of amphetamines-group

7 Andrade, A.G., Duarte, P. and Oliveira, L. G., *I Levantamento Nacional Sobre O Uso De Álcool, Tabaco E Outras Drogas Entre Universitarios Das 27 Capitais Brasileiras*, Secretaria Nacional Politicas sobre Drogas, Brasilia, 2010.

8 Napp S.A., et al., 'Use of anorectic amphetamine-like drugs by Brazilian women,' *Eating Behaviors*, Volume 3, Issue 2, Summer 2002, pages 153-1165

Fig. 100: Trends in amphetamines-group substances in selected European countries, various years

Sources: EMCDDA; UNODC.



substances. While in Germany, there was an increase in the annual prevalence in 2009 (0.7%) over the previous estimates in 2006 (0.5%), the estimate remains at lower levels than shown for 2003 (0.9%).

Within West and Central Europe, the Czech Republic, Denmark, the United Kingdom, Norway and Estonia remain the countries with the highest annual prevalence rates, while in South-East Europe, Bosnia and Herzegovina and Bulgaria have high annual prevalence of amphetamines use.

In most West and Central European countries, problem amphetamines use represents a small fraction of overall problem drug use, except for the Czech Republic and some of the Nordic countries. Those who report amphetamine as their primary substance account for less than 5% of drug users in treatment, on average, in Europe. High levels of injecting use are reported from the Czech Republic, Estonia, Latvia, Lithuania, Sweden and Finland, ranging from 57% to 82% among amphetamines users.[9]

Mixed trends on use of amphetamines-group substances in Africa

The annual prevalence of amphetamines-group substances in Africa is estimated between 0.2% and 1.4% (between 1.2 and 8 million people), reflecting the fact that for most parts of Africa, there is either limited or no recent or reliable data available on the prevalence or trends of amphetamines-group substance use, resulting in a wide range and uncertainty of the estimates. The only valid estimates that can be derived in the region are for Southern Africa where the annual prevalence is estimated between 0.4% and 1% of the population aged 15-64.

Among the limited number of countries that have reported expert opinion on trends in the use of amphetamines-group substances in Africa, nearly half of the countries report that the trend has increased while a similar proportion report stable trends over the past year. In most parts of Africa, prescription amphetamines comprise the primary substances used within this group.

South Africa is one country in the region from which there is more consistent and recent information available on drug use trends. Such data – based on treatment demand - showed a strong increase in the importance of amphetamines until the second half of 2006, followed by a stabilization or small downward trend since. The importance of amphetamines increased again temporarily in the first half of 2009, before falling back in the second half of the year to the levels reported in 2008.

The past 3 months prevalence of amphetamines-group substances in South Africa was reported at 0.7% in 2008 for the population aged 15 and above. Based on this information, the annual prevalence of amphetamines-group substance use was estimated by UNODC at between 0.7% to 1.4% of the adult population (aged 15-64) in South Africa.

In contrast to the patterns in other parts of Africa, methamphetamine and methcathinone are the main substances used within the amphetamines-group substances.

9 European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Annual Report 2010: The State of the drugs problem in Europe*, Lisbon, 2010

Fig. 101: Trends in treatment demand for methamphetamine as the primary substance in Western Cape (Cape Town), South Africa, 2005-2009 (biannual data)

Source: Alcohol and Drug Abuse Trends: July – December, 2009 (Phase 27), South African Community Epidemiology Network on Drug Use (SACENDU) Update June 2010.

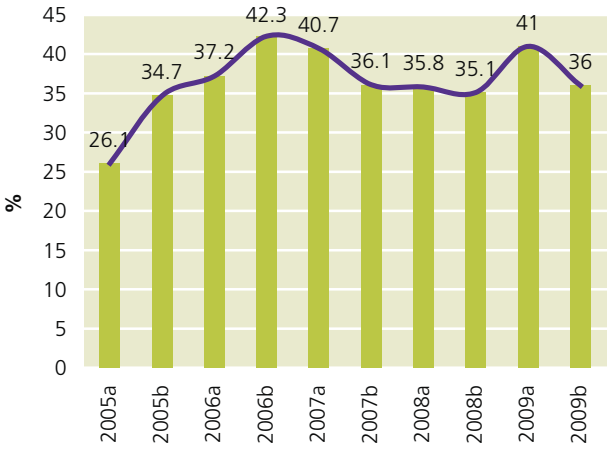
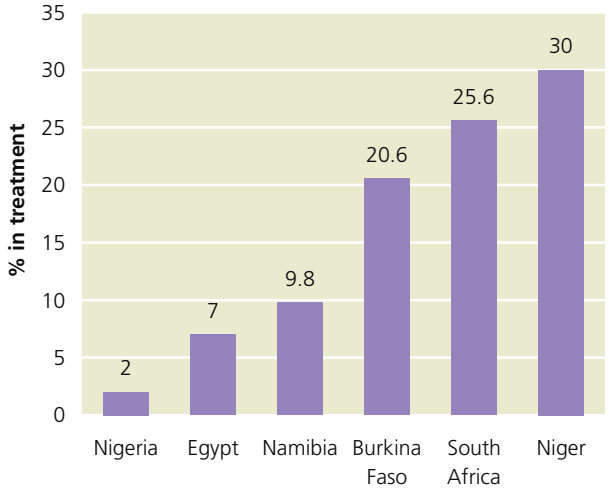


Fig. 102: Percentage of ATS-group substances among primary substance of abuse in treatment in Africa, 2009 or latest year available

Source: UNODC ARQ.



In South Africa, methamphetamine or 'tik' as it is locally known, remained the primary substance of use for which people were seeking treatment, mainly in Cape Town. In other parts of the country, the proportion has remained very low.[10] For the other countries in Africa, for which information on treatment demand is available, amphetamines-group substances as the primary substance of abuse among persons treated in the region averaged around 5% of all treatment demand. This ranges from 30% of all treatment admissions reported in Niger to around 2% in Nigeria.

Increasing trends of amphetamines-group substances use in Asia with injecting methamphetamine and its associated negative health consequences reported as an increasing problem in East and South-East Asia

The annual prevalence of amphetamines-group substance use in Asia ranges between 0.2%-1.4% or from 4 to 38 million people aged 15-64 who are estimated to have used these substances in the past year. The wide range and uncertainty in the estimates derive from missing information on the extent and pattern of use from large countries in Asia, particularly China and India. Due to a lack of recent or reliable estimates from many countries in the region, estimates cannot be calculated for the subregions of Central and South Asia.

Nevertheless, among the Asian countries reporting through the ARQ, experts in more than half of the countries, mainly in East and South-East Asia, perceived an increase in the use of amphetamines-group substances, compared to less than a quarter of countries in which experts perceived the problem to have stabilized or decreased over the past year. Outside East and South-East Asia,[11] Armenia, Georgia, Jordan, Pakistan and Qatar are five countries that have reported a perceived increase in the use of amphetamine-type stimulants over the past years.

In East and South-East Asia, the annual prevalence of amphetamines-group substances ranges between 0.2%-1.4% of the adult population aged 15-64.[12] Methamphetamine, both in pill and crystalline forms, is the main substance used within this group. The Philippines (2.1%), Thailand (1.4%) and the Lao People's Democratic Republic (1.4%) are the countries in the subregion with prevalence of methamphetamine use higher than the global average.

On average, the countries in South-East Asia in 2009 reported a 250% increase in the number of methamphetamine-related arrests since 2004. The highest increase reported was from Lao People's Democratic Republic, whereas Japan has reported a decline in methamphetamine-related attests.[13]

10 Pluddemann A., Parry C., et al. *Alcohol and Drug Abuse Trends: July – December, 2009 (Phase 27),* South African Community Epidemiology Network on Drug Use (SACENDU) Update June 2010.

11 The countries and areas reporting increases in ATS use in 2009 include China (and Macao, China), Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar and Viet Nam. On the other hand, Hong Kong China, Kazakhstan, the Republic of Korea and Lebanon have reported decreasing use of ATS.

12 In East and South-East Asia, most of the information on amphetamines-group substances is available through the UNODC SMART programme that assists the countries in the region to monitor drug trends with a particular focus on use of amphetamine-type stimulants.

13 UNODC *Patterns and Trends of Amphetamine-Type Stimulants and*

Fig. 103: Trends in methamphetamine-related arrests in selected countries in East and South-East Asia, 2004-2009

Source: UNODC, Patterns and Trends of Amphetamine-Type Stimulants and Other Drugs, Asia and Pacific, Global SMART Programme, 2010.

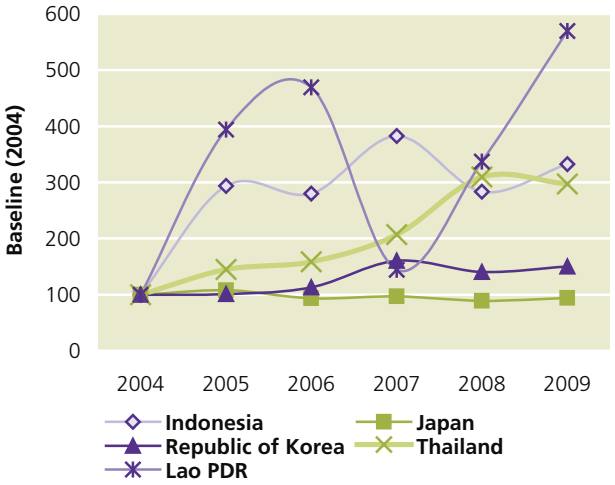
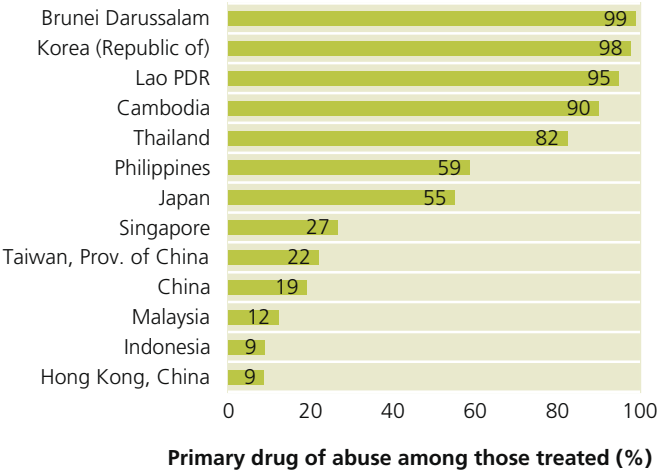


Fig. 104: Percentage of methamphetamine as the primary substance of abuse among those treated (%), 2009 or latest year available

Source: UNODC ARQ.

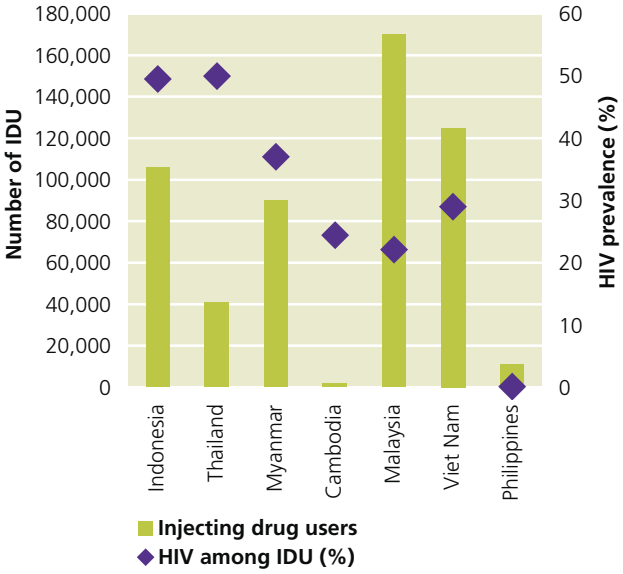


The treatment demand for methamphetamine in East and South-East Asia has also increased considerably over the last decade. It rose from on average a quarter of all treatment demand in 1998 to nearly half of all treatment admissions in 2009. The treatment demand for methamphetamine in 2009, or the latest year for which data is available, varied considerably across the countries and areas, ranging from nearly the entire treatment demand for methamphetamine use in Brunei Darussalam, the Republic of Korea and the Lao People's Democratic Republic to only 9% in Indonesia and Hong Kong, China.

Heroin and methamphetamine are the two common substances being injected in East and South-East Asia, with increasing trends reported of injecting methamphetamine in the subregion. In Thailand, injecting is the second most common method for using crystalline methamphetamine and the third most common method for abuse of methamphetamine pills.[14] In 2009, Indonesia reported an increasing trend in injecting heroin and crystalline methamphetamine, while Malaysia reported injecting of crystalline methamphetamine for the first time in 2009.[15] As a consequence, many countries in East and South-East Asia also have concentrated HIV epidemics that are in large part driven by sharing of contaminated needles and syringes among the injecting drug users.

Fig. 105: East and South-East Asia: Number of injecting drug users and HIV prevalence among IDU in selected countries, 2009 or latest year available

Source: United Nations Regional Task Force on Injecting Drug use and HIV and AIDS for Asia and the Pacific.



Infection with the hepatitis C virus (HCV), another major health consequence of injecting, is also reportedly high in the countries of East and South-East Asia. Among the countries and areas that reported prevalence of HCV among injecting drug users, this ranged between 50% in Macao, China to over 80% in Indonesia, Myanmar and Hong Kong, China.[16]

Other Drugs, Asia and Pacific, Global SMART Programme, 2010.

14 Pills are crushed, dissolved and injected.

15 UNODC, *Patterns and Trends of Amphetamine-Type Stimulants and Other Drugs, Asia and Pacific*, Global SMART Programme, 2010

16 UNODC ARQ.

Fig. 106: Annual prevalence of amphetamines-group substances in selected areas in Oceania, 2007/2008*

* In the case of New Zealand the estimates are for 2008, while for the rest of the countries they are from 2007.

Source: UNODC.

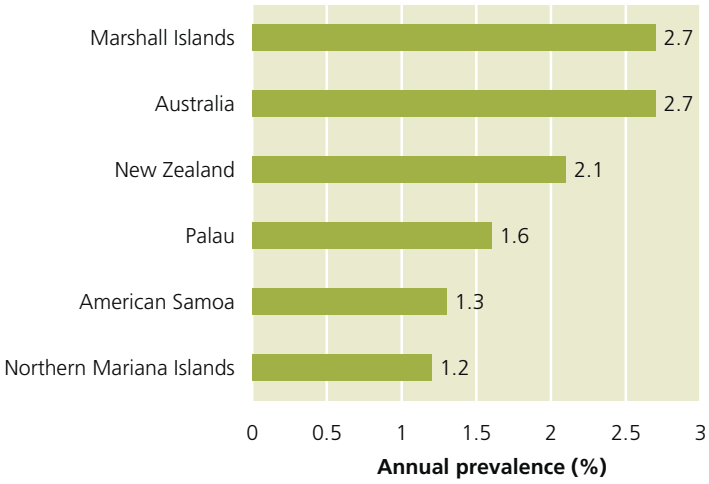


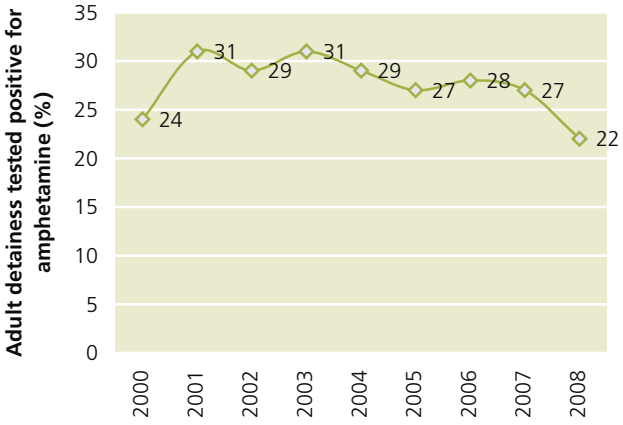
Fig. 107: Australia: Prevalence of amphetamine use among students, 2002, 2005 and 2008

Source: Australian secondary school students' use of tobacco, alcohol, and over-the-counter and illicit substance in 2008, Drug Strategy Branch, Australian Government Department of Health and Ageing, September 2009.

Fig. 108: Australia: Proportion of detainees testing positive for use of amphetamines, 2000-2008

* Trend data from the 4 original DUMA sites of Bankstown, Parramatta, East Perth and Southport

Source: Drug Use Monitoring in Australia: 2008 Annual Report on drug use among police detainees, Australian Institute of Criminology, 2010.



Prevalence of amphetamines-group substances remains highest in Oceania but with declining trends in Australia and New Zealand

Oceania as a region reportedly has the highest prevalence rate of amphetamines-group substances, ranging between 2% to 2.8% of the population aged 15-64. Marshall Islands, Australia and New Zealand, with annual prevalence rates of 2.7%, 2.7% and 2.1% respectively, remain the countries with the highest prevalence rates. The Pacific island states and territories in the region with available data report high prevalence rates of amphetamines-group substances.

The annual prevalence of meth/amphetamine use among the population aged 14 and above in Australia declined from 3.4% in 2001 to 2.3% in 2007. Although there is no updated information on annual prevalence of amphetamines use among the general population since 2007, available information points to a continuing decline in the trends of amphetamines use reported through different indicators.

Among Australian students aged 12-17 there has been a significant decline in both the lifetime and past month prevalence of amphetamines use from 2002 to 2005 and further to 2008.[17] The lifetime prevalence among the students had declined to 3.7% in 2008 from the 6.6% reported in 2002.[18]

The monitoring among detainees who were tested for drug use in Australia in 2008 revealed that 22% of detainees tested positive for methamphetamine use, down from 27% in 2007. This proportion was lower than at any point in time since 2000.[19]

Among the injecting drug users who were interviewed as part of the Illicit Drug Reporting System (IDRS), the

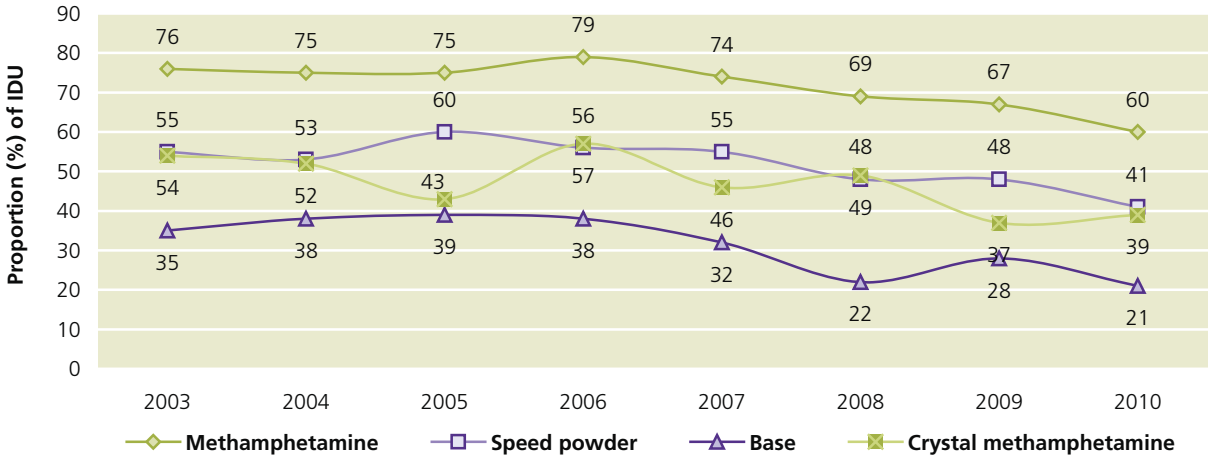
17 White V., Smith G., *Australian secondary school students' use of tobacco, alcohol, and over-the-counter and illicit substance in 2008*, Drug Strategy Branch, Australian Government Department of Health and Ageing, September 2009.

18 Like in other countries, the lifetime and past month prevalence of amphetamines use among students aged 16-17 is higher (6.2% and 2.4% respectively) than those aged 12-15 years (2.7% and 1.2% respectively).

19 Gaffney A., et al *Drug Use Monitoring in Australia: 2008 Annual Report on drug use among police detainees*, Australian Institute of Criminology, 2010

Fig. 109: Australia: proportion of injecting drug users who reported use of methamphetamine in the preceding six months, 2003-2010

Source: Illicit drug reporting system (IDRS), Australian Drug Trends 2010: Key Findings – Drug Trend Conference Handouts, Australian Government Department of Health and Ageing.



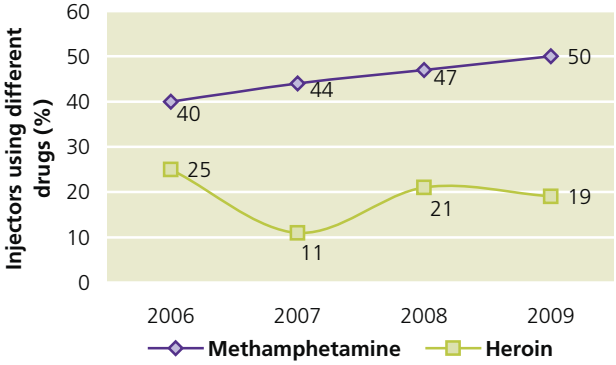
proportion of injecting drug users who had used any form of methamphetamine in the preceding six months declined each year between 2006 and 2010, and in 2010 reached its lowest level since 2003. The proportion of injectors who had used methamphetamine in the preceding six months dropped from 79% in 2006 to 74% in 2007 and continued to decline to 67% in 2009 and 60% in 2010.[20]

The prevalence of Hepatitis C among injecting drug users has remained stable at 61-62% over the period 2005-2008 in Australia, and is lower among those who reported using methamphetamine compared to those who reported heroin as the last drug injected. The HIV prevalence has also remained low at 1.5% among injecting drug users, but the prevalence is higher among drug users reporting methamphetamine as the last drug injected compared to those who reported last injecting heroin.[21]

The prevalence of amphetamines-group substances in New Zealand is among the highest in the world, where 2.1% of the population aged 16-64 had used amphetamine in the past year (2007/2008). Methamphetamine is also injected. About 0.5% of the population had used prescription stimulants for recreational purposes in the past year.[22] As part of the drug use monitoring among arrestees in New Zealand (NZ-ADAM), amphetamines were reported as the second most common drug (10%)

Fig. 110: New Zealand: trends in injecting heroin and methamphetamine among frequent injectors, 2006-2009

Source: Recent Trends in Illegal Drug Use in New Zealand, 2006-20009: Findings from the 2006, 2007,2008 and 2009 Illicit Drug Monitoring System (IDMS), Massey University, July 2010.



after cannabis, followed by methamphetamine (9%) among those tested for drug use in 2008.[23]

In contrast to Australia, methamphetamine use figures seem to be still rising in New Zealand. Among frequent injecting drug users the proportion of those who injected methamphetamine increased from 40% in 2006 to 50% in 2009. Frequent methamphetamine users, that is, those who had used the drug in the past 6 months, interviewed as part of Illicit Drug Monitoring System in New Zealand in 2009, were more likely to have injected methamphetamine in 2009 than in 2008 (35% vs. 23%).[24]

20 Illicit drug reporting system (IDRS), *Australian Drug Trends 2010: Key Findings – Drug Trend Conference Handouts,* Australian Government Department of Health and Ageing.

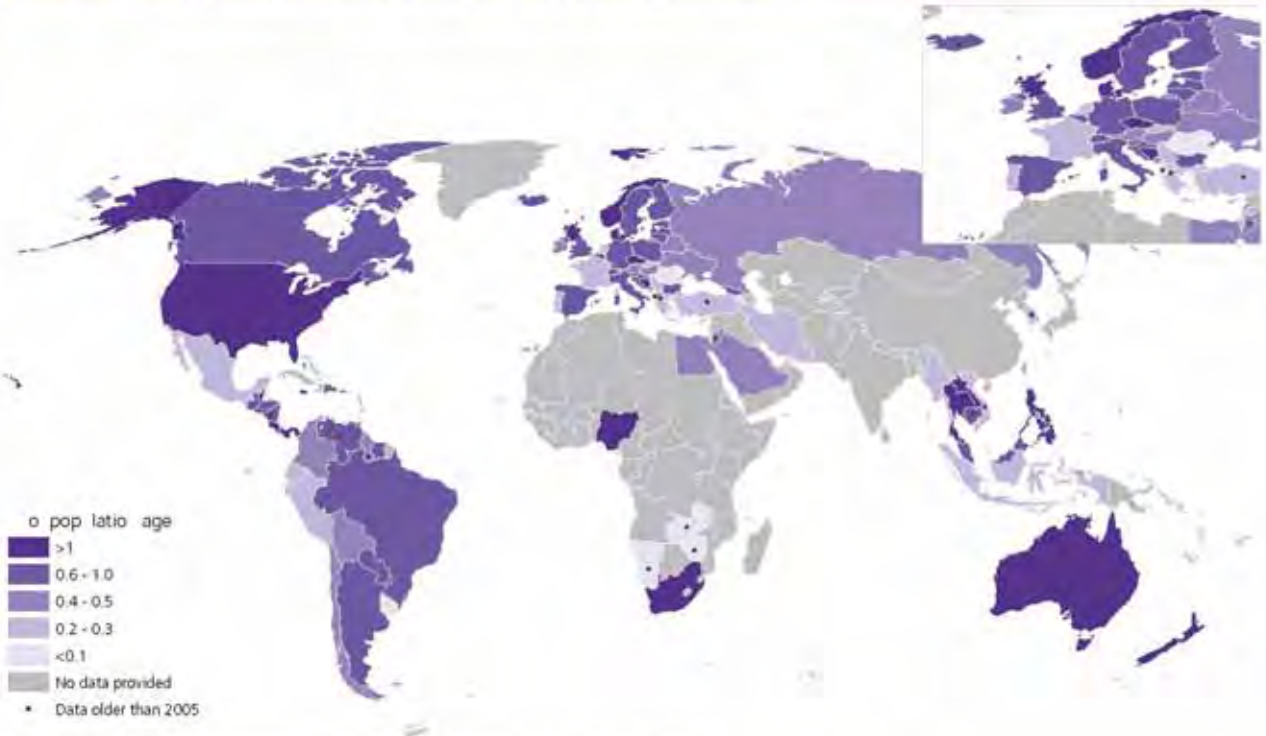
21 National Centre in HIV Epidemiology and Clinical Research., *Australian NSP Survey National Data Report 2005-2009*, The University of New South Wales, Sydney, 2010.

22 Ministry of Health, *Drug Use in New Zealand: Key Results of the 2007/08 New Zealand Alcohol and Drug Use Survey,* 2010.

23 Hales J and Manser J., *Annual report 2008- New Zealand Police NZ-ADAM,* Health Outcomes International Pvt. Ltd., October 2008.

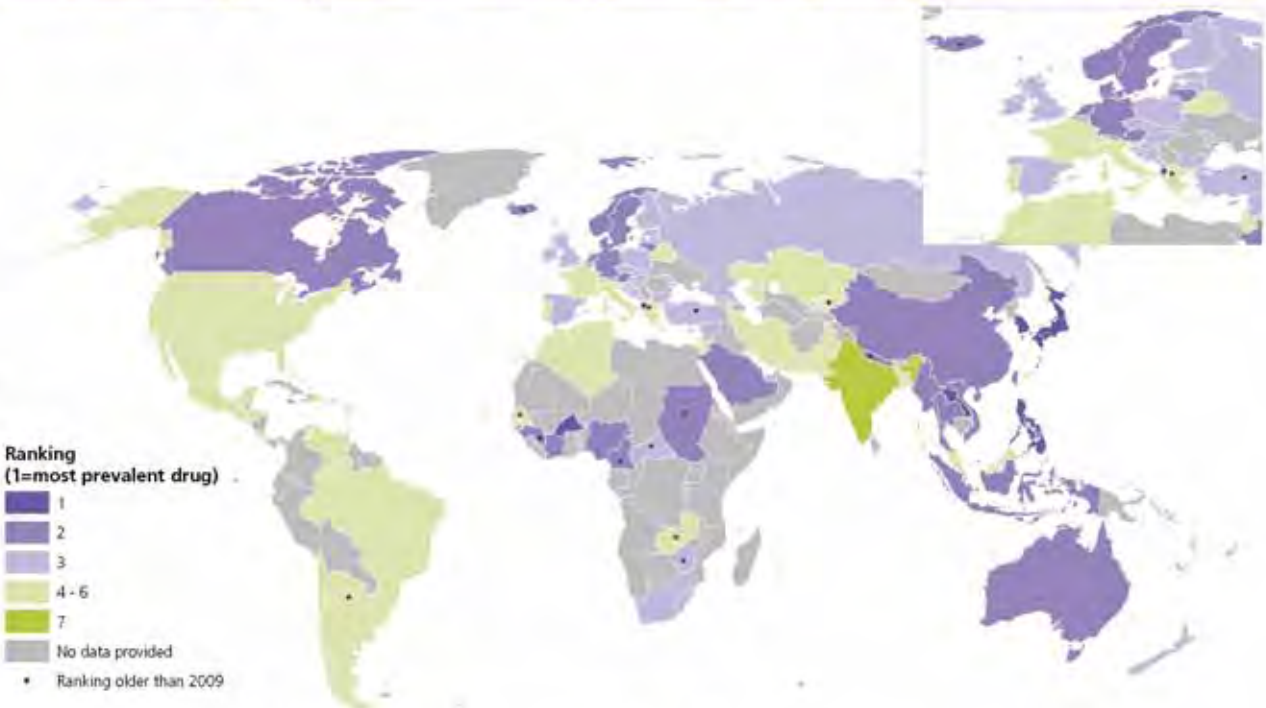
24 Wilkins C., et al, *Recent Trends in Illegal Drug Use in New Zealand, 2006-20009: Findings from the 2006, 2007,2008 and 2009,* Illicit Drug Monitoring System *(IDMS),* Massey University, July 2010.

Map 26: Use of amphetamines, 2009 (or latest year available)



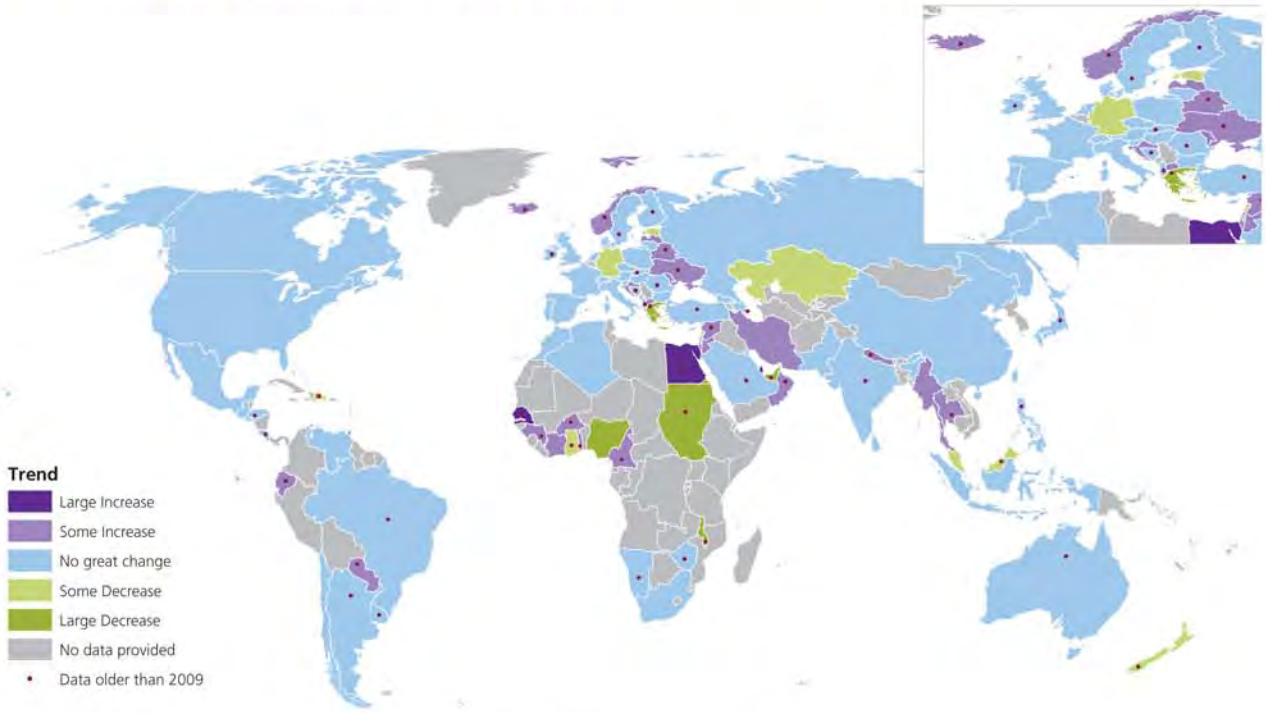
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Map 27: Ranking of amphetamines in order of prevalence, 2009 (or latest year available back to 2005)



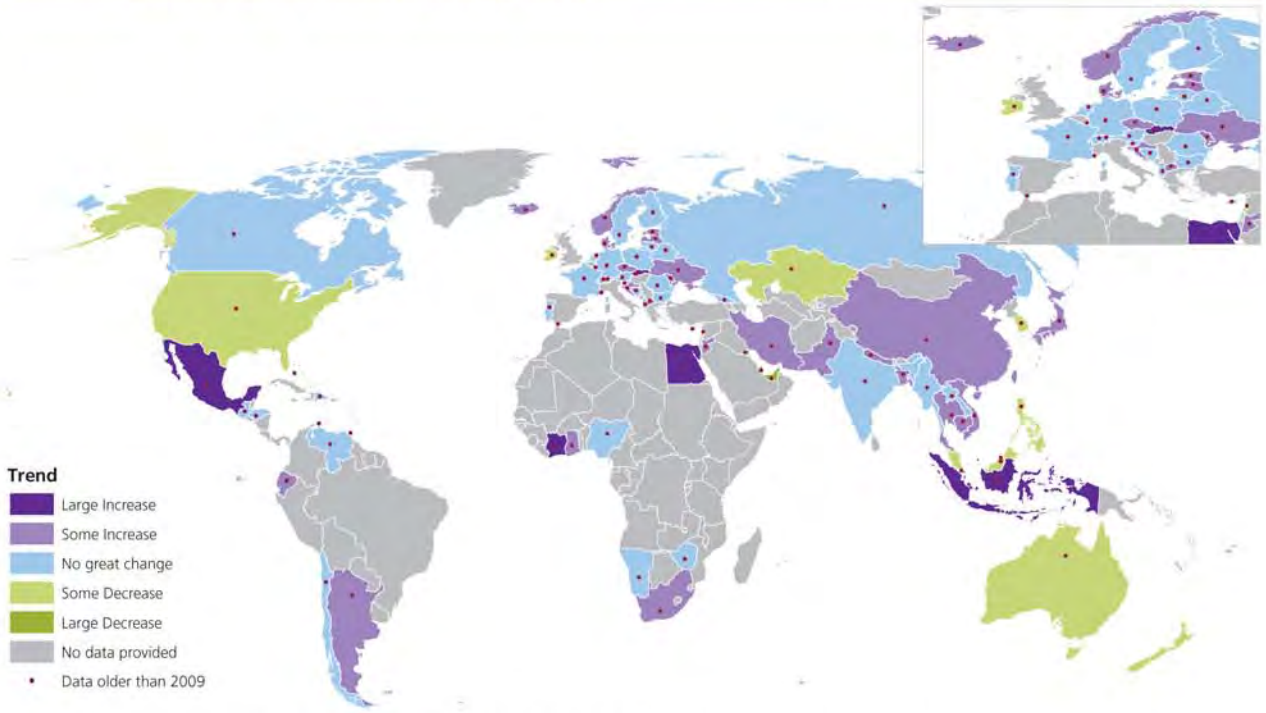
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Map 28: Expert perception of trend changes in the use of amphetamines, 2009 (or latest year available back to 2005)



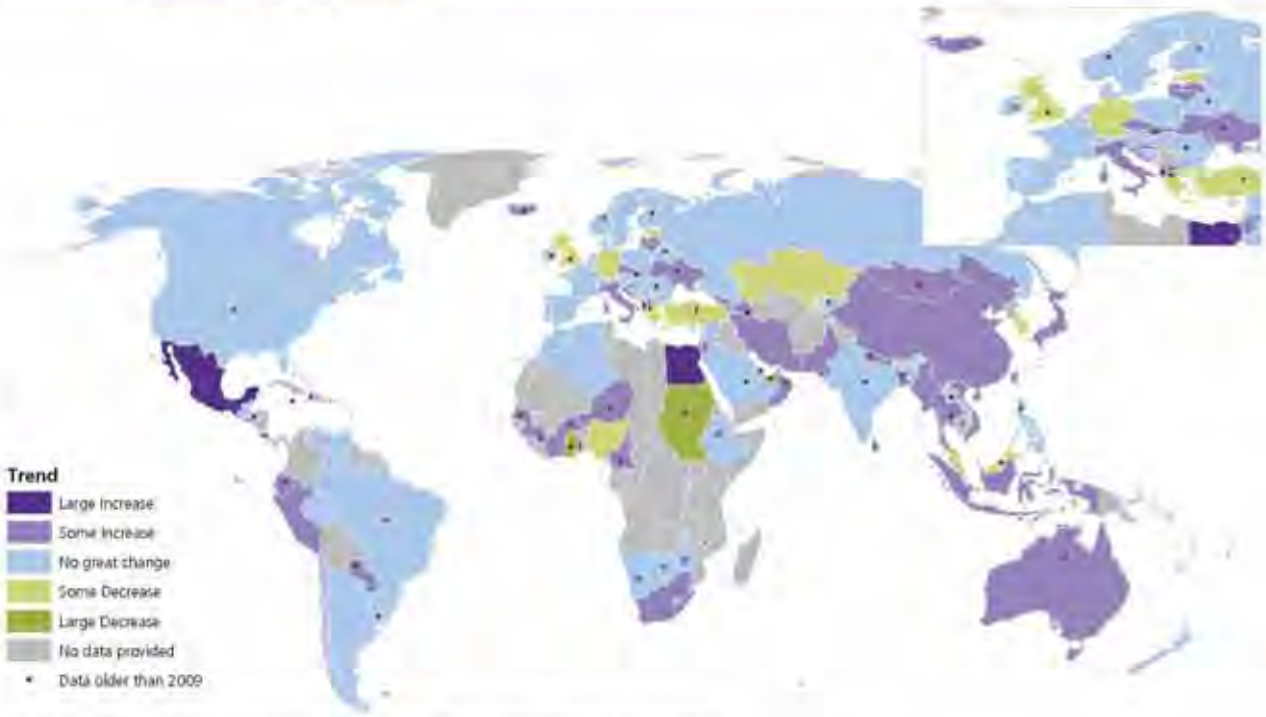
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Map 29: Expert perception of trend changes in the use of methamphetamine, 2009 (or latest year available back to 2005)



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Map 30: Expert perception of trends in the use of undefined amphetamines, 2009 (or latest year available)



Ecstasy-group substances

Ecstasy-group substances include primarily MDMA and its analogues,[25] whose use is often associated with recreational settings such as night clubs and raves frequented by young people. Prevalence of 'ecstasy' use is thus particularly high among younger age cohorts and it often correlates with the number of raves and similar type of dance events taking place. Young people using 'ecstasy' may not necessarily be experimenters or regular users of other illicit substances, but being in the general environment of illicit drug use exposes them to increasing levels of opportunity and a greater chance to experiment with other illicit substances as well. While in developed countries, all sectors of society are affected by 'ecstasy' use, such use is still a phenomenon of the middle and upper classes in developing countries.

In 2009, UNODC estimates the global annual prevalence of 'ecstasy' use as between 0.2%-0.6% of the population aged 15-64, corresponding to between 11 and 28 million people who had used 'ecstasy' at least once in the previous year. As very little information was available, the estimated annual prevalence for 'ecstasy' use appears to have remained at around the same level as in the previous year (2008).

At the global level, most (47%) of the countries responding through the ARQ in 2010 perceived 'ecstasy' use to be stable in their countries. In the Americas (83%) and Europe (54%), the majority of the countries reported stable trends for 2009. Similarly, in Africa, the region with the fewest respondents on this question (reflecting low response rates as well as a low spread of 'ecstasy' use), the majority of countries (67%) also reported stable trends. The only region where most (47%) of the countries reported decreasing trends in 'ecstasy' use was Asia. There are indications that the stabilization or decline of 'ecstasy' use has been linked to reductions in the manufacture of 'ecstasy' which, in turn, appears to have been a consequence of some progress made in the control of precursor chemicals. Wherever the supply situation improved however, or where the perceptions of the harmfulness of 'ecstasy' declined, demand increased immediately, clearly showing that far more still needs to be done with regard to effective prevention.

North America: signs of increased 'ecstasy' use in the United States, decline noted in Canada

The annual prevalence of 'ecstasy' use in North America is estimated at 1.1% or around 3.2 million people aged 15-64 who had used ecstasy-group substances in the previous year. Within the region, the United States of

25 Reports have shown that unbeknown to many ecstasy users what is sold to them as ecstasy (MDMA) is often a combination of many psychoactive substances, such as methamphetamine and ketamine. *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publications, Sales No. E.08.XI.12)

Table 32: Annual prevalence and estimated number of 'ecstasy' users, by region, subregion and globally, 2009

Region/subregion	Estimated number of users annually (lower)	-	Estimated number of users annually (upper)	Percent of population age 15-64 (lower)	-	Percent of population age 15-64 (upper)
Africa	390,000	-	1,900,000	0.1	-	0.3
East Africa						
North Africa						
Southern Africa	190,000	-	300,000	0.2	-	0.4
West and Central Africa						
Americas	3,770,000	-	4,020,000	0.6	-	0.7
Caribbean	20,000	-	240,000	0.1	-	0.9
Central America	20,000	-	30,000	0.1	-	0.1
North America	3,210,000	-	3,210,000	1.1	-	1.1
South America	520,000	-	530,000	0.2	-	0.2
Asia	2,390,000	-	17,330,000	0.1	-	0.6
Central Asia						
East/South-East Asia	1,480,000	-	6,920,000	0.1	-	0.5
Near and Middle East						
South Asia						
Europe	3,680,000	-	3,920,000	0.7	-	0.7
East/South-East Europe	1,190,000	-	1,370,000	0.5	-	0.6
West/Central Europe	2,490,000	-	2,560,000	0.8	-	0.8
Oceania	850,000	-	920,000	3.6	-	4.0
Global	**11,080,000**	**-**	**28,090,000**	**0.2**	**-**	**0.6**

Table 33: Expert perceptions of trends in 'ecstasy' use, 2009

Region	Member States providing perception data	Member States perception response rate	Use problem increased*	Percent use problem increased*	Use problem stable	Percent use problem stable	Use problem decreased*	Percent use problem decreased*
Africa	3	6%	1	33%	2	67%	0	0%
Americas	6	17%	1	17%	5	83%	0	0%
Asia	17	38%	6	35%	3	18%	8	47%
Europe	24	53%	8	33%	13	54%	3	13%
Oceania	1	7%	0		1		0	
Global	51	27%	16	31%	24	47%	11	22%

*Identifies increases/decreases ranging from either some to strong, unweighted by population.

America has the highest prevalence rate of 1.4% of 'ecstasy' use among the general population.

Around 1.1 million people initiated their drug use with 'ecstasy' in the United States in 2009, signalling a significant increase over the previous year (894,000 people in 2008). Most (66.3%) of the 'ecstasy' users who had initiated in 2009 were aged 18 years or older, with an average age of 20.2 among those using 'ecstasy' for the first time in 2009.[26]

Since the decline in prevalence of 'ecstasy' use in 2002, the trends remained stable between 2003 and 2008, but began to register an increase in 2009.

A similar trend was observed among secondary school students, where the annual prevalence of 'ecstasy' use among students in the 8th, 10th and 12th grades, after having remained stable between 2003 and 2008, registered a clear increase over the 2008-2010 period, notably among the younger age groups, the 8th and 10th

26 Substance Abuse and Mental Health Services Administration. (2010). *Results from the 2009 National Survey on Drug Use and Health: Volume I. Summary of National Findings*, Rockville, Maryland, USA.

Fig. 111: United States: Trends in prevalence of 'ecstasy' use among the population aged 12 years or older, 2002-2009

Source: Substance Abuse and Mental Health Services Administration, Results from the 2009 National Survey on Drug Use and Health: Volume I. Summary of National Findings.

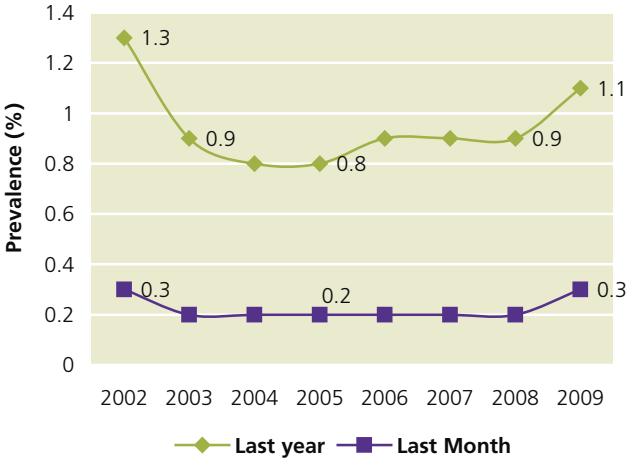
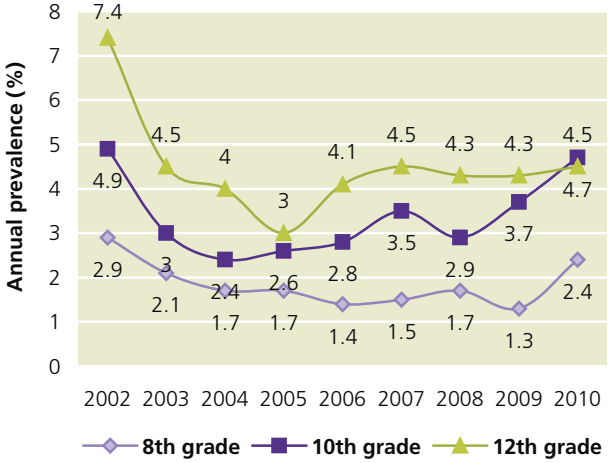


Fig. 112: United States: Trends in annual prevalence of 'ecstasy' use among secondary school students, 2002-2010

Source: Monitoring the Future: national results on adolescent drug use: Overview of key findings, Institute for Social Research, The University of Michigan, USA.



graders.[27] US data among high school students did not indicate any increase in the availability of 'ecstasy.' The increase of 'ecstasy' use went, however, hand in hand with reduced risk perceptions of the harmfulness of using the substance.

By contrast, in Canada, 'ecstasy' use declined in 2009 compared to the previous year. The annual prevalence of 'ecstasy' use among the population aged 15-64 was reported at 1.1% in 2009, down from 1.7% in 2008.[28] The annual prevalence among young people, aged 15-19, was 3% in 2009.[29]

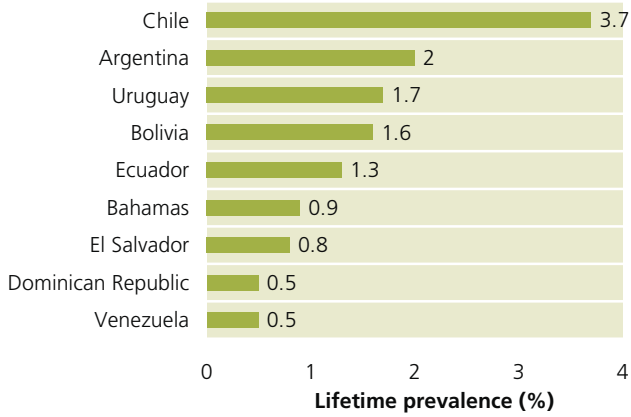
For Mexico there are no recent quantitative estimates on 'ecstasy' use. Expert perceptions indicate an increasing 'ecstasy' use trend in the country.

In Central and South America, 'ecstasy' use remains low in the general population but higher among youth.

There is no update on 'ecstasy' use in Central and South America. Available information suggests, however, that the annual prevalence among the general population remains much lower in these subregions than the world average, ranging between 0.1% in Chile and 0.5% in Argentina. El Salvador, Peru and Trinidad and Tobago reported a perceived increase in 'ecstasy' use over the past year. As in other countries, information on 'ecstasy'

Fig. 113: South and Central America: lifetime prevalence of 'ecstasy' use among youth, 2008 or 2009

Source: UNODC ARQ.



use among school children in South and Central America shows much higher prevalence rates than for the general population. The latest information (2008 or 2009) on lifetime prevalence of 'ecstasy' shows the prevalence rates ranging from 0.5% in the Bolivarian Republic of Venezuela to 3.7% in Chile.

In Brazil, the annual prevalence of 'ecstasy' use according to a national survey conducted among university students in 2009 was 3.1%, clearly exceeding UNODC's general population estimates of around 0.2%. Like in the rest of the world, 'ecstasy' use was found to be more common among male than female students. The annual and past 30 days prevalence was higher among students aged 18-24 than for any other age group.[30]

27 Johnston, L. D., et al., *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2010*, Institute for Social Research, The University of Michigan, Ann Arbor, Michigan, USA.

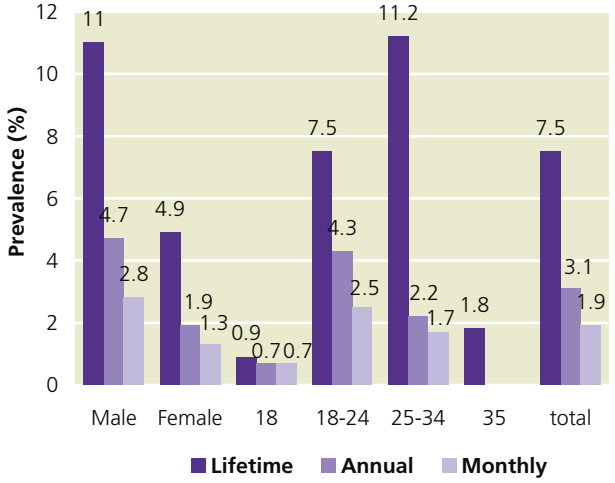
28 UNODC ARQ.

29 For prevalence among youth, Canada reported only the annual prevalence among young people in 2008 as 6.2% among young people aged 12-17, while in 2009, the annual prevalence was reported at 4.5% and last year prevalence at 3% among those aged 15-19.

30 Andrade, A.G., Duarte, P. and Oliveira, L.G., *I Levantamento Nacio-*

Fig. 114: Brazil: prevalence of 'ecstasy' use among university students, 2009

Source: I Levantamento Nacional Sobre O Uso De Álcool, Tabaco E Outras Drogas Entre Universitarios Das 27 Capitais Brasileiras, Secretaria Nacional Politicas sobre Drogas.



'Ecstasy' use is reported to be stabilizing in Europe, but use patterns are becoming more polarized among club-goers and the general population

The annual prevalence of 'ecstasy' use in Europe is estimated at 0.7% of the adult population. Between 3.7 and 4 million people aged 15-64 years used 'ecstasy' in the past year in Europe. The 'ecstasy' use prevalence rate is still higher in West and Central Europe (0.8%) than in East and South-East Europe (0.6%).

Most of the countries in Europe are now reporting stabilizing trends of 'ecstasy' use. Updated or new estimates for 'ecstasy' use were available from some countries in Europe, including Belgium, Cyprus, Germany, Spain Sweden and the United Kingdom (England and Wales, and Scotland). Many of these countries have reported a decline in the annual prevalence in their current surveys compared to previous years. This is in line with reports of manufacturing difficulties in a number of European countries in recent years, and thus the use of various other substances than MDMA in 'ecstasy' tablets. The Czech Republic, Latvia, Slovakia and the United Kingdom remain countries with high 'ecstasy' use prevalence rates in the general population.

Like in other parts of the world, most of the 'ecstasy' users are young people aged 15-34. The EMCDDA in its annual report for 2010 mentions that practically all of the estimated 2.5 million 'ecstasy' users who had used 'ecstasy' in the past year were between 15 and 34 years old.

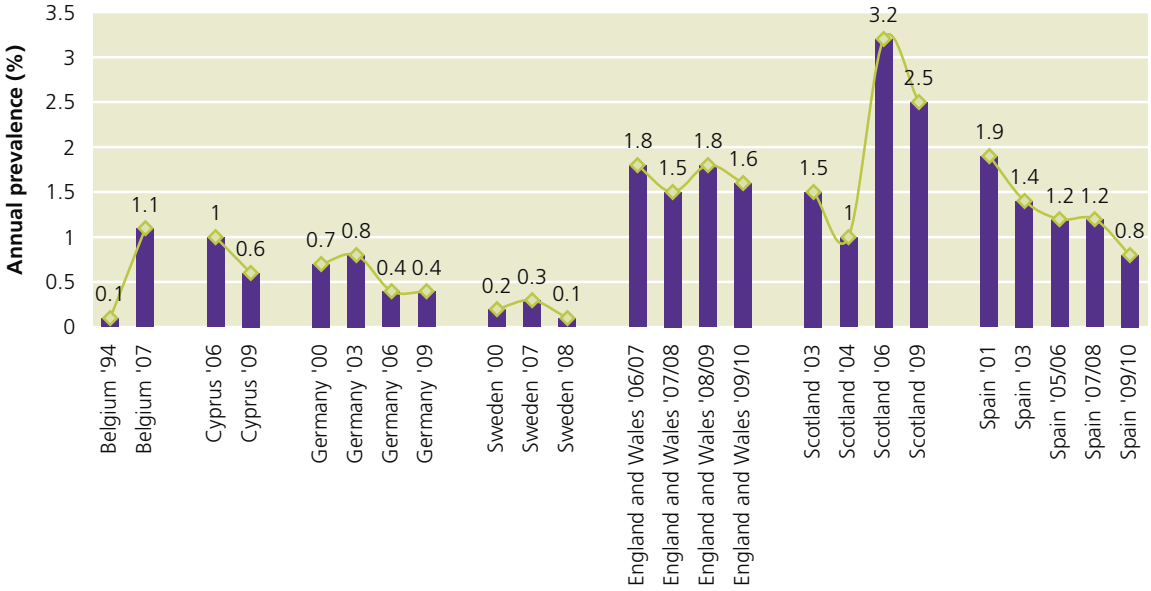
Targeted surveys in nightlife settings in European countries suggest that the prevalence and patterns of stimulants and 'ecstasy' use, together with alcohol, remains high. Some studies even suggest that drug use patterns among club-goers are becoming increasingly 'polarized,' that is, showing ever higher prevalence rates, in sharp contrast to the situation among the general population.[31]

Lack of information from Africa makes it difficult to determine any trends in 'ecstasy' use in the region

Based on very limited country information, the annual prevalence of 'ecstasy' use – based on UNODC's

Fig. 115: Europe: trends in 'ecstasy' use in selected countries and areas, various years

Source: EMCDDA; UNODC ARQ.



nal Sobre O Uso De Álcool, Tabaco E Outras Drogas Entre Universitarios Das 27 Capitais Brasileiras, Secretaria Nacional Politicas sobre Drogas, Brasilia 2010.

31 EMCDDA, *The State of the Drugs Problem in Europe: Annual Report 2010*, 2010.

Table 34: Asia: countries and areas reporting expert perception in 'ecstasy' use in 2009

Source: UNODC ARQ.

Decrease	Stable	Increase
China	Korea (Republic of)	Armenia
Hong Kong, China	Kuwait	Georgia
Macao, China	Malaysia	Israel
Indonesia		Lebanon
Japan		Pakistan
Kazakhstan		Viet Nam
Singapore		
Thailand		

standard model - is estimated between 0.1% and 0.3% in Africa. The actual figures are probably closer to the lower end of the range or perhaps even below that range, as 'ecstasy' use in Africa is still primarily a phenomenon of youth from the upper classes and/or concentrations in some tourist resorts where the prime target group is foreigners from overseas. The wide range in the estimates is due to missing data or information on 'ecstasy' use from most of the region. Only three countries in Africa - Algeria, Morocco and South Africa - reported expert opinions on 'ecstasy' use trends through the ARQ in 2009. While Morocco reported an increase in 'ecstasy' use, Algeria and South Africa reported stabilizing trends for 2009.

Mixed trends on 'ecstasy' use reported from Asia

In 2009, nearly half (47%) of the Asian countries reporting expert opinion on 'ecstasy' use through the ARQ considered its trends to be decreasing, while one third of the countries reported increasing trends in the past year. The annual prevalence of 'ecstasy' use in Asia is estimated between 0.1% and 0.6% of the population aged 15-64, or some 2.4 to 17 million people who could have used 'ecstasy' at least once in the previous year. The wide range in the estimates reflects the uncertainty due to lack of information on 'ecstasy' use for most parts of Asia.

'Ecstasy' use in New Zealand and Australia remains high

Oceania (primarily Australia and New Zealand) has the highest prevalence of 'ecstasy' use in the world, with annual prevalence ranging from 3.6% to 4% of the adult population. This corresponds to between 850,000 and 920,000 people who had used 'ecstasy' at least once in the preceding year.

The annual prevalence of 'ecstasy' use among the population aged 16-64 in New Zealand ranged from 2% to 3%, or an estimated 67,000 people which reported having used 'ecstasy' in the previous year (2007/2008). The highest prevalence, like in other countries, was reported among the 18-24 year age group; higher among men than women (annual prevalence of 8.9% among men and 4.9% among women in this age group). Most of the 'ecstasy' users in New Zealand were reported to have used it with alcohol (78.9%), cannabis (42.8%) and benzylpiperazine (BZP) party pills[32] (13.5%).[33]

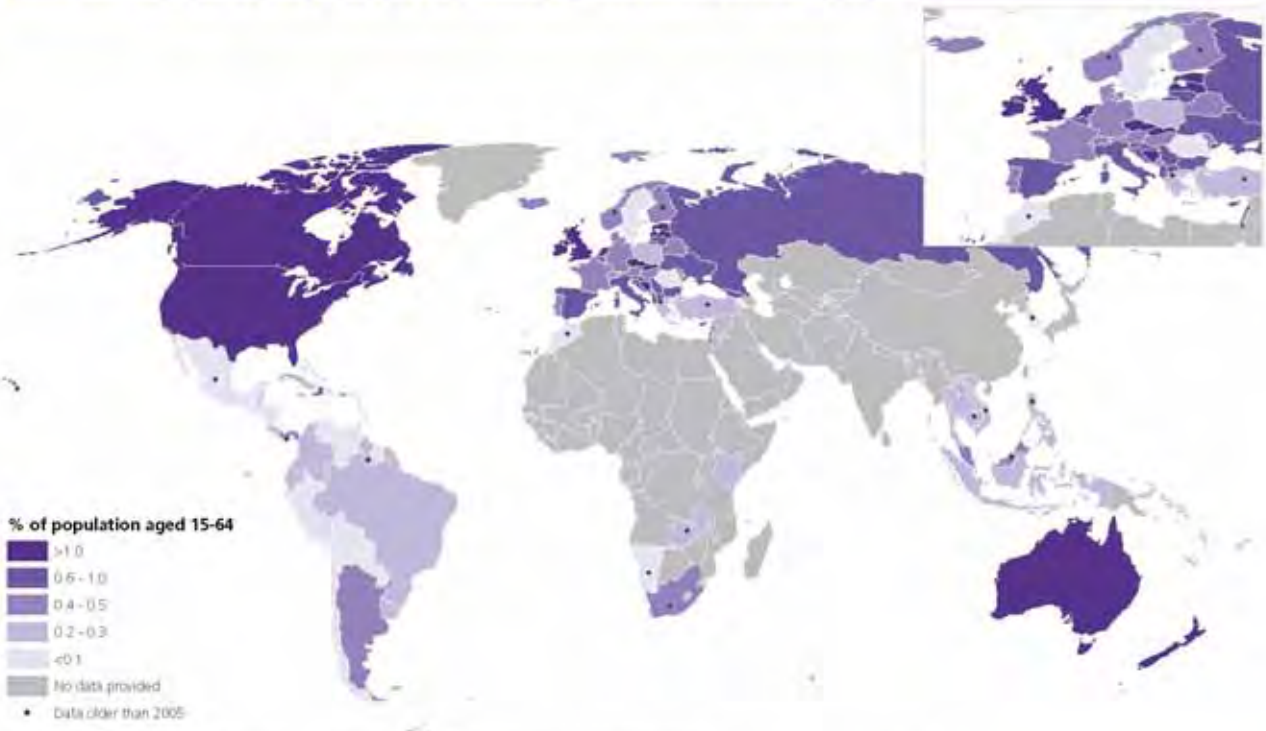
In Australia, 'ecstasy' use was estimated at around 4.2% of the population aged 15-64 in 2007. Since then, there has been no update on drug use prevalence in Australia. However, in 2010, a survey carried out among 974 athletes indicated that one quarter had been offered or had the opportunity to use 'ecstasy' in the past 12 months. This was a higher proportion than for cannabis (22%) and cocaine (17%). Past year 'ecstasy' use was reported by 3.2% of the sample.[34]

32 Products containing benzylpiperazine (BZP) and related substances, with stimulant and euphoric effects.

33 Ministry of Health *Drug Use in New Zealand: Key Results of the 2007/08, New Zealand Alcohol and Drug Use Survey*, 2010.

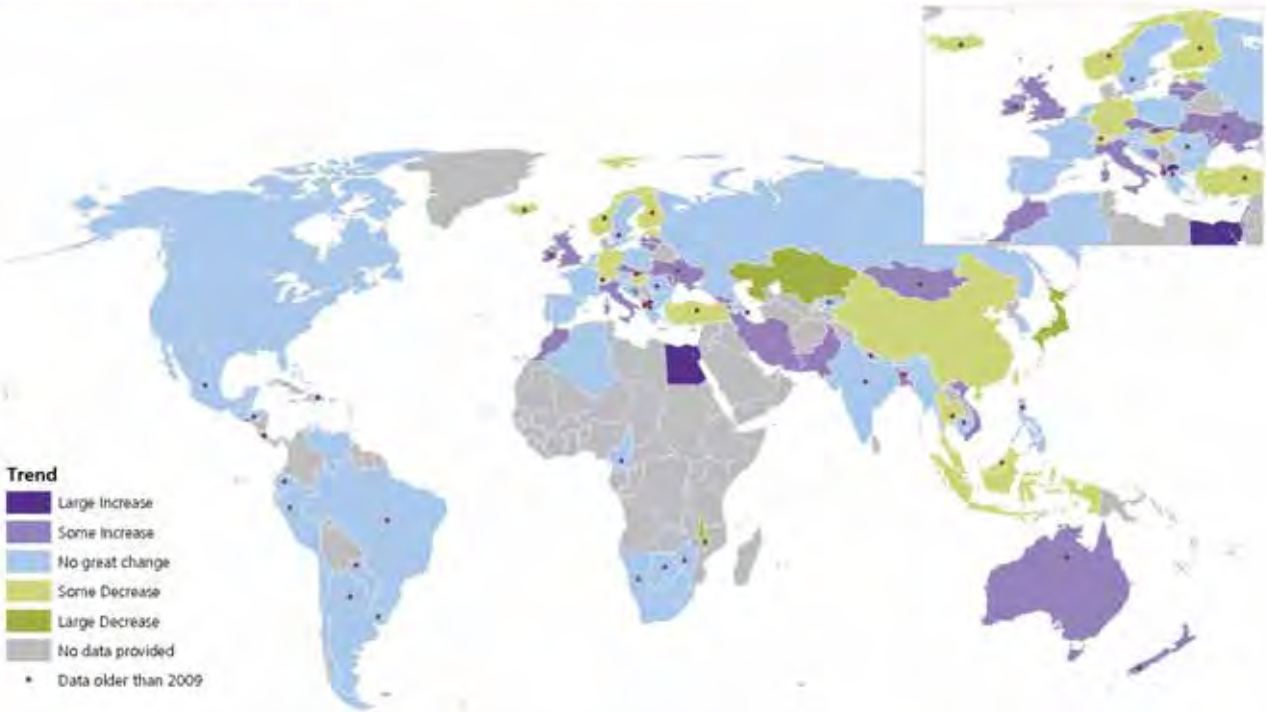
34 Dunn, M. and Thomas, J.O., 'Attitudes toward, knowledge of, and prevalence of recreational drug use among elite Australian athletes,' *EDRS Drug Trends Bulletin*, April 2010, Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

Map 31: Use of 'ecstasy' in 2009 (or latest year available back to 2005)



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Map 32: Expert perception of trend changes in the use of 'ecstasy', 2009 (or latest year available back to 2005)



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

4.3 Manufacture

Unlike the illicit cultivation of coca plant and opium poppy which is constrained to specific locations, the manufacture of ATS is not geographically limited. ATS laboratories tend to be located close to the illicit markets for these drugs. Precursors and other chemicals used in the illicit manufacture of ATS are frequently trafficked across regions.

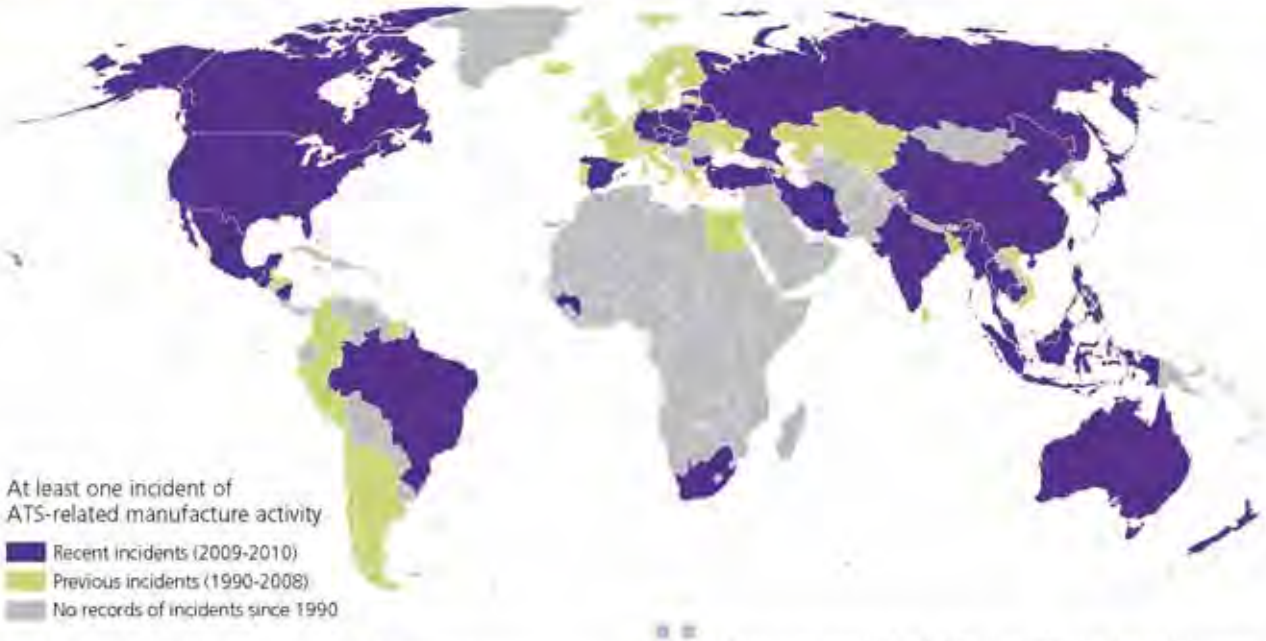
Over the past two decades, there has been a spread in ATS manufacture, with more than 60 Member States having reported ATS manufacturing activity to date. Manufacture has been reported from all regions of the world. Since 2000, significant ATS manufacture has been reported to UNODC in a number of small clandestine laboratories, as well as in larger-scale operations, from Australia, Belgium, Bulgaria, Canada, China,[35] the Czech Republic, Germany, Indonesia, Malaysia, Mexico, Republic of Moldova, Myanmar, the Netherlands, New Zealand, the Philippines, Poland, the Russian Federation, Slovakia, South Africa and the United States of America.

The global number of ATS laboratories continues to increase

In 2009, the seizure of some 10,600 ATS-related laboratories was reported to UNODC through the Annual Reports Questionnaire, which represents an increase of 26% from the 8,400 laboratories reported in 2008, though still down from the peak of 19,800 reported in 2004.[36] The overall trend reflects seizures reported from the United States which continues to dismantle the vast majority of all illicit ATS laboratories worldwide. Small methamphetamine labs are the typical pattern in the United States.

Methamphetamine is still, by far, the most widely manufactured amphetamine-type stimulant worldwide. Amphetamine and 'ecstasy' manufacture operations tend to be fewer in number but more sophisticated, as they require more specialized equipment, precursor chemicals and greater skill levels.

Map 33: Member States reporting ATS-related manufacture* since 1990



* Includes ATS precursor extraction laboratories and drug(s) forwarded by law enforcement.

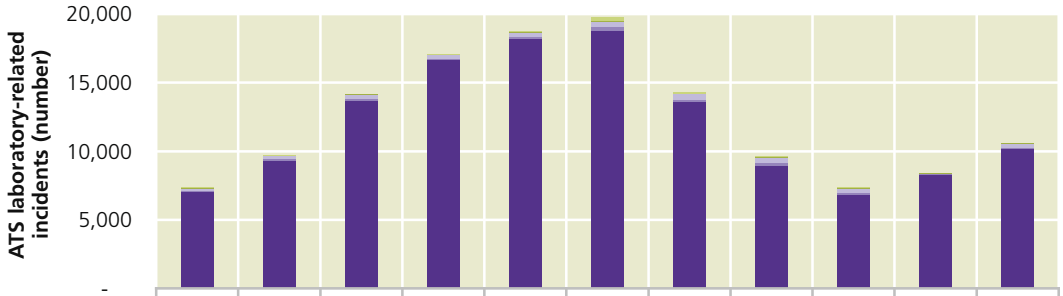
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

35 Includes all provinces and Special Administrative Regions.

36 As there is no standardized definition of a clandestine laboratory, figures reflect any stage of a seized laboratory operation reported to UNODC, such as a location containing laboratory equipment and chemicals in preparation for manufacturing, a location where synthesis or tableting are/were occurring and toxic dumpsites where chemicals and equipment are illicitly discarded.

Fig. 116: Total number of ATS laboratory incidents, 1999-2009

Source: UNODC DELTA.



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ATS lab total	7,412	9,726	14,138	17,093	18,783	19,799	14,312	9,611	7,398	8,415	10,598
Other synthetic stimulants	68	19	5	24	70	282	92	51	35	1	7
Ecstasy group	62	64	70	59	49	87	63	56	72	53	52
Combined ATS	204	221	272	244	314	330	370	361	344	15	300
Amphetamine	59	115	85	132	161	322	159	154	109	44	44
Methamphetamine	7,019	9,307	13,706	16,634	18,189	18,778	13,628	8,989	6,838	8,302	10,195

In 2009, the global number of methamphetamine laboratories increased significantly, by 22%, to almost 10,200, up from 8,300 in 2008. The numbers of reported methamphetamine laboratories have continued to increase since 2007, but are still significantly lower than their peak in 2004. While the overall number of dismantled methamphetamine laboratories increased at the global level in 2009, the increase was largely concentrated in the United States. The number of dismantled (and reported) laboratories outside the United States declined in 2009 from a year earlier, but was still at the second highest level so far.

Significant manufacturing locations

Methamphetamine is manufactured in all North American countries. Over the last decade - and notably in 2009 - Mexico has become an important manufacturing location. In 2009, Mexico reported the dismantling of 191 laboratories, up from 21 in 2008. The upward trend in manufacturing appears to have continued in 2010, with 63 laboratories dismantled up to May 2010.[37] While the number of laboratories seized in Mexico is still substantially lower than in the United States, the Mexican operations tend to manufacture large quantities of end products, whereas many laboratories in the United States appear to be manufacturing the substance on a far smaller scale. There are also increasing incidents of methamphetamine-related manufacturing occurring throughout Central and South America. In 2010, for instance, authorities in Nicaragua dismantled a large clandestine methamphetamine laboratory.

Another important region in terms of illicit methamphetamine manufacture is East and South-East Asia, where a significant number of clandestine methamphetamine laboratories have been dismantled over the past several years.[38] Previously, illicit ATS manufacturing laboratories were primarily large industrial-scale operations. In recent years, however, several countries reported seizures of a significant number of smaller laboratories, a trend that continued in 2009.

China reported the seizure of 391 clandestine synthetic drug laboratories and storage facilities in 2009. Most of these were in Guangdong, Sichuan and Hubei provinces and were primarily manufacturing crystalline methamphetamine and ketamine. In 2008, a total of 244 unspecified laboratories were dismantled in China. ATS manufacture is becoming increasingly diversified in China with different stages of manufacturing being divided across provinces.

Indonesia seized 35 clandestine synthetic drug-manufacturing laboratories in 2009, the highest figure reported to date. These included 25 large-scale and 10 small-scale laboratories.

Clandestine ATS manufacture in Hong Kong, China has been dominated by tableting and repackaging operations. In 2009, two small-scale manufacturing facilities for crystalline methamphetamine were reported in Hong Kong, China.[39]

Over the past five years, Malaysia has become a significant methamphetamine manufacturing location. In

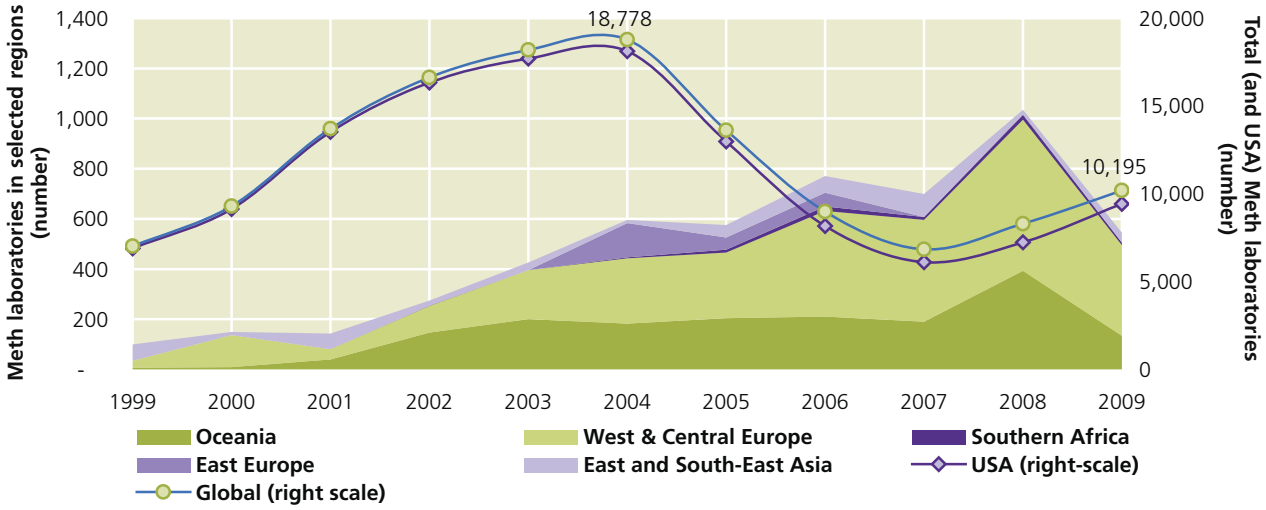
37 US Department of State, *International Narcotics Control Strategy Report*, March 2011.

38 For East and South-East Asia, most ATS data is available through the UNODC Global Synthetics Monitoring: Analyses, Reporting and Trends (SMART) Programme, which assists countries in the region in the monitoring of drug trends, with a particular focus on ATS.

39 UNODC, *Patterns and trends of amphetamine-type stimulants and other drugs- Asia and the Pacific,* Global SMART Programme, November 2010.

Fig. 117: Number of reported methamphetamine laboratory incidents, 1999-2009

Source: UNODC DELTA.



2009, 11 clandestine ATS manufacturing laboratories were seized. Most of the laboratories were located in Kuala Lumpur and southern Malaysia.[40]

In the Philippines, illicit manufacture of crystalline methamphetamine was first reported in 1996, and in 1997, the first industrial-scale clandestine manufacturing facility was reported. The manufacture of crystalline methamphetamine continues in the Philippines, with 9 manufacturing laboratories detected in 2009. Clandestine methamphetamine manufacturing laboratories have been seized across the country in recent years and have been located in both rural and urban areas. The laboratories have also shifted from large and medium-sized facilities in previous years to smaller 'kitchen type' facilities in 2009.[41] In 2009, most of the seized clandestine laboratories were again located in urban areas.[42]

Myanmar main source of methamphetamine pills in South-East Asia

Myanmar is the primary source of the region's methamphetamine in pill form. Reported seizures of clandestine manufacturing laboratories in Myanmar in previous years have mainly consisted of tableting operations. This is inconsistent, however, with the vast number of pills seized throughout the region. Extensive forensic profiling of methamphetamine seized in Thailand suggests that there are likely 12 large-scale methamphetamine manufacturing operations in the 'Golden Triangle' region. While there have been no facilities seized for crystalline methamphetamine manufacture, authorities in both Myanmar and Thailand confirm that manufacture occurs in Myanmar and has been the source of most crystalline methamphetamine seized in the northern part of Thailand in the past few years.

In Japan, the illicit manufacture of ATS is rare. In June 2010, however, police arrested two nationals of the Islamic Republic of Iran on suspicion of manufacturing methamphetamine. This was the first such incident in the country since 1995.

Australia and New Zealand report methamphetamine manufacture; little data from the Pacific Island states and territories

In Oceania, ATS manufacture has been reported from Australia and New Zealand. Australia reported the dismantling of 316 ATS manufacturing laboratories in 2009. Most of the laboratories were identified as manufacturing methamphetamine and amphetamine. New Zealand reported that a total of 135 laboratories were dismantled in 2009, primarily for methamphetamine. Further increases in the number of laboratories might be recorded in 2010 due to the increased efforts of the Government of New Zealand to tackle methamphetamine.[43]

Little data is available from the Pacific Island states and territories, which remain vulnerable to illicit manufacture of amphetamine-type stimulants, given the fact that several of the countries are not parties to the 1988 United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances.[44]

40 UNODC, *Patterns and trends of amphetamine-type stimulants and other drugs- Asia and the Pacific*, Global SMART Programme, November 2010.

41 Communication with the Philippine Drug Enforcement Agency, August 2010.

42 Philippine Drug Enforcement Agency, *Philippine National ATS Situation 2008-2009,* presented at the Global SMART Programme Regional Workshop, Bangkok, 5-6 August 2010.

43 *Monthly Illicit Drug Assessment*, National Drug Intelligence Bureau (NDIB), Wellington, January 2010.

44 These include Kiribati, Nauru, Palau, Papua New Guinea, Solomon

Level of methamphetamine manufacture in Europe comparatively low

Compared to most other regions of the world, illicit manufacture of methamphetamine in Europe is fairly low. Until recently, methamphetamine manufacture was largely confined to the Czech Republic, where some 300-400 mostly small-scale manufacturing sites are being dismantled every year. These are so-called kitchen laboratories, which typically manufacture a few grams of drugs at a time. Seizures of methamphetamine manufacturing facilities were also reported to Europol in neighbouring countries such as Slovakia, Germany, Poland and Austria. The second hub of methamphetamine supply is centred around the Baltic countries, particularly Lithuania and Estonia.[45]

Methamphetamine manufacture is rarely reported from Africa, except for South Africa and Egypt. In 2009, 10 methamphetamine laboratory incidents were reported from South Africa, compared to 20 such incidents reported for 2008.

The global number of dismantled amphetamine laboratories remains stable

In 2009, 44 amphetamine laboratories were reported, remaining essentially stable compared to 2008. Most of these laboratories continue to be reported in Europe, particularly West, Central and East Europe.

According to the European Monitoring Centre on Drugs and Drug Addiction, most amphetamine seized in Europe is manufactured, in order of importance, in the Netherlands, Poland and Belgium, and to a lesser extent in Estonia, Lithuania and the United Kingdom. In 2007, 29 sites involved in the production, tableting or storage of amphetamine were discovered in the European Union and reported to Europol.

The relatively low number of amphetamine laboratories reported is inconsistent with the high number of global amphetamine seizures which have continued to rise over the past two years.

Increase in seizures of precursors for methamphetamine and amphetamine manufacture

Ephedrine and pseudoephedrine are the main precursors for methamphetamine and both substances are controlled in Table I of the 1988 United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances. Seizures of these precursors can provide some indications about manufacturing trends. In 2009, 41.9 mt of ephedrine and 7.2 mt of pseudoephedrine were seized, compared to 18.2 mt of ephedrine and 5.1 mt of pseudoephedrine in 2008.[46] Recently, there has been a shift from bulk substances to pharmaceutical preparations used in the illicit manufacture of methamphetamine.

Fig. 118: Number of seized amphetamine laboratories, 1999-2009

Source: UNODC ARQ.

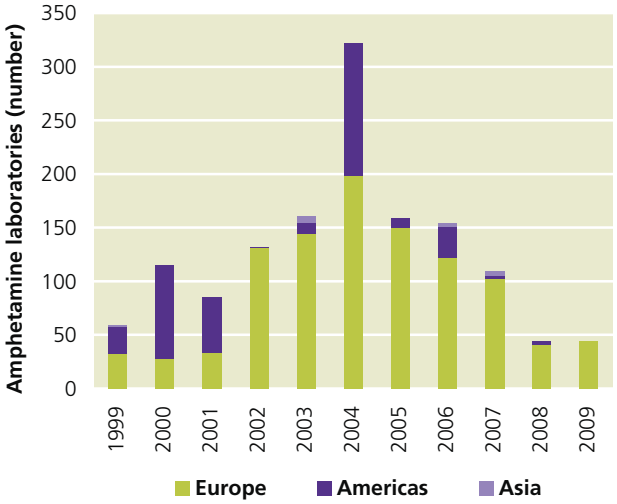
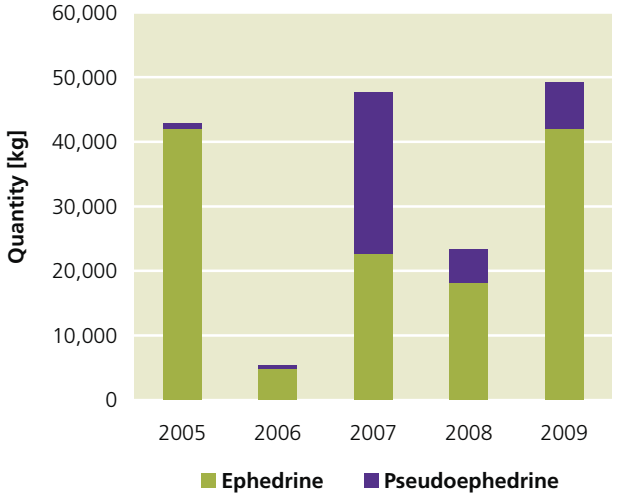


Fig. 119: Global seizures of ephedrine and pseudoephedrine, 2005-2009*

* The chart is based on data on domestic seizures and on seizures effected at points of entry or exit. They do not include reported seizures of substances where it is known that the substances were not intended for the illicit manufacture of drugs. Stopped shipments are also not included.

Source: INCB.



Islands and Tuvalu, status as of 7 April 2011.

45 EMCDDA, *Amphetamine and methamphetamine use in Europe*, Lisbon, November 2010.

46 International Narcotics Control Board, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances*, E/INCB/2010/4, March 2011.

Traffickers adopt alternative strategies to evade stricter control measures

As awareness, restrictions and enforcement against illicit ATS manufacture increases, manufacturing operations tend to move to more vulnerable countries. When controls over precursors were strengthened in the United States, manufacture shifted to Mexico. As Mexico has responded with strong counter-methamphetamine initiatives, manufacturing activities are increasingly reported from countries in Central and South America.

Traffickers also resort to substitute chemicals. As Governments have restricted the availability of ephedrine and pseudoephedrine, some traffickers could turn to other chemicals such as norephedrine which can replace these two chemicals with only slight modifications to the illicit manufacturing process. Traffickers have also attempted to divert the ephedra plant - a natural source of ephedrine - for illicit ATS manufacture. In addition, there have been reports that traffickers transform existing precursors into new uncontrolled chemicals, which are subsequently converted back to the original precursor chemical once in the final destination country.

A precursor chemical commonly used in the illicit manufacture of methamphetamine and amphetamine is 1-phenyl-2-propanone (P-2-P). The diversion of this chemical may be fuelling the market for amphetamine in the Near and Middle East, where amphetamine is often sold as Captagon on illicit markets. In 2009 and 2010, Jordan reported the world's highest annual legitimate requirement of P-2-P to the International Narcotics Control Board, accounting for half of the global total. The high legitimate need is based on the purported formulation of P-2-P into cleaning and disinfection products. The volume represents a significant risk of diversion into illicit manufacture, however, particularly as P-2-P is not an essential ingredient in the formulation of cleaning and disinfection products and alternative chemicals exist.

Number of reported ecstasy-group laboratories remains essentially stable

In 2009, 52 ecstasy-group laboratories were reported, compared to 53 in 2008. The highest number of dismantled laboratories was reported from Asia and Oceania, namely Indonesia (18) and Australia (19). This might indicate that Indonesia has replaced Europe as the main source for 'ecstasy' used in South-East Asia.

In the past, ecstasy-group substances used to be manufactured predominantly in West Europe. Manufacture peaked in 2000, when 50 laboratories were reported as having been dismantled in Europe. Since that time, however, manufacture of ecstasy-group substances has shifted away from the region to a number of other markets around the world. Large-scale manufacturing operations are more frequently being dismantled in East and South-East Asia, the Americas and Oceania. In 2008, only four laboratories were reported from Europe; for

Map 34: Routes of notable ephedrine/pseudoephedrine diversion, 2008-2010

Notable ephedrine & pseudoephedrine trafficking route cases

– –➤ Established trafficking routes
——➤ Routes identified in 2008-2010

Other government sources include: ACC (2010), DEA-ODC (2008), INSCR (2011), NDIB (2009), RCMP (2010 and previous years) and WCO (2010 and previous years)

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Lines represent origin and intended destination, not necessarily exact route, and include completed or stopped trafficking attempts. Modes of transport include by air, sea, overland, or any combination thereof.

Fig. 120: Distribution of global annual legitimate requirement for P-2-P, 2010

Source: INCB.

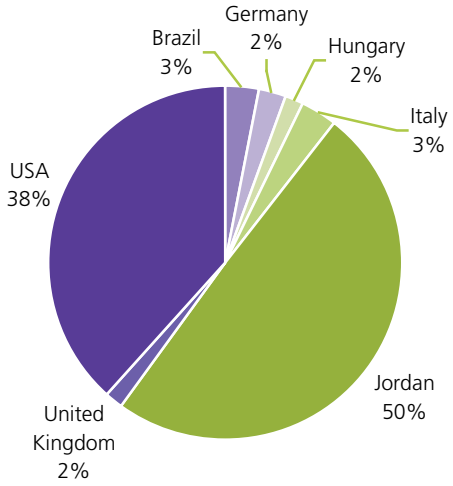
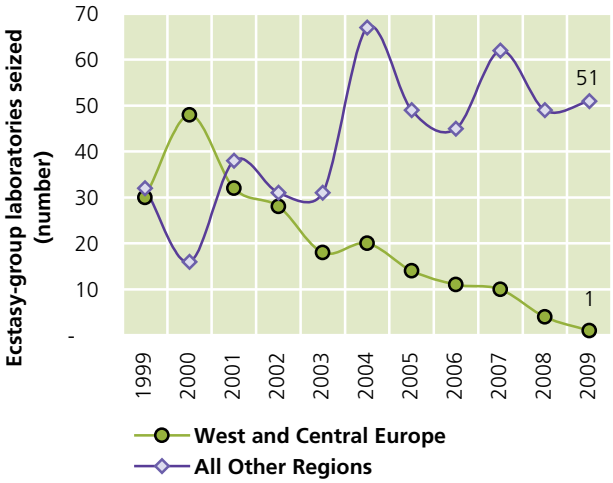


Fig. 121: Number of seized ecstasy-group laboratories by region, 1999-2009

Source: UNODC DELTA.



2009, there was only one reported to have been seized in Belgium.

Shift in ecstasy manufacture

Manufacture of ecstasy increasingly takes place in regions other than Europe, such as East and South-East Asia, North America, Oceania and Latin America. Illicit manufacture of ecstasy has been reported in Argentina, Belize, Brazil, Guatemala, Mexico and Suriname. In Brazil, a small-scale laboratory was seized in 2008 and another, more commercial-size operation in 2009, which included the seizure of 20,000 tablets.[47]

Precursors for ecstasy-group substances include safrole (including in the form of safrole-rich oils), isosafrole, piperonal, and 3,4—MDP-2-P, which are all controlled in Table 1 of the 1988 United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances. Reported global seizures of these precursors have strongly declined, reflecting the declining availability of ecstasy in Europe, one of the main markets for the substance.

However, in January 2010, authorities in Australia uncovered the country's first clandestine laboratory for the domestic extraction and processing of safrole-rich oil for the manufacture of 'ecstasy'.

Significant increase in other synthetic drug manufacture incidents

For the first time, the number of other synthetic drug manufacture incidents reported to UNODC through the ARQ has surpassed those of 'ecstasy'. This is due to a significant number of incidents relating to unspecified ATS precursors reported from the United States. Such cases also appear to occur in other parts of the world.

Table 35: Other synthetic drug manufacture incidents, 1999-2009

Source: UNODC DELTA.

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ATS precursors	0	5	0	0	2	0	0	22	1	3	40
Fentanyl	0	0	0	0	0	0	0	1	1	1	0
Gamma-Hydroxybutyric acid (GHB)	0	1	0	9	21	17	8	10	8	12	9
Ketamine	0	0	0	0	0	0	0	0	44	0	0
Lysergic acid diethylamide (LSD)	1	1	1	0	1	0	1	1	1	0	1
Methaqualone	0	4	5	6	15	16	5	3	4	1	4
Phencyclidine (PCP)	1	1	4	6	16	0	11	4	0	16	7
Total	**2**	**12**	**10**	**21**	**55**	**33**	**25**	**41**	**59**	**33**	**61**

47 UNODC, *Global SMART Update*, vol.2, October 2009.

The number of GHB laboratory incidents decreased from 12 in 2008 to 9 in 2009. No ketamine laboratory was reported through the ARQ. As ketamine is not under international control, however, the extent of manufacture is probably underreported. Government sources in China indicate that ketamine laboratories are regularly dismantled in that country.

Seizures of precursors used in the illicit manufacture of ATS

Chemical precursors are necessary for the synthesis of amphetamine-type stimulants, and many of the chemicals are controlled internationally through the 1988 United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances. Their seizures are reported to the International Narcotics Control Board and can provide some indications about trends in illicit manufacture.

Seizures in 2009 included:

Amphetamines-group

- Methamphetamine: 41,931 kg of ephedrine and 7,241 kg of pseudoephedrine, sufficient to manufacture 32.7 mt of methamphetamine.
- Amphetamine: 4,885 litres of phenyl-2-propoanone (P-2-P), sufficient for 2.4 mt of amphetamine or methamphetamine.
- 195 kg of norephedrine, sufficient to manufacture 130 kg of amphetamine.

Ecstasy-group

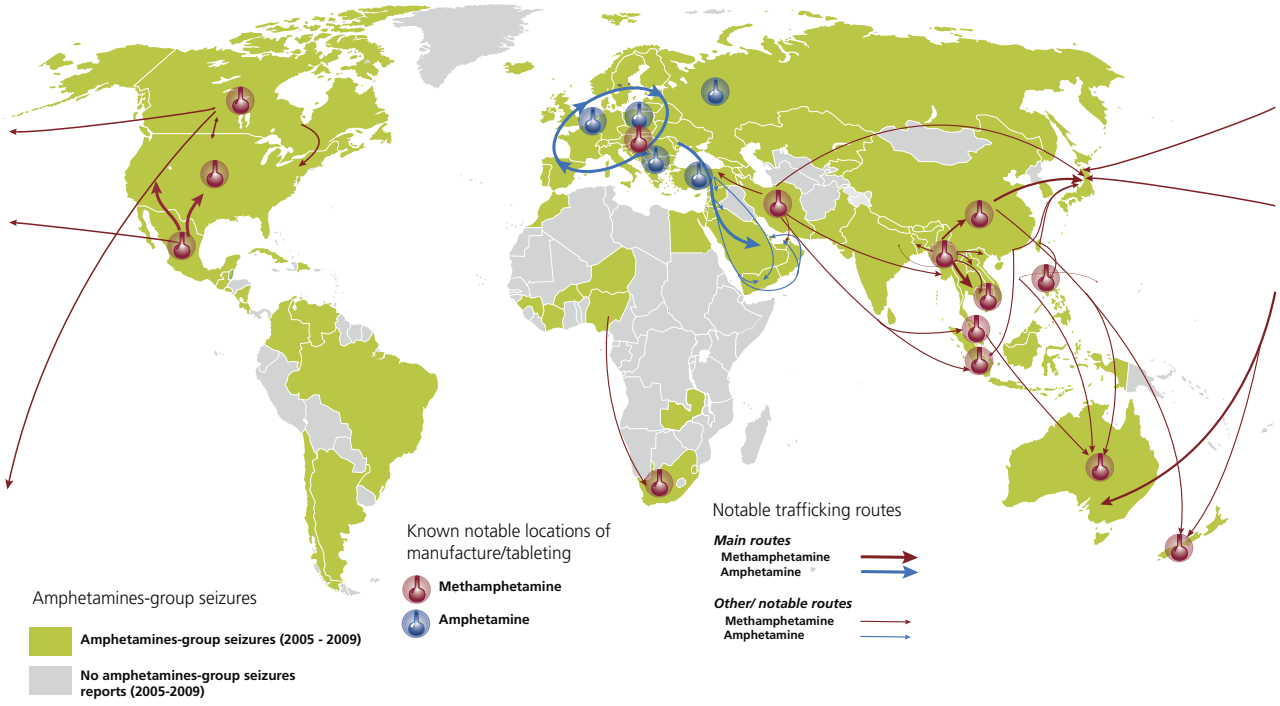
- 40 litres of 3,4-MDP-2-P, enough to manufacture 33 kg of MDMA;
- 1048 l of safrole oil, sufficient to manufacture 222 kg of MDMA;
- 4.3 mt of piperonal which could be converted into 1.6 mt of MDMA; and
- 5 l of isosafrole, which could be used in the manufacture of 2.36 kg of MDMA.

The low amounts of precursor chemicals seized are inconsistent with the size of the consuming market, suggesting that much of the trafficking of precursors needed for ATS manufacture goes undetected. Criminal organizations adopt several strategies to avoid control by trafficking precursors through new locations, such as Africa, by relocating manufacturing operations to new countries and by changing precursor chemicals.

Seizure data for precursors can only provide a partial picture of precursor availability. Diversions and stopped shipments are not included in the traditional seizure statistics, neither are domestic diversions followed by onward smuggling.

These figures largely represent raw chemical seizures and in some cases pharmaceutical preparations, and thus are not representative of all precursors seized.

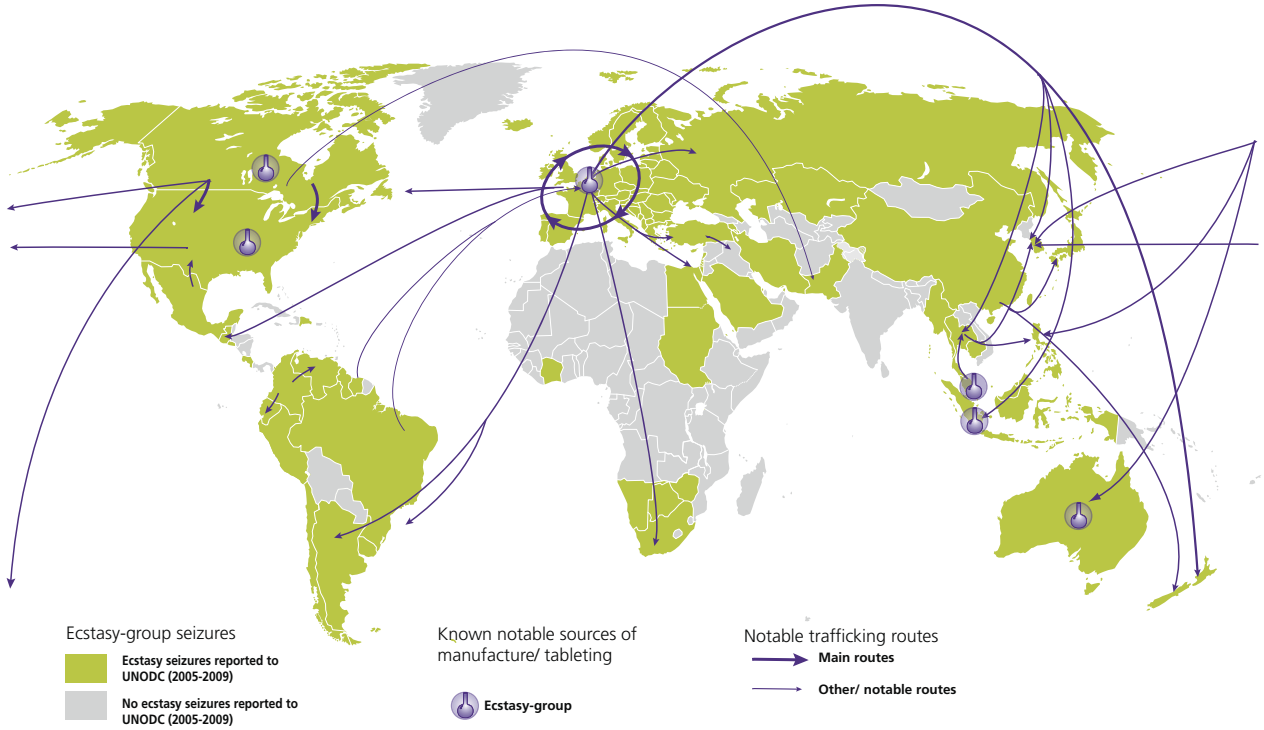
Map 35: Notable locations of manufacture and main trafficking routes of ATS



Other government sources include: ACC (2010), DCHIRI (2008), ICPO (2010), INSCR (2011), JNPA (2010), LDECB (2008), RCMP (2010), TKOM (2008-2009), and WCO (2010)

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Lines represent origin and intended destination, not necessarily exact route, and include completed or stopped trafficking attempts. Modes of transport include by air, sea, overland, or any combination thereof.

Map 36: Notable locations of manufacture and main trafficking routes of ecstasy-group substances



Other government sources include: ACC (2010), DCHIRI (2008), ICPO (2010), INSCR (2011), JNPA (2010), LDECB (2008), RCMP (2010), TKOM (2008-2009), and WCO (2010)

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Lines represent origin and intended destination, not necessarily exact route, and include completed or stopped trafficking attempts. Modes of transport include by air, sea, overland, or any combination thereof.

4.4 Trafficking

Global ATS seizures

In 2009, global seizures of ATS rose significantly (by 16%), slightly exceeding the high level of 2007 (following a dip of 9% in 2008). The increase was driven by the quantities of seized methamphetamine, which rose markedly to 31 mt (from 22 mt in 2008) and amphetamine, which rose more moderately (33 mt, up from 30 mt in 2008). Seizures of ecstasy amounted to 5.4 mt, remaining below the reduced level of 2008. The increases in methamphetamine and amphetamine were also partly offset by a drop in seizures of non-specified amphetamines, so that total ATS seizures in 2009 amounted to 71 mt. Due to the paucity of data from some countries, the decline in non-specified amphetamines is not statistically significant, and the total for amphetamine, methamphetamine and ecstasy rose by 22% in 2009.

Seizures of amphetamine-type stimulants are reported by weight (in kg), by volume (in litres, usually when the seized drugs are in liquid form) and by number of tablets, doses or 'units'. Although UNODC maintains and publishes records to reflect - as closely as possible - seizure quantities as reported by countries, it is often useful to aggregate data of different types to compare over time or across countries and regions. For the purposes of this aggregation, conversion factors are used to convert the quantities into 'kilogram equivalents.'

The aggregate statistics used in this report depend on the conversion factors used, and the impact of these conversion factors can be especially pronounced in the case of amphetamine-type stimulants, as a significant share of seizures of these drug types are quantified by number of tablets. In previous editions of the *World Drug Report* the conversion factors used were intended to reflect the amount of psychoactive ingredient in the seized tablets. In order to enhance the comparability with seizures reported by weight, which are quantified by bulk weight and can only be adjusted for purity in a minority of cases where the availability of data allows, UNODC has revised the conversion factors used for amphetamine-type stimulants to reflect the bulk weight of the seized tablets. The new factors are based on forensic studies and range between 90 mg and 300 mg per tablet, depending on the region as well as the drug type. These factors are subject to revision as the available information improves; details can be found in the methodology section.

Although trafficking in and consumption of amphetamine-type stimulants has come to affect all regions of the world, different types of ATS prevail in different regions. In past years, seizures of ATS in Europe have been dominated by ecstasy and amphetamine; however, ecstasy seizures in Europe fell sharply between 2007 and

Fig. 122: ATS seizures worldwide, in kg, litres, number of units and aggregates, 2001-2009

Source: UNODC DELTA.

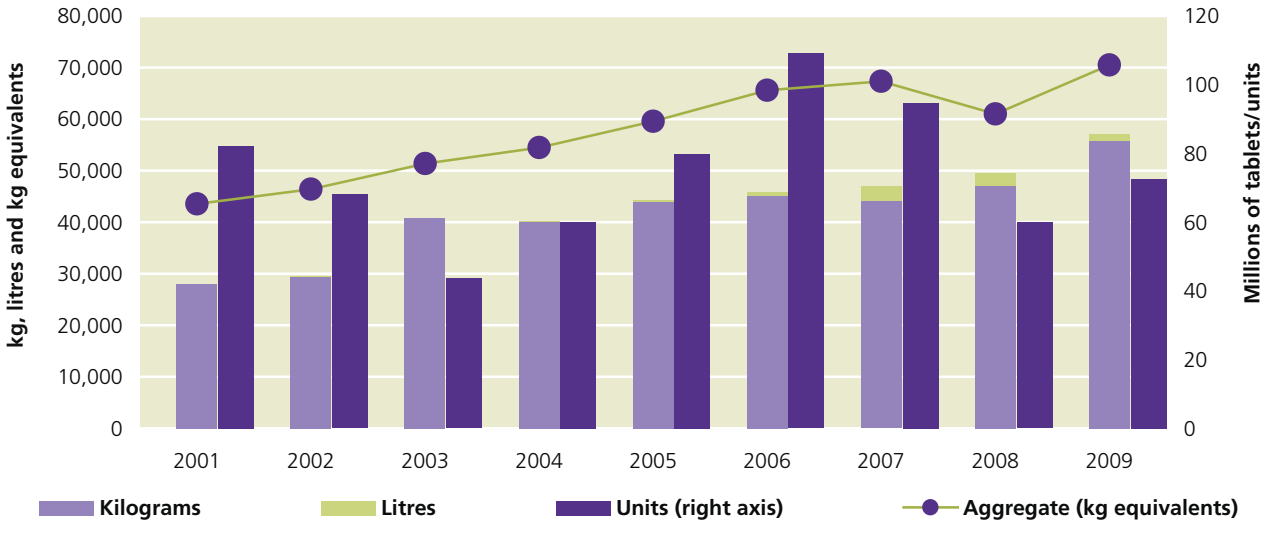
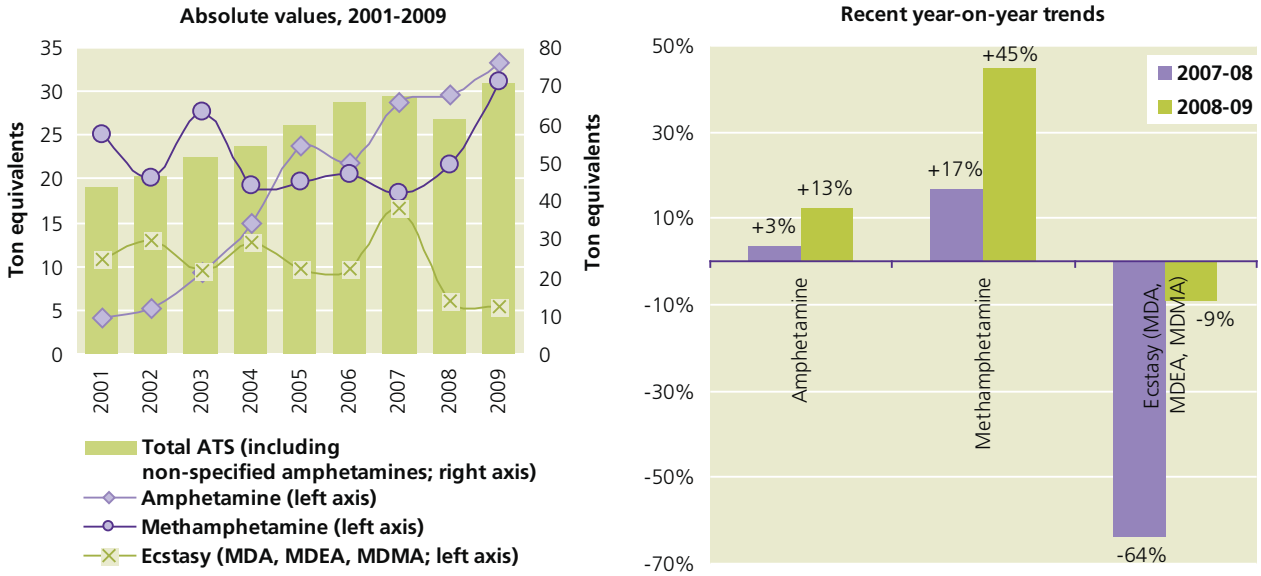


Fig. 123: Seizures of ATS by type

Source: UNODC DELTA.



2009, while methamphetamine seizures reached a record level by European standards in 2009. Ecstasy accounted for only 10% of ATS seizures in Europe in 2009, compared with 6% for methamphetamine. In North America, seizures continue to be dominated by methamphetamine and 'ecstasy'. In relative terms, seizures of 'ecstasy' remained important also in Central and South America and the Caribbean, although the majority of reported ATS seizures in this region consisted of amphetamine in 2009. The market in Oceania remained diversified among the various types of amphetamine-type stimulants. In the Near and Middle East/South-West Asia, seizures of amphetamine-type stimulants are mainly in the form of Captagon, believed to contain amphetamine as the main psychoactive ingredient. Methamphetamine seizures have been reported from Nigeria and South Africa. For 2009, however, only South Africa reported seizures of methamphetamine, out of a total of four African countries reporting any ATS seizures in the ARQ. Approximately one half of the ATS seized in Africa referred to amphetamine. The paucity of the data thus does not allow for a reliable characterization for the continent as a whole.

Fig. 124: Distribution of ATS seizures by region, 2009

Source: UNODC DELTA.

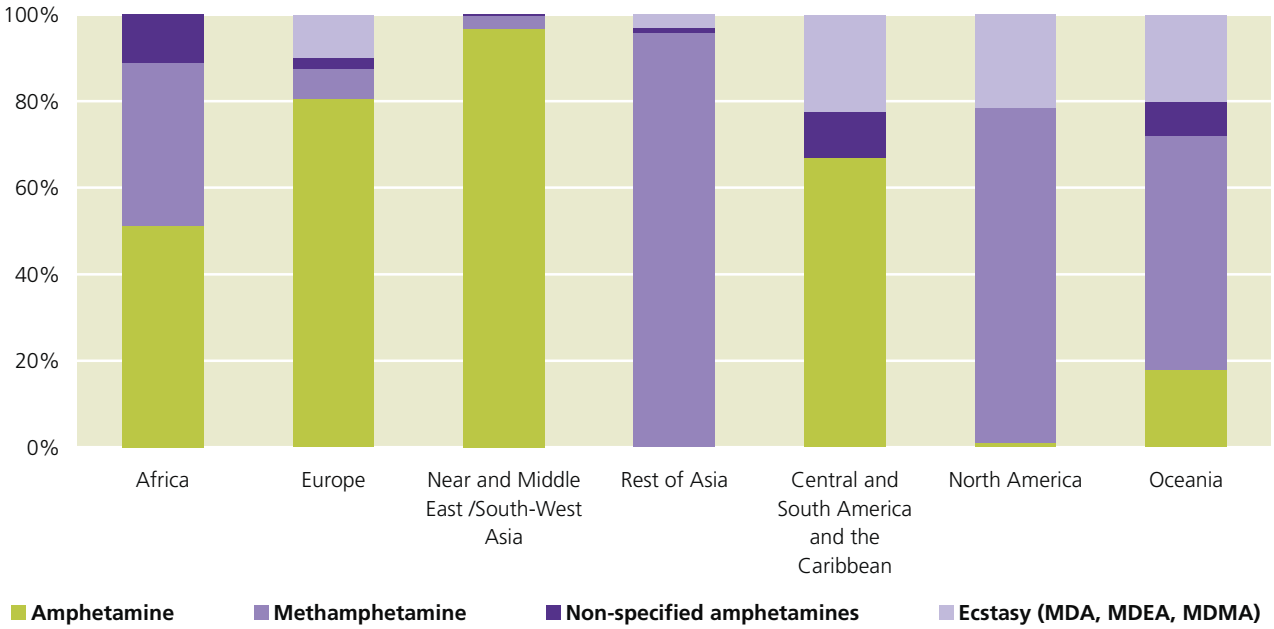
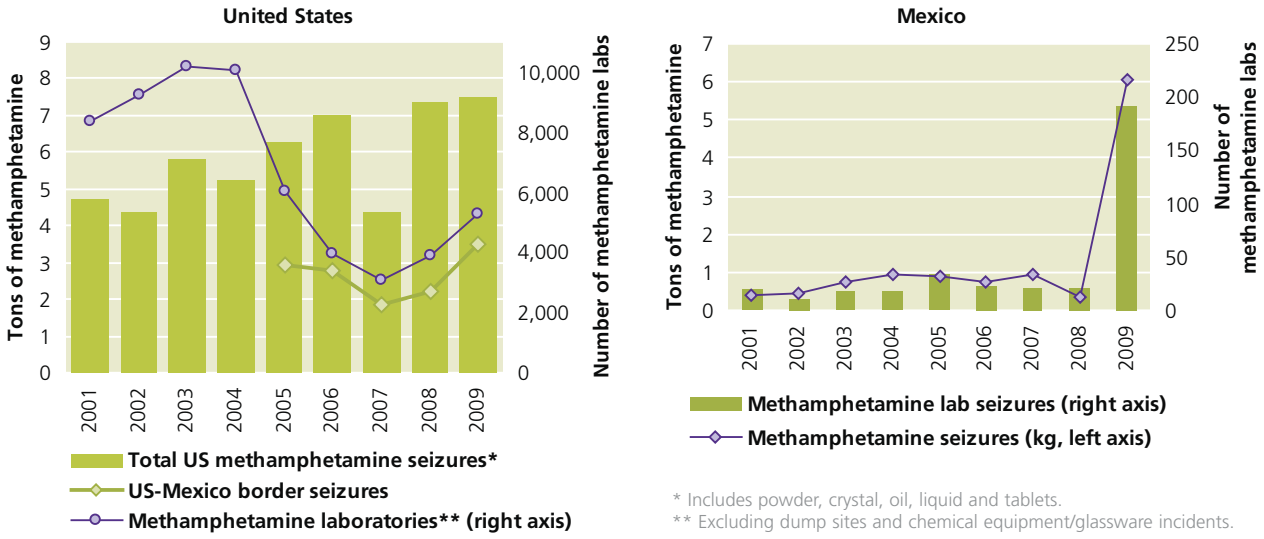


Fig. 125: Methamphetamine laboratories and seizures of methamphetamine in the United States and Mexico, 2001-2009

Sources: UNODC DELTA; US Department of Justice.



* Includes powder, crystal, oil, liquid and tablets.
** Excluding dump sites and chemical equipment/glassware incidents.

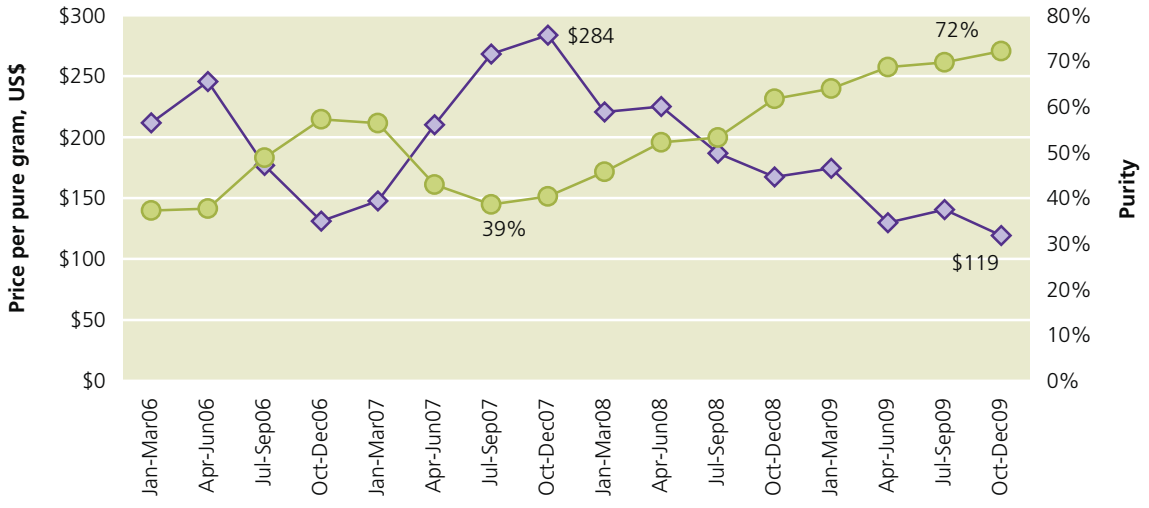
North America: Increase in the supply of methamphetamine

In 2009, North America accounted for 44% of global seizures of methamphetamine, due to continued high seizures in the United States (7.5 mt, compared with 7.4 mt in 2008) as well as a sharp increase in methamphetamine seizures in Mexico, which reached a comparable level (6.1 mt, up from 341 kg in 2008). This was in sharp contrast to prior years; over the period 2001-2008, annual seizures in the United States ranged between 5 and 21 times the level in Mexico.

Methamphetamine in the United States' consumer market continued to be supplied by manufacture of methamphetamine in Mexico as well as the United States. Following a substantial decline in 2007, the availability of methamphetamine in the United States appears to have rebounded. According to the United States Department of Justice,[48] methamphetamine availability in the United States seems to be directly related to methamphetamine production trends in Mexico. The decline in availability in 2007, possibly triggered by more stringent import restrictions of methamphetamine precursors in Mexico, was reflected in reduced seizures and

Fig. 126: Mean price and purity of methamphetamine purchases by law enforcement agencies in the United States, 2006-2009

Source: UNODC ARQ.



48 US Department of Justice, *National Drug Threat Assessment 2010*, February 2010.

increased prices, and may have led to an increase in manufacture of methamphetamine in the United States. The number of methamphetamine laboratories detected in the United States rose from 3,049 in 2007 to 3,873 in 2008 and 5,286 in 2009. The increase was mainly attributable to the number of small-scale laboratories. Moreover, some Mexican drug trafficking organizations shifted their production operations from Mexico to the United States, particularly to California.

Since 2007, manufacture of methamphetamine in Mexico appears to have grown significantly. Mexico reported 191 methamphetamine laboratories in 2009, up from 21 in 2008. In 2009, the laboratories were discovered in the central Pacific region (in particular, the states of Michoacan, Jalisco and Sinaloa). Between 2007 and 2009, seizures of methamphetamine by United States authorities along the border with Mexico increased by at least 87%, as the partial total for 2009 amounted to 3,478 kg (compared with 1,860 kg in 2007).[49] The increased availability in the United States is also visible in price and purity data. Between the fourth quarter of 2007 and the fourth quarter of 2009, the average price per pure gram of methamphetamine followed a generally decreasing trend, falling from US$284 to US$119, while the average purity followed a distinct increasing trend, rising from 39% to 72%.[50]

The rising purity and falling price are, however, also due to a less potent product being manufactured – a racemic 'd/l methamphetamine'. The loss in potency of this inferior product can, however, be compensated by higher purity levels – and this is currently happening. It appears that the reduced availability of ephedrine and pseudoephedrine (which would be required for the manufacture of the more potent 'd-methamphetamine') in Mexico had led to an increased use of alternative methods for the manufacture of methamphetamine. Such techniques either synthesize these chemicals from others more easily available or bypass their use entirely, employing for example the 1-phenyl-2-propanone (P-2-P) method, or its pre-precursor, phenylacetic acid (PAA). The product obtained from the use of PAA or P-2-P is a less potent racemic 'd/l methamphetamine,' unless an additional purification step is added on to obtain again the traditional 'd-methamphetamine.' Mexico made large seizures of phenylacetic acid (31 mt in 2009), which can be used to obtain P-2-P, as well as other closely related chemicals, including some which are not under international control (such as esters of phenylacetic acid in 2008[51] and phenylacetyl amide in 2009). In 2010 and 2011, Mexican authorities continued to make seizures of esters of phenylacetic acid.[52]

Increasing seizures of MDMA in the United States and Canada

For the second year in a row, North America accounted for more than half of global 'ecstasy' seizures in 2009. The United States alone accounted for 63% of the global total. Contrary to the trend in global seizures, which essentially remained at the significantly reduced level of 2008, in 2009, seizures in North America sustained the increased levels of 2007 and 2008. According to the United States Department of Justice,[53] the resurgence of MDMA availability in the United States was fuelled by the manufacture of MDMA in Canada and subsequent smuggling into the United States across the northern border. MDMA seizures at the northern border more than doubled between 2007 and 2008.

Canada reported 23 methamphetamine laboratories and 12 MDMA laboratories in 2009. Although 'ecstasy' seizures in Canada fell for the second year in a row – from 1 mt in 2007 to 715 kg in 2008 and 405 kg in 2009 – Canada reported an increased amount of powder MDMA shipments destined for foreign countries and an apparent expansion of international consumer markets for Canadian-produced MDMA. Destinations for MDMA shipments seized in or en route from Canada included the Philippines, Malaysia, Taiwan Province of China, Mexico and Jamaica. While cross-border methamphetamine trafficking between Canada and the United States continued to be limited in comparison with cross-border MDMA trafficking, a slight increase was registered in the number of methamphetamine shipments intercepted in both directions.

Central America, South America and the Caribbean

In this region, seizures of amphetamine-type stimulants are limited. In recent years however, illicit manufacture of amphetamine-type stimulants has emerged in several countries with little or no previous history of reported manufacture.

In Argentina, seizures of 'ecstasy' tablets rose from 11,072 in 2008 to 136,550 in 2009.[54] Argentina also seized 20 kg of methamphetamine in 2008, and small quantities of methamphetamine tablets in 2008 and 2009. Argentina reported the seizure of one 'ecstasy' laboratory in 2008. In August 2009, Argentine authorities seized 4.2 mt of ephedrine (a precursor for metham-

49 Ibid.

50 US Department of Justice, *National Drug Threat Assessment 2010*. Based on data extracted from System To Retrieve Information on Drug Evidence (STRIDE).

51 International Narcotics Control Board, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances, 2008,* February 2009.

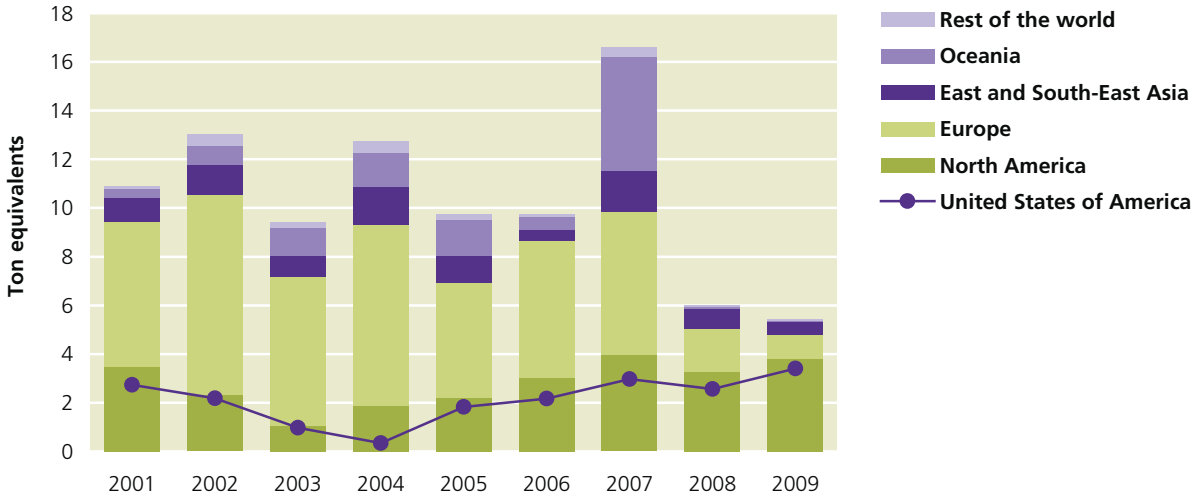
52 Procuraduría General de la República, Mexico, Secretaría de Marina, Mexico.

53 US Department of Justice, *National Drug Threat Assessment 2010*, February 2010.

54 In addition, Argentina also reported 15 grams and 10 grams of 'ecstasy' seized in 2008 and 2009 respectively.

Fig. 127: Ecstasy seizures in the United States and by region, 2001-2009

Source: UNODC DELTA.



phetamine) in two operations in the outskirts of Buenos Aires. Although manufacture in Argentina cannot be ruled out, it is likely that the large quantity of precursor chemical was intended for other destinations, possibly Mexico.[55]

In 2010, Brazil seized 2,740 'ecstasy' tablets and 5,910 units of methamphetamine.[56] Brazilian authorities seized one 'ecstasy' laboratory in 2008[57] in the state of Paraná, and, according to preliminary data, one 'ecstasy' laboratory, again in Paraná, as well as one methamphetamine laboratory in the state of Santa Catarina, in 2009.[58] Chile seized one laboratory manufacturing mescaline[59] in 2009. Seizures and investigations by Chilean authorities also point to trafficking of ephedrine from Chile to Mexico.[60] Colombia seized 126,573 ATS tablets in 2009, including 23,477 'ecstasy' tablets.[61]

In the Dominican Republic – for years an important trans-shipment location of ecstasy – seizures of 'ecstasy' tablets fell from 20,861 units in 2007 to 17,885 in 2008[62] and 10,166 in 2009. In August 2009, authorities in the Dominican Republic intercepted more than 409,000 pseudoephedrine tablets in a shipment en route to Guatemala and originating in Bangladesh.[63]

55 UNODC, *Global SMART Update*, Volume 2, October 2009.

56 Brazil Federal Police.

57 Brazil Federal Police. *Dados Estatísticos apreensão de drogas*, Coordenação Geral Polícia de Repressão a Entorpecentes. December 2010.

58 UNODC, *Global SMART Update*, Volume 2, October 2009.

59 Although mescaline is not classified as an amphetamine-type stimulant, it is a psychotropic substance and a hallucinogen.

60 UNODC, *Global Smart Update*, Volume 2, October 2009.

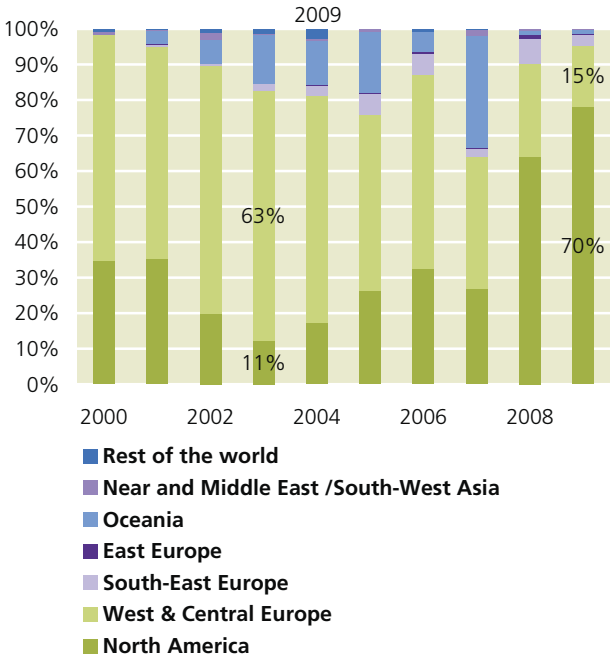
61 Observatorio de Drogas de Colombia.

62 In addition, in 2008, 49 grams of 'ecstasy' were seized in the Dominican Republic.

63 UNODC, *Global Smart Update*, Volume 2, October 2009.

Fig. 128: Distribution of global ecstasy seizures, by region, 2000-2009

Source: UNODC DELTA.



Guatemala reported the seizure of one ATS laboratory in 2008 and three in 2009, as well as the seizure of 12 mt of pseudoephedrine in 2009. In 2008, Honduran authorities discovered some establishments used for extracting pseudoephedrine. In Nicaragua, police discovered a laboratory manufacturing illicit synthetic drugs in February 2010, and seized a small quantity of amphetamine. This represented the third reported ATS laboratory in Nicaragua.[64]

64 UNODC, *Global Smart Update*, Volume 3, March 2010.

Fig. 129: Seizures of amphetamine in the Near and Middle East/South-West Asia and worldwide, 2000-2009

Source: UNODC DELTA.

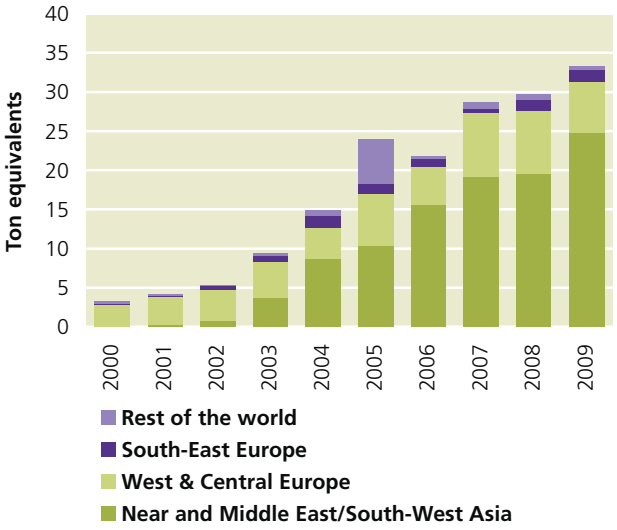
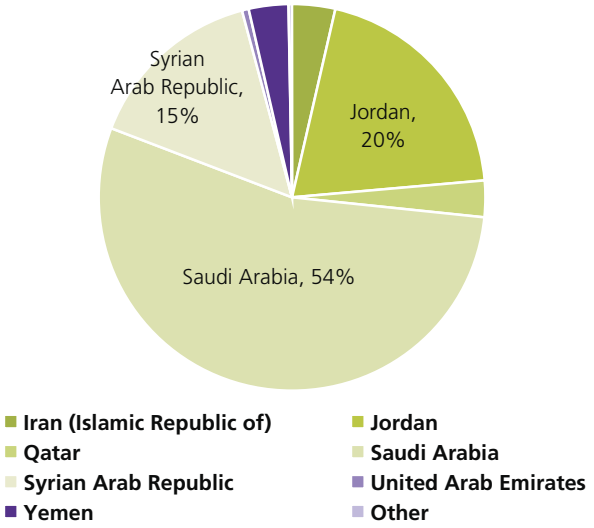


Fig. 130: Distribution of amphetamine seizures in the Near and Middle East/South-West Asia, 2009 (kg equivalents)

Source: UNODC DELTA.



In 2009, small quantities of amphetamine-type stimulants were also seized in Costa Rica (methamphetamine and 'ecstasy'), Chile (amphetamine and 'ecstasy') Cuba (methamphetamine and unspecified ATS), the Bahamas ('ecstasy') and El Salvador (amphetamine).

Near and Middle East/South-West Asia: Rise in amphetamine seizures

Countries in the Near and Middle East/South-West Asia continued to be affected by trafficking of Captagon on a large scale. The content of tablets bearing the Captagon logo is not always clear, but the main psychoactive ingredient in such tablets is now amphetamine (rather than fenetylline, the active ingredient in the licit pharmaceutical preparation some 15 years ago). Caffeine is also frequently found in such tablets.

Seizures of amphetamine in the Near and Middle East/South-West Asia increased steadily between 2000 and 2007, appeared to stabilize in 2008, amounting to 19.6 mt, and resumed the increasing trend in 2009, reaching 24.8 tons. The long-term growth in seizures in this region was driven mainly by seizures in Saudi Arabia, which rose consistently over the period 2000-2007, reaching 13.9 mt[65] in 2007. Seizures in this country have remained stable since then, amounting to 12.8 mt in 2008 and 13.4 mt[66] in 2009. Saudi Arabia has a significant consumer market for Captagon tablets. In January 2010, eight million Captagon pills were confiscated in a single seizure in Saudi Arabia. The traffickers were believed to have ties to an amphetamine manufacturing and distribution ring that was broken in Turkey a few months earlier.[67] Turkey is believed to be mainly a transit country for Captagon, and a gateway for illicit trafficking from South-East Europe to the Middle East.

Replies to the Annual Reports Questionnaire from the Near and Middle East identified Saudi Arabia as a major destination for amphetamine (specifically Captagon) trafficked on their territory. It also appeared that Egypt had become a point of departure for amphetamine shipments. In a single seizure at Dhuba seaport, Saudi Arabian Customs seized over 1.3 million tablets that were concealed on board a vessel that had arrived from Egypt.[68]

Jordan registered significant increases in amphetamine seizures in 2008 and again in 2009. Seizures in this country averaged 11 million tablets over the period 2004-2007, and rose to 14 million tablets in 2008 and 29 million tablets (specifically Captagon tablets) in 2009. Seizures also continued to increase in the Syrian Arab Republic, from 12 million tablets in 2007 and 2008 to 22 million tablets in 2009.

Turkey reported seizures of 2.8 million Captagon tablets in 2009,[69] in addition to 479 kg of amphetamine, of which 473 kg[70] were seized at a Captagon laboratory

65 Data relative to the period 2002-2007 and 2009 were sourced from the World Customs Organization and ICPO/INTERPOL.

66 World Customs Organization.

67 UNODC, *Global SMART Update, Volume 3,* March 2010.

68 World Customs Organization, *Customs and Drugs Report 2009.* June 2010.

69 Turkey also confirmed that, in 2009, Captagon tablets contained amphetamine rather than fenetylline.

70 Ministry of Interior, Turkish National Police, Department of Anti-Smuggling and Organized Crime. *Turkish Report on Drugs and*

discovered in Istanbul in September 2009. According to Turkish authorities,[71] such establishments, which are discovered sporadically, carry out the conversion into tablet form, rather than the chemical process whereby amphetamine is manufactured from other substances. In 2010 seizures of Captagon tablets fell to 1.1 million.[72]

Increased seizures of methamphetamine in the Islamic Republic of Iran

Starting in 2005, the Islamic Republic of Iran has seized increasing quantities of methamphetamine. In the first nine months of 2010, the country seized 883 kg of methamphetamine, up from 571 kg in 2009.[73] The results of research in the country, as reported by the Drug Control Headquarters[74], indicate that the use of methamphetamine has increased. The Islamic Republic of Iran reported that, in 2009, methamphetamine trafficked on its territory originated in North-West Asia, South-East Asia and northern and western Europe, with 1% manufactured domestically. It also reported the detection of six 'kitchen' laboratories manufacturing methamphetamine. In 2009, the Islamic Republic of Iran registered legitimate requirements of 55 mt[75] of the precursor pseudoepehedrine, the fourth largest level worldwide for that year.

According to Thai authorities,[76] there was an emergent trend of Iranian nationals trafficking methamphetamine into the region. This pattern was also observed in Japan, where Iranian nationals accounted for one fifth of arrests of non-resident foreigners related to methamphetamine.[77] In two incidents in July 2009 and February 2010, a total of five Iranian nationals were arrested in Malaysia for attempting to traffic a total of 75 kg of methamphetamine on flights from the United Arab Emirates.[78] In August 2010, police in Sri Lanka arrested three Iranian nationals, confiscating 16 kg of methamphetamine.[79] Turkey, which registered methamphetamine seizures for the first time in 2009, also reported that methamphetamine was smuggled overland from the Islamic Republic of Iran into Turkey and then trafficked by air to countries in East and South-East Asia such as Indonesia, Japan, Malaysia and the Republic of Korea. Indonesia also mentioned the Islamic Republic of Iran as a source country for methamphetamine in 2009, and Turkey as a transit country. Trafficking of methamphetamine from the Islamic Republic of Iran via Turkey was also confirmed by Philippine authorities.[80]

Asia-Pacific: Increased seizures of methamphetamine

The Asia-Pacific region - notably the area encompassing Cambodia, the Lao People's Democratic Republic, Myanmar, Thailand, Viet Nam and bordering provinces of south China - continued to be affected by manufacture, trafficking and consumption of methamphetamine on a large scale. In 2009, seizures in East and South-East Asia rose by more than one third, from 11.6 mt in 2008 to 15.8 mt, mainly due to the quantities seized in Myanmar. In relative terms, Thailand recently also registered significant increases. The largest seizures in the Asia-Pacific region continued to be made by China, while East and South-East Asia as a whole continued to account for approximately one half of global seizures of methamphetamine. Moreover, there were signs of diversification in trafficking routes, with methamphetamine reaching the region from Africa and the Islamic Republic of Iran.

In China, aggregate seizures of methamphetamine were remarkably stable over the period 2005-2009, ranging between 6.1 mt and 6.8 mt (6.6 mt in 2009). According to Chinese authorities,[81] there was an increase in trafficking of amphetamine-type stimulants from neighbouring countries (referred to as the 'Golden Triangle') into Yunnan province. Methamphetamine seizures in this province rose from 2.2 mt in 2008 to 3.2 mt in 2009. There was also an increase in the domestic manufacture of illicit drugs, with the number of dismantled clandestine laboratories rising from 244 in 2008 to 391 in 2009. Manufacture occurred in particular in the provinces of Guangdong, Sichuan and Hubei, and the substances involved were mainly amphetamine-type stimulants and ketamine.

Organized Crime 2009.

71 Ibid.

72 Ministry of Interior, Turkish National Police, Department of Anti-Smuggling and Organized Crime. *Turkish Report on Drugs and Organized Crime 2010.*

73 Drug Control Headquarters, Islamic Republic of Iran, *Drug Control in 2010*, Annual Report.

74 Drug Control Headquarters, Islamic Republic of Iran. *Drug control in 2008, Annual Report and Rapid Situation Assessment*,

75 International Narcotics Control Board, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances*, Report of the International Narcotics Control Board for 2009 on the Implementation of Article 12 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988, E/INCB/2009/4. February 2010.

76 Office of the Narcotics Control Board of Thailand, presentation at the Twentieth Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), October 2010, Seoul, Republic of Korea.

77 Fifteenth Asia-Pacific Operational Drug Enforcement Conference, February 2010, Tokyo, Japan. Country report by Japan.

78 UNODC, *Global SMART Update, Volume 3,* March 2010.

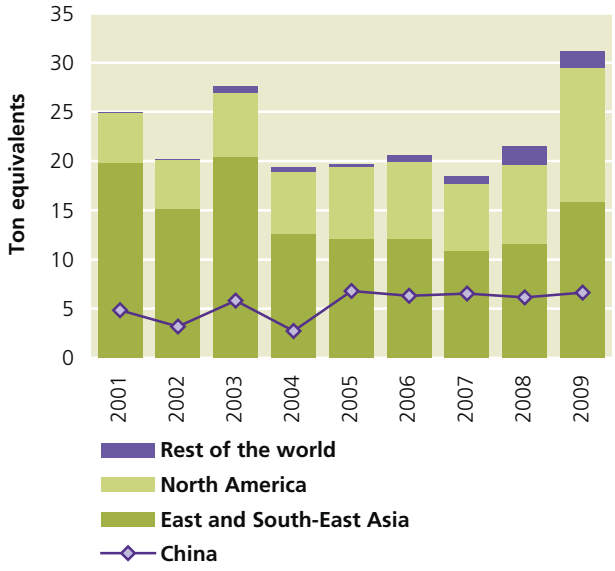
79 UNODC, *Global SMART Update, Volume 4,* October 2010.

80 Twentieth Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), October 2010, Seoul, Republic of Korea. Country report by the Philippines.

81 National Narcotics Control Commission of China, presentation at the Twentieth Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), October 2010, Seoul, Republic of Korea.

Fig. 131: Methamphetamine seizures in China, East and South-East Asia, North America and worldwide, 2001-2009

Source: UNODC DELTA.



In 2009, a notable increase in methamphetamine seizures was registered in Myanmar, where annual seizures of methamphetamine averaged 528 kg over the period 2003-2008 and rose to 3.4 mt in 2009. This increase was concurrent with a similar increase in heroin seizures in the same country and may reflect a strengthened presence of law enforcement agencies in parts of Myanmar.

Thailand continues to constitute a major market for methamphetamine, and there were signs that trafficking methamphetamine was on the rise. According to data collated by the Drug Abuse Information Network for Asia and the Pacific, seizures of methamphetamine tablets rose from 14 million in 2007 to 22 million in 2008 and 27 million in 2009, while seizures of crystalline methamphetamine increased from 47 kg in 2007 and 53 kg in 2008 to 209 kg in 2009.[82] According to Thai authorities,[83] manufacture of illicit substances was very limited in Thailand, and methamphetamine was trafficked into Thailand from neighbouring countries. Thailand was also being used by traffickers as a transit point for methamphetamine intended for other markets.

Large quantities of methamphetamine were seized in the Philippines in 2008 and 2009. The Philippines also dismantled 10 methamphetamine laboratories in 2008 (including four 'kitchen' laboratories) and nine in 2009 (including eight 'kitchen' laboratories), and further reported an increase of 36% in the average price of methamphetamine hydrochloride in 2009, as compared to that in 2008, suggesting an increased demand for the substance.

Methamphetamine seizures in Malaysia amounted to 1.1 mt in 2008 and 1.2 mt in 2009.[84] These levels are significantly higher than those registered prior to 2008. In a single seizure in May 2009, Malaysian police seized 978 kg of high purity crystalline methamphetamine in the city of Johor Bahru.[85]

Methamphetamine seizures in Indonesia, in contrast, fell to the lowest level since 2004. Indonesia also reported the seizure of five 'kitchen' methamphetamine laboratories in 2008 and 17 in 2009.

The general declining trend in ecstasy seizures prevalent worldwide since 2007 (with the exception of North America) was also to be seen in several countries in the Asia-Pacific region. By 2009, ecstasy seizures in China, Indonesia, Japan, Malaysia and Thailand had fallen significantly by comparison with the level in 2007. However, Indonesia reported that nine 'kitchen' laboratories manufacturing ecstasy were seized in 2008 and 18 in 2009.

Oceania continued to be affected by trafficking of amphetamine, methamphetamine and ecstasy, with no single type dominating the market. In 2009, Australia seized 56 kg of amphetamine, 150 kg of methamphetamine and 59 kg of ecstasy. The number of laboratories dismantled in Australia rose significantly, from 11 ATS laboratories in 2007-2008 to 316 in 2008-09, of which 19 were manufacturing primarily MDMA and the rest were manufacturing amphetamine or methamphetamine. New Zealand also seized smaller quantities of amphetamine, methamphetamine and ecstasy; however, all 135 seized laboratories reported by New Zealand were manufacturing methamphetamine.

Africa: Few countries report seizures

The variety of substances, combinations of substances, precursor chemicals and chemical processes for manufacturing ATS hinders the collection of good quality data, in particular the proper identification and classification of seized controlled substances, especially in countries lacking laboratory services for forensic purposes, and this is an issue of concern especially in Africa. The vast majority represent seizures whose precise nature is unknown. Several African countries appear to be affected by trafficking in, and consumption of, diverted or counterfeit prescription drugs containing controlled substances whose nature is not always clear, possibly

82 In its reply to the Annual Reports Questionnaire for 2009, Thailand reported seizures of 2.4 mt of methamphetamine pills and 210 kg of crystalline methamphetamine.

83 Office of the Narcotics Control Board of Thailand, presentation at the Twentieth Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), October 2010, Seoul, Republic of Korea.

84 Data collated by DAINAP.

85 UNODC, *Global SMART Update, Volume 2.* October 2009.

including amphetamine-type stimulants as well as sedatives and tranquillisers.

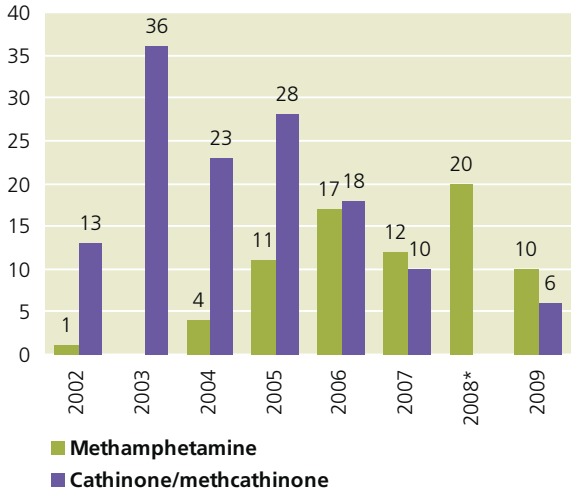
Nigeria reported seizures of 712 kg of psychotropic substances in 2009, up from 530 kg of psychotropic substances in 2008. Burkina Faso reported seizures of 3,403 kg of 'médicaments de la rue' in 2008. Morocco reported seizures of 48,293 units of psychotropic substances in 2008, rising to 61,254 in 2009 and 105,940 in 2010.[86] South Africa reported aggregate seizures of 48 kg of amphetamine-type stimulants in 2009, including 37 kg of methamphetamine. Algeria reported aggregate seizures of 90,630 tablets of sedatives and tranquillisers in 2009. Côte d'Ivoire seized 43 kg of amphetamine in 2008, as well as 17,155 amphetamine tablets (in addition to seizures of clonazepam and diazepam tablets).[87] In 2009, seizures of amphetamine in Côte d'Ivoire fell to 1,200 tablets. The World Customs Organization also reported that Sudanese officials foiled an attempt to smuggle 18.3 kg of stimulant tablets at Khartoum airport.

Every year from 2000 to 2009, Egyptian authorities seized small quantities of 'ecstasy tablets'. Seizures exceeded 10,000 tablets in 2006, but had fallen to 203 tablets by 2008 to 76 tablets in 2009. In April 2010,[88] one methamphetamine laboratory was seized in Egypt.

According to South African authorities, amphetamine-type stimulants, in particular methamphetamine and club drugs such as ecstasy and cathinone, continued to be used in South Africa.[89] These drugs, with the exception of ecstasy, were manufactured locally in clandestine laboratories, while ecstasy was mainly smuggled in from Europe by air freight and parcel post. Over the period 1 April 2008 to 31 March 2009, 20 clandestine laboratories manufacturing methamphetamine were dismantled,[90] while 10 methamphetamine laboratories and six cathinone laboratories were dismantled during 2009. South Africa also reported that an increase of methamphetamine trafficking allowed for a decrease in prices.

Fig. 132: Number of methamphetamine and cathinone/methcathinone laboratories seized in South Africa (all sizes), 2002-2009

Source: UNODC DELTA.



*Covers the period 1 April 2008 to 31 March 2009

Methamphetamine trafficking from Africa to Japan

One emerging trend identified by Japanese authorities[91] was that of methamphetamine trafficking from Africa to Japan. The proportion of methamphetamine seized in Japan that was sourced from Africa increased from 7.4% in 2009 to 36% in the first half of 2010. The West and Central African countries of Benin, Nigeria, Cameroon and Senegal were prominent among the source countries in Africa. It is unclear whether West Africa, already a hub for cocaine trafficking, was beginning to see the emergence of local ATS manufacture, or is simply serving as a transit point for methamphetamine manufactured elsewhere, possibly in South Africa. Nevertheless this trend, together with reports from other countries in the region, suggests that African trafficking syndicates active in the Asia-Pacific region may be expanding their activities to include trafficking of methamphetamine in addition to heroin and cocaine.

Countries in West Africa, which have assumed an important role in the trafficking of cocaine, are also vulnerable to a potentially increased role in the trafficking or manufacture of other drugs, including amphetamine-type stimulants. In July 2009, large quantities of chemicals and equipment that could be used in the manufacture of illicit drugs were discovered in multiple facilities in Guinea. Among the seized materials were more than 5,000 litres of sassafras oil and 80 litres of

86 Official communication from the Government of Morocco. The replies to the Annual Reports Questionnaire for the year 2009 and 2010 from the Kingdom of Morocco were not available at the time of preparation of the present report.

87 Country report by Côte d'Ivoire to the Nineteenth Meeting of Heads of National Drug Law Enforcement Agencies, Africa. The replies to the ARQ for 2008 from Côte d'Ivoire were not available at the time of preparation of the present report.

88 UNODC, Global SMART Update Volume 4.

89 Country report by South Africa to the Nineteenth Meeting of Heads of National Drug Law Enforcement Agencies, Africa.

90 South African Police Service, *Annual Report 2008/2009*. In the replies to the ARQ for 2008, South Africa did not report any clandestine laboratories.

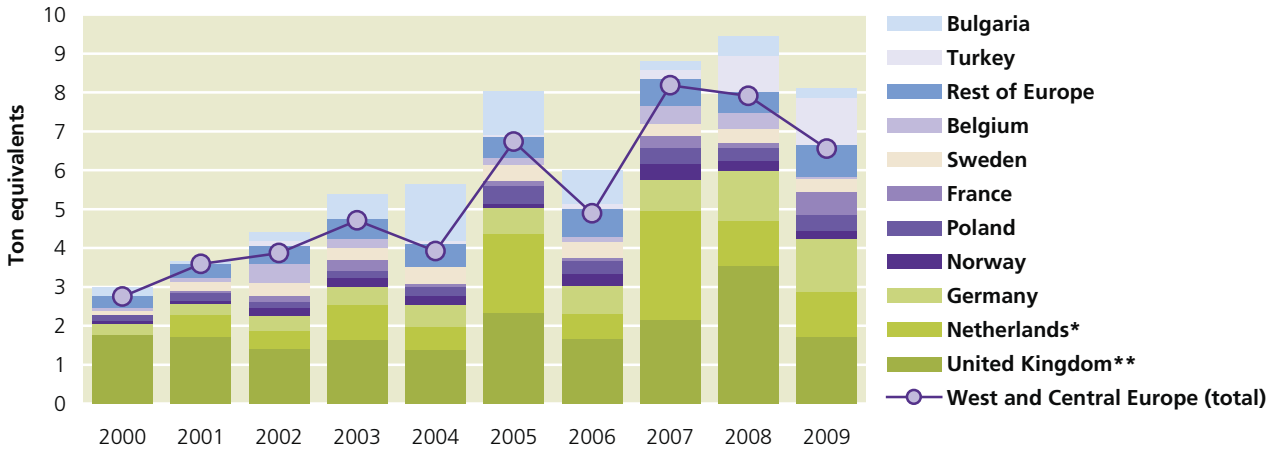
91 Japan Customs Intelligence and Targeting Centre, presentation at the Twentieth Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), October 2010, Seoul, Republic of Korea.

Fig. 133: Amphetamine seizures in Europe, 2000-2009

* Data for 2009 for the Netherlands were unavailable; the value used is that corresponding to the year 2008, and is only included to estimate the regional total.

** Data for the United Kingdom for 2007, 2008 and 2009 are based on incomplete data for some jurisdictions for the financial years 2007/08, 2008/09 and 2009/10 respectively, and adjusted for the missing jurisdictions using the distribution in 2006/07.

Source: UNODC DELTA.



3,4-MDP-2-P, which can be used to manufacture MDMA. In a separate single seizure, also in July 2009, Nigerian officials seized 10 kg of crystalline methamphetamine and 10 kg of amphetamine along with 57 kg of the precursor chemical ephedrine. The seizure was made at the departure concourse of a flight en route to South Africa.[92] (The methamphetamine seizures were, however, not reported separately in the ARQ but included in the broad category of psychotropic substances seizures). In 2010, Nigeria seized 75 kg of methamphetamine: over the nine-month period May 2010 – January 2011, 11 out of 150 seizures made by authorities at Murtala Muhammed International Airport involved methamphetamine, intended predominantly for the Asia-Pacific region.[93]

Europe: Amphetamine seizures appear to recede

Europe, notably West and Central Europe, continues to be an important market for amphetamine, in terms of both manufacture and consumption. Amphetamine seizures in West and Central Europe reached a record level (8.2 mt) in 2007, and essentially sustained this level in 2008 (7.9 mt). In 2007 and 2008, the Netherlands, the United Kingdom and Germany collectively accounted for more than 70% of annual amphetamine seizures in West and Central Europe, and in 2009 the United Kingdom and Germany accounted for the largest and second largest seizure levels in Europe, respectively. Seizure data from the Netherlands for 2009 were not available; however, a comparison of seizure totals for 2008 and 2009 excluding the Netherlands indicates a decline of 20%.

A sharp drop in seizures in the United Kingdom, from the high level of 2008, was partly offset by increased seizures in France, while seizures in Germany continued the gradually increasing trend that can be traced back to 2002. Among all countries worldwide, the Netherlands continued to be the most frequently mentioned country of origin for amphetamine as well as 'ecstasy'. Poland continued to be the second most frequently mentioned country of origin for amphetamine: Poland dismantled eight amphetamine laboratories in 2009, and identified Germany, Scandinavia and the United Kingdom as the main destinations for amphetamine manufactured in Poland.

Ecstasy seizures continue to decline

Seizures of ecstasy in Europe have declined sharply, standing at 1.8 mt in 2008 – approximately one third the prior levels – and appearing to decline by a further 59% in 2009 (excluding seizures in the Netherlands). The decreases were prevalent throughout Europe but were more pronounced in some countries than others; due to recent decreases in countries which historically accounted for a dominant portion of European 'ecstasy' seizures (notably the United Kingdom and, up till 2008, the Netherlands), in 2009 the largest 'ecstasy' seizures reported by European countries were made in Turkey (432,513 tablets) and Spain (404,334 tablets), while Poland registered seizures comparable with the quantities seized in the United Kingdom (6% of the European total). Poland assessed that some of the `ecstasy' on its territory originated in Poland itself, as well as the Netherlands. According to Colombian authorities,[94] a

92 UNODC, *Global SMART Update*, Volume 2, October 2009.

93 National Drug Law Enforcement Agency of Nigeria.

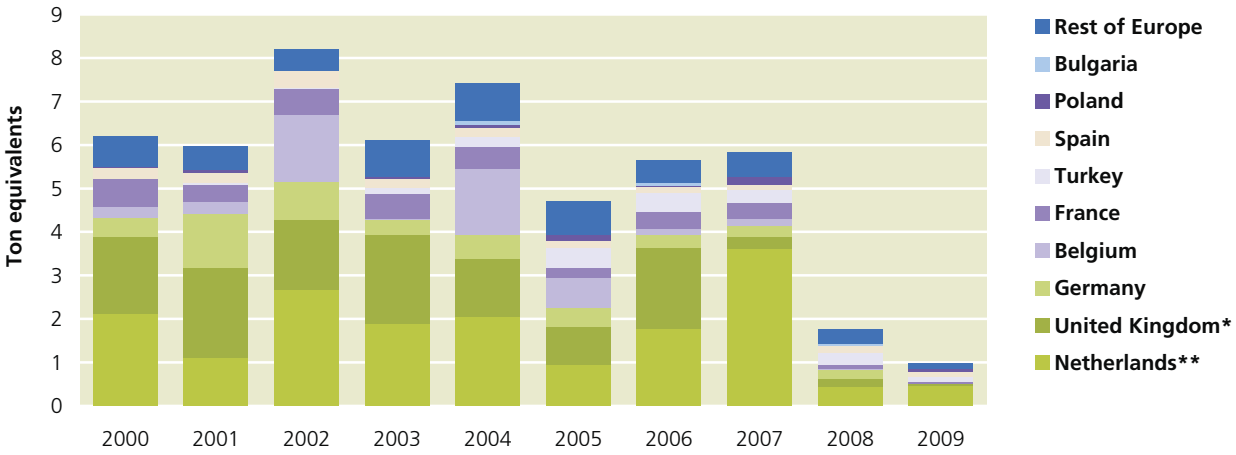
94 Dirección Nacional de Estupefacientes, Ministerio del Interior y de Justicia, Colombia.

Fig. 134: Seizures of ecstasy in Europe, 2000-2009

* Data for the United Kingdom for 2007, 2008 and 2009 are based on incomplete data for some jurisdictions for the financial years 2007/08, 2008/09 and 2009/10 respectively, and adjusted for the missing jurisdictions using the distribution in 2006/07.

** Data for 2009 for the Netherlands were unavailable; the value used is that corresponding to the year 2008, and is only included to estimate the regional total.

Source: UNODC DELTA.



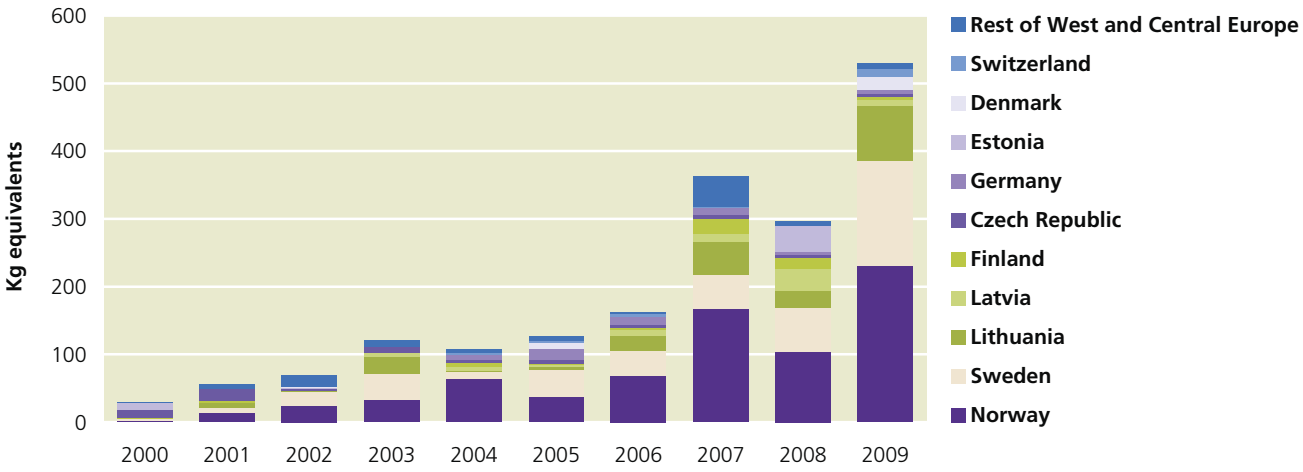
shipment of 15 million 'ecstasy' tablets seized in Poland and intended for Colombia suggested that Colombian syndicates were accepting payment for cocaine in the form of 'ecstasy' tablets manufactured in Europe. Similar arrangements were also reported from other European countries in the past.

Methamphetamine emerging in Europe

While the European ATS market has in the past been dominated by amphetamine and 'ecstasy', recent years have seen the emergence of methamphetamine manufacture, trafficking and consumption in parts of Europe. Between 2004 and 2009, there was a five-fold increase of methamphetamine seizures in West and Central Europe, driven mainly by seizures in Norway, Sweden and Lithuania. Over the period 2002-2009, Lithuania and the Netherlands were the European countries most frequently mentioned as a country of origin for methamphetamine, followed by Poland, the Czech Republic and Slovakia. Lithuania assessed that methamphetamine on its territory originated entirely in Lithuania itself in 2009, while the percentage of domestic manufacture was estimated at 98% by Slovakia and 95% by the Czech Republic. The Czech Republic reported seizures of a large number of methamphetamine laboratories (342); one methamphetamine laboratory was also dismantled in Lithuania and an unspecified number in Slovakia.

Fig. 135: Methamphetamine seizures in West and Central Europe, 2000-2009

Source: UNODC DELTA.



4.5 Emerging trends

Market expansion for ATS markets in East and South-East Asia

Established markets for amphetamine-type stimulants in East and South-East Asia have seen an expansion over the past year. Expert perceptions confirm that ATS - notably methamphetamine - play a significant role in the region. ATS may even have overtaken the use of plant-based drugs in some countries over the past few years. Methamphetamine in pill form has been reported as the primary drug of use in the Lao People's Democratic Republic and Thailand, while methamphetamine in crystalline form has been reported as the primary drug of use in Brunei Darussalam, Cambodia, Japan, the Republic of Korea and the Philippines. Methamphetamine in pill and crystalline form ranked as the second most commonly used drug type in China, with 'ecstasy' ranking third. In Indonesia, crystalline methamphetamine and 'ecstasy' ranked as the second and third most commonly used drugs, respectively. Crystalline methamphetamine ranked as the third most commonly used drug in Malaysia and Singapore.

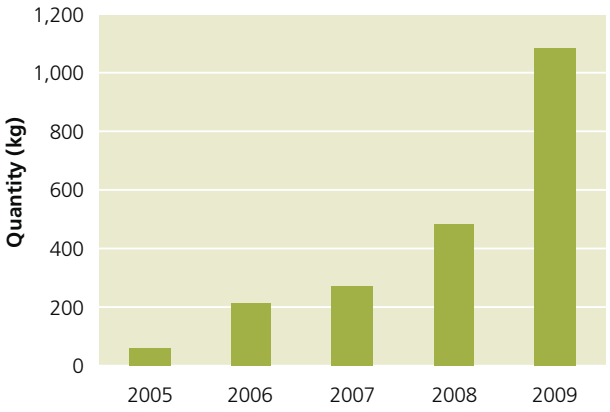
Over the past few years, several expanding markets have emerged in the region. For example, the market for methamphetamine in Viet Nam has grown as the country becomes an attractive target for traffickers due to its large, increasingly affluent and urban population. The use of crystalline methamphetamine, in particular, has increased among young people in major cities and seizures of methamphetamine pills have increased significantly over the past three years. Viet Nam also reports the existence of drug storage points along the northern border with the Lao People's Democratic Republic.

In Indonesia, crystalline methamphetamine use has been increasing each year since 2003 according to experts, and the drug now ranks as the second most commonly used drug, after having ranked fifth in 2005. Over the past five years, Indonesia - hitherto primarily a transit country for methamphetamine - has become a manufacturing centre for crystalline methamphetamine. Malaysia is a key transit country for crystalline methamphetamine trafficking in the region and in recent years has seen seizures of several small and large-scale manufacturing laboratories, echoing the same pattern as some other countries.

Another trend is the increasing trafficking and use of ketamine which is often sold in the traditional ATS markets of South-East Asia. In 2009, 6.9 mt of ketamine was seized in East and South-East Asia. Almost 90% of this was seized in China, which, along with India, is one of the major source countries for ketamine in the region. Ketamine seizure figures are almost certainly underreported, particularly in Asia. Ketamine is not under international control and only some countries in the region have imposed restrictions on its availability. Use is reportedly increasing in several countries and areas, and in Hong Kong, China, it was the main drug of use, with 2009 seizures reaching five times their 2007 level. One reason for its growing popularity is that ketamine is cheaper than other drugs such as MDMA and its licit use makes it widely available for diversion for illicit purposes in many countries in the region.

Fig. 136: Seizures of ketamine in India, 2005-2009

Source: Directorate of Revenue Intelligence and Narcotics Control Board, India.



Ketamine is also frequently trafficked in South Asia, particularly from India. Seizures of ketamine in India have increased from 60 kg in 2005 to more than 1 mt in 2009. Ketamine has been trafficked to countries in East and South-East Asia as well as to North America (notably Canada) and some European countries (notably the United Kingdom and the Netherlands).

The emergence of analogue substances in established ATS markets

The appearance of several new unregulated synthetic compounds in established ATS markets, particularly in

Europe, the United States, Canada, Australia and New Zealand, has been an important trend observed over the past years. Many of these substances are marketed as 'legal highs' and substitute for illicit stimulant drugs such as cocaine or ecstasy.

In Europe, the emergence of these substances coincided with the gradual disappearance of ecstasy from the illicit drugs market. Seizures of ecstasy precursors have continually declined over the past five years. Seizures of the main ecstasy precursor 3,4-MDP-2-P (also known as piperonyl methyl ketone) steeply declined after 2004. The slow and steady disappearance of MDMA from the illicit market coincided with a decline in laboratory activity. In 2009, only one ecstasy-related laboratory incident was reported in Europe.

At the same time, other synthetic substances, notably piperazines, have been sold as 'ecstasy' to meet the demand from the illicit market. Manufacturers and traffickers have started to exploit the lack of national and international control over piperazines and other new synthetic substances. Piperazines are not under international control although many countries have introduced national controls over BZP and taken other action to prevent their sale and distribution.

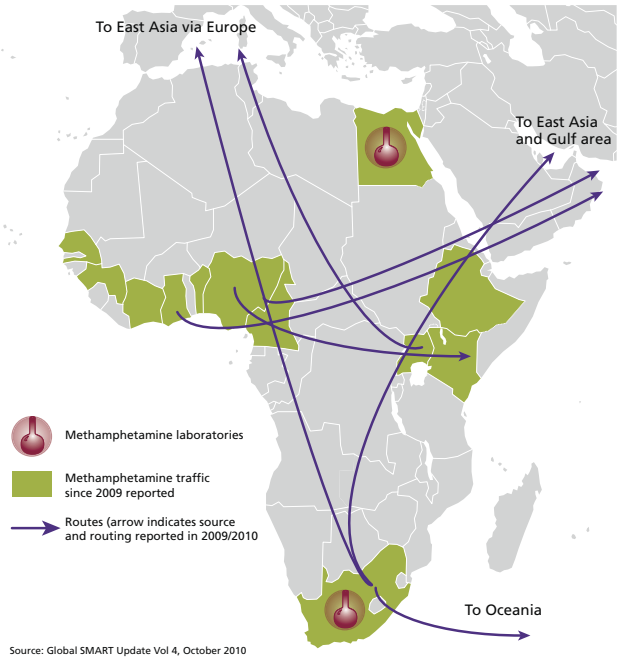
As a result, other substances have emerged, notably mephedrone. Mephedrone, 4-methylmethcathinone (4-MMC), first appeared on the illicit market around 2007. The substance has no medical use in either humans or animals and has been associated with a number of fatalities in European countries. In December 2010, mephedrone was banned in the countries of the European Union. But it is still available in illicit drug markets and has also appeared on markets in developed countries outside Europe, including the United States and Australia.

Methamphetamine trafficking from Africa

Africa poses one of the greatest emerging threats with regard to trafficking of amphetamine-type stimulants. Trafficking of methamphetamine from Africa was reported first at the end of 2008 and reports of such trafficking have continued since. West Africa, in particular, is emerging as a source of methamphetamine for illicit markets in East Asia, with couriers transiting Europe, western Asia or East Africa. Few countries in the region have the capacity and governance structures to address the problem.

Methamphetamine manufacture is not entirely new to Africa. South Africa has had increasing reports since 2004 and Egypt reported a case as recently as April 2010. There are also indications that ATS manufacture could occur in West Africa. In July 2009, equipment that could be used in ATS manufacture was discovered in Guinea. In June 2010, the United States Government indicted members of a large international cocaine trafficking organization for, inter alia, the intent to establish large-scale manufacture of crystalline methamphetamine in Liberia.

Map 37: Trafficking routes of methamphetamine in Africa



Source: Global SMART Update Vol 4, October 2010

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Lines represent origin and intended destination, not necessarily exact route, and include completed or stopped trafficking attempts. Modes of transport include by air, sea, overland, or any combination thereof.

Precursor chemicals are frequently trans-shipped through the region. The International Narcotics Control Board (INCB) identified Africa as the region with the greatest number of diversions or attempted diversions of ATS precursor chemicals in 2008. Countries import precursors in considerable excess of legitimate annual needs and are targets for organized crime. For example, a single shipment to Uganda of 300 kg of pseudoephedrine was seized upon arrival in 2008. At the same time, the INCB notes that precursor trafficking patterns in Africa stand in sharp contrast to the low number of seizures made by Governments in the region. Only two cases were reported in 2009: 1.25 mt of ephedrine to the Central African Republic and 1 mt of pseudoephedrine to Kenya, both of which can be used in the manufacture of methamphetamine.

The World Customs Organization (WCO) noted a small number of methamphetamine trafficking cases from Africa (southern) to East Asia in mid-2008 with no prior cases reported. The year 2009 saw both the number of seizures and their quantities originating from Africa more than triple. This trend appears to be growing and spreading. Cases of methamphetamine trafficking have emerged from various West African nations. Trafficking of methamphetamine originating in or transiting through Benin, Cameroon, Côte d'Ivoire, Ghana,

Guinea, Senegal and in particular Nigeria have all been reported since 2009.

The most common destinations for methamphetamine have been outside the region, primarily Japan, followed by the Republic of Korea, with new reports from Malaysia and Thailand. Cases are typically multi-kilo and transported via air passengers hidden in luggage or by body concealment resembling methods employed by West African syndicates for other drugs. Couriers transit via Gulf countries, East African as well as European countries. Significantly larger shipments have also been reported. For example, in May 2010, Nigerian authorities stopped two separate cargo shipments totalling 63 kg of methamphetamine and amphetamine to Japan and South Africa. In July 2009, 10 kg of crystalline methamphetamine, 10 kg of amphetamine and 57 kg of ephedrine were seized in Nigeria en route to South Africa.

The infrastructure established by transnational cocaine and heroin traffickers in West Africa is readily adaptable to accommodate the flexibility of ATS manufacture. While the capacity to report on the situation in the region remains limited, initial indications suggest that the products are a threat for lucrative markets around the world. This raises the need for a truly global effort to address the synthetic drugs problem.

ATS in South Asia

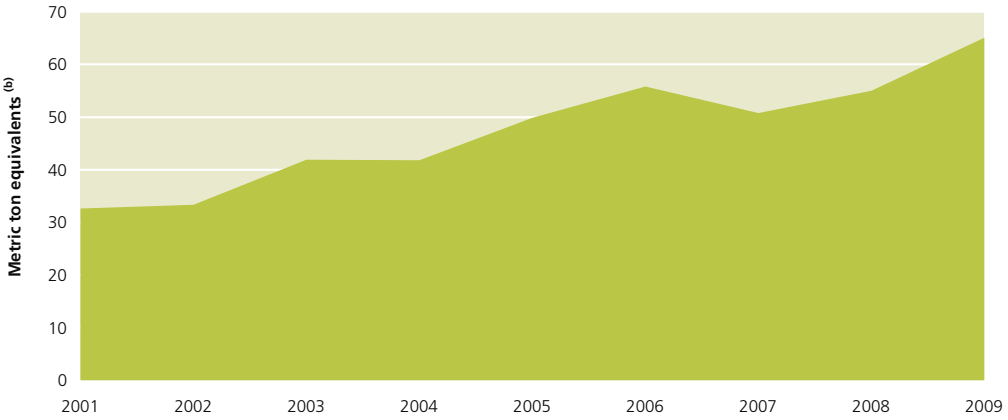
Located at the crossroads of drug supply between the sources in South-East and South-West Asia, South Asia has traditionally been affected by illicit manufacture, trafficking and use of drugs, mostly opiates. Over the past few years, however, South Asia has emerged as a source for amphetamine-type stimulants (ATS) and the precursors needed to manufacture them.

The geographical proximity to East and South-East Asian source countries of illicit methamphetamine is one of several factors which makes South Asia a vulnerable target for illicit manufacture of amphetamine-type stimulants. The first clandestine ATS manufacture operation was detected in India in May 2003. Since then, several additional facilities have been uncovered. In August 2010, a methamphetamine laboratory was discovered in India. However, attempts at illicit ATS manufacture are not limited to India, they have also been reported from Bangladesh and Sri Lanka. In Sri Lanka, for example, a large-scale methamphetamine laboratory was dismantled in May 2008.

In addition, South Asia has become one of the main regions used by drug traffickers to obtain ephedrine and pseudoephedrine for the illicit manufacture of methamphetamine. India is one of the world's largest manufacturers of precursor chemicals and Bangladesh also has a growing chemical industry. Despite efforts to control precursor chemicals, both countries have been identified in a number of cases as the source of diverted precursor chemicals for a range of drugs, including methamphetamine. Several significant seizures of pseudoephedrine in Central America and the Caribbean (such as the Dominican Republic, Guatemala and Honduras) are believed to have originated in Bangladesh. Many countries in Central America and the Caribbean are vulnerable as destinations for these shipments. Africa also remains at risk at being used by traffickers to obtain precursor chemicals.

Amphetamine, methamphetamine and ecstasy have been regularly seized in South Asia over the past five years. Methamphetamine pills originating from Myanmar are trafficked into Bangladesh, India and Nepal. The recent upsurge of methamphetamine seizures originating from Myanmar may therefore be felt acutely in the region.

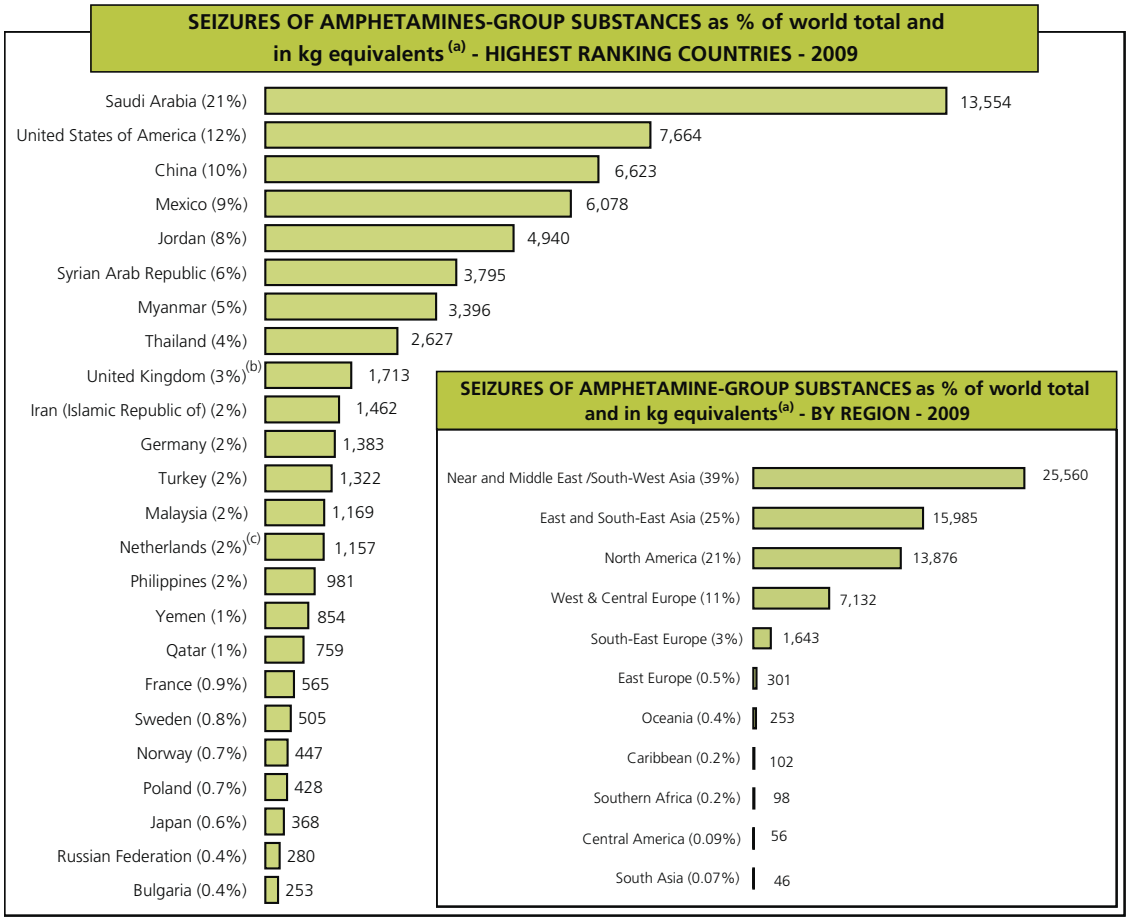
Fig. 137: Global seizures of amphetamines[a], 2001-2009



[a] Amphetamine, methamphetamine and related non-specified amphetamines.

[b] This quantity reflects the bulk weight of seizures, with no adjustment for purity. Seizures of amphetamines-group substances reported in tablets or similar units are converted using assumed bulk tablet weights between 90mg and 300 mg, depending on the region and specific drug type, and based on information currently available to UNODC. This differs from the approach adopted in earlier editions of the World Drug Report.

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Metric ton equivalents[b]	33	33	42	42	50	56	51	55	65



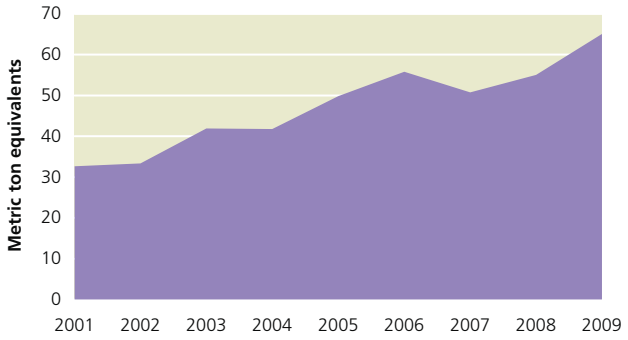
[a] This quantity reflects the bulk weight of seizures, with no adjustment for purity. Seizures of amphetamines-group substances reported in tablets or similar units are converted using assumed bulk tablet weights between 90mg and 300 mg, depending on the region and specific drug type, and based on information currently available to UNODC. This differs from the approach adopted in earlier editions of the World Drug Report.

[b] Data for the United Kingdom for 2009 are based on incomplete data for some jurisdictions for the financial year 2009/10, and adjusted for the missing jurisdictions using the latest available complete distribution (relative to the financial year 2006/07).

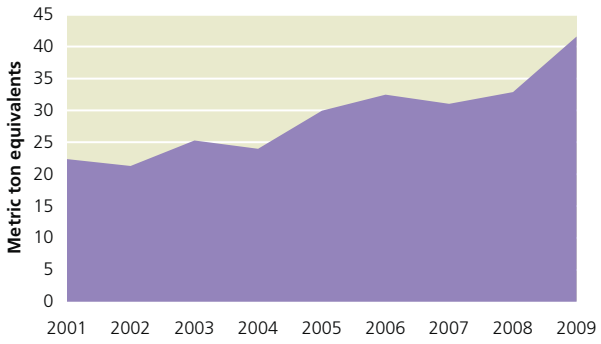
[c] Data relative to 2008. Data for 2009 from the Netherlands were not available.

Fig. 138: Interception of amphetamines-group substances, 2001-2009

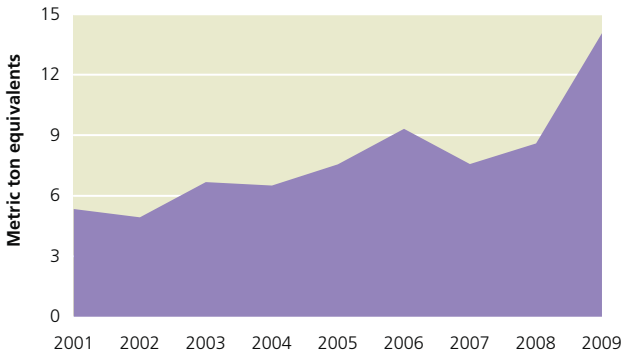
AMPHETAMINES-GROUP SUBSTANCES INTERCEPTED - WORLD: 2001-2009



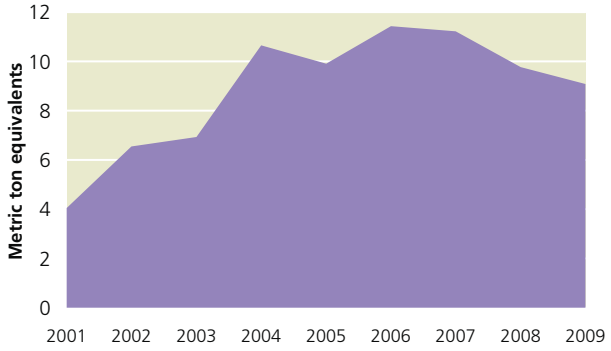
AMPHETAMINES-GROUP SUBSTANCES INTERCEPTED - ASIA: 2001-2009



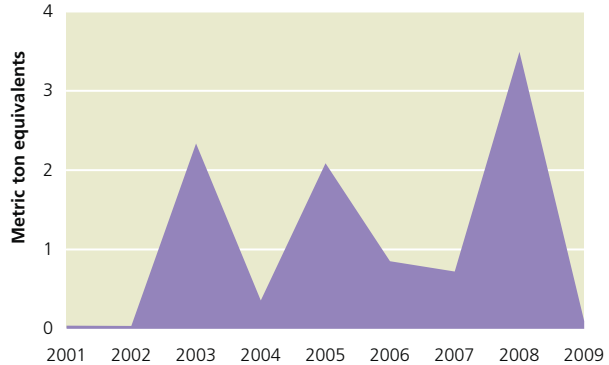
AMPHETAMINES-GROUP SUBSTANCES INTERCEPTED - AMERICAS: 2001-2009



AMPHETAMINES-GROUP SUBSTANCES INTERCEPTED - EUROPE: 2001-2009



AMPHETAMINES-GROUP SUBSTANCES INTERCEPTED - AFRICA: 2001-2009



AMPHETAMINES-GROUP SUBSTANCES INTERCEPTED - OCEANIA: 2001-2009

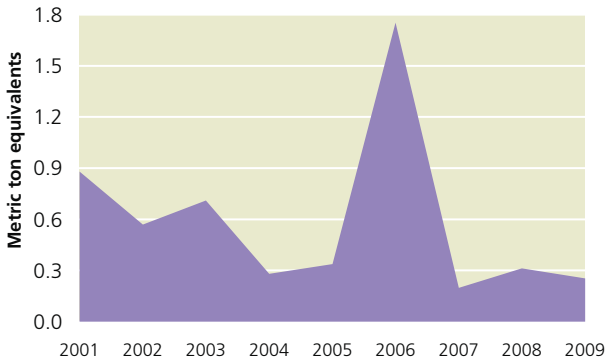
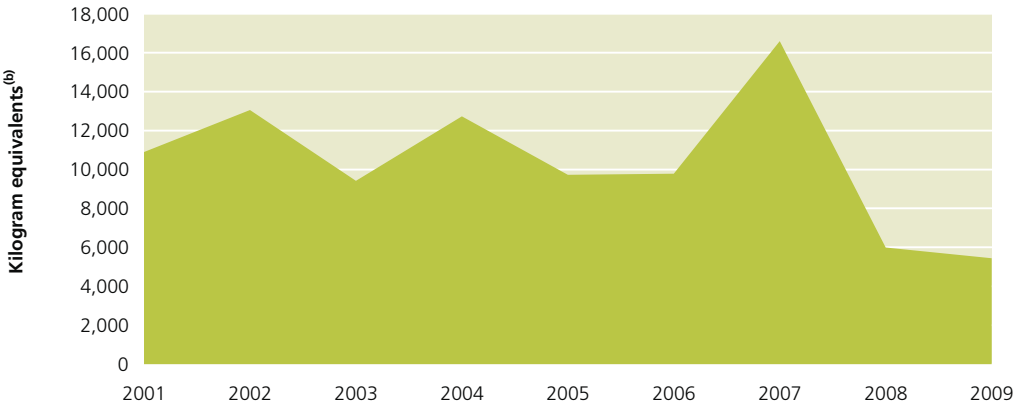
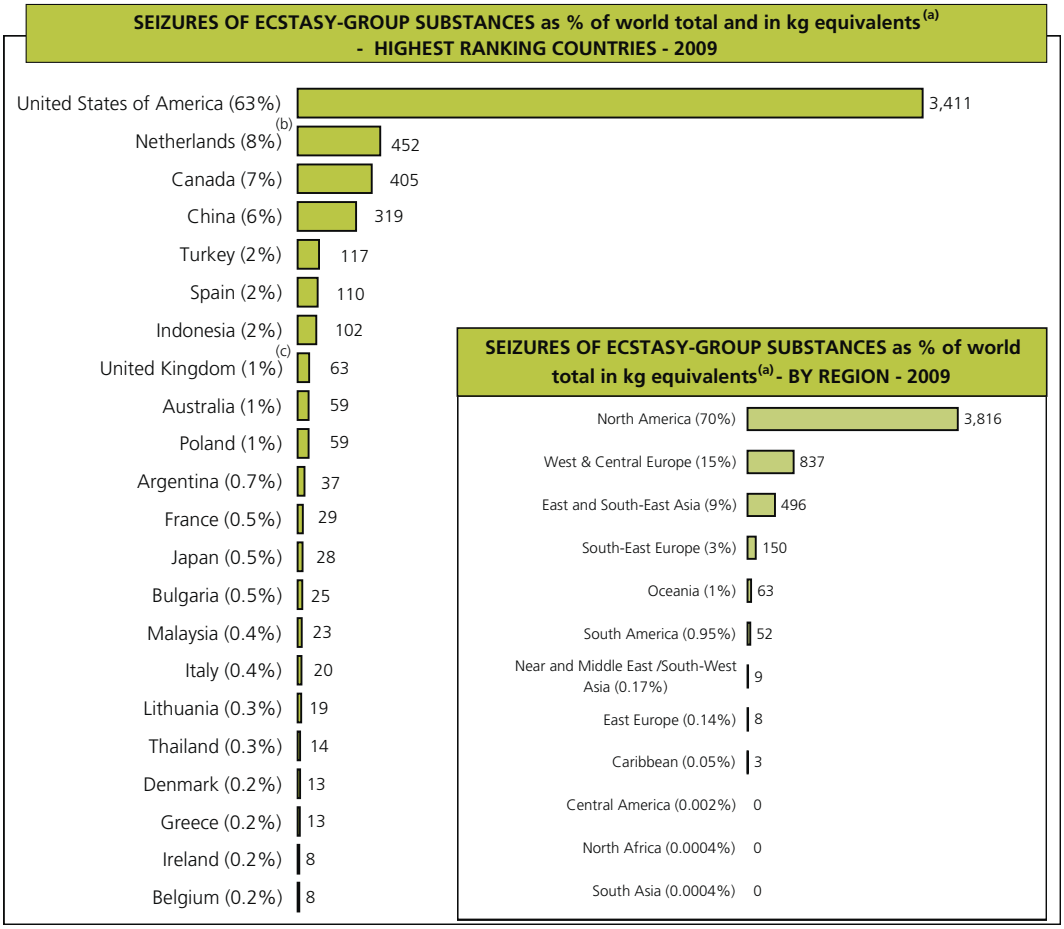


Fig. 139: Global seizures of 'ecstasy'-group[a] substances, 2001-2009



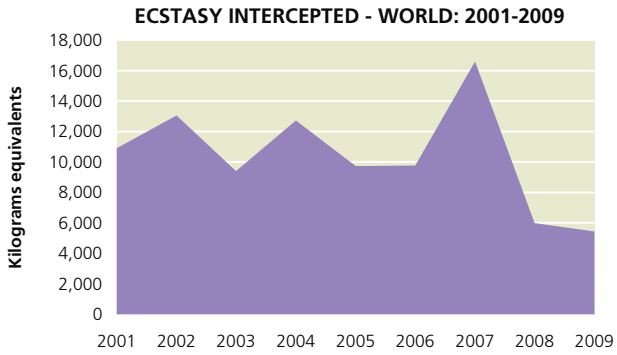
[a] Includes substances believed to be ecstasy (e.g. MDMA, MDA, MDE) which may not have been confirmed by forensic testing.
[b] This quantity reflects the bulk weight of ecstasy seizures, with no adjustment for purity. Seizures of ecstasy reported in tablets or similar units are converted using assumed bulk tablet weights between 200mg and 300mg, depending on the region and based on information currently available to UNODC. This differs from the approach adopted in earlier editions of the World Drug Report.

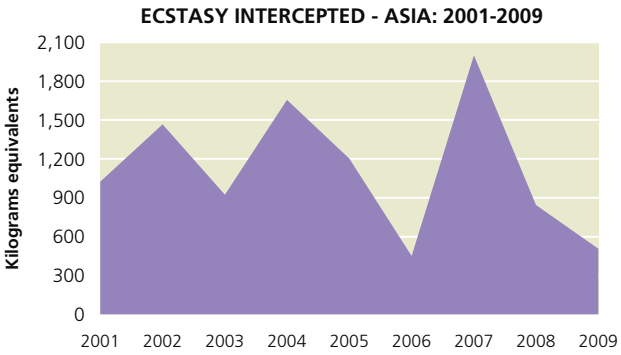
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Kilogram equivalents	10,895	13,049	9,410	12,727	9,729	9,776	16,595	5,991	5,435

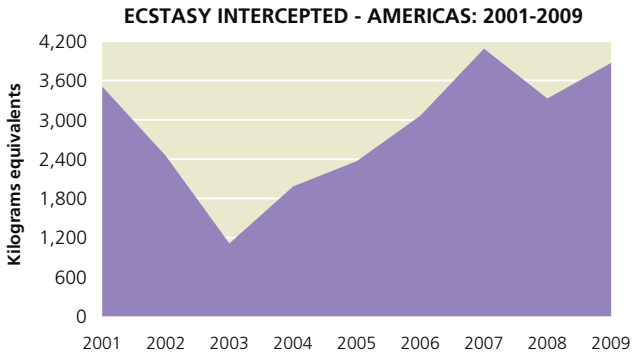


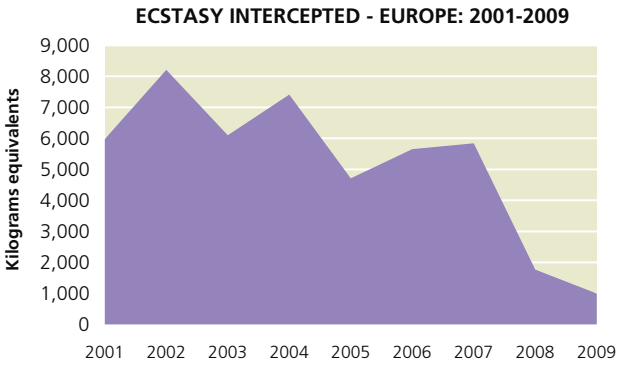
[a] This quantity reflects the bulk weight of ecstasy seizures, with no adjustment for purity. Seizures of ecstasy reported in tablets or similar units are converted using assumed bulk tablet weights between 200mg and 300mg, depending on the region and based on information currently available to UNODC. This differs from the approach adopted in earlier editions of the World Drug Report.
[b] Data relative to 2008. Data for 2009 from the Netherlands were not available
[c] Data for the United Kingdom for 2009 are based on incomplete data for some jurisdictions for the financial year 2009/10, and adjusted for the missing jurisdictions using the latest available complete distribution (relative to the financial year 2006/07).

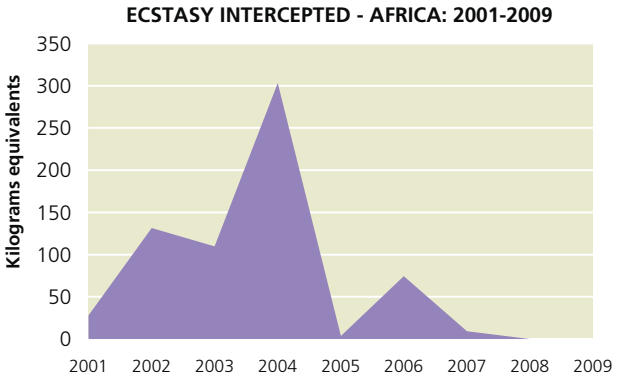
Fig. 140: Interception of 'ecstasy'-group substances, 2001-2009

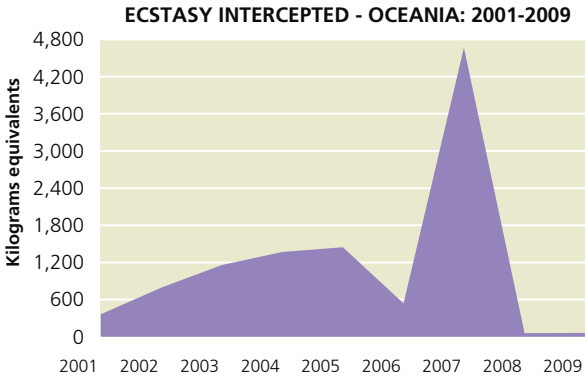




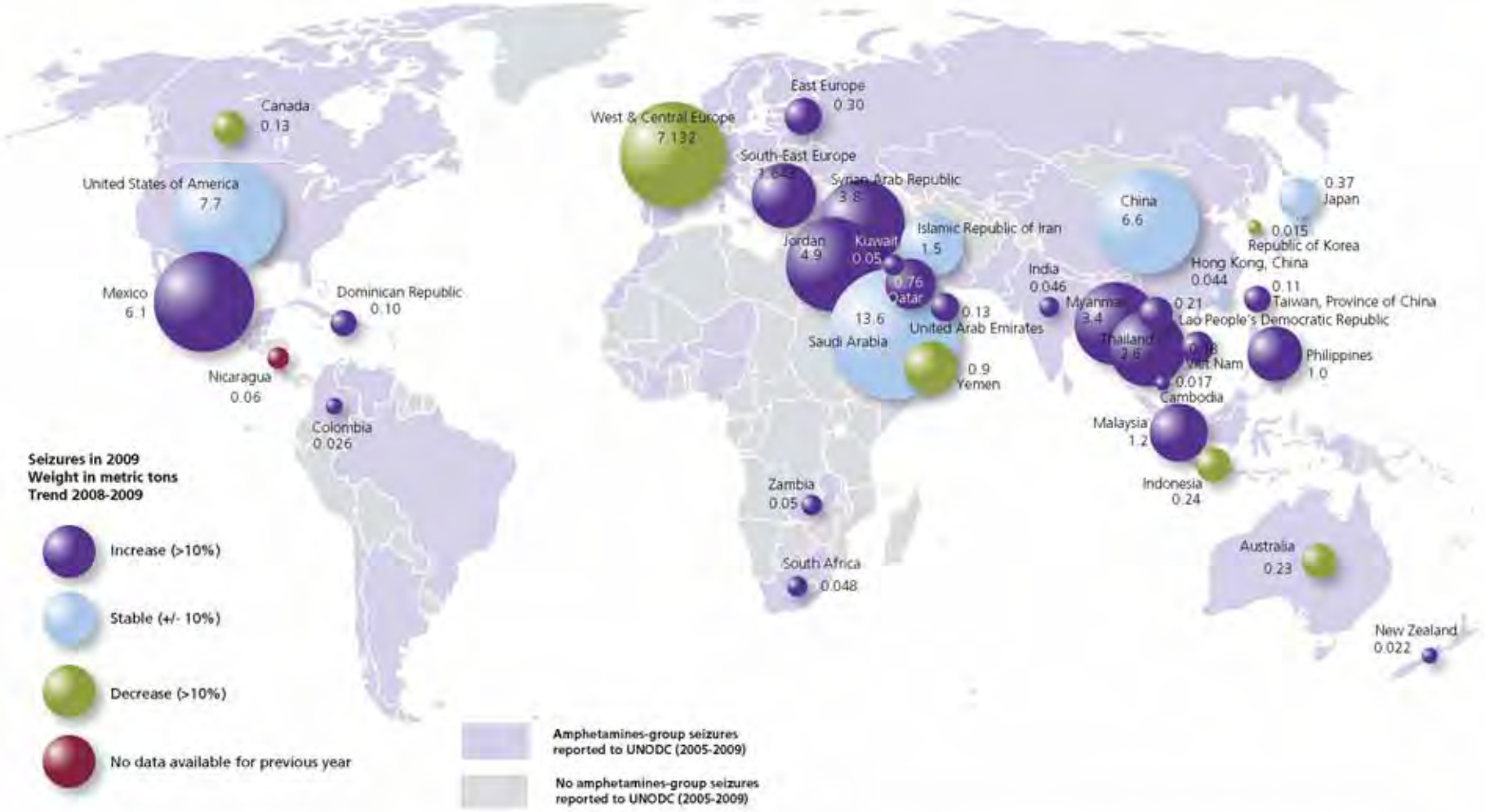








Map 38: Seizures of amphetamines-group substances, 2009 (countries and territories reporting seizures of more than 10 kg)*

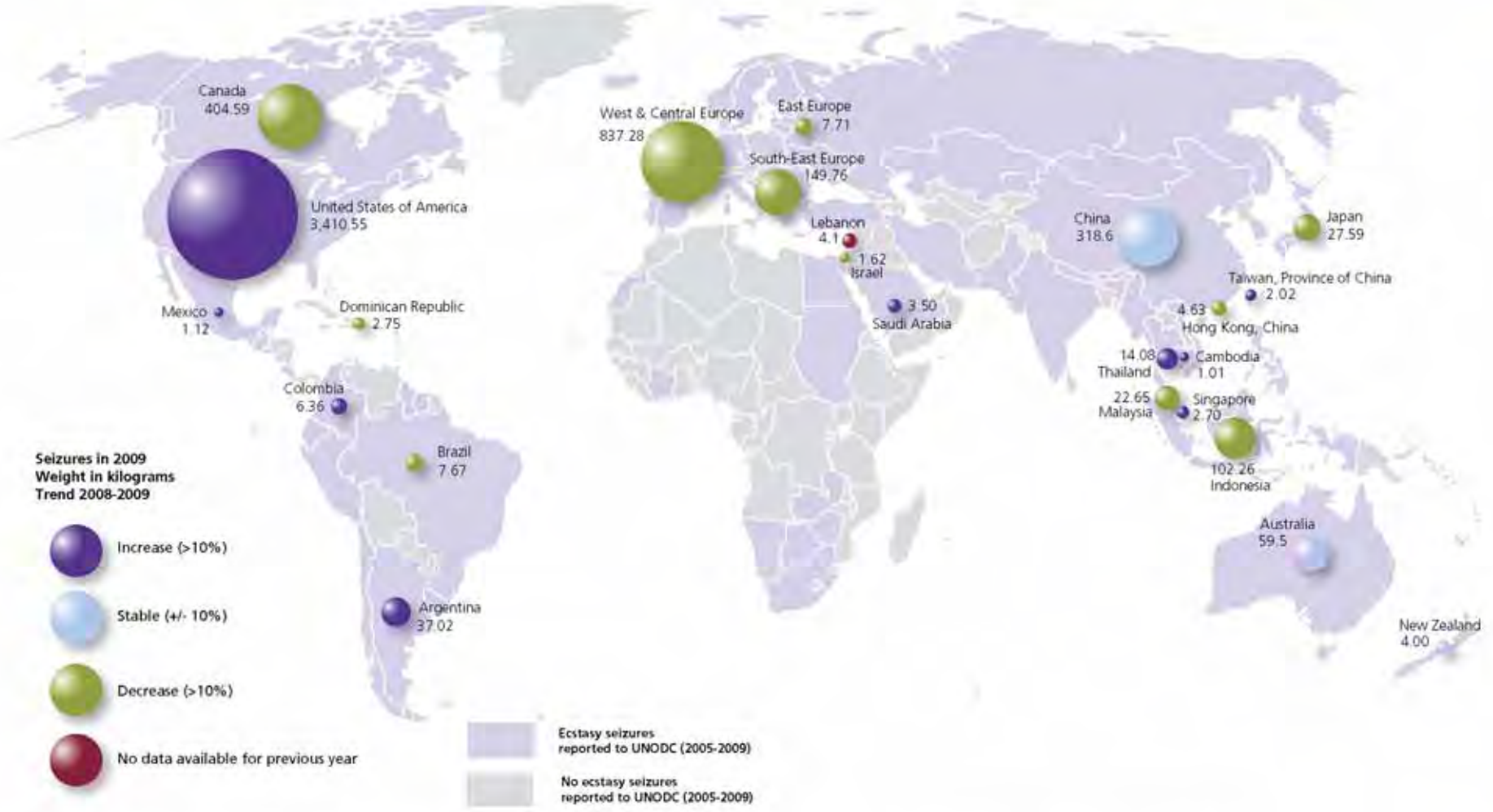


* This quantity reflects the bulk weight of amphetamine group seizures, with no adjustment for purity. Seizures of amphetamines-group reported in tablets or similar units are converted using assumed bulk tablet weights between 90mg and 300mg, depending on the region and specific drug type and based on information currently available to UNODC. This differs from the approach adopted in earlier editions of the World Drug Report.

Source: UNODC Annual Reports Questionnaires data supplemented by other sources.

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Map 39: Seizures of ecstasy, 2009 (countries and territories reporting seizures of more than 10 kg)*



* This quantity reflects the bulk weight of ecstasy seizures, with no adjustment for purity. Seizures of ecstasy reported in tablets or similar units are converted using assumed bulk tablet weights between 200mg and 300mg, depending on the region and based on information currently available to UNODC. This differs from the approach adopted in earlier editions of the World Drug Report.
Source: UNODC Annual Reports Questionnaires data supplemented by other sources
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

5. The cannabis market

5.1 Introduction

Cannabis remains the most widely produced and consumed illicit substance globally. The extent of the global cannabis problem did not change significantly in 2009, though the consumption estimates show a wider range. This is the result of some increases in cannabis use in the United States of America, Africa, South and Central America and Asia, though consumption in Canada, western Europe and Oceania remained stable or showed a decline.

In Europe, cannabis resin seizures are now at their lowest level for the last 10 years, whereas seizures of resin in North Africa have increased. The major cannabis resin-producing countries showed little evidence of changes in the production levels. Global herbal cannabis seizures have increased, principally due to increased seizures in the United States of America and Mexico, where data on use and cultivation also point to an increase in the availability of cannabis herb in the market.

There is more and more evidence that intensive exposure to cannabis products with high potency levels increases the risk of psychotic disorders (see text box). Some recent studies show that the average concentration of the major psychoactive substance in cannabis products (THC) is nowadays at higher levels than 10-15 years ago; however, data for the past five years show a stable trend in some countries although the pattern is not consistent for all products and all countries.

From a market perspective, both cannabis producers and users are apparently searching for more diversified products which are not only determined by different THC concentrations, but also by choices in 'flavours.' This diversification is illustrated by the rise of synthetic cannabinoids ('spice'). In a short time, these products have become popular among young adults and teenagers in Europe and the United States. While there are some indications that these products might cause more damage to the health of users, there is a need for more pharmacological and toxicological research in this area. At the same time, the large number of products being marketed as cannabinoids also challenges the control measures taken by regulatory authorities in the Member States, the World Health Organization, the International Narcotics Control Board and the Commission on Narcotic Drugs.

5.2 Consumption

UNODC estimates that in 2009, between 2.8% and 4.5% of the world population aged 15-64, corresponding to between 125 and 203 million people, had used cannabis at least once in the past year. Compared to the previous year, the lower and upper levels of the estimates have increased, thereby widening the range.[1] This is in part due to greater uncertainty in the estimates as there are limited recent or reliable prevalence data available from many countries in Asia and Africa.

1 In 2008, the annual prevalence was estimated between 2.9% and 4.3% of the population aged 15-64.

Table 36: Annual prevalence and estimated number of cannabis users, by region, subregion and globally, 2009

Region/subregion	Estimated number of users annually (lower)	-	Estimated number of users annually (upper)	Percent of population age 15-64 (lower)	-	Percent of population age 15-64 (upper)
Africa	21,630,000	-	59,140,000	3.8	-	10.4
East Africa	2,340,000	-	8,870,000	1.7	-	6.5
North Africa	4,780,000	-	10,620,000	3.6	-	8.0
Southern Africa	3,130,000	-	7,810,000	3.9	-	9.8
West and Central Africa	11,380,000	-	31,840,000	5.2	-	14.6
Americas	40,950,000	-	42,860,000	6.7	-	7.0
Caribbean	440,000	-	2,060,000	1.6	-	7.6
Central America	550,000	-	610,000	2.2	-	2.5
North America	32,520,000	-	32,520,000	10.7	-	10.7
South America	7,410,000	-	7,630,000	2.9	-	3.0
Asia	31,340,000	-	67,970,000	1.2	-	2.5
Central Asia	1,950,000	-	2,260,000	3.8	-	4.4
East/South-East Asia	5,440,000	-	24,160,000	0.4	-	1.6
Near and Middle East	6,060,000	-	12,360,000	2.4	-	4.8
South Asia	16,830,000	-	28,110,000	1.9	-	3.1
Europe	28,730,000	-	29,250,000	5.2	-	5.3
East/South-East Europe	5,980,000	-	6,380,000	2.6	-	2.6
West/Central Europe	22,750,000	-	22,860,000	7.1	-	7.1
Oceania	2,160,000	-	3,460,000	9.3	-	14.8
Global	**124,810,000**	-	**202,680,000**	**2.8**	-	**4.5**

Fig. 141: Estimated number of cannabis users by region, 2009

Source: UNODC.

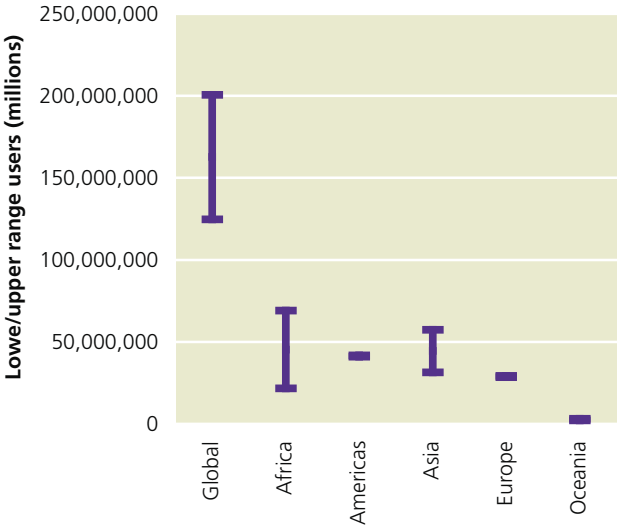
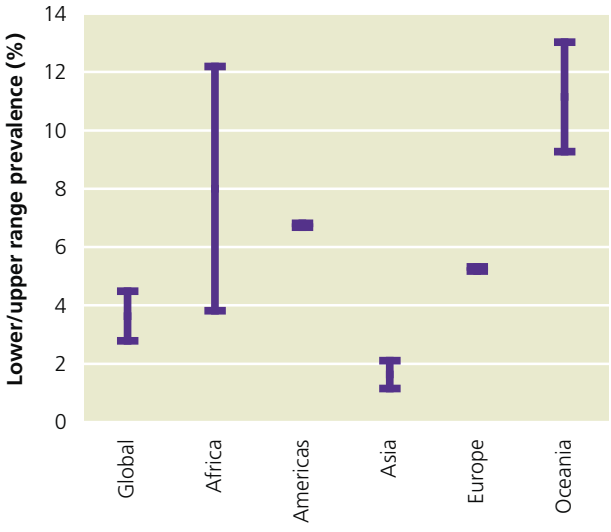


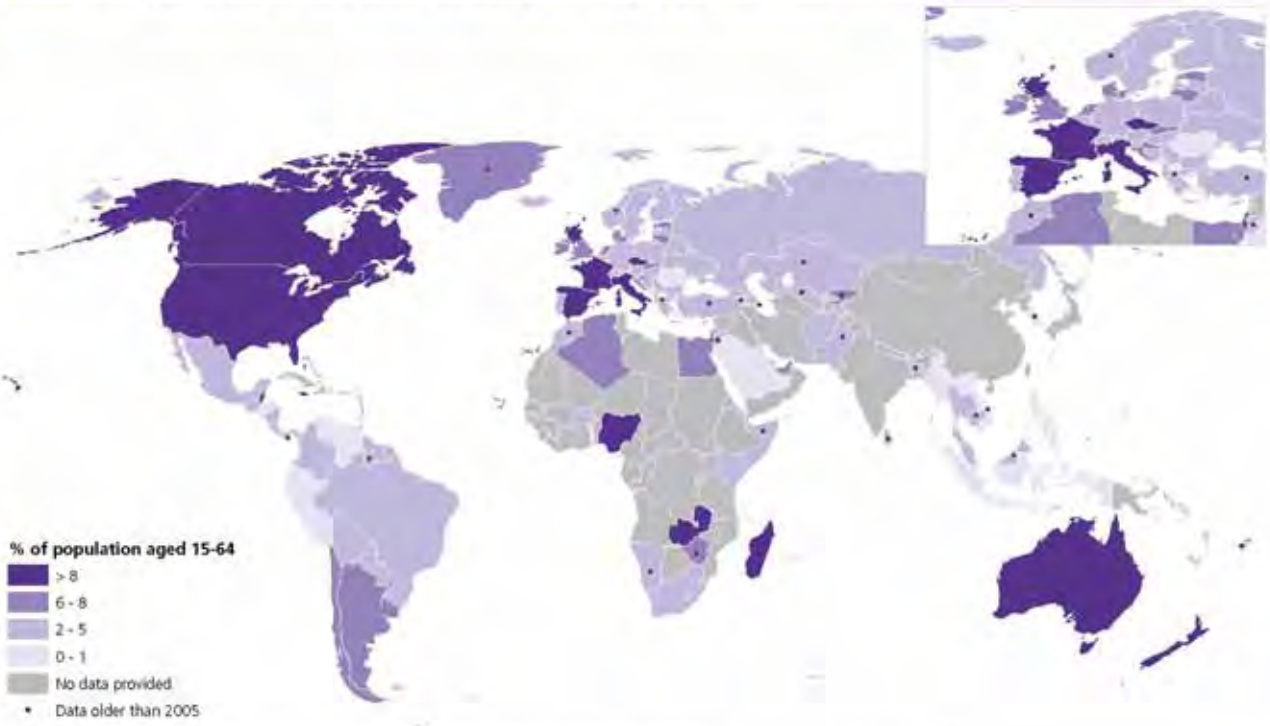
Fig. 142: Annual prevalence of cannabis users by region, 2009

Source: UNODC.



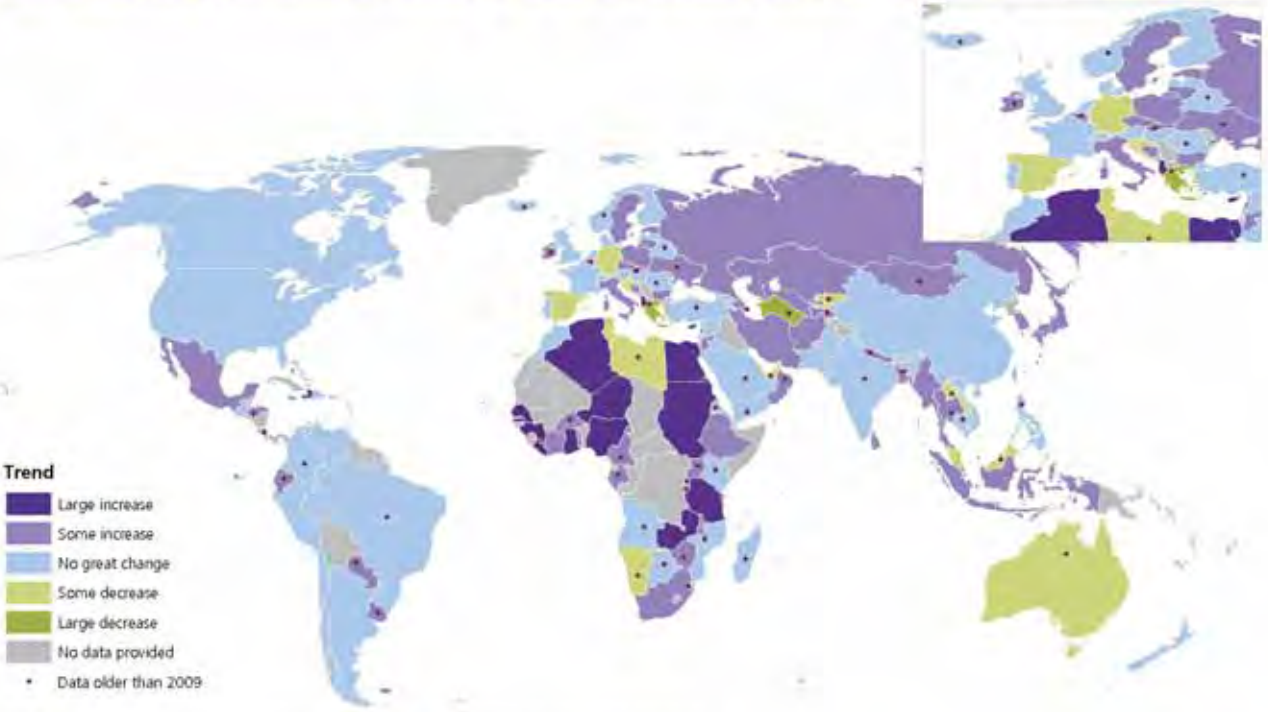
In 2009, among the Member States who provided expert perceptions on the trends of cannabis use in their countries, nearly half of the countries reported a stable trend. This number was even higher in countries in the Americas (67%). Less than half of Member States (44%), mainly in Africa, Asia and to a lesser extent Europe, reported that cannabis use had increased in their countries. As an overall trend, over the past 10 years, an increasing number of countries have been reporting stable trends for the use of cannabis.

Map 40: Prevalence of cannabis use, 2009 (or latest year available)



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Map 41: Expert perception of trends in the use of cannabis, 2009 (or latest year available)



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Cannabis users

The typology presented below is based on selected behavioural studies undertaken in a few developed countries (including the United States, Australia and the United Kingdom). It gives an indication of the risk factors and cannabis use patterns in some high-prevalence countries.

Experimental:

Experimental cannabis users typically try the drug for the first time in adolescence. They constitute a group of people who want to experience illegal drugs, but for the majority of these people, experience with cannabis suffices. A stage pattern suggests that 'experimenters' begin with alcohol and tobacco, followed by cannabis or inhalants.

Poor relations with parents, depression symptoms, exposure to drug-using peers and accessibility of drugs are important factors for initiation into illicit drugs. However, adolescents' beliefs and values favourable to the use of cannabis and association with cannabis-using peers are the strongest predictors of cannabis experimentation. Sensation-seeking in adolescence represents a propensity toward novel experiences and could also lead to the experimental use of cannabis. A number of experimental users may continue to use cannabis more regularly for recreational purposes or long-term to become chronic or dependent users.

Recreational:

During the last quarter of the twentieth century, recreational use of cannabis increased greatly across the world and came to be seen by larger numbers of young people as a *normal* leisure activity. Recreational users use cannabis mostly on weekends, are likely to have used or use other drugs and have a more active night life in the city than other users. These users report that the main purpose of their use of cannabis is to reach a 'social high' and that they also use it to relax, enhance activity, decrease boredom, increase confidence, reduce anxiety or feel better. These young people do not contact public or private addiction counselling services because they are at times unaware of their existence, do not consider themselves dependent or feel these services are not designed for their specific needs. Early repeated use of cannabis during adolescence may be a risk factor for chronic cannabis use.

Long-term or chronic:

People who start using cannabis at an early age and those who used other illicit drugs are more likely to continue using cannabis in their mid-30s or beyond, suggesting that cannabis use is part of their routine lifestyle choices. Lower income and marital rates, higher unemployment rates and having cannabis-using friends in young adulthood are commonly reported among this population.

Long-term cannabis users express lower levels of satisfaction on measures of quality of life. They report using cannabis to enhance positive feelings and perceive the drug as having calming effects, and may use it for stress-coping purposes. They also report using cannabis to escape from problems, alleviate anger or frustration, and 'get through the day'. Greater antisocial behaviour distinguishes chronic users from experimental and recreational users. It has been reported that psychosocial factors, antisocial personality disorder and alcohol dependence could predict long-term cannabis use. A social taboo against chronic drug use among women may be a protective factor, which is reflected in lower long-term female use rates.

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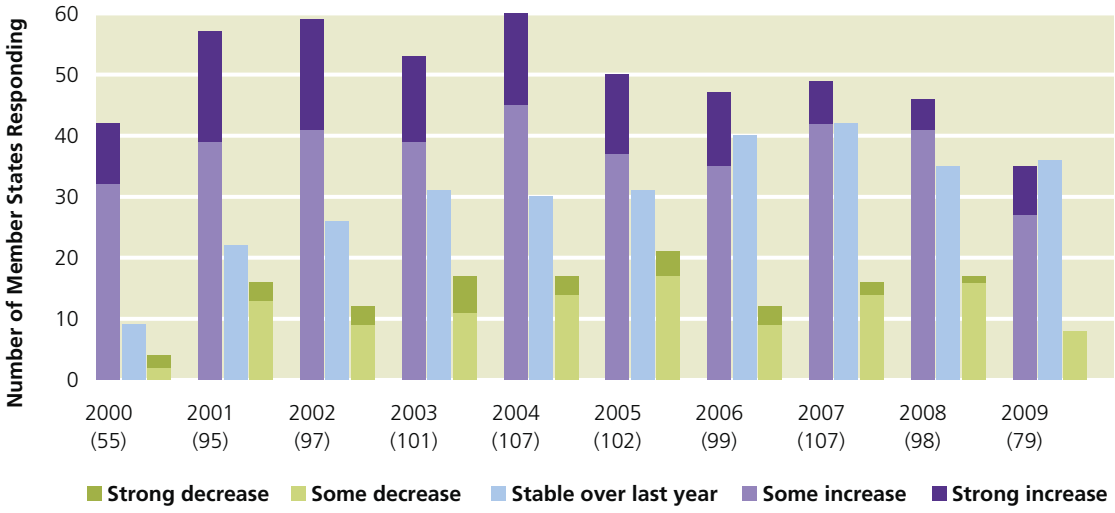
Table 37: Expert perceptions of trends in cannabis use by region, 2009

Source: UNODC ARQ.

Region	Member States providing perception data	Member States perception response rate	Use problem increased	Percent use problem increased	Use problem stable	Percent use problem stable	Use problem decreased	Percent use problem decreased
Africa	11	21%	7	64%	3	27%	1	9%
Americas	15	43%	5	33%	10	67%	0	0%
Asia	22	49%	11	50%	8	36%	3	14%
Europe	30	67%	12	40%	14	47%	4	13%
Oceania	1	7%	0	0%	1	100%	0	0%
Global	**79**	**41%**	**35**	**44%**	**36**	**46%**	**8**	**10%**

Fig. 143: Expert perceptions of trends in cannabis use, 2000-2009

Source: UNODC ARQ.



Cannabis use in the United States shows a resurgence, while there is a decrease in Canada

The annual prevalence of cannabis use in North America is estimated at around 10.7% of the adult population aged 15-64. These estimates are higher than the annual prevalence of 9.9% reported in the 2010 *World Drug Report*, and essentially reflect the increase in the annual prevalence of cannabis use in the United States of America.

In the United States, cannabis remained the most common illicit drug used in the past year. The annual prevalence of cannabis use that had been declining steadily between 2002 and 2007 begun to show an increase over the past two years, and in 2009 was estimated slightly higher than the prevalence in 2002.[2] Comparable trends of cannabis use have been observed both among the general population and high school students.

In 2009, among the people who had initiated drug use in the past year in the United States, the largest number - 2.4 million people aged 12 years or older - had used cannabis as their first drug. This was followed by the non-medical use of pain relievers (2.2 million). Among the estimated 22.5 million drug users who were classified with substance dependence or abuse in the past year, the highest number was among cannabis users (4.3 million people aged 12 or older).[3]

Past month prevalence of cannabis use among the US population aged 12 or older increased from 6.1% in 2008 to 6.6% in 2009. The rate of current illicit drug use, including cannabis, among the older population

2 Substance Abuse and Mental Health Services Administration, *Results from the 2009 National Survey on Drug Use and Health: Volume I.* Summary of National Findings, 2010, Rockville, Maryland, USA.

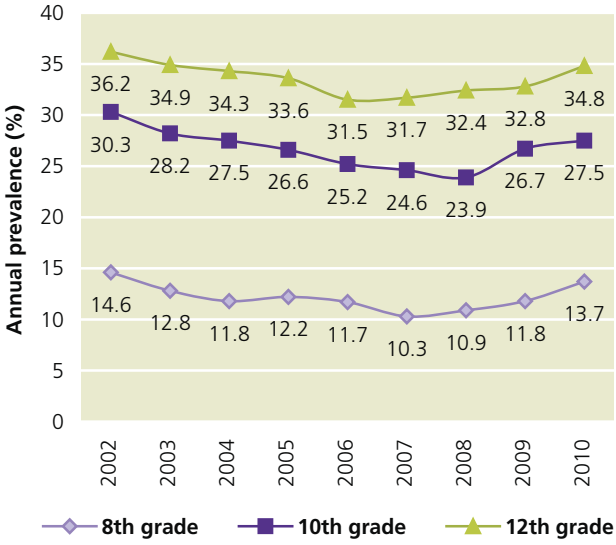
3 Ibid.

Fig. 144: United States: Trends in the annual prevalence of cannabis use among the population aged 12 or older, 2002-2009

Source: Substance Abuse and Mental Health Services Administration, Results from the 2009 National Survey on Drug Use and Health: Summary of National Findings.

Fig. 145: United States: Trends in the annual prevalence of cannabis use among secondary school students, 2002-2010

Source: Monitoring the Future: national results on adolescent drug use.



(aged 50-59) has also increased from 2.7% in 2002 to 6.2% in 2009,[4] mainly due to the ageing cohort of baby boomers[5] that have had high rates of illicit drug use. Among secondary school students in grades 8, 10 and 12, after some decreases observed between 2002 and 2006, there has been a steady increase in the annual prevalence of cannabis use since 2007. Use is still not reaching the levels reported in 2002, however.[6] The reversal in cannabis trends from 2006 onwards is in part attributed to a softening of the perceptions related to the risks of cannabis use among the student population,[7] which coincided with a period of public debates around an initiative aiming at the legalization of cannabis in one US state.

In 2009, among emergency department visits related to cannabis use, the rate was slightly higher for the population aged 20 years or younger (125.3 visits per 100,000 people) compared to those aged 21 or older (121.5 visits per 100,000 people).[8] For all other illicit drugs, the rate of emergency department visits was much lower among the younger population.

In Canada, the annual prevalence of cannabis use among the adult population remains at levels comparable to those in the United States, although the annual prevalence has been declining since 2004. In 2009 the annual prevalence was reported at 12.6%, a decrease from 13.6% in 2008 and 14.1% in 2004.[9] There has also been a decline in the annual prevalence of cannabis use among youth aged 15-24, from 37% in 2004 to 26.3% in 2009.[10]

There is no update on the extent of cannabis use in Mexico, but experts perceive an increase since 2008 when use was reported at 1% among the adult population. Cannabis use in Mexico remains at much lower levels than in the United States or Canada.

Some countries in South and Central America report increases in cannabis use

Cannabis use patterns and trends in the Caribbean, South and Central America remain unchanged, with the prevalence of cannabis use at comparable levels in these subregions. One third of the countries that reported expert opinions on trends of drug use considered that cannabis use in their countries had increased. Countries with high prevalence of cannabis use among the adult

4 Substance Abuse and Mental Health Services Administration, *Results from the 2009 National Survey on Drug Use and Health: Volume I.* Summary of National Findings, 2010, Rockville, Maryland, USA.

5 Baby boomers refers to the cohort of persons born in the United States between 1946 and 1964.

6 Johnston, L. D., O'Malley, P. M., Bachman, J. G. and Schulenberg, J. E., *Monitoring the Future, national results on adolescent drug use: Overview of key findings, 2010*, Institute for Social Research, University of Michigan, 2011, Ann Arbor, Michigan, USA.

7 NIDA, *Research Report Series: Marijuana Abuse,* US Department of Health and Human Services, National Institutes of Health, September 2010.

8 Substance Abuse and Mental Health Services Administration, Centre for Behavioural Health Statistics and Quality, The *DAWN Report: Highlights of the 2009 Drug Abuse Warning Network (DAWN) Findings on Drug-Related Emergency Department Visits*, December 2010, Rockville, Maryland, USA.

9 UNODC ARQ.

10 Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey: Summary Results for 2009,* 2010.

Profile of clients in treatment with cannabis as the primary drug of concern in the United States (2000-2008)

Contrary to the general belief that cannabis use can result in little harm to users, in recent years, an increasing number of people in many regions have entered treatment for problems related to cannabis use. Presented below are some characteristics of a typical cannabis user entering treatment services in the United States, using data aggregated over the years 2000-2008. Based on this information, it can be inferred that cannabis users in treatment:

1. Are most likely adolescents or young adults, single and male with secondary-level schooling. One third of clients are less than 17 years old.
2. Are most likely not in the workforce, that is, unemployed or students.
3. Initiated their use of cannabis at a very young age - more than half by the age of 14 and almost 90% before the age of 18.

More than a quarter were daily users immediately prior to entering treatment, although more than a third had ceased use in the month prior to admission. The majority of referrals came through the criminal justice system.

Characteristic		% of total
Age	12-17	32.5
	18-24	32.5
	25+	34.9
Gender	Male	74.4
	Female	25.6
Marital status	Never married	80.5
Education	12 years or less	90.4
Employment status	Full time	19.2
	Part time	9.2
	Unemployed	25.3
	Not in labour force (of which 55.4% are students)	46.3
Frequency of cannabis use	No use in past month	35.0
	1-3 times in past month	16.4
	1-2 times in past week	10.4
	3-6 times in past week	11.8
	daily	26.4
Age at first use	11 and under	13.6
	12-14	42.3
	15-17	31.2
	18-20	8.5
	21+	4.4
Source of referral	Individual (includes self-)	16.1
	Healthcare provider	10.3
	School	3.9
	Employer	1
	Community referral	11.5
	Court/criminal justice system	57.1
DSM diagnosis	Cannabis dependence	40.8
	Cannabis abuse	28.8
Psychiatric problem in addition to cannabis problem		23.2

Source: SAMHSA, Treatment Episode Data Set (TEDS).

population in these regions include Argentina, Belize, the Plurinational State of Bolivia, Chile and Guatemala. As observed in other regions, the prevalence of cannabis use in Central and South America tends to be higher among youth than in the general population. One exception is Guatemala, where the prevalence of cannabis use is higher in the adult population aged 15-64 (4.8%) than in the 12-19 age group (1%). In Argentina, the annual prevalence of cannabis use among the populations aged 15-64 and 13-17 is almost identical (7.2% and 7.6%, respectively).

Fig. 146: Annual prevalence of cannabis use among adult and youth* populations in selected countries in the Caribbean, Central and South America

* Youth: Argentina and Uruguay 13-17 years; Belize ages 13,15 and 17; Brazil, Chile and Colombia 15-16 years; Costa Rica grade 10; Ecuador 12-17 years; Guatemala 12-19 years.

Source: UNODC ARQ.

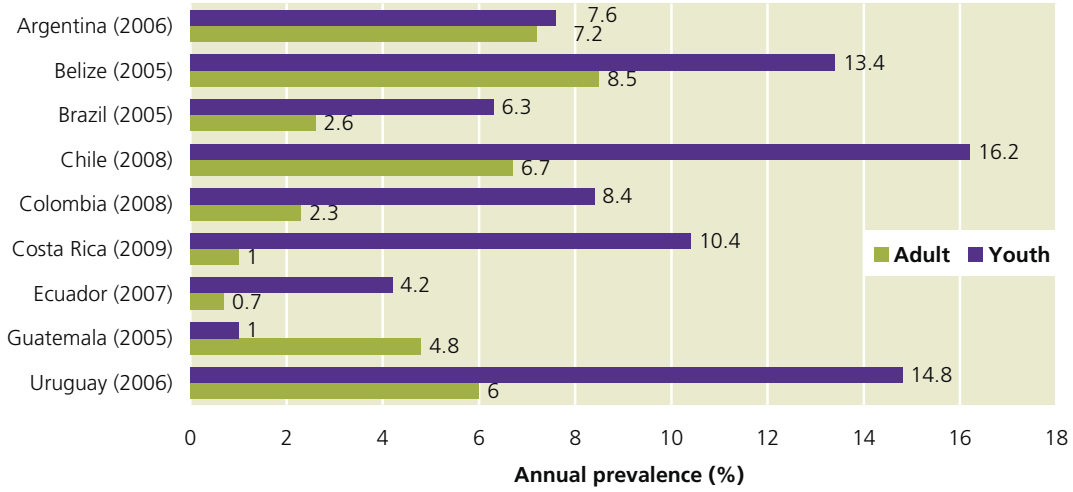
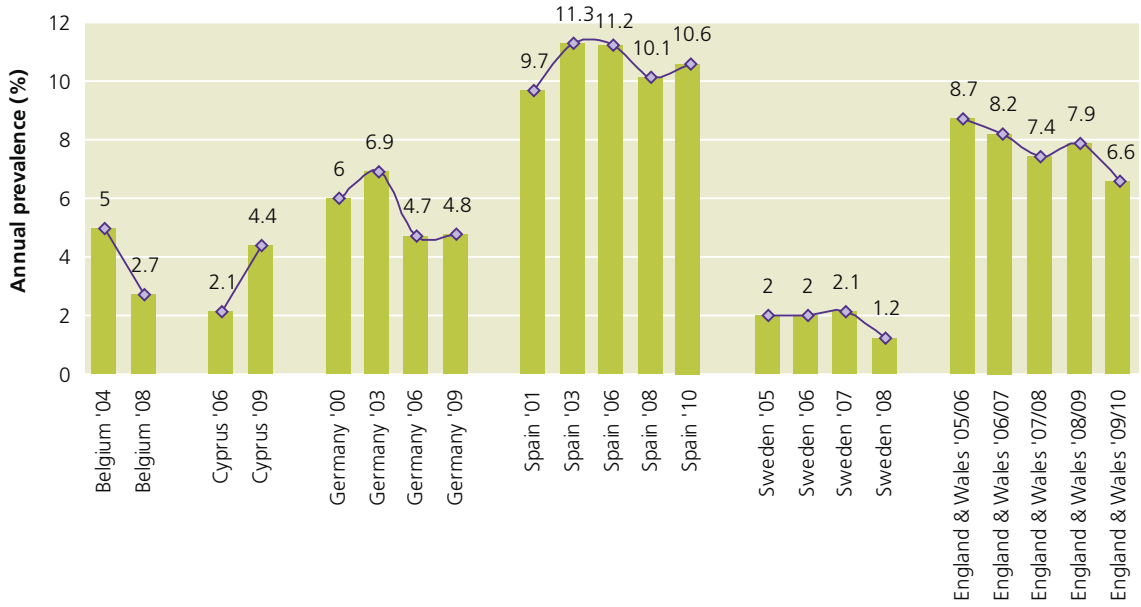


Fig. 147: Europe: Trends in annual prevalence of cannabis use in countries with new* data

* This refers to new or most recent data provided by Member States in 2010, either through the ARQ or in survey reports.

Source: UNODC ARQ; Government reports.



Most countries in Europe have shown stable or declining levels of cannabis use, but it is reportedly on the increase in eastern Europe

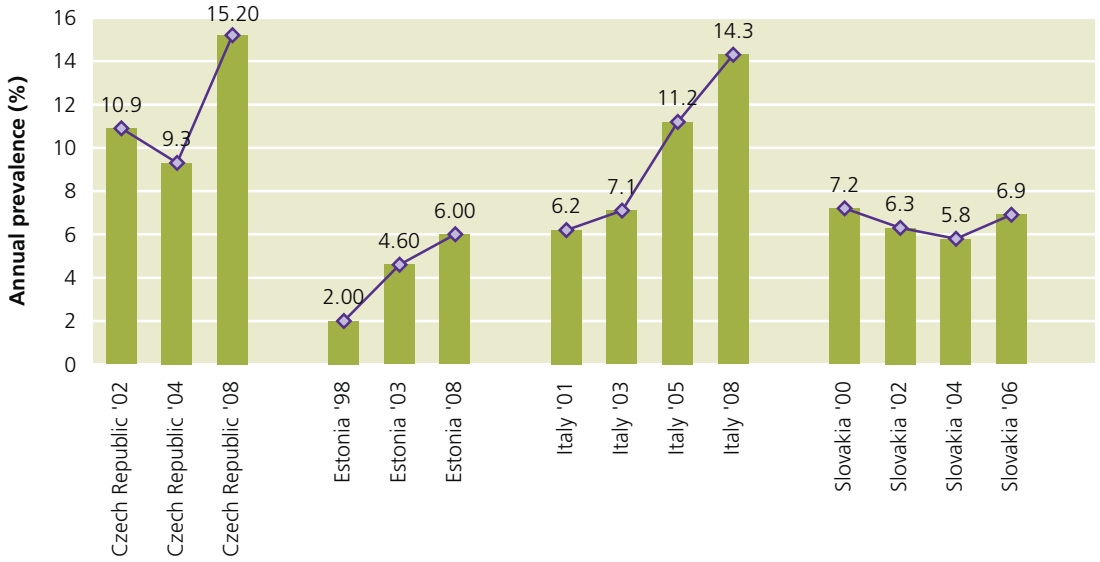
In some countries in eastern Europe, cannabis use exceeds the prevalence levels in western Europe. New data are available from a few countries in Europe, and they confirm the stabilization of cannabis use in West Europe. The Czech Republic, Estonia, Italy, Slovakia, Spain and the United Kingdom remain countries with high levels of cannabis use among the general population and among young adults with perceived trends of increasing use reported in recent years.[11]

In Europe, the annual prevalence of cannabis use is estimated at 5.2%-5.3% of the population aged 15-64. The prevalence of cannabis use is much higher in West and

11 A new household survey in Italy indicates a strong decline in annual prevalence from 14.3% in 2008 to 5.2% in 2009 as well as a parallel decline in the lifetime prevalence of cannabis use among the general population. The comparability of the findings between these two surveys, however, is uncertain.

Fig. 148: Trends in annual prevalence of cannabis use in high prevalence countries

Source: EMCDDA; UNODC ARQ.



Central Europe (7.1%) than in East and South-East Europe (2.6%). The use of cannabis is in large part concentrated among young people, with the highest annual prevalence reported among those aged 15-24 (13.9%), compared to an average annual prevalence of 10% among the population aged 15-34 in West, Central and South-East Europe.

The individual risk related to cannabis use seems lower than for heroin or cocaine, but health problems do exist and due to the high prevalence of use, the impact of cannabis on public health may be significant.[12] On average, cannabis was reported as the primary drug in treatment for 21% of cases in West and Central Europe and 14% of cases in East and South-East Europe. Cannabis was also reported as a secondary drug by 24% of all outpatient clients in Europe. Among the younger drug users (aged 15-19) in treatment, a much higher proportion (83%) were in treatment for primary cannabis use.[13] As reported by EMCDDA, many cannabis clients also report the use of alcohol or other drugs. Based on data collected in 14 EU member states, 65% of the cannabis users had taken another substance – mostly alcohol or cocaine – and some reported the use of both alcohol and cocaine in the previous year.

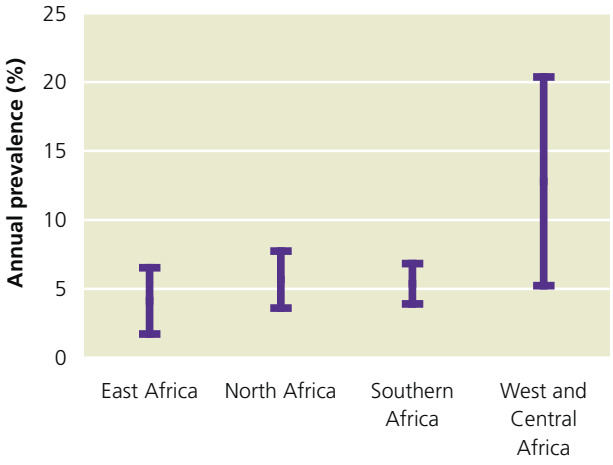
Although there is not much reliable information on the extent of cannabis use in Africa, it is perceived to be widespread, and most countries reporting expert opinion consider that cannabis use continues to increase

The estimated annual prevalence rates of cannabis use for Africa is the second highest in the world, with estimates ranging between 3.8% and 10.4% of the population aged 15-64, or between 21.6 and 59.1 million people. Higher levels of cannabis use are estimated for West and Central Africa compared to other subregions.

In Kenya, a 2009 survey conducted among 4,500 households in the coastal provinces indicated that the overall lifetime prevalence of cannabis use was 10.6% among all

Fig. 149: Annual prevalence of cannabis use in Africa by subregion, 2009

Source: UNODC.



12 European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) *Annual Report 2010: The State of the drugs problem in Europe*, Lisbon, 2010.

13 Ibid.

Cannabis use and psychosis

Evidence suggests that cannabis and other cannabinoids can produce a range of transient psychotic symptoms and cognitive deficits, such as transient deficits in learning, short-term memory, working memory, executive function, abstract ability, decision-making and attention. Increasing evidence also suggests that early onset and heavy cannabis exposure could increase the risk of developing a psychotic disorder such as schizophrenia.

In a case control study conducted by Di Forti et al. in the United Kingdom (2009), it was reported that patients with a first episode of psychosis were more likely to have smoked higher potency cannabis (that is, cannabis with higher THC content) with greater frequency and for a longer period. The study found that 78% of the case groups used the high potency cannabis (Sinsemilla or Skunk with THC concentrations ranging between 12-18% and 0% cannabidiol) compared with 37% of the control group (that smoked cannabis resin with both THC concentration and cannabidiol of 3.4%) (AOR* 6.8); were daily users (AOR = 6.4), and had smoked cannabis for more than 5 years (AOR 2.1).

Recent studies also indicate that cannabidiol reduces the acute cognitive effects of THC, an important aspect since the potency of cannabis has increased in Europe during the last 10 years and THC has been associated with the detrimental effects of cannabis on the mental health of at-risk users.

A recently published 10-year follow-up cohort study investigated the relationship between cannabis use and the subsequent development of psychosis over time and concluded that cannabis use was a risk factor for the development of incident psychotic symptoms. The study also concluded that continued cannabis use might increase the risk of psychotic disorder by impacting on the persistence of symptoms.

* AOR stands for Adjusted Odds Ratio, meaning that adjusting for age, gender, ethnicity, et cetera, those who had smoked higher THC content cannabis were 6.8 times more likely to report psychosis than the other group.

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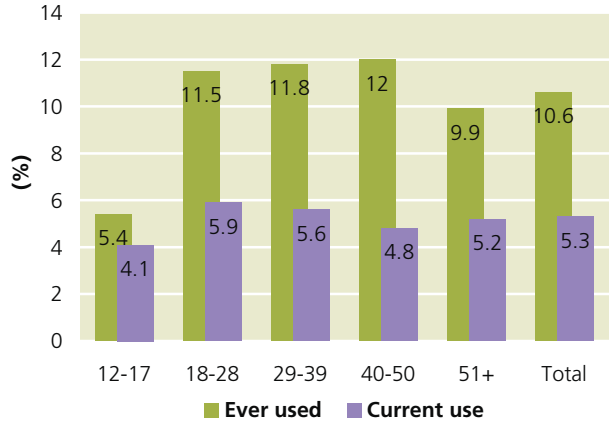
Keupper et al, 'Continued cannabis use and risk of incidence and persistence of psychotic symptoms: 10-year follow-up cohort study,' *British Medical Journal*, 2011: 342:d738.

Fig. 150: Kenya: Lifetime and current use prevalence of cannabis by age group, 2009

Source: National Campaign Against Drug Abuse Authority (NACADA), Report of Survey on Drug and Substance Abuse in Coast Province Kenya – Main Report.



ages, with a much higher prevalence among the urban (11%) than the rural population (4%). The lifetime prevalence was at similar levels for all age groups except the 12-17 year olds, whereas the current use,[14] reported at 5.3% among all age groups, was fairly consistent.[15]

In terms of treatment demand, compared to the other regions, cannabis remains the most common primary drug for which drug users seek treatment in Africa. This proportion varies from nearly all treatment admissions in countries such as Botswana, Malawi and Ghana to around one third of treatment admissions in Kenya, Mozambique and South Africa.

14 Defined as use in the past 4 weeks before the interview.

15 National Campaign Against Drug Abuse Authority (NACADA), *Report of Survey on Drug and Substance Abuse in Coast Province Kenya – Main Report,* March 2010.

Fig. 151: Africa: Distribution of primary drug of people entering treatment, 2009*

* Total is greater than 100% due to polydrug use
Source: UNODC ARQ.

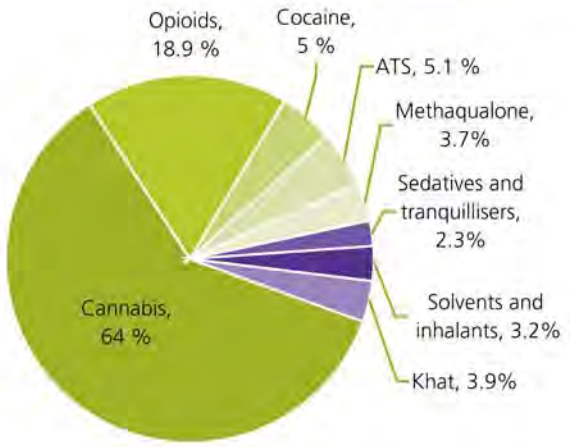
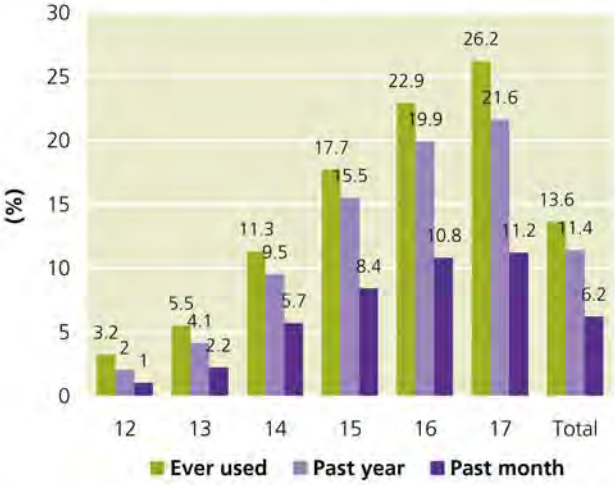


Fig. 152: Australia: Cannabis use among students, 2008

Source: Australian School Survey 2008



Recent information on the extent of cannabis use from most parts of Asia - especially from countries with large populations such as China and India - is not available

Among the countries reporting expert opinions on trends of drug use, more experts considered that cannabis use had increased over the past year.

The annual prevalence of cannabis use in Asia is estimated at between 1.2% and 2.5% of the population aged 15-64. This corresponds to between 31 and 68 million people using cannabis at least once in the past year. In terms of prevalence, Asia has the lowest rate, but because of its population size, may have the largest absolute number of cannabis users globally. Most of the countries that reported an increase in cannabis use are in East and South-East Asia, whereas higher cannabis use prevalence is reported from Central Asia and the Near and Middle East.

Table 38: Asia: Member States reporting an increase in cannabis use, 2009

Source: UNODC ARQ.

Near and Middle East/ South-West Asia	East and South-East Asia	South Asia	Central Asia
Afghanistan	Brunei Darussalam	Sri Lanka	Kazakhstan
Jordan	Indonesia		Uzbekistan
Lebanon	Malaysia		
	Singapore		
	Thailand		

Cannabis use in Oceania remains at high levels, but shows decreasing trends in Australia and New Zealand

Oceania has one of the highest prevalence rates of cannabis use globally, ranging between 9.3% and 14.8% of the population aged 15-64. The main information on the extent of cannabis use from the region is available from Australia and New Zealand, and to some extent from the smaller Pacific Island states.

No new data on the prevalence of cannabis use among the general population in Australia has been reported. The annual prevalence was estimated at 10% of the population aged 15-64 in 2007, with an almost one fifth decline in cannabis use reported between 2004 and 2007. The lifetime prevalence of cannabis use among 12-17 year old students who participated in the Australian secondary school survey was 13.6% in 2008. This has declined from a lifetime prevalence of 17.8% in 2005 and 25% in 2002. Among the students who participated in the 2008 survey, the use of cannabis across all periods, that is, lifetime, past year and past month use, increased by age and was highest among the 17-year -old students.[16]

In Australia, cannabis was also the most common drug detected among police detainees, where 48% of all detainees tested positive for cannabis use in 2009. Among detainees who self-reported, 54% reported cannabis use during the past 12 months, with the highest proportion reported among the 21-25 age group.[17]

16 White, V. and Smith, G., *Australian secondary school students 'use of tobacco, alcohol, and over the counter and illicit substances in 2008*, Drugs Strategy Branch, Australian Department of Health and Ageing.

17 Gaffney, A., Jones, W., Seeney, J. and Payne J., *Drug Use monitoring in Australia: 2008 annual report on drug use among police detainees,*

For New Zealand, the latest information on cannabis use dates from 2008, when the annual prevalence was estimated between 13.4% and 15.7% of the population aged 16-64. As commonly observed, men (21%) were more likely to have used cannabis in the past year than women (13.9%). Among the adult population, the past year cannabis use was highest among younger age groups and decreased with increasing age in the adult population. The highest past year use prevalence was among men in the 18-24 year age group and for women in the 16-17 and 18-24 year age groups.[18]

As shown in previous years, high annual prevalence of cannabis use is reported from many Pacific Island states and territories, ranging from 24.2% in Palau or 22.2% in Northern Mariana Islands to around 5% in Fiji and Marshall Islands.

The emergence of synthetic cannabinoids in herbal products

In 2008, several synthetic cannabinoids were detected in herbal smoking blends which were sold on the internet and in specialized shops under a variety of brand names such as 'Spice Silver,' 'Spice Gold,' 'Spice Diamond,' 'Yucatan Fire' and 'Smoke.' These colourful and professionally designed herbal products typically contain about 3 grams of finely cut plant material to which one or more synthetic cannabinoids have been added.

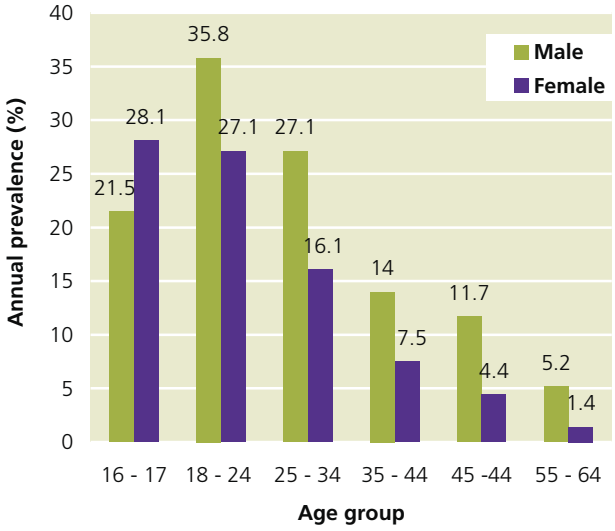
Before 2008, the use of these herbal products seemed to be restricted to a small number of experimental users. However, in 2008,[19] these products achieved immense popularity in Germany and other European countries through the internet and subsequent media reports, where they were referred to as 'legal alternatives' to cannabis, thus unintentionally promoting the use of these drugs.

The synthetic cannabinoids are generally administered by smoking either as a joint or in a water-pipe. These products do not contain tobacco or cannabis but when smoked were claimed to be able to produce cannabis-like effects.

Although so far, relatively little is known about the pharmacology and toxicology of the various (and frequently changing) synthetic cannabinoids that are added to the herbal mixtures, a number of these substances may have a higher addictive potential compared to cannabis due to quicker development of tolerance (see text box).

Fig. 153: New Zealand: annual prevalence of cannabis use by gender and age group, 2008

Source: Drug use in New Zealand, Key Results 2007/08 New Zealand Alcohol and Drug Use Survey, Ministry of Health 2010.



Currently, none of the synthetic cannabinoids found in these herbal products are internationally controlled under the 1961 or 1971 UN drug control conventions and at present, the control status of these compounds differ significantly from country to country. Most countries are challenged by the sheer number of synthetic cannabinoids constantly emerging, which means that control measures targeting individual compounds can be easily circumnavigated. Some Member States, for example, the United Kingdom, Ireland and Luxembourg, have adopted a more generic approach to controlling synthetic cannabinoids of similarly structured compounds. Nevertheless, effective implementation of control measures could be hampered by the lack of analytical data and reference samples, as well as methodologies for toxicological identification of metabolites in biological specimens.

Monitoring Reports 09, Australian Institute of Criminology.

18 Drug use in New Zealand, *Key Results 2007/08 New Zealand Alcohol and Drug Use Survey*, Ministry of Health, 2010.

19 Although a recent study showed a sharp decline in the use of spice in Germany, from 3% to 1% in 2009 (source: Abschlussbericht, Spice, Smoke, Sence & Co. – Cannabinoidhaltige Räuchermischungen: Konsum und Konsummotivation vor dem Hintergrund sich wandelnder Gesetzgebung, Goethe-Universität).

Chemistry and effects of synthetic cannabinoids

Chemistry

Synthetic cannabinoids are typically synthetic cannabinoid agonists that function similarly to D9-tetrahydrocannabinol (THC), the principal psychoactive component in cannabis. Like THC, synthetic cannabinoids have structural features that allow binding to one of the known cannabinoid receptors, that is, CB1 or CB2, in the brain and other organs to produce cannabis-like pharmacological activity. Currently, there are many compounds with chemically unrelated structures that fall under this definition and could be classified as follows:*

i) Classical cannabinoids (for example, HU-210, AM-906, AM-411, O-1184)
ii) Nonclassical cannabinoids (for example, CP-47,497-C8, CP-55,940, CP-55,244)
iii) Hybrid cannabinoids (for example, AM-4030)
iv) Aminoalkylindoles (for example, JWH-018, JWH-073, JWH-398, JWH-015, JWH-122, JWH-210, JWH-081, WIN-55,212, JWH-250, JWH-251, pravadoline, AM-694, RSC-4)
v) Eicosanoids (for example, anandamide, methanandamide)
vi) Others (for example, Rimonabant®, JWH 307, CRA-13)

Synthesis and precursors

A number of methods for synthesizing synthetic cannabinoids have been described in detail in the scientific literature.** Precursor chemicals can also be obtained from commercial chemical suppliers. In general, syntheses of classical, nonclassical or hybrid cannabinoids are much more elaborate and complicated due to the presence of asymmetric centres in these compounds. As a result, stereoselective synthesis or elaborate separation of stereoisomers are often necessary to isolate the desired compound. As for compounds without asymmetric centres like most aminoalkylindoles, a vast variety of similar compounds could be easily synthesized by the addition of a halogen, alkyl, alkoxy or other substituents to one of the aromatic ring systems, or other small changes could be made, such as variation of the length and configuration of the alkyl chain.

Most of the aminoalkylindoles can be easily synthesized with standard laboratory equipment and readily available reagents. The synthesis of nonclassical cannabinoids requires more elaborate equipment and technical know-how, but it should be feasible for a chemist with a sound basic training in organic synthesis.

Medicinal use

Some synthetic cannabinoids are commercially available for medicinal purposes such as Nabilone (Cesamet®) for treatment of cancer patients under chemotherapy and Dronabinol (Marinol®) which is a synthetically produced pure THC applied in multiple sclerosis and palliative care.

Pharmacology and toxicity

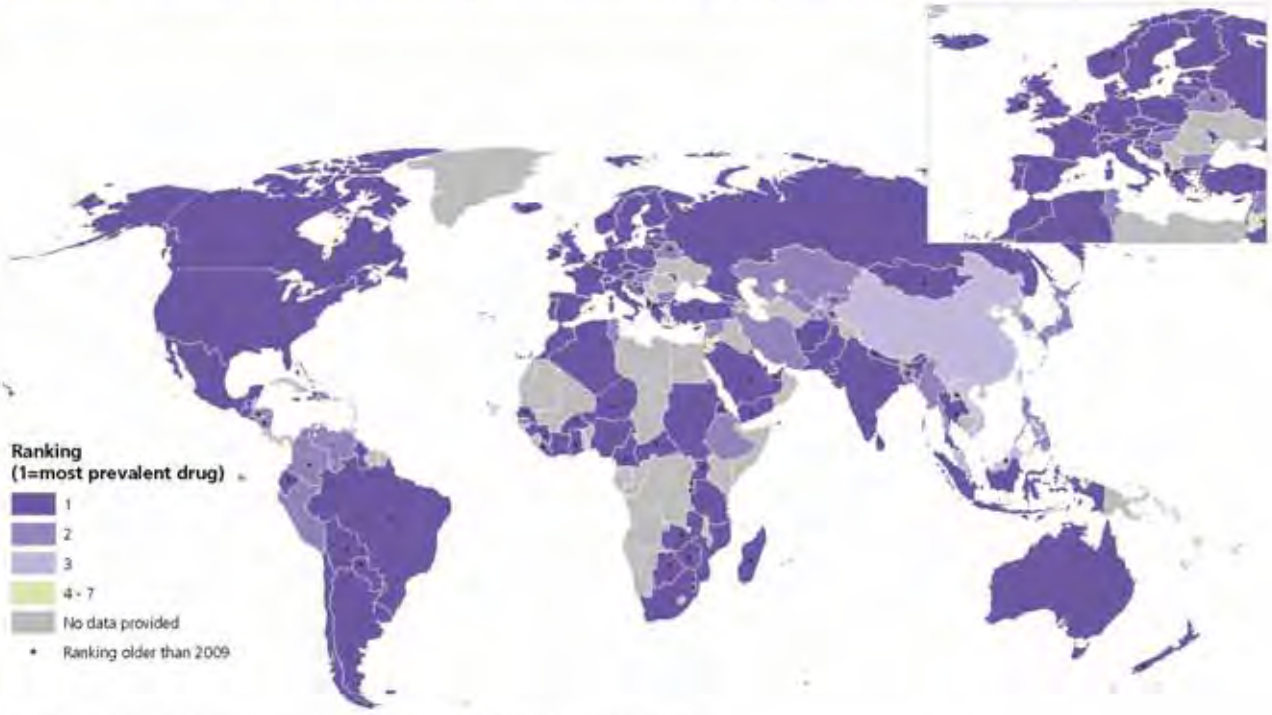
So far, little is known about the pharmacology and toxicology of these compounds. Some case reports have shown that health-related problems associated with the use of these herbal products seem to be very similar to problems reported after cannabis use.*** Cardiovascular problems and psychological disorders such as panic attacks were among the frequently reported symptoms. A number of these substances may have a higher addictive potential compared to cannabis due to quicker development of tolerance. Some synthetic cannabinoids, for example, HU-210, CP-55,940 and WIN-55,212-2, which act as full agonists at the CB1 receptor, could possibly cause severe or even life-threatening intoxications when overdosed. Furthermore, due to its structural features in certain aminoalkylindoles, some carcinogenic potential could also be possible.

* Howlett et al., 'International Union of Pharmacology. XXVII. Classification of cannabinoid receptors,' *Pharmacol Rev*, 2002. 54(2): p. 161–202.

** Huffman et al., 'Structure-activity relationships for 1-alkyl-3-(1-naphthoyl)indoles at the cannabinoid CB1 and CB2 receptors: steric and electronic effects of naphthoyl substituents. New highly selective CB2 receptor agonists,' *Bioorganic and Medicinal Chemistry*, 2005, 13(1): pp. 89–112.

*** Vardakou et al., 'Spice drugs as a new trend: mode of action, identification and legislation,' *Toxicology Letters*, 2010. 197(3): pp. 157–62.

Map 42: Ranking of cannabis in order of prevalence, 2009 (or latest year available back to 2005)



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control between India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

5.3 Production

Cannabis is produced in practically every country of the world, making it the most widely produced illicit drug. Cannabis herb is mostly produced for domestic or regional markets, whereas cannabis resin is trafficked over larger distances. The major countries identified as sources by the cannabis resin consumer markets are Afghanistan, Morocco, Lebanon and Nepal/India. Attempts to estimate cannabis production encounter severe deficiencies in the data, which were extensively described in former *World Drug Reports* and is reflected in the reporting. In the 2009 *World Drug Report*, it was estimated that the production of cannabis herb ranged from 13,300-66,100 mt and of cannabis resin from 2,200-9,900 mt. The resulting total area under cannabis cultivation was estimated at 200,000-641,800 ha. The calculations were based on the minimum and maximum levels from reported cultivation and production, seizures and user prevalence rates. In 2010, these indicators did not show significant changes that would justify an update of the production estimates, taking into account the large minimum and maximum levels. Therefore, the production estimates were not updated for this *World Drug Report*. This chapter focuses on some production trends found in the last year, with a focus on trends in potency.

Table 39: Update of available information on the extent of cannabis cultivation and production in major producing countries, 2009*

Source: UNODC ARQ 2009 unless otherwise specified.

Country	Cultivated area (ha)	Eradication		Harvestable area (ha)	Production (mt)	
		Area (ha)	Plants		Resin	Herb
Afghanistan[20]	9,000-29,000 (2010)			9,000-29,000 (2010)		
Belarus	300			300		
Bolivia[21]			1,910,857 (kg)		1,200-3,700 (2010)	
Guatemala			429,610 (kg)			
India	4,265	4,265		0		
Lebanon	1,310	1,310		0		
Mexico		16,547		17,500[22]		
Morocco				47,500[23]		
Nigeria		925				
Philippines			477,927 (kg)			
South Africa	880	567		313		657[24]
Spain						29
Sri Lanka	500					
Swaziland		542				
USA[25]			9,980,038 outdoor plants/ 414,604 indoor plants			

* Or other year, if mentioned.

20 UNODC, Afghanistan cannabis survey 2010 (preliminary).

21 OAS, Mecanismo de *Evaluación Multilateral, Evaluación del progreso de control de drogas 2007-2009*.

22 US Department of State, *International Narcotics Control Strategy Report, 2011*.

23 Note Verbale to UNODC, 27 December 2010.

24 Calculated from the harvestable area, number of harvests and yield figures in UNODC, ARQ 2009.

25 US Department of Justice, Drug Enforcement Administration, 2009.

Cannabis cultivation in some major producing countries

In 2010, UNODC and the Government jointly carried out a survey in an important cannabis resin producing country, Afghanistan. The results of the first cannabis survey in 2009 indicated that Afghanistan is among the major cannabis resin producing countries and that cannabis has become a competitor to opium poppy as a lucrative crop for farmers in the country. The preliminary 2010 survey gave no indications for major changes in the levels of cultivation and production compared to 2009. It showed a cultivation range of 9,000 to 29,000 hectares, compared to 10,000-24,000 hectares in 2009. Resin production ranged between 1,200 and 3,700 mt, compared to 1,500 to 3,500 mt in 2009.

The importance of Afghanistan as a cannabis resin producer is reflected in the seizures reported by other countries. 10% of all countries reporting cannabis seizures mentioned Afghanistan as the source of cannabis. The Government of Morocco reported a reduction of cultivation area to 47,500 ha,[26] however, Morocco continued to be mentioned as source by the majority of countries reporting cannabis resin seizures to UNODC (19%). This suggests that Morocco continued to be a major producer of cannabis resin. Data on seizures and prices in Europe suggest that the supply of cannabis resin from Morocco to the region has remained the same or slightly decreased.

Other countries were increasingly reported as sources of cannabis, including Lebanon, Spain (as a transit country for Moroccan cannabis), Turkey and India. India also reported substantial cannabis cultivation and subsequent eradication of 4,265 ha.

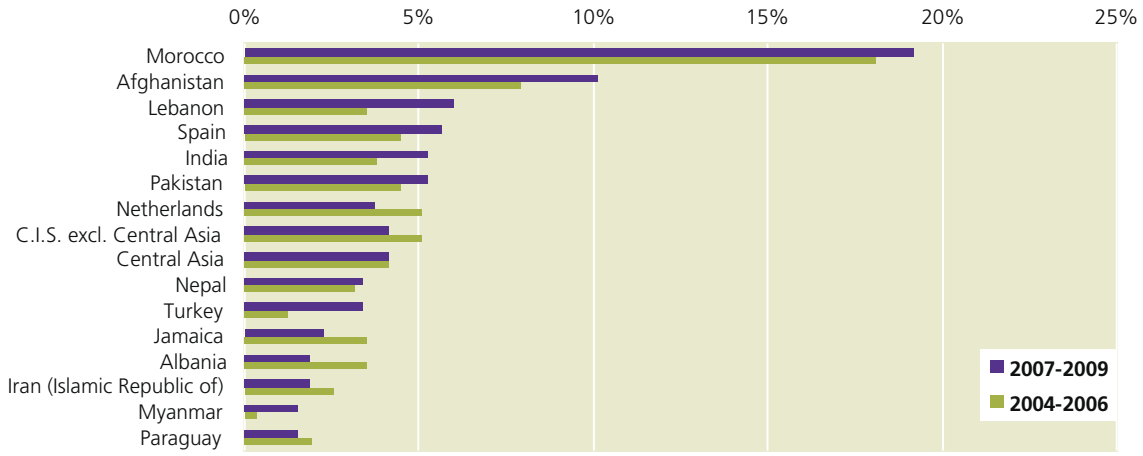
The amount of cannabis herb produced in the United States is unknown but believed to be high and rising. The rise is illustrated by the continuing increase of eradicated cannabis plants, mainly grown on public lands by foreign criminal groups (attributed to Caucasian, Asian, Cuban and Mexican criminal groups/drug trafficking organizations.[27]) The indoor production is believed to be increasing as well; however, the number of eradicated indoor-grown plants is stable.[28]

Although the Mexican Government does not estimate its national production level,[29] reports from the United States suggest that cannabis cultivation in Mexico has increased. The US estimates suggest that cultivation in Mexico has increased from 5,600 ha in 2005 to 17,500 ha in 2009. According to the US sources, the increase may be a result of a shifting law enforcement focus from reduction of illicit crop cultivation to public security tasks.[30]

Cannabis production in Europe is believed to be increasing,[31] mostly in indoor settings and increasingly controlled by organized crime groups. Herbal cannabis is now commonly produced inside Europe (29 European countries reported domestic cultivation in 2008), closer to its intended market and therefore less likely to be intercepted.[32]

Fig. 154: Main source* countries of cannabis resin reported to UNODC in the periods 2007-2009 and 2004-2006**

* Source countries might not always mean the country where it was produced and might also indicate the latest known transit country.
** Number of times that countries were identified as source countries, represented as proportion of countries reporting.
Source: UNODC ARQ.



26 The last joint survey by UNODC and the Moroccan Government was carried out in 2005.

27 US Department of Justice, *National Drug Threat Assessment 2010.*

28 US Department of Justice, Drug Enforcement Administration, 2009.

29 Currently, the Mexican Government is preparing to conduct its own cannabis production surveys in cooperation with UNODC.

30 US Department of State, *International Narcotics Control Strategy Report*, 2011.

31 EMCDDA, *Annual Report 2010.*

32 Ibid.

Fig. 155: Eradicated cannabis plants at indoor and outdoor cultivation sites in the United States, 2003-2009

Source: US Department of Justice, Drug Enforcement Administration, 2009.

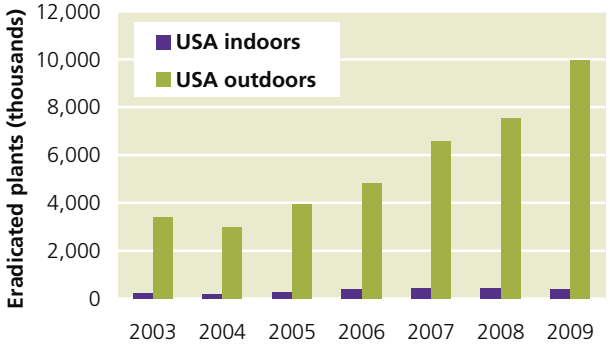
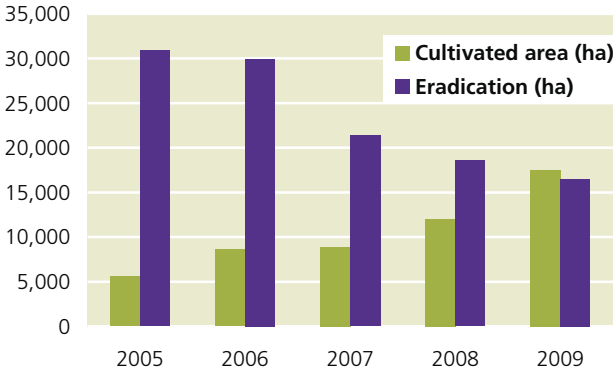
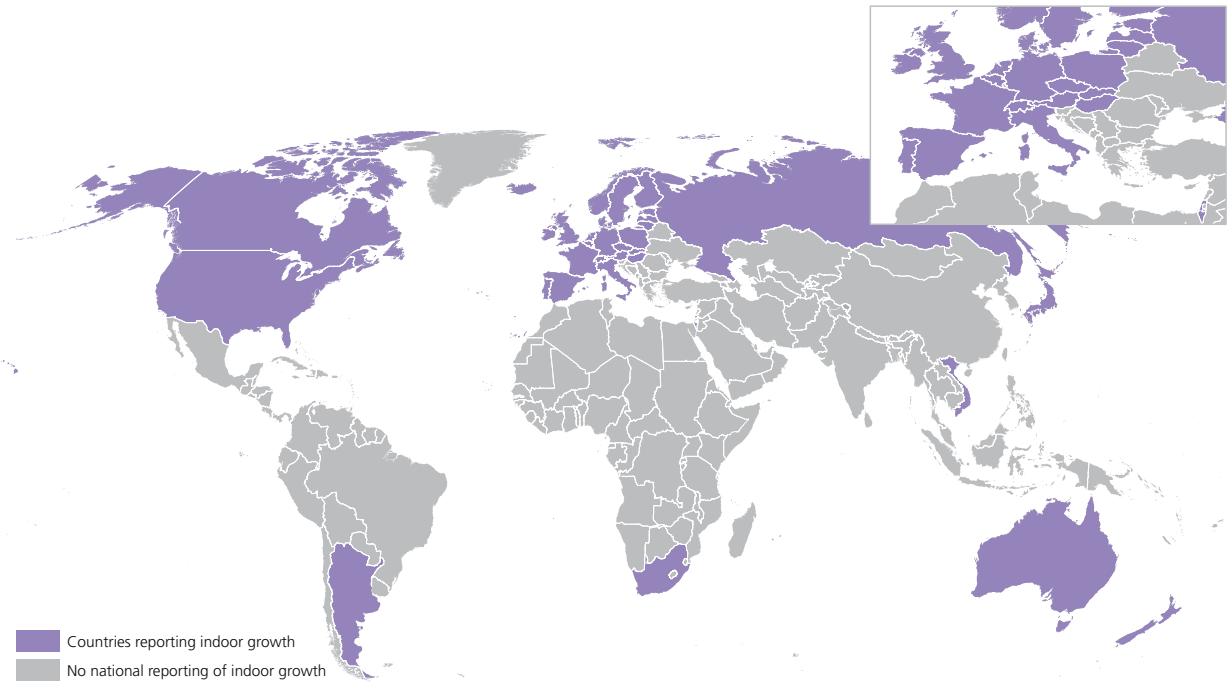


Fig. 156: Cultivation and eradication figures for Mexico, 2005-2009

Sources: UNODC ARQ; US International Narcotics Control Strategy Reports.



Map 43: Evidence of indoor cannabis cultivation in the world



Sources: UNODC, ARQ 2008-2009; National reports to the INCB 2007-2010; INCSR 2010-2011; Thirty-third Meeting of Heads of National Drug Law Enforcement Agencies, Asia and the Pacific, (Denpasar, Indonesia, 6-9 October 2009); Kilmer and Hoorens, Understanding illicit drug markets, supply- reduction efforts, and drug-related crime in the European Union, RAND Europe, 2010; REITOX reports, National Reports to the EMCDDA, 2009-2010; OAS, Multilateral Evaluation Mechanism, 2008; Netherlands Police Agency (KLPD-IPOL).
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Changes in THC concentrations

In the recent past there were claims of strong increases in THC concentrations (frequently referred to as 'potency') of cannabis, the main active component of cannabis. Cannabis THC contents have changed frequently in different countries. The most systematic and standardized collections of THC content are performed in the United States, the Netherlands and Germany[33] and are presented below.

THC concentration in herbal cannabis in the United States, the Netherlands and Germany

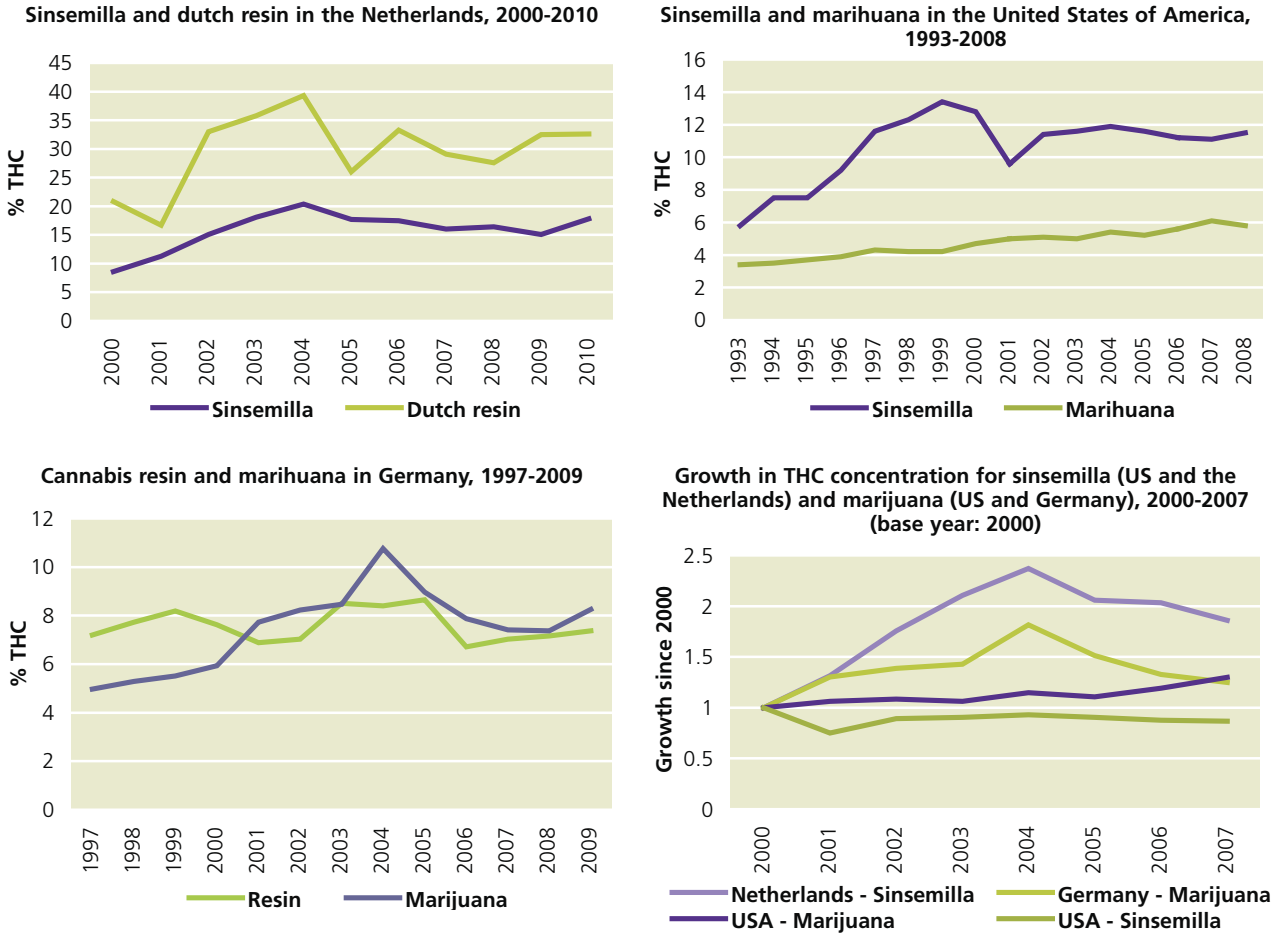
At the end of the 1990s/beginning of the 2000s, both the US and the Netherlands experienced an increase of the average THC contents in their herbal cannabis products. In the US, the average THC concentration of sinsemilla doubled from 6% to 13% from the early 1990s to the late 1990s, after which the level decreased and became practically stable around 11% over the past decade.[34] At the same time, THC contents of the more

33 Measured from samples: in the USA, from 46,211 samples confiscated by law enforcement agencies; in the Netherlands, from yearly collected samples from 50 randomly selected coffeeshops; in Germany, calculated from seizure data, in 2009 from 9,250 samples.

34 These are average values and the ranges of potency have not changed. High potency cannabis was also available in the past, however, it was less common.

Fig. 157: THC concentrations for different cannabis products in the Netherlands, United States and Germany, with varying time series

Sources: THC-concentraties in wiet, nederwiet en hasj in Nederlandse coffeeshops 2009-2010; THC-concentraties in wiet, nederwiet en hasj in Nederlandse coffeeshops 2005-2006.; Mehmedic, Z. et al, 'Potency Trends of 9-THC and Other Cannabinoids in Confiscated Cannabis Preparations from 1993 to 2008,' Journal of Forensic Sciences, September 2010, Vol. 55, No.5, pp. 1209-1217; 2010 national report (2009 data) to the EMCDDA by the Reitox National Focal Point for Germany.



commonly grown marijuana are significantly lower since the consumed marijuana in the USA is mainly produced outdoors; THC contents in marijuana show a consistent but slowly increasing trend in the 15-year period.

In the Netherlands, yearly analyses have been performed since 2000, and the results show a sharp increase in THC concentration of sinsemilla in the early 2000s, from nearly 9% to 19%. This is attributed to the increasingly common use of improved breeds, indoor cultivation and the use of sophisticated techniques. Although these techniques were already available in the 1980s, the profile of the cultivators has changed to organized professionals. Nevertheless, since 2004, the general trend was downwards to 15% in 2009. In Germany, the THC concentration of marijuana, which is a broader group than sinsemilla alone, shows a similar trend, doubling its THC content from 5% in 1997 to more than 10% in 2004, dropping back again to around 8% in 2009. The similar patterns probably reflect similar production sources. Reports from other countries are fragmented and less systematic; the European countries that reported sufficient data for herbal cannabis reported divergent trends for the period 2003-2008. Six countries reported an increase, four a decrease.[35]

THC concentration in cannabis resin

In the Netherlands, THC contents of cannabis resin show a growth trend similar to that of sinsemilla. The level in the Netherlands increased from 20% to almost 40% in the early 2000s, after which it dropped to around 30% during 2005-2010. In Germany, the THC contents have been fluctuating around 8%, without showing a long-term change. The THC contents of cannabis resin in other European countries followed divergent patterns, with some countries showing an increase and others a decrease.

35 EMCDDA, *Annual Report 2010.*

5.4 Trafficking

Among the four major drug groups, cannabis derivatives constitute the most widely trafficked and most easily available class of illicit drugs. Reports of cannabis seizures refer mainly to cannabis herb and cannabis resin, but also cannabis plant, cannabis oil and cannabis seed. Large quantities of cannabis herb are seized worldwide, while seizures of cannabis resin are concentrated mainly in Europe, North Africa and the Near and Middle East/South-West Asia, reflecting the locations of production and main consumer markets for cannabis resin. The fact that production of cannabis resin occurs to a large extent in countries removed from the main consumer markets brings about the necessity for trafficking of cannabis resin across different regions, in contrast with the more localized trafficking patterns of cannabis herb.

Cannabis herb

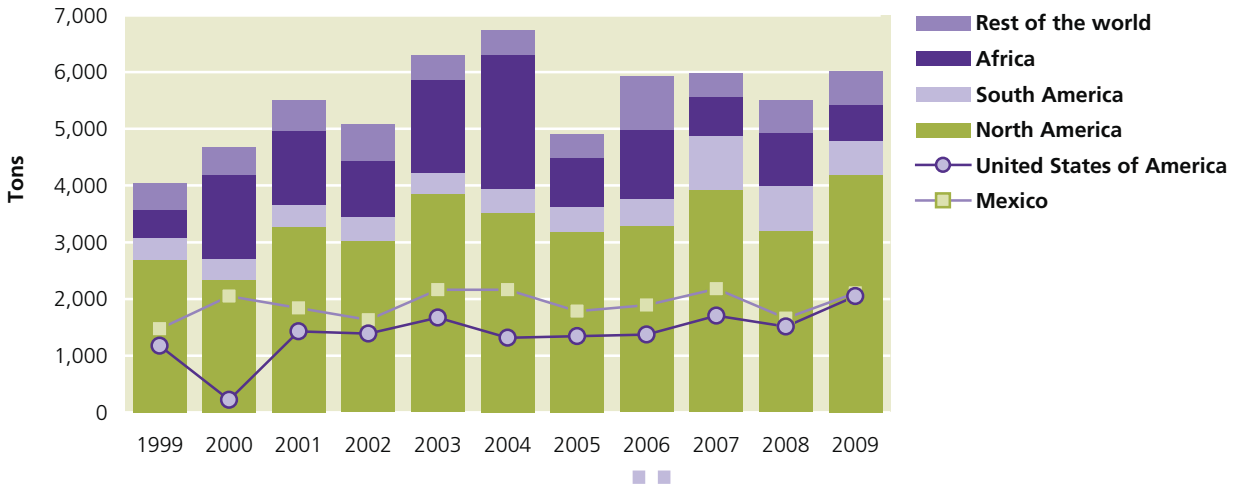
Following a slight drop (8%) in 2008, in 2009, global cannabis herb seizures returned to the levels of 2006 and 2007, amounting to 6,022 mt. North America accounted for 70% of global seizures, followed by Africa (11%), South America (10%), Asia (6%) and Europe (3%).

Given the relative ease of cannabis cultivation, the supply of cannabis herb can often be locally sourced, with the result that the trafficking patterns tend to be rather localized in comparison with cannabis resin or other drugs. In the ARQ replies for 2009, out of 68 countries that provided information about the country of origin of cannabis herb trafficked in their territories, 44 countries assessed that some or all cannabis herb originated in their own country. For these countries, on average 75% of all herb originated from their own country.[36]

Cannabis herb retail prices displayed significant inter-regional as well as intra-regional variation, even when adjusted for purchasing power parity. Retail prices appear to be driven both by the availability of cannabis herb, which is in turn linked to domestic production levels, as well as the disposable income of consumers. Overall, prices were significantly lower in Africa and in Central and South America and the Caribbean. Some of the lowest prices were registered in Togo, India, Guatemala and the United Republic of Tanzania, while the highest price was registered in Japan. The low prices in some of these countries could be partly due to high production, but income levels likely also play a significant role. Similarly, the price in Japan may be high partly because of the high income level of consumers and partly because, contrary to the common pattern in other countries, a significant share of cannabis herb in Japan appears to be imported.

Fig. 158: Cannabis herb seizures worldwide, 1999-2009

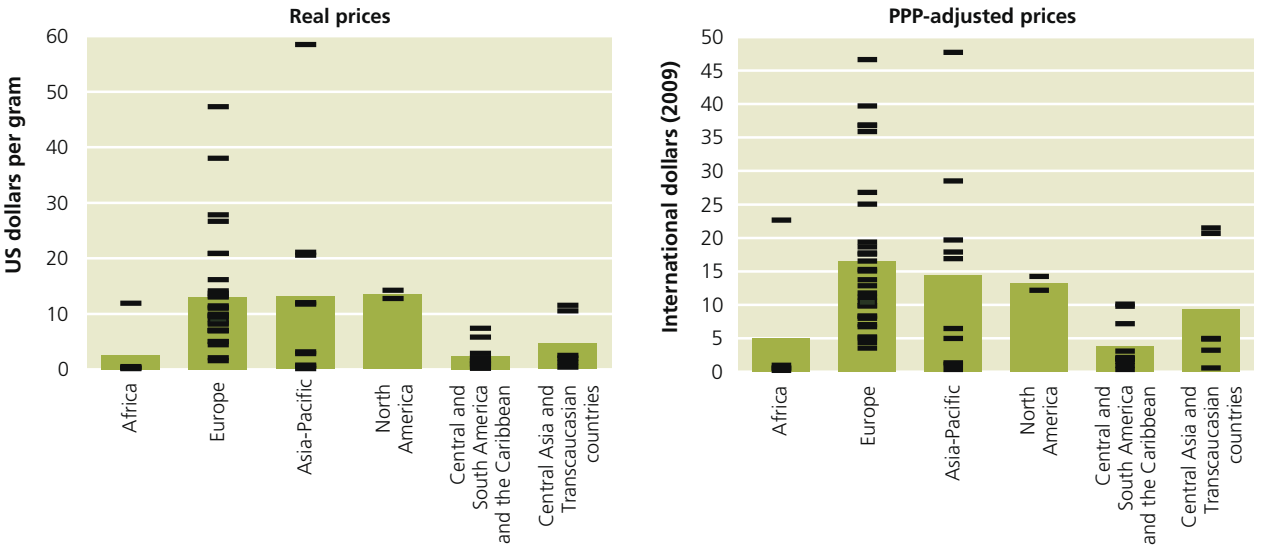
Source: UNODC DELTA.



36 Calculated based on the 33 countries that gave a percentage. The other 11 countries pointed to their own country without specifying the proportion.

Fig. 159: Cannabis herb retail prices worldwide, by region, 2009

Source: UNODC DELTA.



Americas

Cannabis herb seizures in North America rose from 3,205 mt in 2008 to 4,189 mt in 2009, driven by increases in both Mexico and the United States, which continued to report the largest cannabis herb seizures worldwide. Large quantities of cannabis herb are produced in Mexico and trafficked to the United States. Seizures in the United States rose to a record level of 2,049 mt in 2009, up by one third on the previous year, and a similar increase was registered in Mexico, with seizures rising from 1,658 mt in 2008 to 2,105 mt in 2009.

Seizures in Mexico were made mainly close to the areas of cultivation or close to the border with the United States. In 2009, the contiguous states of Sinaloa, Durango, Chihuahua and Sonora accounted for 75% of cannabis herb seizures, while Sinaloa, Chihuahua and Durango accounted for 76% of eradication, with the states of Nayarit, Jalisco, Michoacán, Guerrero and Oaxaca on the Pacific coast accounting for an additional 20% of eradication.

The supply of cannabis herb in the consumer market in the United States is partly locally produced and partly trafficked into the country from Mexico as well as, to a smaller extent, from Canada. In 2008, border seizures of cannabis herb made by US authorities amounted to 1,253 mt on the US-Mexico border and 3 mt on the US-Canada border; based on partial data for 2009, seizures on both borders rose in 2009, but they remained concentrated on the US-Mexico border. According to US authorities, cannabis herb in Mexico was widely available, in part due to rising production there.[37]

37 US Department of Justice, *National Drug Threat Assessment 2010*.

The United States also reported that foreign drug trafficking organizations were increasingly engaging in indoor and outdoor cannabis cultivation, and their distribution networks were growing. Canada reported that Asian organized crime groups continued to specialize in cannabis cultivation while Indo-Canadian and East European organized crime groups were involved in cross-border smuggling.

Large quantities of cannabis herb, as well as cannabis plants, continued to be seized in South America. Seizures in this region peaked at 946 mt in 2007 and since then fell twice in succession, standing at 598 mt in 2009. The largest seizures were registered in Colombia, where seizures declined from 255 mt in 2008 to 209 mt, and in Brazil, where seizures also fell, from 187 mt in 2008 to 131 mt. In relative terms, a significant increase was registered in the Bolivarian Republic of Venezuela, where seizures rose by 58% in 2009, reaching 33 mt – the highest level since 1990.

Considering seizures of the various forms of cannabis collectively (cannabis herb, plant, resin, oil and seed), the Plurinational State of Bolivia recorded a consistent increase over the period 1998-2009. The reported quantities, which include predominantly cannabis plant, amounted to 320 kg in 1998, 28 mt in 2004 and 1,937 mt in 2009. According to preliminary data, seizures receded to 1,073 mt in 2010.

The recent high levels of cannabis plant seizures in the Plurinational State of Bolivia are comparable with cannabis plant seizures registered in Paraguay in 2007 and 2008 – 4,667 mt in 2007 and 5,185 mt in 2008. Seizures of very large numbers of cannabis plants have also been reported by Guatemala: 10.8 million in 2008 and 4.3 million in 2009.

Fig. 160: Growth of aggregate cannabis* seizures in selected South American countries, 1997-2009 (baseline: 1997)

*Cannabis herb, plant, resin, oil and seed. For the purposes of aggregation, one cannabis plant is assumed to have a weight of 100 grams.

Source: UNODC DELTA.

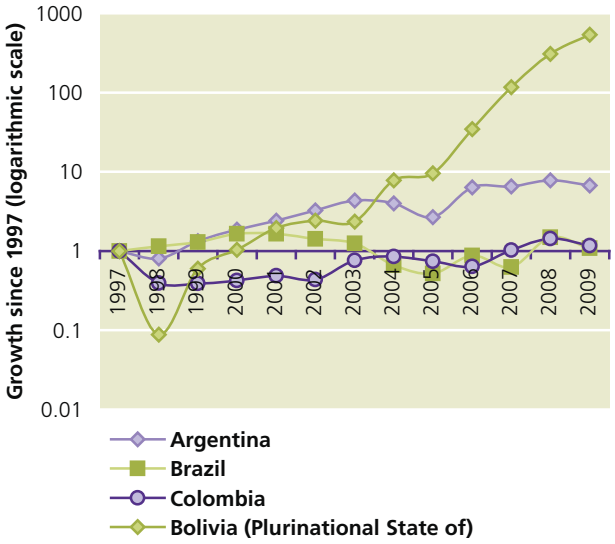


Fig. 161: Africa: seizures of cannabis herb by subregion, 1999-2009

Source: UNODC DELTA.

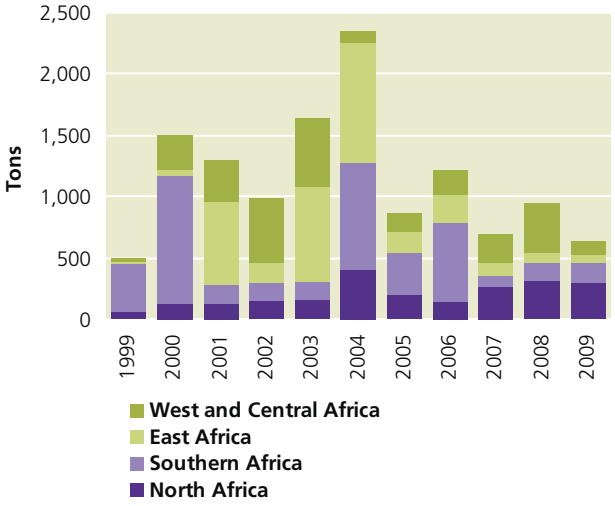
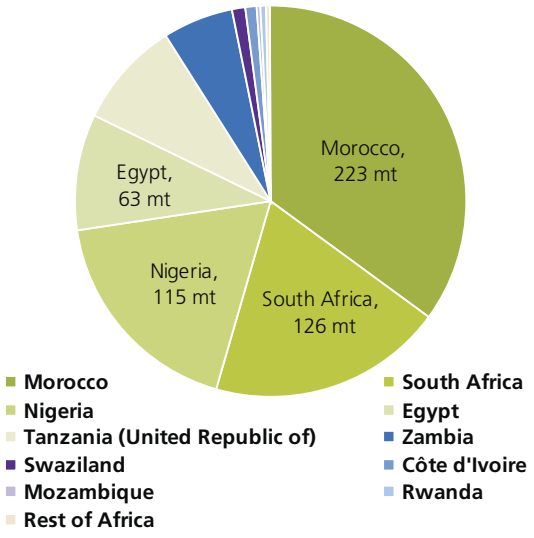


Fig. 162: Africa: cannabis herb seizures, by country, 2009

Source: UNODC DELTA.



Africa

Seizures of cannabis herb in Africa have fluctuated considerably in recent years, but have followed a generally decreasing trend since the peak level of 2004. In 2009, total seizures in Africa fell to 640 mt, from 936 mt in 2008. The decline was partly due to a significant drop in Nigeria.

Although cannabis herb continues to be trafficked throughout Africa, seizures tend to be concentrated in a small number of countries. Over the period 2000-2009, UNODC collated records of cannabis herb seizures from 48 countries in Africa. However, seizures in seven of these countries (Egypt, Kenya, Malawi, Morocco, Nigeria, South Africa and the United Republic of Tanzania) accounted for 90% or more of the annual total for Africa each year from 2000 to 2009 and for 94% of the quantity seized in Africa over the entire period.

In 2007 and 2008, the largest annual seizures of cannabis herb in Africa were reported by Nigeria. However, in 2009 seizures in this country fell by almost two thirds, to 115 mt, from 336 mt in 2008. Nigeria assessed that, in 2009, cannabis herb on its territory originated entirely in Nigeria itself, but was destined for the Netherlands (50%), Japan (30%) and Italy (20%). Nigeria also reported a notable increase in the farm-gate price of cannabis – from 8,000 Naira per kg in 2008 to 35,000 Naira per kg in 2009. Both the decline in seizures and the increase in price were attributed to the destruction of cannabis farms by law enforcement operatives in Nigeria.

Morocco continued to seize large quantities of 'kif,' selected parts of herbal cannabis which can be further processed into cannabis resin.[38] However, Morocco has also been mentioned by other countries as a country of origin for cannabis herb, sometimes in addition to cannabis resin. Seizures of 'kif' amounted to 223 mt in 2009 to 187 mt in 2010. In 2009, seizures of cannabis herb declined in Egypt, from 81 mt in 2008 to 63 mt, and in the United Republic of Tanzania, from 70 mt in 2008 to 56 mt.

38 Stambouli, H., El Bouri, A., Bellimam, M. A., Bouayoun, T. and El Karn, N., 'Cultivation of Cannabis sativa L. in northern Morocco,' *Bulletin on Narcotics*, Volume LVII, Nos. 1 and 2, 2005.

South Africa continued to be a source, consumer and transit country for cannabis herb. It appears that the ports of South Africa provide a gateway for cannabis herb produced in neighbouring countries, as well as South Africa itself, and exported to consumer markets outside Africa. This reflects the role of this country as a major trans-shipment hub for legitimate trade. South Africa assessed that, in 2009, 80% of cannabis herb on its territory originated in neighbouring countries (Lesotho and Swaziland). Moreover, an estimated 30% were destined for the consumer markets of Europe. Seizures in South Africa amounted to 126 mt in 2009. In the ARQ replies for 2007-2009, South Africa was mentioned eight times by other countries as a country of origin for cannabis herb. Contrary to the prevalent trend of localized trafficking patterns for cannabis herb, seven of these mentions were by countries outside Africa.

Asia-Pacific

In 2009, the Asia-Pacific region accounted for 5.5% of global cannabis herb seizures. Seizures in this region rose for the second year in a row, standing at 333 mt in 2009. The increases were mainly due to the amounts seized in India and Indonesia, which reported the largest seizures in this region by far.

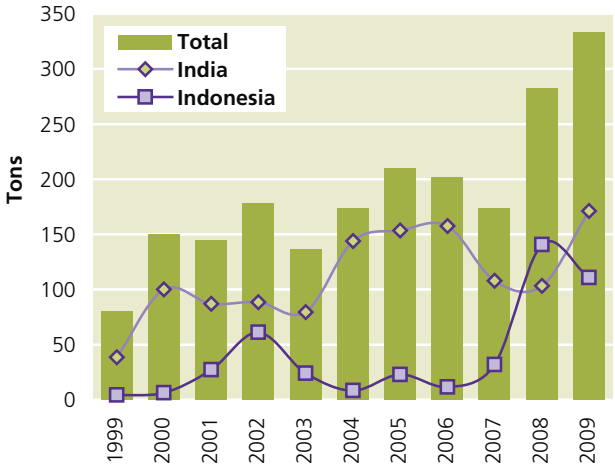
In 2008, seizures in Indonesia reached a record level of 141 mt. In 2009, seizures fell to 111 mt, but remained high in comparison with historical levels, which averaged 20 mt over the 2003-2007 period. Indonesia assessed that 99% of cannabis herb on its territory originated in Indonesia itself. The increased levels were attributed to improvements in law enforcement efforts, and the decline in 2009 to the success of alternative development programmes.

In 2009, cannabis herb seizures in India rose by almost two thirds, from 103 mt in 2008 to 171 mt – the highest level since 1994. India assessed that 81% of the cannabis seized on its territory in 2009 originated in India itself, with the remainder originating in Nepal. An unspecified proportion was intended for Bangladesh. In 2008, seizures of cannabis herb in Nepal rose to 9.6 mt (the highest level since 1987), and increased by a further 73% in 2009, reaching 17 mt.[39]

According to Thai authorities,[40] cultivation of cannabis herb in Thailand had been drastically reduced over a period of 20 years, and recent trafficking patterns for cannabis herb involved smuggling into Thailand from

Fig. 163: Cannabis herb seizures in the Asia-Pacific region, 1999-2009

Source: UNODC DELTA.



the Lao People's Democratic Republic and out of Thailand into Malaysia. Cannabis herb seizures in Thailand amounted to 19 mt in 2008 and 18 mt in 2009. Significant quantities were also seized in 2009 in Malaysia (2.4 mt, up from 875 kg in 2008[41]) and the Philippines (1.9 mt, down from 3.7 mt in 2008).

In Japan, seizures declined from 504 kg in 2007 to 207 kg in 2009. Japan attributed the decline to a decrease in cases of illegal importation accompanied by an increase in domestic illicit cultivation of cannabis. According to Japanese authorities, one case of large-scale indoor cultivation of cannabis was discovered in Japan and involved six Vietnamese and one Japanese national.[42] Moreover, the number of arrests for cannabis cultivation rose from 207 in 2008 to 243 in 2009, while the number of arrests for smuggling of cannabis fell from 85 in 2008 to 48 in 2009.[43] Nevertheless, in 2009 cannabis herb also continued to be smuggled into Japan from other countries, such as Botswana, France, South Africa and the United States.[44]

Seizures of cannabis herb in Oceania have declined significantly since the peak level of 2001, mainly due to Australian seizures. In 2009 seizures in New Zealand amounted to 759 kg, while in Australia seizures amounted

39 Fifteenth Asia-Pacific Operational Drug Enforcement Conference, February 2010, Tokyo, Japan, country report by Nepal.

40 Fifteenth Asia-Pacific Operational Drug Enforcement Conference, February 2010, Tokyo, Japan, country report by Thailand and Office of the Narcotics Control Board of Thailand, presentation at the Twentieth Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), October 2010, Seoul, Republic of Korea.

41 Data collated by DAINAP.

42 International Intelligence Division, Narcotics Control Department, Japan. Presentation at the Twentieth Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), October 2010, Seoul, Republic of Korea.

43 Drugs and Firearms Division, National Police Agency, Japan. Presentation at the Twentieth Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), October 2010, Seoul, Republic of Korea.

44 Twentieth Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), October 2010, Seoul, Republic of Korea, country report by Japan.

to 629 kg[45] in 2009 and 745 kg in 2008, significantly less than previous levels in this country, which averaged 6.1 mt over the 2001-2003 period. Despite the high prevalence rate of cannabis use in Australia, the seized quantities are relatively low, even when compared on a per capita basis with similar consumer markets such as Europe and the United States.

Rest of the world

In Central Asia, the largest quantities of cannabis herb continued to be seized by Kazakhstan (26 mt in 2009) where cannabis was partially supplying the domestic market and partially intended for other markets such as the Russian Federation where significant seizures were also registered (33 mt, up from 25 mt in 2008). Seizures in West and Central Europe amounted to 101 mt, essentially sustaining the increased level of 2008.

In recent years, seizures of cannabis herb in Turkey have followed a notable increasing trend, rising six-fold over a period of 5 years, from 6.8 mt in 2004 to a record level of 42 mt in 2009. According to Turkish authorities,[46] the increase in cannabis trafficking was attributable to illicit cultivation taking place in some rural parts of the country.

Cannabis resin

Global cannabis resin seizures reached a record of 1,648 mt in 2008, and in 2009 declined to 1,261 mt - a level comparable to those registered in previous years. Every year from 2001 onwards, West and Central Europe, the Near and Middle East/South-West Asia and North Africa together accounted for 95% or more of global cannabis resin seizures. The proportion attributable to West and Central Europe declined gradually from 73% in 2004 to 48% in 2009. The year 2009 marked a significant shift in cannabis resin seizures, away from the consumer market of West and Central Europe and toward North Africa, an important source region for cannabis resin reaching Europe.

The high level of 2008 was partly due to increases in the Near and Middle East/South-West Asia; in particular a single extraordinarily large seizure of 236.8 mt[47]of cannabis resin made by Afghan authorities in Kandahar province in June 2008. A less pronounced increase in seizures was registered in West and Central Europe in 2008; however, in 2009 seizures fell in both West and Central Europe and the Near and Middle East/South-West Asia, and the drop was partially offset by seizures in North Africa.

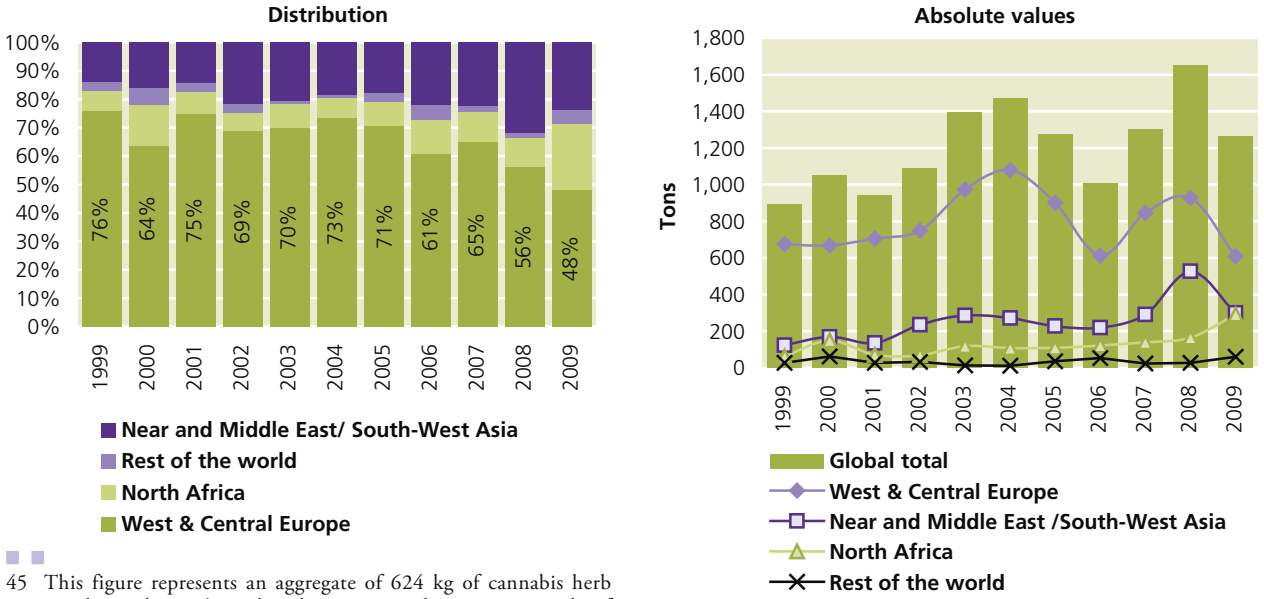
In contrast with cannabis herb, the demand for which tends to be met by production occurring in relative proximity to consumption, large quantities of cannabis resin are trafficked significant distances to reach consumer markets.

Europe and North Africa

Spain continued to report the largest annual seizures of cannabis resin worldwide. Large quantities of cannabis resin are trafficked from the source country of Morocco to Spain, and on to other countries in Europe. In 2009,

Fig. 164: Global cannabis resin seizures, by region, 1999-2009

Source: UNODC DELTA.



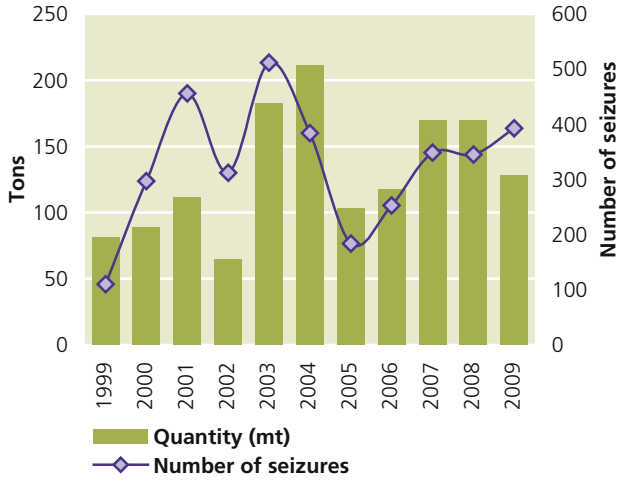
45 This figure represents an aggregate of 624 kg of cannabis herb together with 11,042 seeds or bags, converted assuming a weight of half a gram per unit.

46 Ministry of Interior, Turkish National Police, Department of Anti-Smuggling and Organized Crime, *Turkish Report on Drugs and Organized Crime 2009*.

47 International Security Assistance Force, Press Release 11 June 2008 (http://www.nato.int/isaf/docu/pressreleases/2008/06-june/pr080611-246.html) and UNODC press release, 12 June 2008 (http://www.unodc.org/unodc/en/press/releases/2008-06-12.html).

Fig. 165: Significant individual seizures of cannabis resin in Spain originating in Morocco, 1999-2009

Source: UNODC IDS.



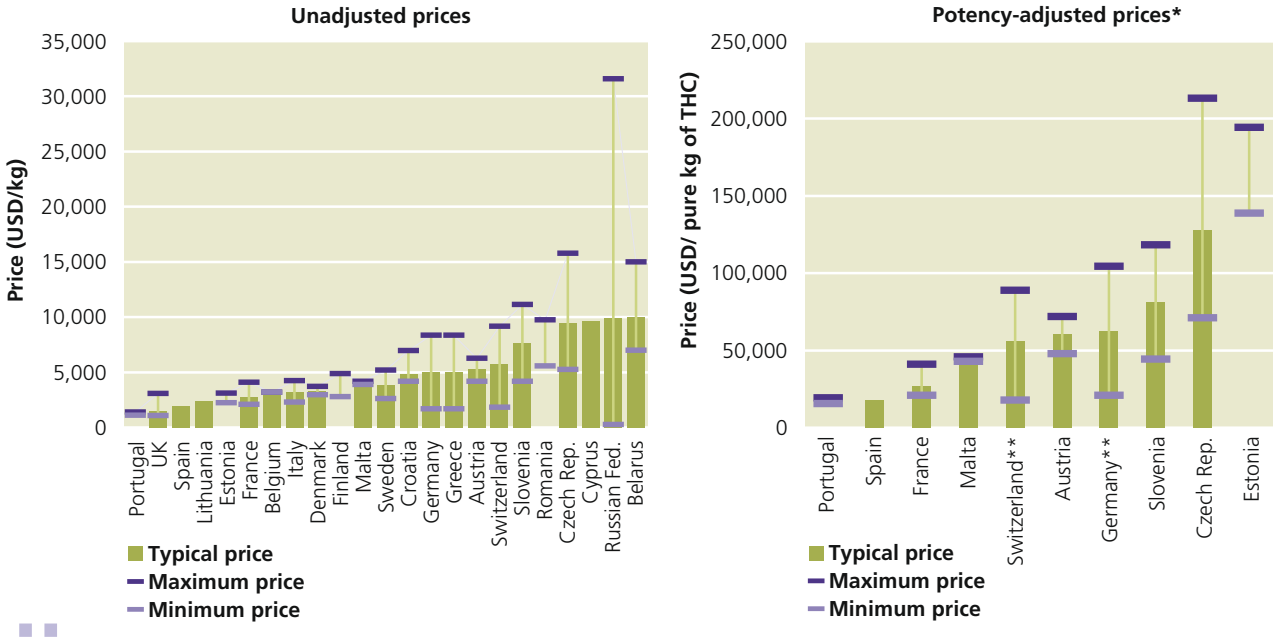
seizures of cannabis resin in Spain fell to 445 mt – the lowest level since 1999 (431 mt) - while seizures in Morocco rose from 114 mt in 2008 to 188 mt in 2009 – the highest level on record. Over the period 1999-2009, approximately one half of significant individual drug seizures reported by Spain involved cannabis resin. Among these seizure cases, Morocco was practically the only country of origin[48] for the seized cannabis resin. However, Morocco is likely not the only source country for cannabis resin reaching Europe, and Spain assessed that the drop in the total quantity of resin seized in Spain was due to the European market drawing from another supplier than Morocco. In 2010, seizures in Morocco fell back to 118 mt.

Increases in cannabis resin seizures were also observed in other North African countries. In Algeria and Egypt, seizures more than doubled in 2008, reaching a record level of 38 mt in Algeria and a level of 12.8 mt – the highest since 1989 - in Egypt. In 2009, seizures in Egypt appeared to stabilize, amounting to 11.4 mt, but seizures in Algeria rose even further, registering the fourth consecutive year-on-year increase. Indeed, seizures in Algeria amounted to 74.6 mt in 2009, compared with 1.7 mt in 2005. Algeria reported that in 2009 cannabis resin and cannabis herb in its territory originated entirely in Morocco.

Seizure data and, to some extent, price data support the flow of cannabis resin from North Africa into western Europe via Spain. Apart from Spain, which reports the largest cannabis seizures in Europe by far, the largest seizures among European countries in 2009 were reported by France and Portugal, followed by Italy and Belgium. The decrease in seizures in Spain in 2009 was reflected in similar decreases in the four European countries which seized the largest quantities in 2008 (apart from Spain): France (-21%), Portugal (-62%), Italy (-43%) and the United Kingdom (-61%). Seizures in Belgium have fluctuated considerably, amounting to 18.7 mt in 2009 (up from 1.5 mt in 2008).

Fig. 166: Wholesale cannabis resin prices in Europe, 2009

Source: UNODC DELTA.



48 This excludes mentions of Spain itself as the country of 'origin,' which likely refer to the point of departure of the consignment rather than the actual country of origin of the drug.

* UNODC estimates based on reported price and typical purity data.
** Purity data for Germany and Switzerland relative to 2008.

Map 44: Wholesale cannabis resin prices* in Europe, 2009

Wholesale prices of cannabis resin (unadjusted for potency) in Europe are also compatible with a flow of cannabis resin from Spain to the rest of Europe, with some notable exceptions. In 2009, the lowest wholesale prices in Europe were registered by Portugal and Spain, while France, Italy and Belgium reported slightly higher prices. Prices reported by the United Kingdom and the neighbouring countries of Estonia and Lithuania, however, were low. A clearer picture emerges when prices are adjusted for potency, with the price in Estonia being the highest among those countries where both price and potency data were available.[49]

Although large quantities of cannabis resin continue to be trafficked from Morocco to Europe, cannabis resin also reaches Europe from other regions. Afghanistan and India were both frequently mentioned by European countries as countries of origin for cannabis resin in 2009. India assessed that approximately half of the cannabis resin on its territory in 2009 was produced in India itself, and identified western Europe and Canada among the intended destinations.

Asia-Pacific

In 2007 and 2008, Viet Nam accounted for the largest seizures of cannabis resin in the Asia-Pacific region. Seizures in this country amounted to 8 mt in 2007 and 8.8 mt in 2009.[50] According to Vietnamese authorities,[51] in May 2008, more than 8 mt of cannabis resin was seized in a single case in the town of Mong Cai, on the border with China. The circumstances of the case suggest that Viet Nam was serving as a transit country for cannabis resin, and anecdotal reports indicate that the consignment could be traced back to Pakistan, and was intended for Canada.

Significant quantities of cannabis resin continued to be seized in India, although seizures fell from the peak level of 2007 (5.2 mt) to 3.5 mt in 2009. India assessed that, in 2009, half of the cannabis resin present on its territory was trafficked into India from Nepal, with the remainder originating in India itself. The intended destinations included the metropolitan areas and tourist destinations within India, but cannabis resin was also trafficked from India to Europe and Canada.

According to Nepalese authorities,[52] seizures of cannabis resin fell from 2.0 mt in 2008 to 1.6 mt in 2009. Cannabis resin was produced in Nepal and trafficked to

49 Data on potency for 2009 were unavailable for Lithuania and the United Kingdom.

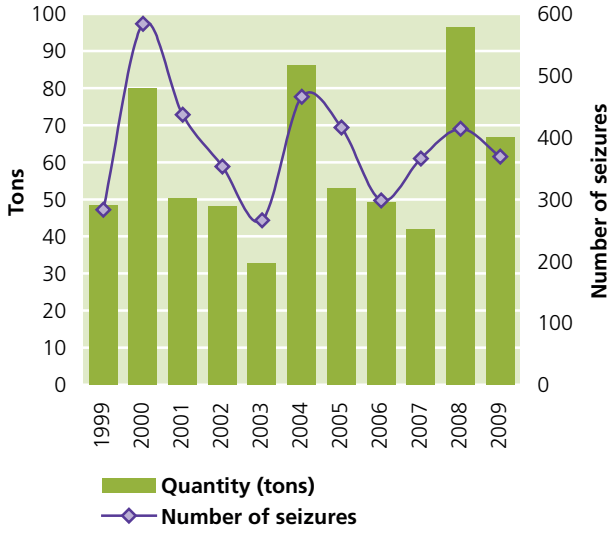
50 Data collated by DAINAP.

51 Seventh ACCORD Task Force III Meeting, Philippines, July 2008. Presentation by Viet Nam.

52 Fifteenth Asia-Pacific Operational Drug Enforcement Conference, February 2010, Tokyo, Japan, country report by Nepal.

Fig. 167: Significant individual seizures of cannabis resin in Pakistan originating in Afghanistan, 1999-2009

Source: UNODC IDS.



China and India overland. Cannabis resin was further distributed from India to other destinations via cargo couriers.

Near and Middle East/South-West Asia

Seizures of cannabis resin in Pakistan rose for two years running, reaching 205 mt in 2009 – the highest level since 1995. Pakistan continued to assess the share of cannabis resin originating in Afghanistan at 98%. Over the period 1999-2009, 41% of significant individual drug seizures reported by Pakistan involved cannabis resin; the country of origin for these consignments was identified almost exclusively as Afghanistan.

In the Islamic Republic of Iran, seizures of cannabis resin fell twice in succession, from the record level of 2007 (90 mt) to 69 mt in 2009. Based on data for the first nine months of the year, it appears that the decreasing trend continued into 2010. The Islamic Republic of Iran assessed that, in 2009, one quarter of cannabis resin trafficked on its territory was intended for the country itself, with the remainder intended for Arab countries, Turkey and Europe.

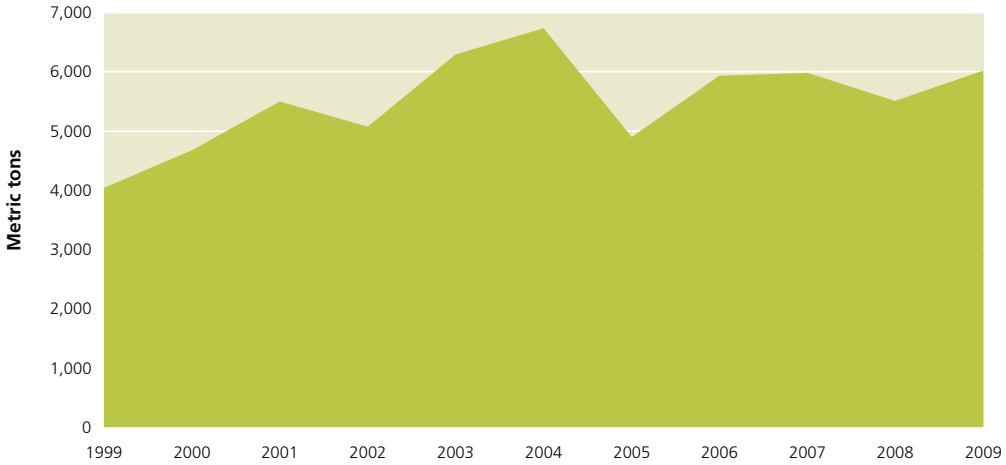
Seizures in Afghanistan fell from the record level of 2008 (271 mt) to the relatively low level of 10.5 mt in 2009, representing slightly less than 1% of the global total for 2009. Seizures in Afghanistan averaged 56 mt over the 2002-2007 period.

North America

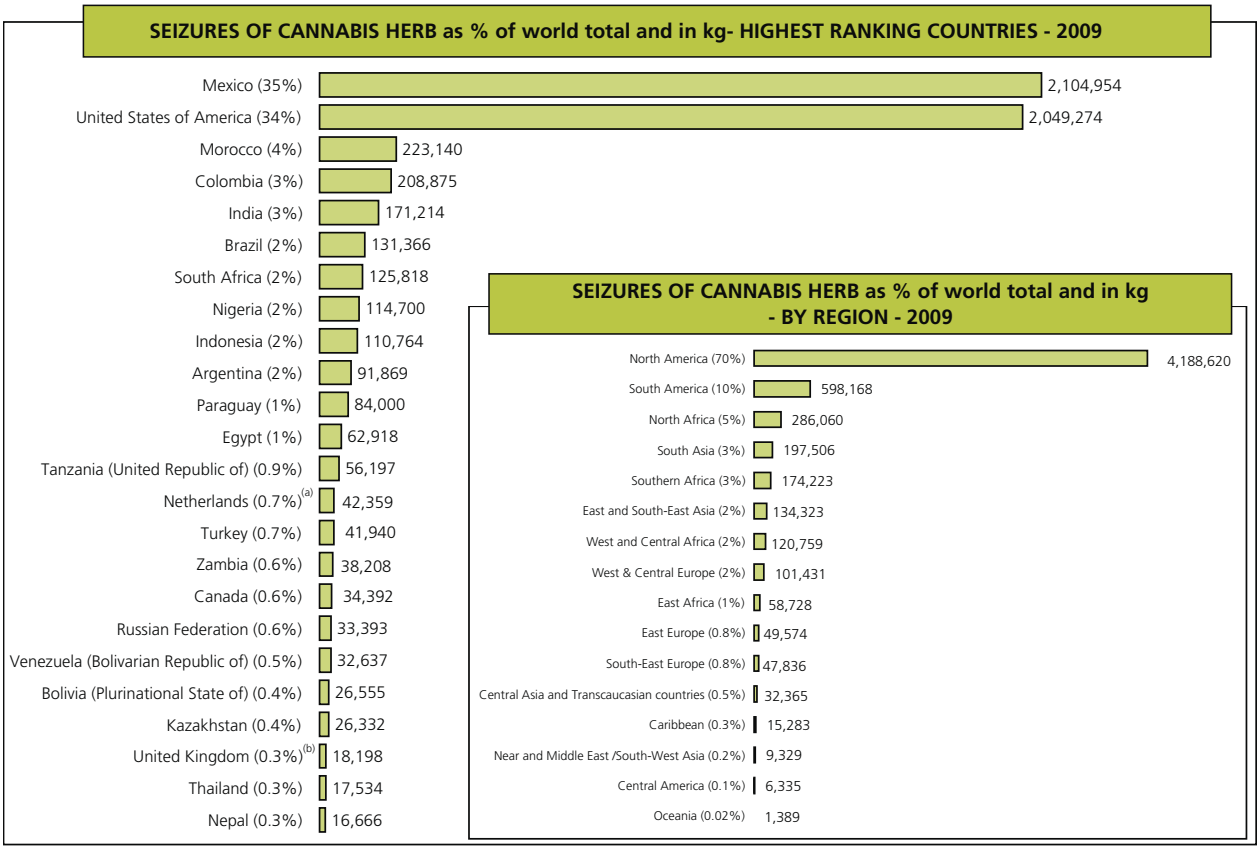
Seizures of cannabis resin in the Americas remained limited. In 2009, seizures rose significantly but at 10.8 mt, remained below 1% of the global total. Nevertheless, Canada has a significant consumer market for cannabis resin. In 2008, almost one half of cannabis resin seizures in the Americas were made by Canada (899 kg). In 2009, Canada seized a much larger quantity - 9.7 mt - in 2,045 individual seizures, two of which together accounted for 82% of the total. Moreover, the trafficking routes for cannabis resin reaching Canada appeared to undergo significant changes. Canada identified the Caribbean, North Africa and South-East Asia as the origin for cannabis resin reaching its territory in 2008, but these were replaced by Southern Africa and South-West Asia in 2009.

In the United States, seizures rose from 367 kg in 2008 to 811 kg in 2009. The United States also assessed that, in 2008, cannabis resin was trafficked both to the United States via Canada (from North Africa), and to Canada via the United States (of Caribbean origin). Seizures of cannabis resin in Mexico rose from 6 kg in 2007 to 297 kg in 2008 – the highest level since 1995. However, seizures fell to 11 kg in 2009. In Brazil, cannabis resin seizures tripled between 2006 and 2008, reaching the record level of 301 kg in 2008, but fell to 204 kg in 2009.

Fig. 168: Global seizures of cannabis herb, 1999-2009



Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Metric tons	4,042	4,680	5,504	5,076	6,295	6,739	4,901	5,932	5,982	5,510	6,022

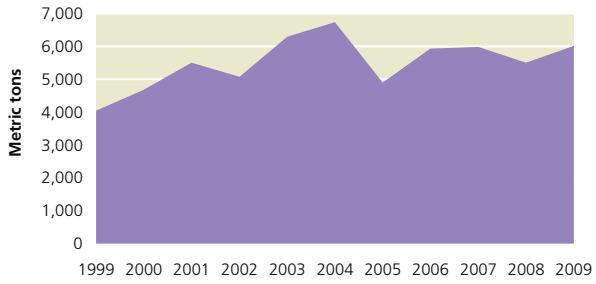


(a) Data relative to 2008. Data for 2009 from the Netherlands were not available.

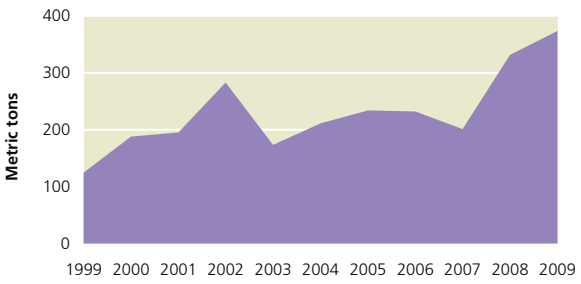
(b) Data for the United Kingdom for 2009 are based on incomplete data for some jurisdictions for the financial year 2009/10, and adjusted for the missing jurisdictions using the latest available complete distribution (relative to the financial year 2006/07).

Fig. 169: Global seizures of cannabis herb, 1999-2009

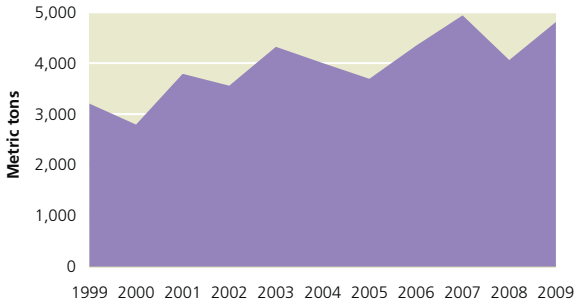
CANNABIS HERB INTERCEPTED - WORLD: 1999-2009



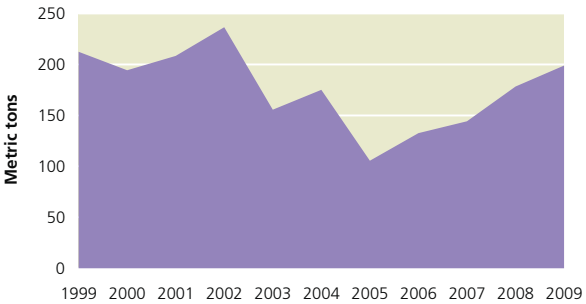
CANNABIS HERB INTERCEPTED - ASIA: 1999-2009



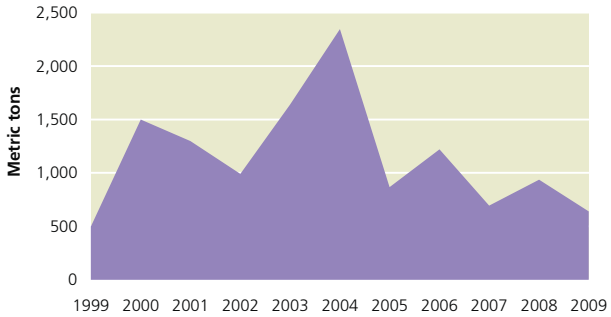
CANNABIS HERB INTERCEPTED - AMERICAS: 1999-2009



CANNABIS HERB INTERCEPTED - EUROPE: 1999-2009



CANNABIS HERB INTERCEPTED - AFRICA: 1999-2009



CANNABIS HERB INTERCEPTED - OCEANIA: 1999-2009

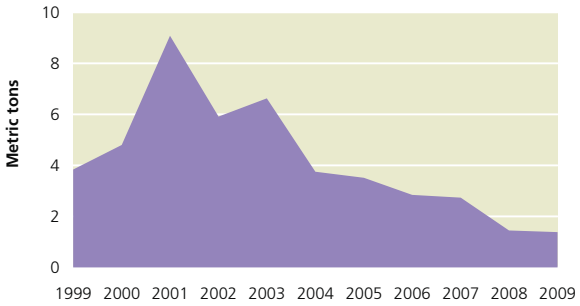
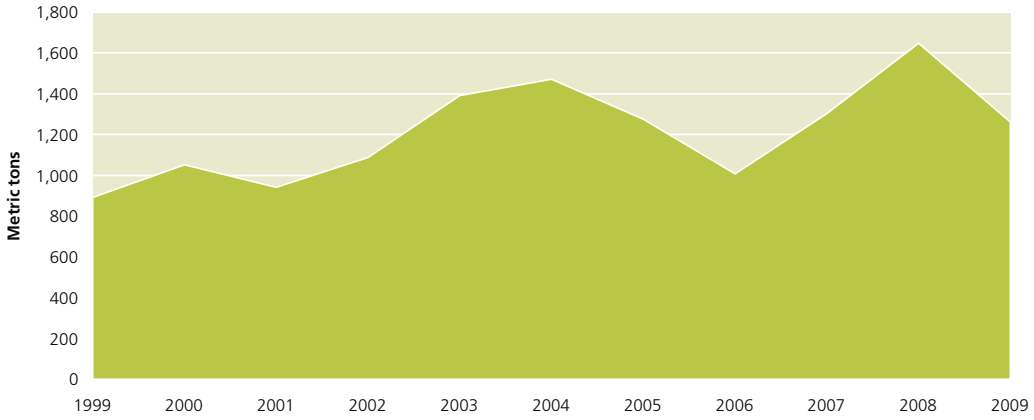
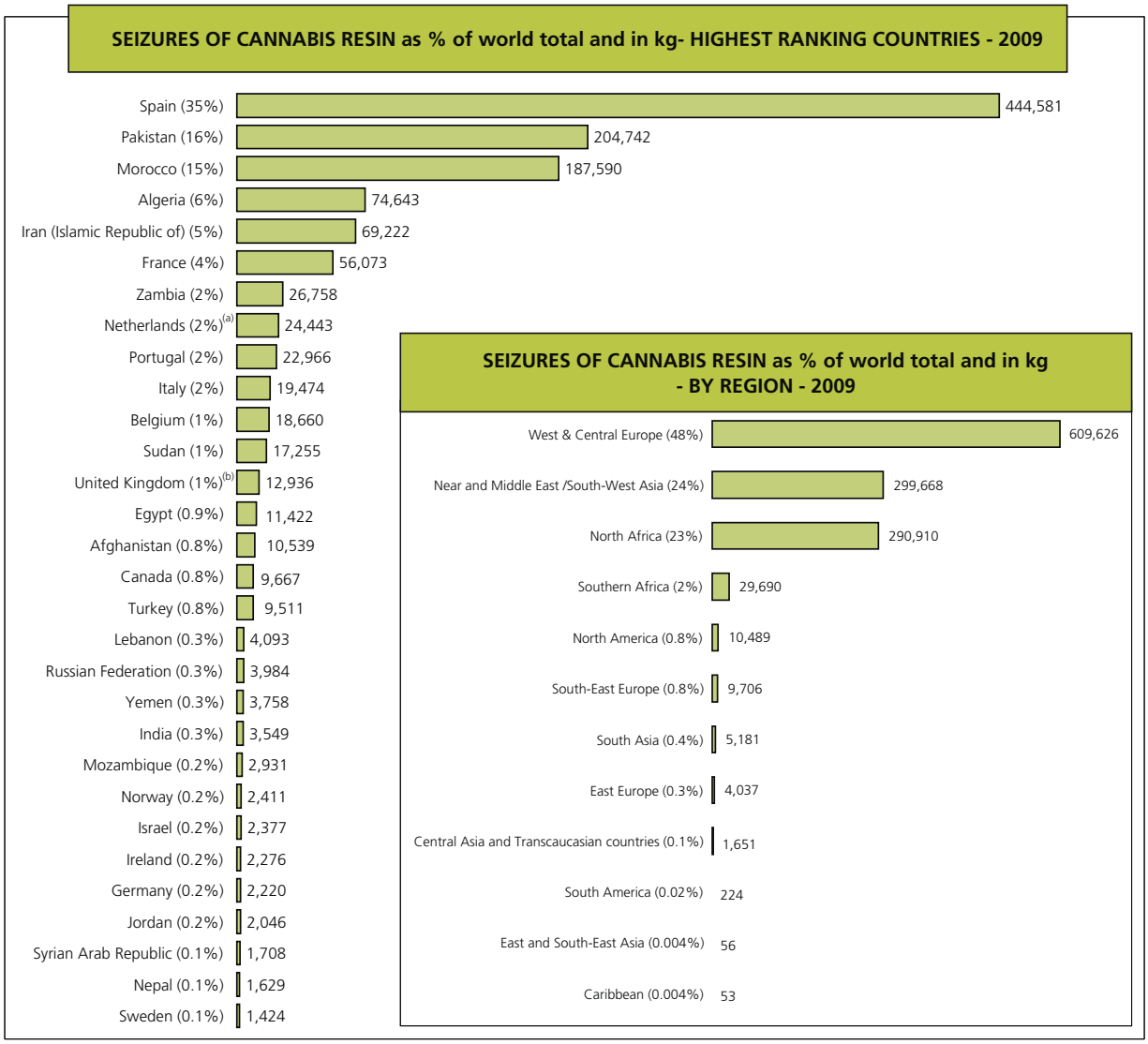


Fig. 170: Global seizures of cannabis resin, 1999-2009



Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Metric tons	891	1,051	942	1,088	1,392	1,472	1,274	1,008	1,303	1,648	1,261

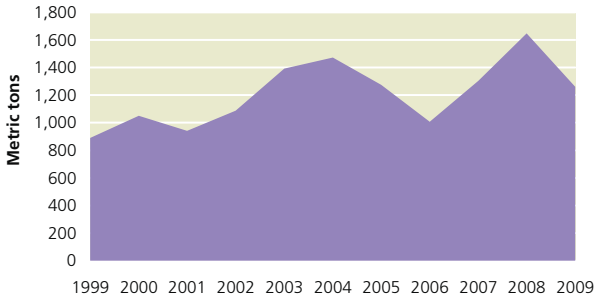


(a) Data relative to 2008. Data for 2009 from the Netherlands were not available.

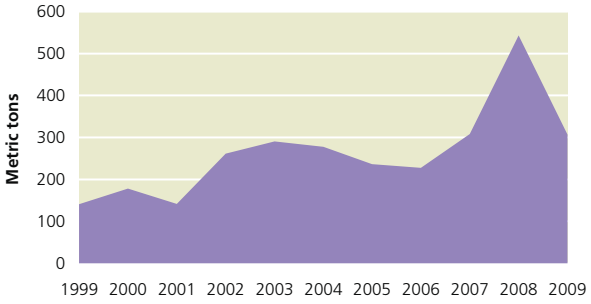
(b) Data for the United Kingdom for 2009 are based on incomplete data for some jurisdictions for the financial year 2009/10, and adjusted for the missing jurisdictions using the latest available complete distribution (relative to the financial year 2006/07).

Fig. 171: Global seizures of cannabis resin, 1999-2009

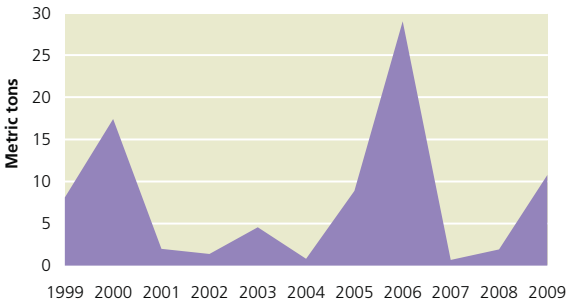
CANNABIS RESIN INTERCEPTED - WORLD: 1999-2009



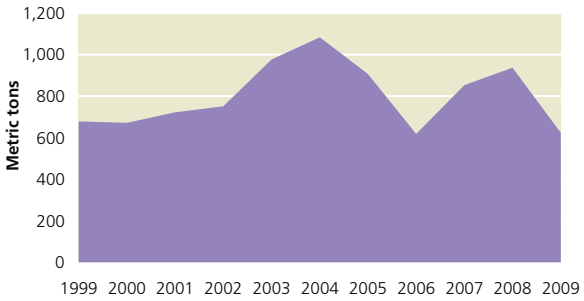
CANNABIS RESIN INTERCEPTED - ASIA: 1999-2009



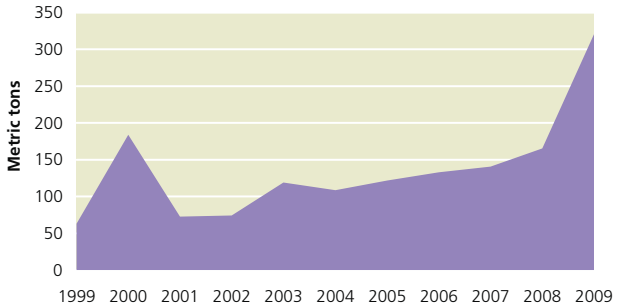
CANNABIS RESIN INTERCEPTED - AMERICAS: 1999-2009



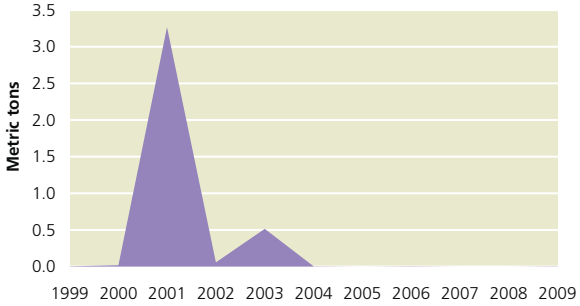
CANNABIS RESIN INTERCEPTED - EUROPE: 1999-2009



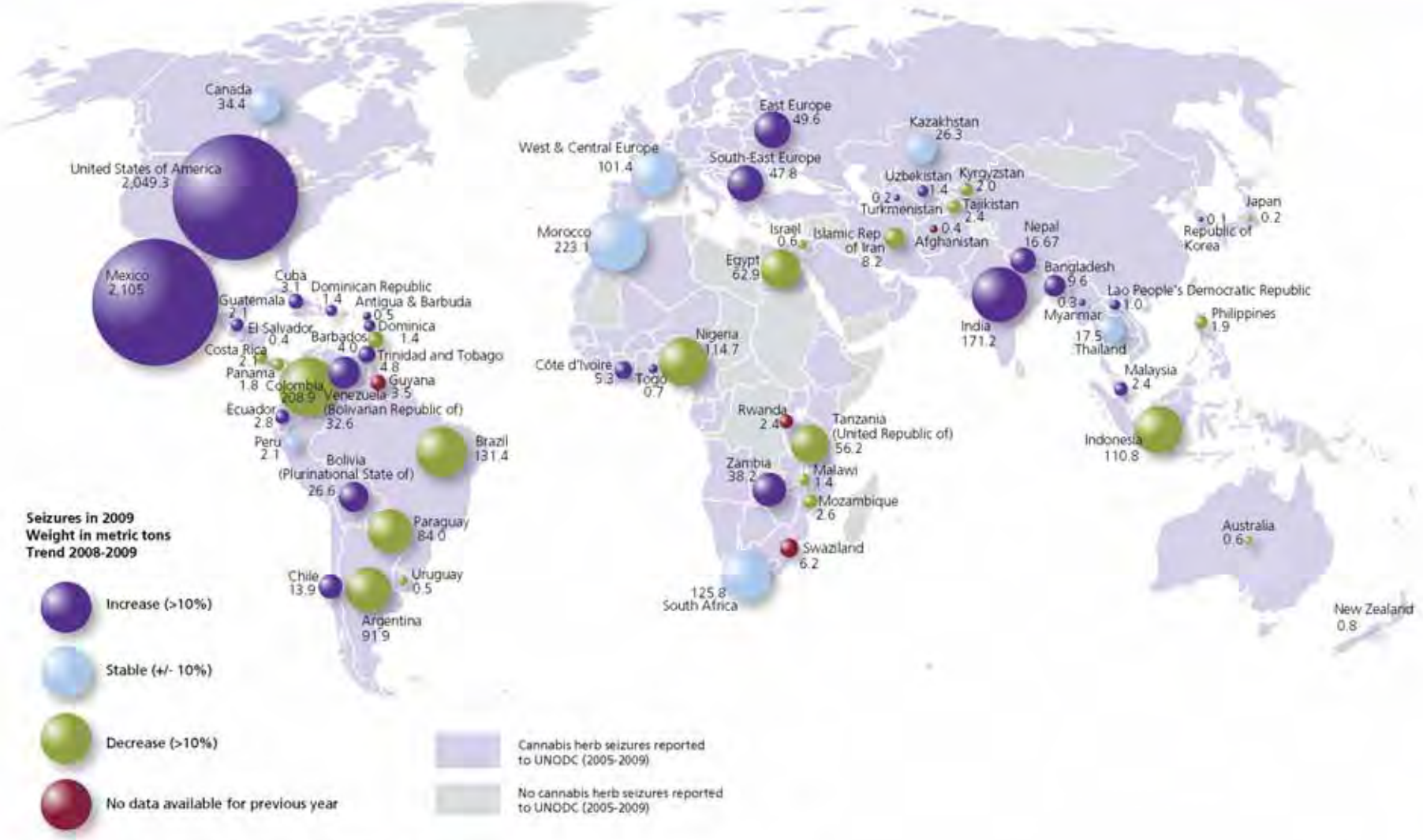
CANNABIS RESIN INTERCEPTED - AFRICA: 1999-2009



CANNABIS RESIN INTERCEPTED - OCEANIA: 1999-2009

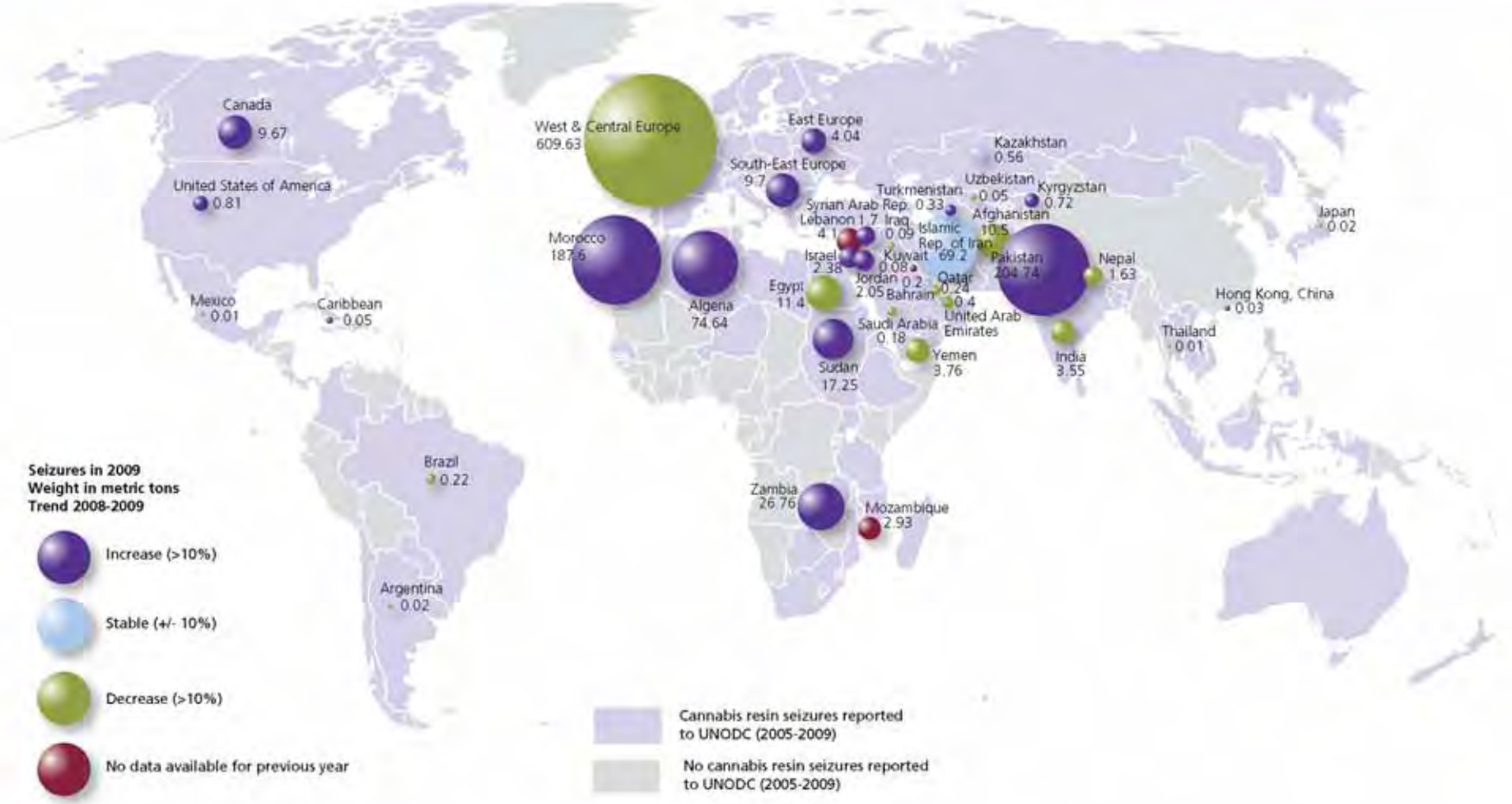


Map 45: Seizures of cannabis herb, 2009 (countries reporting seizures of more than 100 kg)



Source: UNODC Annual Reports Questionnaires data supplemented by other sources
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Map 46: Seizures of cannabis resin, 2009 (countries and territories reporting seizures of more than 10 kg)



Source: UNODC Annual Reports Questionnaires data supplemented by other sources.
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

6. STATISTICAL ANNEX

6.1 Consumption

6.1.1 Annual prevalence

6.1.1.1 Opiates

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)													
			Opioids		Opiates		Prescripition Opioids						
Country or Territory			UNODC Best Estimate	Uncertainty Range	UNODC Best Estimate	Uncertainty Range	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Africa	East Africa	Burundi									No recent, reliable estimate		
		Comoros									No recent, reliable estimate		
		Djibouti									No recent, reliable estimate		
		Eritrea									No recent, reliable estimate		
		Ethiopia									No recent, reliable estimate		
		Kenya	0.73	0.16 - 1.30	0.73	0.16 - 1.30			15-64	2004	IDU ref. group	I	c, i
		Madagascar									No recent, reliable estimate		
		Mauritius	1.95	1.95 - 1.95	0.91	0.91 - 0.91	1.04	1.04 - 1.04	15-54	2007	UNODC Estimate based	I	
		Rwanda	0.14	0.14 - 0.14	0.14	0.14 - 0.14			15-64	2004	Cure Research estimate		
		Seychelles									No recent, reliable estimate		
		Somalia	0.16	0.16 - 0.16	0.16	0.16 - 0.16			15-64	2004	Cure Research estimate		
		Tanzania (United Republic of)									No recent, reliable estimate		
		Uganda	0.05	0.05 - 0.05	0.05	0.05 - 0.05			15-64	2004	Cure Research estimate		
	North Africa	Algeria	0.12	0.12 - 0.12	0.12	0.12 - 0.12			15-64	2004	UNODC Estimate		
		Egypt	0.44	0.14 - 0.73	0.44	0.14 - 0.73			15-64	2006	Govt; Academic Research	HHS, SS	a, d
		Libyan Arab Jamahiriya	0.14	0.14 - 0.14	0.14	0.14 - 0.14			15-64	2004	UNODC Estimate		
		Morocco	0.02	0.02 - 0.02	0.02	0.02 - 0.02			15-64	2003	ARQ		
		Sudan									No recent, reliable estimate		
		Tunisia	0.09	0.09 - 0.09	0.09	0.09 - 0.09			15-64	2006	UNODC Estimate		
	Southern Africa	Angola	0.25	0.25 - 0.25	0.25	0.25 - 0.25			15-64	2001	UNODC Estimate		
		Botswana									No recent, reliable estimate		
		Lesotho									No recent, reliable estimate		
		Malawi									No recent, reliable estimate		
		Mozambique									No recent, reliable estimate		
		Namibia									No recent, reliable estimate		
		Réunion									No recent, reliable estimate		
		South Africa	0.50	0.50 - 0.50	0.41	0.41 - 0.41	0.09	0.09 - 0.09	15-64	2008	UNODC Estimate		
		Swaziland	0.17	0.17 - 0.17	0.17	0.17 - 0.17			15-64	2004	Cure Research estimate		
		Zambia	0.37	0.37 - 0.37	0.37	0.37 - 0.37			15-64	2003	UNODC Estimate		
		Zimbabwe	0.04	0.04 - 0.04	0.04	0.04 - 0.04			15-64	2004	Cure Research estimate		
	West and Central Africa	Benin									No recent, reliable estimate		
		Burkina Faso									No recent, reliable estimate		
		Cameroon									No recent, reliable estimate		
		Cape Verde	0.18	0.18 - 0.18	0.18	0.18 - 0.18			15-64	2004	UNODC Estimate		
		Central African Republic	0.05	0.05 - 0.05	0.05	0.05 - 0.05			15-64	2004	Cure Research estimate		
		Chad	0.22	0.22 - 0.22	0.22	0.22 - 0.22			15-64	2004	Cure Research estimate		
		Congo	0.13	0.13 - 0.13	0.13	0.13 - 0.13			15-64	2004	Cure Research estimate		
		Congo (Dem. Rep. of the)	0.17	0.17 - 0.17	0.13	0.13 - 0.13			15-64	2004	Cure Research estimate		
		Côte d'Ivoire									No recent, reliable estimate		
		Equatorial Guinea									No recent, reliable estimate		
		Gabon									No recent, reliable estimate		
		Gambia									No recent, reliable estimate		
		Ghana	0.14	0.14 - 0.14	0.14	0.14 - 0.14			15-65	2004	Cure Research estimate		
		Guinea									No recent, reliable estimate		
		Guinea-Bissau									No recent, reliable estimate		
		Liberia	0.17	0.17 - 0.17	0.17	0.17 - 0.17			15-64	2004	Cure Research estimate		
		Mali									No recent, reliable estimate		
		Mauritania									No recent, reliable estimate		
		Niger	0.20	0.20 - 0.20	0.20	0.20 - 0.20			15-64	2004	IDU ref. group	I	
		Nigeria	0.70	0.30 - 1.00	0.70	0.30 - 1.00			15-64	2008	UNODC Estimate		
		Saint Helena									No recent, reliable estimate		
		Sao Tome and Principe									No recent, reliable estimate		
		Senegal	0.08	0.08 - 0.08	0.08	0.08 - 0.08			15-64	2006	UNODC Estimate	SS	a, d, e
		Sierra Leone	0.17	0.17 - 0.17	0.17	0.17 - 0.17			15-64	2004	Cure Research estimate		
		Togo									No recent, reliable estimate		
Americas	Caribbean	Anguilla									No recent, reliable estimate		
		Antigua and Barbuda	0.05	0.05 - 0.05	0.05	0.05 - 0.05			15-64	2000	ARQ		
		Aruba									No recent, reliable estimate		
		Bahamas	0.22	0.22 - 0.22	0.22	0.22 - 0.22			15-64	2003	UNODC Estimate		
		Barbados	0.23	0.16 - 0.29	0.11	0.10 - 0.13	0.16	0.12 - 0.21	15-64	2006	UNODC Estimate		
		Bermuda									No recent, reliable estimate		
		British Virgin Islands									No recent, reliable estimate		
		Cayman Islands									No recent, reliable estimate		
		Cuba									No recent, reliable estimate		
		Dominica									No recent, reliable estimate		
		Dominican Republic	0.14	0.14 - 0.14	0.11	0.11 - 0.11	0.03	0.03 - 0.03	15-64	2001	UNODC Estimate		
		Grenada									No recent, reliable estimate		
		Guadeloupe									No recent, reliable estimate		
		Haiti	0.20	0.19 - 0.22	0.07	0.07 - 0.07	0.13	0.13 - 0.13	15-64	2006	ARQ	SS	a, d, e
		Jamaica	0.10	0.10 - 0.10	0.10	0.10 - 0.10			15-64	2001	UNODC Estimate		
		Martinique									No recent, reliable estimate		
		Montserrat									No recent, reliable estimate		
		Netherlands Antilles									No recent, reliable estimate		
		Puerto Rico	1.15	1.15 - 1.15	1.15	1.15 - 1.15			15-64	2002	IDU ref. group	I	
		Saint Kitts and Nevis									No recent, reliable estimate		
		Saint Lucia									No recent, reliable estimate		
		Saint Vincent and the Grenadines									No recent, reliable estimate		
		Trinidad and Tobago	0.09	0.09 - 0.09	0.09	0.09 - 0.09			15-64	2002	UNODC Estimate		
		Turks and Caicos Islands	0.07	0.07 - 0.07	0.07	0.07 - 0.07			15-64	2002	UNODC Estimate		
		United States Virgin Islands									No recent, reliable estimate		
	Central America	Belize									No recent, reliable estimate		
		Costa Rica	2.80	2.80 - 2.90	0.09	0.09 - 0.09	2.80	2.80 - 2.80	12-70	2006	ARQ	HHS	
		El Salvador	0.14	0.14 - 0.14	0.11	0.11 - 0.11	0.06	0.06 - 0.06	15-64	2005	UNODC Estimate	HHS	e
		Guatemala	0.04	0.04 - 0.04	0.04	0.04 - 0.04			15-65	2005	ARQ		
		Honduras	0.15	0.15 - 0.15	0.15	0.15 - 0.15			15-64	2005	UNODC Estimate	HHS	e
		Nicaragua									No recent, reliable estimate		
		Panama									No recent, reliable estimate		
	North America	Canada	0.68	0.50 - 0.86	0.36	0.28 - 0.47	0.50	0.50 - 0.50	15-64	2009	ARQ & IDU Ref Group	HHS, I x	
		Mexico	0.08	0.06 - 0.10	0.04	0.04 - 0.04	0.06	0.06 - 0.06	15-64	2008	ARQ	HHS	
		Saint Pierre and Miquelon									No recent, reliable estimate		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported, x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants.

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

			Opioids		Opiates		Prescripition Opioids						
Country or Territory			UNODC Best Estimate	Uncertainty Range	UNODC Best Estimate	Uncertainty Range	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.													
		United States of America	5.90	5.60 - 6.20	0.57	0.43 - 0.71	5.60	5.60 - 5.60	15-64	2009	ARQ, SAMHSA, ONDCP	HHS, I x	
	South America	Argentina	0.19	0.13 - 0.26	0.13	0.09 - 0.17	0.11	0.10 - 0.13	15-64	2007	UNODC Estimate		e
		Bolivia (Plurinational State of)	0.60	0.30 - 0.90	0.45	0.30 - 0.60	0.30	0.30 - 0.30	12-65	2007	ARQ	HHS	e
		Brazil	0.50	0.50 - 0.50			0.50	0.50 - 0.50	12-65	2005	ARQ	HHS	e
		Chile	0.50	0.50 - 0.50	0.10	0.10 - 0.10	0.40	0.40 - 0.40	15-64	2008	HHS	HHS	
		Colombia	0.10	0.10 - 0.10	0.02	0.02 - 0.02			15-64	2004	UNODC Estimate		
		Ecuador	0.12	0.12 - 0.12	0.12	0.12 - 0.12			15-64	2005	UNODC Estimate		e
		Falkland Islands (Malvinas)									No recent, reliable estimate		
		French Guiana									No recent, reliable estimate		
		Guyana	0.25	0.25 - 0.25	0.07	0.07 - 0.07	0.18	0.18 - 0.18	15-64	2002	UNODC Estimate		
		Paraguay	0.03	0.03 - 0.03	0.03	0.03 - 0.03			12-65	2003	ARQ	HHS	e
		Peru	0.18	0.18 - 0.18	0.18	0.18 - 0.18			12-64	2005	UNODC Estimate		
		Suriname	0.08	0.08 - 0.08	0.08	0.08 - 0.08			15-64	2002	UNODC Estimate		e
		Uruguay	0.10	0.10 - 0.10	0.10	0.10 - 0.10			15-64	2006	ARQ	HHS	e
		Venezuela (Bolivarian Republic of)	0.10	0.03 - 0.16	0.10	0.03 - 0.16			15-64	2003	ARQ	SS	a, d, e
Asia	Central Asia and Transcaucasian countries	Armenia	0.30	0.30 - 0.30	0.22	0.22 - 0.22	0.08	0.08 - 0.08	15-64	2005	UNODC Estimate	HHS	
		Azerbaijan	0.20	0.20 - 0.20	0.20	0.20 - 0.20			15-64	2008	ARQ		i
		Georgia	0.58	0.58 - 0.58	0.31	0.31 - 0.31	0.27	0.27 - 0.27	15-64	2006	UNODC Estimate		
		Kazakhstan	1.00	1.00 - 1.00	0.89	0.89 - 0.89	0.11	0.11 - 0.11	15-64	2006	UNODC (GAP survey)		i
		Kyrgyzstan	0.80	0.80 - 0.80	0.74	0.74 - 0.74	0.06	0.06 - 0.06	15-64	2006	UNODC (GAP survey)		i
		Tajikistan	0.54	0.54 - 0.54	0.54	0.54 - 0.54			15-64	2006	UNODC (GAP survey)		i
		Turkmenistan	0.32	0.32 - 0.32	0.32	0.32 - 0.32			15-64	2007	ARQ		
		Uzbekistan	0.80	0.80 - 0.80	0.78	0.78 - 0.78	0.02	0.02 - 0.02	15-64	2006	UNODC (GAP survey)		i
	East and South-East Asia	Brunei Darussalam									No recent, reliable estimate		
		Cambodia	0.03	0.01 - 0.09	0.03	0.01 - 0.09			15-64	2004	INCSR/ IDU ref. group	I	
		China	0.25	0.19 - 0.31	0.25	0.19 - 0.31			15-64	2005	Academic research/ IDU ref. group	I	
		China, Hong Kong SAR	0.20	0.20 - 0.20	0.20	0.20 - 0.20			15-64	2006	ARQ		
		China, Macao SAR	1.12	1.12 - 1.12	1.12	1.12 - 1.12			15-64	2003	ARQ		
		Guam									No recent, reliable estimate		
		Indonesia	0.16	0.16 - 0.16	0.16	0.16 - 0.16			15-64	2005	ARQ		
		Japan									No recent, reliable estimate		
		Korea (Dem. People's Rep.)									No recent, reliable estimate		
		Korea (Republic of)	0.08	0.06 - 0.10			0.08	0.06 - 0.10	15-64	2004	ARQ	HHS	a,e
		Lao People's Democratic Republic	0.37	0.37 - 0.37	0.37	0.37 - 0.37			15-64	2008	UNODC (ICMP)	HHS	a, c
		Malaysia	0.94	0.94 - 0.94	0.94	0.94 - 0.94			15-64	2009	SMART	I	
		Mongolia									No recent, reliable estimate		
		Myanmar	0.80	0.70 - 0.90	0.80	0.70 - 0.90			15-64	2010	UNODC (ICMP)	HHS	a,c
		Philippines	0.05	0.05 - 0.05			0.05	0.05 - 0.05	15-64	2005	IDU ref. group; ARQ		
		Singapore	0.01	0.01 - 0.01					15-64	2006	ARQ	R	
		Taiwan, Province of China	0.20	0.20 - 0.20	0.20	0.20 - 0.20			12-64	2005	Government source		
		Thailand	0.20	0.20 - 0.20	0.20	0.20 - 0.20			15-64	2007	ARQ	HHS	
		Timor-Leste									No recent, reliable estimate		
		Viet Nam	0.27	0.25 - 0.28	0.27	0.25 - 0.28			15-64	2005	INCSR/ IDU ref. group		
	Near and Middle East /South-West Asia	Afghanistan	2.92	2.65 - 3.20	2.65	2.34 - 2.96	0.55	0.46 - 0.63	15-64	2009	UNODC/ Govt. Source	HHS	
		Bahrain									No recent, reliable estimate		
		Iran (Islamic Republic of)	2.26	1.77 - 2.75	2.26	1.77 - 2.75			15-64	2010	Government Source		
		Iraq									No recent, reliable estimate		
		Israel	0.72	0.46 - 0.97	0.61	0.46 - 0.76	0.21	0.21 - 0.21	18-40	2008	UNODC Estimate	HHS	
		Jordan	0.17	0.17 - 0.17	0.17	0.17 - 0.17			15-64	2001	UNODC Estimate		
		Kuwait	0.17	0.17 - 0.17	0.17	0.17 - 0.17			15-64	2004	UNODC Estimate		
		Lebanon	0.20	0.20 - 0.20	0.20	0.20 - 0.20			15-64	2003	ARQ		
		Occupied Palestinian Territory									No recent, reliable estimate		
		Oman									No recent, reliable estimate		
		Pakistan	0.70	0.70 - 0.70	0.57	0.57 - 0.57	0.13	0.13 - 0.13	15-64	2006	UNODC (GAP survey)		
		Qatar									No recent, reliable estimate		
		Saudi Arabia	0.06	0.06 - 0.06	0.06	0.06 - 0.06			15-64	2006	UNODC Estimate		
		Syrian Arab Republic	0.02	0.02 - 0.02	0.02	0.02 - 0.02				2005	UNODC Estimate		
		United Arab Emirates	0.02	0.02 - 0.02	0.02	0.02 - 0.02			15-64	2004	UNODC Estimate		
		Yemen									No recent, reliable estimate		
	South Asia	Bangladesh	0.40	0.40 - 0.40	0.37	0.37 - 0.37	0.03	0.03 - 0.03	15-64	2003	ARQ	HHS	a, e
		Bhutan									No recent, reliable estimate		
		India									No recent, reliable estimate		
		Maldives									No recent, reliable estimate		
		Sri Lanka	0.11	0.11 - 0.11	0.11	0.11 - 0.11			15-64	2006	ARQ		
Europe	East Europe	Belarus	0.43	0.08 - 0.74	0.39	0.07 - 0.67	0.04	0.01 - 0.07	15-64	2007	UNODC Estimate	R	h,g
		Moldova (Republic of)	0.15	0.12 - 0.17					15-64	2008	Government source	R, HHS	e
		Russian Federation	1.64	0.31 - 1.64	1.64	0.31 - 1.64			15-64	2007	UNODC Estimate		g
		Ukraine	1.16	1.00 - 1.31	1.16	1.00 - 1.31			15-64	2006	IDU ref. group	I	
	Southeast Europe	Albania	0.45	0.45 - 0.45	0.45	0.45 - 0.45			15-64	2007	UNODC Estimate	R	h,g
		Bosnia and Herzegovina	0.30	0.30 - 0.30	0.30	0.30 - 0.30			15-64	2005	IDU ref. group	I	
		Bulgaria	0.45	0.30 - 0.60					15-64	2008	UNODC Estimate	I	
		Croatia	0.36	0.36 - 0.36	0.36	0.36 - 0.36			15-64	2006	ARQ	I	
		Macedonia (TFYR)	0.50	0.50 - 0.50	0.40	0.40 - 0.50			15-64	2005	ARQ		
		Montenegro									No recent, reliable estimate		
		Romania	0.16	0.11 - 0.21					15-64	2004	ARQ based on heroin injectors	I	
		Serbia	0.28	0.18 - 0.38	0.28	0.18 - 0.38			15-64	2008	ARQ	I	
		Turkey	0.05	0.05 - 0.11					15-64	2008	EMCDDA	I	
	West & Central Europe	Andorra									No recent, reliable estimate		
		Austria	0.41	0.40 - 0.43					15-64	2007	ARQ	I	
		Belgium	0.20	0.20 - 0.20					15-64	2008	ARQ	HHS	
		Channel Islands									No recent, reliable estimate		
		Cyprus	0.20	0.20 - 0.20	0.20	0.20 - 0.20			15-64	2009	ARQ	HHS	
		Czech Republic	0.40	0.40 - 0.40					15-64	2008	Government source	HHS	
		Denmark	0.60	0.60 - 0.60					15-64	2005	ARQ	I	
		Estonia	1.52	0.89 - 3.79	0.81	0.47 - 2.02	0.71	0.42 - 1.77	15-64	2004	Annual report 2008 to EMCDDA	I	
		Faeroe Islands									No recent, reliable estimate		
		Finland	0.29	0.29 - 0.30					15-64	2005	UNODC Estimate	I	
		France	0.47	0.42 - 0.51					15-64	2007	Government source	I	

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported, x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants.

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory			Opioids		Opiates		Prescripition Opioids						
			UNODC Best Estimate	Uncertainty Range	UNODC Best Estimate	Uncertainty Range	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
		Germany	0.22	0.18 - 0.25					15-64	2008	EMCDDA	I	
		Gibraltar									No recent, reliable estimate		
		Greece	0.27	0.23 - 0.31					15-64	2008	EMCDDA	I	
		Greenland									No recent, reliable estimate		
		Hungary	0.10	0.04 - 0.20					18-64	2007	Government source	HHS	g
		Iceland	0.40	0.40 - 0.40					15-64	2005	ARQ		
		Ireland	0.72	0.62 - 0.81					15-64	2006	EMCDDA	I	
		Isle of Man									No recent, reliable estimate		
		Italy	0.55	0.53 - 0.57					15-64	2008	EMCDDA	I	
		Latvia	0.75	0.70 - 0.80	0.75	0.70 - 0.80			15-64	2007	ARQ	HHS	
		Liechtenstein	0.20	0.20 - 0.20	0.20	0.20 - 0.20			15-64	2005	ARQ	SS	
		Lithuania	0.10	0.10 - 0.10	0.10	0.10 - 0.10			15-64	2008	Government source	HHS	
		Luxembourg	0.59	0.50 - 0.76					15-64	2007	EMCDDA	I	
		Malta	0.57	0.54 - 0.59					15-64	2007	ARQ	I	
		Monaco									No recent, reliable estimate		
		Netherlands	0.31	0.31 - 0.31	0.31	0.31 - 0.31			15-64	2005	ARQ		
		Norway	0.30	0.21 - 0.39					15-64	2008	Government source	I	
		Poland	0.10	0.09 - 0.11					15-64	2005	ARQ	I	
		Portugal	0.46	0.43 - 0.50					15-64	2005	ARQ	I	
		San Marino									No recent, reliable estimate		
		Slovakia	0.30	0.30 - 0.30					15-64	2009	ARQ	I	
		Slovenia	0.74	0.66 - 0.92					15-64	2004	ARQ	I	g
		Spain	0.13	0.12 - 0.14					15-64	2007	Government source	I	
		Sweden	0.23	0.19 - 0.28					15-64	2007	ARQ	I	g
		Switzerland	0.61	0.51 - 0.78					15-64	2000	Government source	I	
		United Kingdom (England and Wales)	0.81	0.78 - 0.87					15-64	2007	EMCDDA	I	
		United Kingdom (Northern Ireland)	0.12	0.11 - 0.16					15-64	2004	EMCDDA		
		United Kingdom (Scotland)	1.59	1.57 - 1.65					15-64	2006	EMCDDA	I	
Oceania	**Oceania**	American Samoa									No recent, reliable estimate		
		Australia	0.40	0.40 - 0.40	0.20	0.20 - 0.20	0.20	0.20 - 0.20	15-64	2007	ARQ	HHS	a
		Christmas Islands									No recent, reliable estimate		
		Cocos (Keeling) Islands									No recent, reliable estimate		
		Cook Islands									No recent, reliable estimate		
		Fiji									No recent, reliable estimate		
		French Polynesia									No recent, reliable estimate		
		Kiribati									No recent, reliable estimate		
		Marshall Islands									No recent, reliable estimate		
		Micronesia (Federated States of)									No recent, reliable estimate		
		Nauru									No recent, reliable estimate		
		New Caledonia									No recent, reliable estimate		
		New Zealand	1.10	0.70 - 1.50	0.10	0.10 - 0.30	1.00	0.70 - 1.30	16-64	2008	Government source	HHS, x	
		Norfolk Island									No recent, reliable estimate		
		Northern Mariana Islands									No recent, reliable estimate		
		Palau									No recent, reliable estimate		
		Papua New Guinea									No recent, reliable estimate		
		Pitcairn									No recent, reliable estimate		
		Samoa									No recent, reliable estimate		
		Solomon Islands									No recent, reliable estimate		
		Tonga									No recent, reliable estimate		
		Tuvalu									No recent, reliable estimate		
		Vanuatu									No recent, reliable estimate		
		Wallis and Futuna Islands									No recent, reliable estimate		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported, x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants.

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

6.1.1.2 Cocaine

COCAINE

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
AFRICA							
East Africa							
Burundi					No recent, reliable estimate located		
Comoros					No recent, reliable estimate located		
Djibouti					No recent, reliable estimate located		
Eritrea					No recent, reliable estimate located		
Ethiopia					No recent, reliable estimate located		
Kenya	0.3	0.2 - 0.4	15 - 65	2007	Government source	HHS	b, e
Madagascar					No recent, reliable estimate located		
Mauritius					No recent, reliable estimate located		
Rwanda					No recent, reliable estimate located		
Seychelles					No recent, reliable estimate located		
Somalia					No recent, reliable estimate located		
Tanzania (United Republic of)					No recent, reliable estimate located		
Uganda					No recent, reliable estimate located		
North Africa							
Algeria					No recent, reliable estimate located		
Egypt	<0.1		15 - 64	2006	Govt; Academic Research	HHS, SS	a, d
Libyan Arab Jamahiriya					No recent, reliable estimate located		
Morocco	<0.1		15 - 64	2004	ARQ		
Sudan					No recent, reliable estimate located		
Tunisia					No recent, reliable estimate located		
Southern Africa							
Angola					No recent, reliable estimate located		
Botswana					No recent, reliable estimate located		
Lesotho					No recent, reliable estimate located		
Malawi					No recent, reliable estimate located		
Mozambique					No recent, reliable estimate located		
Namibia					No recent, reliable estimate located		
Réunion					No recent, reliable estimate located		
South Africa	0.8	0.6 - 1.2	15 - 64	2008	ARQ	HHS	a, e
Swaziland					No recent, reliable estimate located		
Zambia	0.2		15 - 64	2000	UNODC Estimate		
Zimbabwe	0.1		15 - 64	2000	UNODC Estimate		
West and Central Africa							
Benin					No recent, reliable estimate located		
Burkina Faso					No recent, reliable estimate located		
Cameroon					No recent, reliable estimate located		
Cape Verde	0.2		15 - 64	2004	UNODC Estimate		d, e
Central African Republic					No recent, reliable estimate located		
Chad					No recent, reliable estimate located		
Congo					No recent, reliable estimate located		
Congo (Dem. Rep. of the)					No recent, reliable estimate located		
Côte d'Ivoire					No recent, reliable estimate located		
Equatorial Guinea					No recent, reliable estimate located		
Gabon					No recent, reliable estimate located		
Gambia					No recent, reliable estimate located		
Ghana					No recent, reliable estimate located		
Guinea					No recent, reliable estimate located		
Guinea-Bissau					No recent, reliable estimate located		
Liberia					No recent, reliable estimate located		
Mali					No recent, reliable estimate located		
Mauritania					No recent, reliable estimate located		
Niger					No recent, reliable estimate located		
Nigeria	0.7	0.3 - 1.1	15 - 64	2008	ARQ	HHS	a, b, e
Saint Helena					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

COCAINE

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Sao Tome and Principe					No recent, reliable estimate located		
Senegal					No recent, reliable estimate located		
Sierra Leone					No recent, reliable estimate located		
Togo					No recent, reliable estimate located		
AMERICAS							
Caribbean							
Anguilla					No recent, reliable estimate located		
Antigua and Barbuda	0.9	0.3 - 1.6	15 - 64	2005	Government source	SS	d, e
Aruba					No recent, reliable estimate located		
Bahamas	0.2	<0.1 - 0.3	15 - 64	2008	ARQ	SS	d, e
Barbados	0.4		12 - 65	2006	CICAD	HHS	
Bermuda					No recent, reliable estimate located		
British Virgin Islands					No recent, reliable estimate located		
Cayman Islands	0.6		15 - 64	2000	UNODC Estimate		
Cuba					No recent, reliable estimate located		
Dominica					No recent, reliable estimate located		
Dominican Republic	0.3	0.1 - 0.6	15 - 64	2008	ARQ	SS	d, e
Grenada	0.9	0.2 - 1.9	15 - 64	2005	CICAD	SS	d, e
Guadeloupe					No recent, reliable estimate located		
Haiti	0.9		15 - 64	2005	UNODC Estimate		
Jamaica	1.1		15 - 64	2006	UNODC Estimate	SS	a, d
Martinique					No recent, reliable estimate located		
Montserrat					No recent, reliable estimate located		
Netherlands Antilles					No recent, reliable estimate located		
Puerto Rico	0.8	0.3 - 1.4	15 - 64	2005	Government source	SS	d, e
Saint Kitts and Nevis	1.7	0.4 - 3.2	15 - 64	2006	Government source	SS	d, e
Saint Lucia	1.0		15 - 64	2002	UNODC Estimate		
Saint Vincent and the Grenadines	0.7		15 - 64	2002	UNODC Estimate	SS	
Trinidad and Tobago					No recent, reliable estimate located		
Turks and Caicos Islands	0.7		15 - 64	2002	UNODC Estimate		
United States Virgin Islands					No recent, reliable estimate located		
Central America							
Belize	0.9		12 - 65	2005	CICAD	HHS	
Costa Rica	0.4		12 - 70	2006	ARQ	HHS	
El Salvador	0.4	0.2 - 0.5	12 - 65	2005	CICAD	HHS	
Guatemala	0.2		15 - 64	2005	ARQ	HHS	
Honduras	0.9		15 - 64	2005	ARQ		
Nicaragua	0.7	0.5 - 0.9	12 - 65	2006	CICAD	HHS, c	
Panama	1.2		12 - 65	2003	Government source	HHS	
North America							
Canada	1.4		15 - 64	2009	ARQ	HHS	
Mexico	0.4		12 - 65	2008	Govt. source (ENA)	HHS	
Saint Pierre and Miquelon					No recent, reliable estimate located		
United States of America	2.4		15 - 64	2009	Govt. source (SAMSHA)	HHS	
South America							
Argentina	2.6		15 - 64	2006	UNODC/ CICAD	HHS, a, c	
Bolivia (Plurinational State of)	0.8		12 - 65	2007	UNODC/ CICAD	HHS, a, c	
Brazil	0.7		12 - 65	2005	Government source	HHS, c	
Chile	2.4		15 - 64	2008	ARQ	HHS	
Colombia	0.8	0.7 - 0.9	12 - 65	2008	Government source	HHS, c	
Ecuador	0.3		15 - 64	2007	UNODC/ CICAD	HHS, a, c	
Falkland Islands (Malvinas)					No recent, reliable estimate located		
French Guiana					No recent, reliable estimate located		
Guyana					No recent, reliable estimate located		
Paraguay	0.3	0.2 - 0.3	12 - 64	2003	CICAD	HHS	
Peru	0.5	0.3 - 0.6	12 - 64	2006	ARQ	HHS, c	

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

COCAINE

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Suriname	0.3		12 - 65	2007	Government source	HHS	
Uruguay	1.4		12 - 65	2006	UNODC/ CICAD	HHS, a, c	
Venezuela (Bolivarian Republic of)	0.6		15 - 64	2005	Government source	HHS	
ASIA							
Central Asia and Transcaucasian countries							
Armenia	0.1		15 - 64	2005	UNODC Estimate	HHS	
Azerbaijan					No recent, reliable estimate located		
Georgia					No recent, reliable estimate located		
Kazakhstan					No recent, reliable estimate located		
Kyrgyzstan					No recent, reliable estimate located		
Tajikistan					No recent, reliable estimate located		
Turkmenistan					No recent, reliable estimate located		
Uzbekistan					No recent, reliable estimate located		
East and South-East Asia							
Brunei Darussalam					No recent, reliable estimate located		
Cambodia					No recent, reliable estimate located		
China					No recent, reliable estimate located		
China, Hong Kong SAR	0.3	0.2 - 0.3	15 - 64	2008	Government source	SS	d, e
China, Macao SAR					No recent, reliable estimate located		
Guam					No recent, reliable estimate located		
Indonesia	<0.1		15 - 64	2008	ARQ	HHS	
Japan					No recent, reliable estimate located		
Korea (Dem. People's Rep.)					No recent, reliable estimate located		
Korea (Republic of)	<0.1		15 - 64	2004	ARQ	HHS	e, f
Lao People's Democratic Republic					No recent, reliable estimate located		
Malaysia					No recent, reliable estimate located		
Mongolia					No recent, reliable estimate located		
Myanmar					No recent, reliable estimate located		
Philippines	<0.1		15 - 64	2005	UNODC Estimate	HHS	
Singapore					No recent, reliable estimate located		
Taiwan, Province of China	0.1		12 - 64	2005	AMCEWG		
Thailand	<0.1		12 - 65	2007	ARQ	HHS	e
Timor-Leste					No recent, reliable estimate located		
Viet Nam					No recent, reliable estimate located		
Near and Middle East /South-West Asia							
Afghanistan	<0.1		15 - 64	2009	UNODC/ Govt. Source	HHS	
Bahrain					No recent, reliable estimate located		
Iran (Islamic Republic of)	<0.1		15 - 64	2008	Government source	I	f, g
Iraq					No recent, reliable estimate located		
Israel	0.6		18 - 40	2008	Governmetn source	HHS	
Jordan					No recent, reliable estimate located		
Kuwait	<0.1		15 - 64	2005	UNODC Estimate		g
Lebanon	0.1		15 - 64	2001	UNODC Estimate		d, e
Occupied Palestinian Territory					No recent, reliable estimate located		
Oman					No recent, reliable estimate located		
Pakistan					No recent, reliable estimate located		
Qatar					No recent, reliable estimate located		
Saudi Arabia					No recent, reliable estimate located		
Syrian Arab Republic	<0.1		15 - 64	2005	UNODC Estimate		g
United Arab Emirates					No recent, reliable estimate located		
Yemen					No recent, reliable estimate located		
South Asia							
Bangladesh					No recent, reliable estimate located		
Bhutan					No recent, reliable estimate located		
India					No recent, reliable estimate located		
Maldives					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,

x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

COCAINE

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Nepal					No recent, reliable estimate located		
Sri Lanka					No recent, reliable estimate located		
EUROPE							
East Europe							
Belarus	<0.1	<0.1 - 0.1	15 - 64	2007	ESPAD	SS	d, e
Moldova (Republic of)	<0.1	<0.1	15 - 64	2008	Government sources	HHS	e
Russian Federation*	0.2	0.2 - 0.3	15 - 64	2007	ESPAD	SS	d, e
Ukraine	0.2	0.2 - 0.3	15 - 64	2007	ESPAD	SS	d, e
Southeast Europe							
Albania	0.8	<0.1 - 1.6	15 - 64	2006	Government sources	SS	d, e
Bosnia and Herzegovina	0.6	<0.1 - 1.9	15 - 64	2008	ESPAD	SS	d, e
Bulgaria	0.6		15 - 64	2007	ARQ	HHS	
Croatia	0.9		15 - 64	2007	ESPAD	SS	d, e
Macedonia (TFYR)	<0.1		15 - 64	2007	INCSR		
Montenegro	0.8	<0.1 - 1.7	15 - 64	2008	ESPAD	SS	d, e
Romania	<0.1	<0.1	15 - 64	2007	ARQ	HHS	e
Serbia	0.5	0.1 - 1.2	15 - 64	2008	Government sources	HHS	a, d, e
Turkey	<0.1		15 - 64	2003	UNODC Estimate		
West & Central Europe							
Andorra					No recent, reliable estimate located		
Austria	0.9		15 - 64	2008	Govt.	HHS	
Belgium	0.9		15 - 64	2008	ARQ	HHS	
Channel Islands					No recent, reliable estimate located		
Cyprus	1.2		15 - 64	2009	ARQ	HHS	
Czech Republic	0.7		15 - 64	2008	Government sources	HHS	
Denmark	1.4		16 - 64	2008	ARQ	HHS	
Estonia	0.6		15 - 64	2008	Government sources	HHS	
Faeroe Islands	0.2	0.1 - 0.8	15 - 64	2007	ARQ	SS	d, e
Finland	0.5		15 - 64	2006	ARQ		
France	0.6		15 - 64	2005	ARQ		
Germany	0.9	0.8 - 0.9	18 - 64	2009	Government source	HHS	
Gibraltar					No recent, reliable estimate located		
Greece	0.1		15 - 64	2004	ARQ		
Greenland	0.4		15 - 64	2003	UNODC Estimate		
Hungary	0.2	<0.1 - 0.4	18 - 64	2007	ARQ	HHS	
Iceland	0.9		15 - 64	2007	ESPAD	SS	d, e
Ireland	1.7		15 - 64	2007	Government source	HHS	
Isle of Man	3.5	2.4 - 4.6	15 - 64	2007	ARQ	SS	d, e
Italy	2.2		15 - 64	2008	Government source	HHS	
Latvia	0.5		15 - 64	2007	ARQ	HHS	
Liechtenstein	0.8		15 - 64	2005	UNODC Estimate		
Lithuania	0.2		15 - 64	2008	ARQ	HHS	
Luxembourg	0.9		15 - 64	2003	UNODC Estimate		
Malta	1.1	1.1 - 1.2	15 - 64	2007	ESPAD	SS	d, e
Monaco	1.9	1.7 - 2.0	15 - 64	2007	ESPAD	SS	d, e
Netherlands	0.6		15 - 64	2005	ARQ		
Norway	0.8		15 - 64	2004	ARQ		
Poland	0.2		15 - 64	2006	ARQ		
Portugal	0.6		15 - 64	2007	ARQ	HHS	
San Marino					No recent, reliable estimate located		
Slovakia	0.6		15 - 64	2006	ARQ	HHS	
Slovenia	0.9		15 - 64	2007	ESPAD	SS	d, e
Spain	2.6		15 - 64	2010	Government source	HHS	
Sweden	0.5		15 - 64	2008	ARQ	HHS	
Switzerland	0.2		15 - 64	2007	ARQ	hhs	
United Kingdom					No recent, reliable estimate located		
United Kingdom (England and Wales)	2.5		16 - 59	2010	Government source	HHS	

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

COCAINE

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
United Kingdom (Northern Ireland)	1.9		15 - 64	2007	Government source	HHS	
United Kingdom (Scotland)	3.9	3.7 - 4.0	16 - 64	2009	Government source	HHS	
OCEANIA							
Oceania							
American Samoa					No recent, reliable estimate located		
Australia	1.9		15 - 64	2007	Government Source	HHS	
Christmas Islands					No recent, reliable estimate located		
Cocos (Keeling) Islands					No recent, reliable estimate located		
Cook Islands					No recent, reliable estimate located		
Fiji					No recent, reliable estimate located		
French Polynesia					No recent, reliable estimate located		
Kiribati					No recent, reliable estimate located		
Marshall Islands					No recent, reliable estimate located		
Micronesia (Federated States of)					No recent, reliable estimate located		
Nauru					No recent, reliable estimate located		
New Caledonia					No recent, reliable estimate located		
New Zealand	0.6		16 - 64	2008	Government source	HHS	
Norfolk Island					No recent, reliable estimate located		
Northern Mariana Islands					No recent, reliable estimate located		
Palau					No recent, reliable estimate located		
Papua New Guinea					No recent, reliable estimate located		
Pitcairn					No recent, reliable estimate located		
Samoa					No recent, reliable estimate located		
Solomon Islands					No recent, reliable estimate located		
Tonga					No recent, reliable estimate located		
Tuvalu					No recent, reliable estimate located		
Vanuatu					No recent, reliable estimate located		
Wallis and Futuna Islands					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

6.1.1.3 Cannabis

CANNABIS

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
AFRICA							
East Africa							
Burundi					No recent, reliable estimate located		
Comoros	2.9		15 - 64	2002	UNODC Estimate		
Djibouti					No recent, reliable estimate located		
Eritrea					No recent, reliable estimate located		
Ethiopia					No recent, reliable estimate located		
Kenya	2.1	0.3 - 4.0	15 - 65	2007	Govt	HHS	b, e
Madagascar	9.1		15 - 64	2004	ARQ	SS, A	d, e
Mauritius	3.9		15 - 54	2004	ARQ		
Rwanda					No recent, reliable estimate located		
Seychelles					No recent, reliable estimate located		
Somalia	2.5		15 - 64	2002	UNODC Estimate		
Tanzania (United Republic of)					No recent, reliable estimate located		
Uganda					No recent, reliable estimate located		
North Africa							
Algeria	5.7	5.2 - 6.4	15 - 64	2006	Council of Europe	SS, A	d
Egypt	6.2	2.9 - 9.6	15 - 64	2006	Govt; Academic Research	HHS, SS	a, d
Libyan Arab Jamahiriya					No recent, reliable estimate located		
Morocco	4.2		15 - 64	2004	ARQ	HHS	
Sudan					No recent, reliable estimate located		
Tunisia					No recent, reliable estimate located		
Southern Africa							
Angola					No recent, reliable estimate located		
Botswana					No recent, reliable estimate located		
Lesotho					No recent, reliable estimate located		
Malawi					No recent, reliable estimate located		
Mozambique					No recent, reliable estimate located		
Namibia	3.9		15 - 64	2000	ARQ		
Réunion					No recent, reliable estimate located		
South Africa	4.3	3.5 - 6.2	15 - 64	2008	ARQ	HHS	a, e
Swaziland					No recent, reliable estimate located		
Zambia	9.5	4.0 - 15.6	15 - 64	2004	Govt; Academic Research	SS	d, e
Zimbabwe	6.9		15 - 64	2000	UNODC Estimate		
West and Central Africa							
Benin					No recent, reliable estimate located		
Burkina Faso	2.9		15 - 64	2006	UNODC Estimate		d, e
Cameroon					No recent, reliable estimate located		
Cape Verde	8.1		15 - 64	2004	UNODC Estimate		d, e
Central African Republic					No recent, reliable estimate located		
Chad					No recent, reliable estimate located		
Congo					No recent, reliable estimate located		
Congo (Dem. Rep. of the)					No recent, reliable estimate located		
Côte d'Ivoire					No recent, reliable estimate located		
Equatorial Guinea					No recent, reliable estimate located		
Gabon					No recent, reliable estimate located		
Gambia					No recent, reliable estimate located		
Ghana					No recent, reliable estimate located		
Guinea					No recent, reliable estimate located		
Guinea-Bissau					No recent, reliable estimate located		
Liberia					No recent, reliable estimate located		
Mali					No recent, reliable estimate located		
Mauritania					No recent, reliable estimate located		
Niger					No recent, reliable estimate located		
Nigeria	14.3	11.8 - 16.8	15 - 64	2008	ARQ	HHS	a, b, e
Saint Helena					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

CANNABIS

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Sao Tome and Principe					No recent, reliable estimate located		
Senegal					No recent, reliable estimate located		
Sierra Leone					No recent, reliable estimate located		
Togo	1.0	0.2 - 3.1	15 - 64	2009	ARQ	SS	d, e
AMERICAS							
Caribbean							
Anguilla					No recent, reliable estimate located		
Antigua and Barbuda	10.6	7.8 - 13.4	15 - 64	2005	Government source	SS	d, e
Aruba					No recent, reliable estimate located		
Bahamas	5.5	3.2 - 7.9	15 - 64	2008	ARQ	SS	d, e
Barbados	8.3		12 - 65	2006	CICAD	HHS	
Bermuda					No recent, reliable estimate located		
British Virgin Islands					No recent, reliable estimate located		
Cayman Islands					No recent, reliable estimate located		
Cuba					No recent, reliable estimate located		
Dominica	10.8	6.1 - 15.5	15 - 64	2006	Government source	SS	d, e
Dominican Republic	0.3	0.3 - 1.4	15 - 64	2008	ARQ	SS	d, e
Grenada	10.8	7.3 - 14.4	15 - 64	2005	Government source	SS	d, e
Guadeloupe					No recent, reliable estimate located		
Haiti	1.4	0.4 - 2.2	15 - 64	2005	CICAD	SS	d, e
Jamaica	9.9	7.5 - 12.2	15 - 64	2006	Government source	SS	d, e
Martinique					No recent, reliable estimate located		
Montserrat					No recent, reliable estimate located		
Netherlands Antilles					No recent, reliable estimate located		
Puerto Rico	4.9	3.1 - 6.7	15 - 64	2005	Government source	SS	d, e
Saint Kitts and Nevis	11.7	8.3 - 15.1	15 - 64	2006	Government source	SS	d, e
Saint Lucia	9.0		15 - 64	2006	UNODC Estimate	SS	d, e
Saint Vincent and the Grenadines	7.1	5.1 - 9.1	15 - 64	2006	Government source	SS	d, e
Trinidad and Tobago	4.7	2.9 - 6.4	15 - 64	2006	Government source	SS	d, e
Turks and Caicos Islands	5.4		15 - 64	2002	UNODC Estimate		
United States Virgin Islands					No recent, reliable estimate located		
Central America							
Belize	8.5		12 - 65	2005	CICAD	HHS	
Costa Rica	1.0		12 - 70	2006	ARQ	HHS	
El Salvador	0.4		12 - 65	2005	CICAD	HHS	
Guatemala	4.8		15 - 64	2005	UNODC Estimate	HHS, SS	c, d
Honduras	0.8	0.4 - 1.6	15 - 64	2005	CICAD	SS	d, e
Nicaragua	1.1		12 - 65	2006	CICAD	HHS, c	
Panama	3.6	3.4 - 3.7	12 - 65	2003	CICAD	HHS	d, e
North America							
Canada	12.6		15 - 64	2009	ARQ	HHS	
Mexico	1.0		12 - 65	2008	Govt. source (ENA)	HHS	
Saint Pierre and Miquelon					No recent, reliable estimate located		
United States of America	13.7		15 - 64	2009	Govt. source (SAMSHA)	HHS	
South America							
Argentina	7.2		15 - 64	2006	UNODC/ CICAD	HHS, a, c	
Bolivia (Plurinational State of)	4.3		12 - 65	2007	UNODC/ CICAD	HHS, a, c	
Brazil	2.6		12 - 65	2005	Government source	HHS, c	
Chile	6.7		15 - 64	2008	ARQ	HHS	
Colombia	2.3		12 - 65	2008	Government source	HHS	
Ecuador	0.7		15 - 64	2007	UNODC/ CICAD	HHS, a, c	
Falkland Islands (Malvinas)					No recent, reliable estimate located		
French Guiana					No recent, reliable estimate located		
Guyana	2.6		15 - 64	2002	UNODC Estimate		
Paraguay	1.6		15 - 64	2005	UNODC Estimate		
Peru	0.7		12 - 64	2006	ARQ	HHS, c	

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,

x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

CANNABIS

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Suriname	4.3	3.8 - 4.7	12 - 65	2007	Government source	HHS	
Uruguay	6.0		12 - 65	2006	UNODC/ CICAD	HHS, a, c	
Venezuela (Bolivarian Republic of)	0.9	0.2 - 1.4	15 - 64	2005	Government source	HHS	a, e
ASIA							
Central Asia and Transcaucasian countries							
Armenia	3.5		15 - 64	2003	UNODC Estimate		
Azerbaijan	3.5		15 - 64	2004	UNODC Estimate		
Georgia	2.7	1.2 - 4.3	15 - 64	2009	Government source/ NGO/Academic	SS	b, d, e
Kazakhstan	4.2		15 - 64	2003	INCSR		
Kyrgyzstan	6.4		15 - 64	2001	ARQ		
Tajikistan					No recent, reliable estimate located		
Turkmenistan					No recent, reliable estimate located		
Uzbekistan	4.2		15 - 64	2003	UNODC Estimate		e
East and South-East Asia							
Brunei Darussalam					No recent, reliable estimate located		
Cambodia	3.5		15 - 64	2003	UNODC Estimate		
China					No recent, reliable estimate located		
China, Hong Kong SAR	0.4	0.2 - 2.0	15 - 64	2008	Government source	SS	d, e
China, Macao SAR	0.7		15 - 64	2003	UNODC Estimate	R	d, e
Guam	18.4	14.7 - 22.0	15 - 64	2007	Government source	SS	d, e
Indonesia	0.4		15 - 64	2008	ARQ	HHS	
Japan					No recent, reliable estimate located		
Korea (Dem. People's Rep.)					No recent, reliable estimate located		
Korea (Republic of)	0.3	<0.1 - 0.6	15 - 64	2004	ARQ	HHS	c, e
Lao People's Democratic Republic	0.9	0.7 - 1.1	15 - 64	2008	UNODC report	SS	c, d
Malaysia	1.6		15 - 64	2003	UNODC Estimate		
Mongolia					No recent, reliable estimate located		
Myanmar	0.9		15 - 64	2005	UNODC Estimate		d, e
Philippines	0.8	0.7 - 0.9	15 - 64	2008	Government source	HHS	c, e
Singapore					No recent, reliable estimate located		
Taiwan, Province of China	0.3		12 - 64	2005	AMCEWG		
Thailand	1.2		12 - 65	2007	ARQ	HHS	
Timor-Leste					No recent, reliable estimate located		
Viet Nam	0.3		15 - 64	2002	UNODC Estimate		
Near and Middle East /South-West Asia							
Afghanistan	4.3	3.4 - 5.2	15 - 64	2009	UNODC/ Govt. Source	HHS	
Bahrain					No recent, reliable estimate located		
Iran (Islamic Republic of)					No recent, reliable estimate located		
Iraq					No recent, reliable estimate located		
Israel	8.9		18 - 40	2008	Government source	HHS	
Jordan	2.1		15 - 64	2001	ARQ		a
Kuwait	3.1		15 - 64	2005	UNODC Estimate		
Lebanon	1.9	0.7 - 4.0	15 - 64	2009	Government source/ NGO/Academic	SS	d, e
Occupied Palestinian Territory					No recent, reliable estimate located		
Oman					No recent, reliable estimate located		
Pakistan	3.9		15 - 64	2000	INCSR		
Qatar					No recent, reliable estimate located		
Saudi Arabia	0.3		15 - 64	2006	Government source/ NGO/Academic	R	
Syrian Arab Republic					No recent, reliable estimate located		
United Arab Emirates	5.4		15 - 64	2006	UNODC Estimate		
Yemen					No recent, reliable estimate located		
South Asia							
Bangladesh	3.3		15 - 54	2004	Academic research	HHS	a, e,f
Bhutan					No recent, reliable estimate located		
India					No recent, reliable estimate located		
Maldives					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,

x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

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CANNABIS

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Nepal					No recent, reliable estimate located		
Sri Lanka	1.5		15 - 64	2000	UNODC Estimate		
EUROPE							
East Europe							
Belarus	1.1	0.9 - 1.3	15 - 64	2007	ESPAD	SS	c, d, e
Moldova (Republic of)	0.9		15 - 64	2008	Government source	HHS	
Russian Federation*	3.5		15 - 64	2007	ESPAD	SS	d, e
Ukraine	2.5	2.4 - 2.6	15 - 64	2007	ESPAD	SS	d, e
Southeast Europe							
Albania	1.8		15 - 64	2006	Government source	SS	d, e
Bosnia and Herzegovina	2.8	2.8 - 4.6	15 - 64	2008	ESPAD	SS	c, d, e
Bulgaria	2.5		15 - 64	2008	ARQ	HHS	
Croatia	5.2	5.1 - 5.3	15 - 64	2007	ESPAD	SS	d, e
Macedonia (TFYR)	0.6	0.5 - 2.4	15 - 64	2008	ESPAD	SS	d, e
Montenegro	0.2	0.2 - 2.0	15 - 64	2008	ESPAD	SS	d, e
Romania	0.4		15 - 64	2007	ARQ	HHS	
Serbia	4.1	2.8 - 5.4	15 - 64	2006	Government source	HHS	a, d, e
Turkey	1.9		15 - 64	2003	UNODC Estimate		
West & Central Europe							
Andorra	14.6	10.3 - 18.8	15 - 64	2008	ARQ	SS	d, e
Austria	3.5		15 - 64	2008	Government source	HHS	a
Belgium	5.1		15 - 64	2008	ARQ	HHS	
Channel Islands					No recent, reliable estimate located		
Cyprus	4.4		15 - 64	2009	ARQ	HHS	
Czech Republic	15.2		15 - 64	2008	Government source	HHS	
Denmark	5.5		16 - 64	2008	ARQ	HHS	
Estonia	6.0		15 - 64	2008	Government source	HHS	
Faeroe Islands	2.2	0.7 - 4.6	15 - 64	2007	ARQ	SS	d, e
Finland	3.1	3.0 - 3.2	15 - 64	2008	Government source	HHS	a
France	8.6		15 - 64	2005	ARQ		
Germany	4.8		18 - 64	2009	ARQ	HHS	
Gibraltar	5.2	2.2 - 8.2	15 - 64	2008	ARQ	SS	d, e
Greece	1.7		15 - 64	2004	ARQ		
Greenland	7.6		15 - 64	2003	ESPAD	SS	d, e
Hungary	2.3	1.7 - 2.9	18 - 64	2007	ARQ	HHS	
Iceland	3.4	3.2 - 3.5	15 - 64	2007	ESPAD	SS	d, e
Ireland	6.3		15 - 64	2007	Government source	HHS	
Isle of Man	9.4	5.9 - 12.9	15 - 64	2007	ARQ	SS	d, e
Italy	14.6		15 - 64	2008	Government source	HHS	
Latvia	4.9		15 - 64	2007	ARQ		
Liechtenstein	8.6		15 - 64	2005	UNODC Estimate		
Lithuania	5.6		15 - 64	2008	ARQ	HHS	
Luxembourg	7.6		15 - 64	2003	UNODC Estimate		
Malta	4.5	4.4 - 4.6	15 - 64	2007	ESPAD	SS	d, e
Monaco	8.9	7.9 - 10.0	15 - 64	2007	ESPAD	SS	d, e
Netherlands	5.4		15 - 64	2005	ARQ		
Norway	4.6		15 - 64	2004	ARQ		
Poland	2.7		15 - 64	2006	ARQ	HHS	
Portugal	3.6		15 - 64	2007	ARQ	HHS	
San Marino					No recent, reliable estimate located		
Slovakia	6.9		15 - 64	2006	ARQ	HHS	
Slovenia	4.1		15 - 64	2007	ESPAD	SS	d, e
Spain	10.6		15 - 64	2010	Government source	HHS	
Sweden	1.2		15 - 64	2008	ARQ	HHS	
Switzerland	3.4		15 - 64	2008	ARQ	HHS	
United Kingdom					No recent, reliable estimate located		
United Kingdom (England and Wales)	6.6		16 - 59	2010	Government source	HHS	

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

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CANNABIS

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
United Kingdom (Northern Ireland)	7.2		15 - 64	2007	Government source	HHS	
United Kingdom (Scotland)	8.4		16 - 64	2009	Government source	HHS	
OCEANIA							
Oceania							
American Samoa	7.0	4.7 - 9.2	15 - 64	2007	Government source	SS	d, e
Australia	10.6		15 - 64	2007	Government source	HHS	
Christmas Islands					No recent, reliable estimate located		
Cocos (Keeling) Islands					No recent, reliable estimate located		
Cook Islands					No recent, reliable estimate located		
Fiji	5.1	3.0 - 7.1	15 - 64	2004	Government source	SS	d, e
French Polynesia					No recent, reliable estimate located		
Kiribati					No recent, reliable estimate located		
Marshall Islands	5.5	3.4 - 7.5	15 - 64	2007	Government source	SS	d, e
Micronesia (Federated States of)					No recent, reliable estimate located		
Nauru					No recent, reliable estimate located		
New Caledonia					No recent, reliable estimate located		
New Zealand	14.6		16 - 64	2008	Government source	HHS	
Norfolk Island					No recent, reliable estimate located		
Northern Mariana Islands	22.2	18.1 - 26.4	15 - 64	2007	Government source	SS	d, e
Palau	24.2	19.8 - 28.6	15 - 64	2007	Government source	SS	d, e
Papua New Guinea					No recent, reliable estimate located		
Pitcairn					No recent, reliable estimate located		
Samoa					No recent, reliable estimate located		
Solomon Islands					No recent, reliable estimate located		
Tonga					No recent, reliable estimate located		
Tuvalu					No recent, reliable estimate located		
Vanuatu					No recent, reliable estimate located		
Wallis and Futuna Islands					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

6.1.1.4 Amphetamines

AMPHETAMINES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
AFRICA							
East Africa							
Burundi					No recent, reliable estimate located		
Comoros					No recent, reliable estimate located		
Djibouti					No recent, reliable estimate located		
Eritrea					No recent, reliable estimate located		
Ethiopia					No recent, reliable estimate located		
Kenya					No recent, reliable estimate located		
Madagascar					No recent, reliable estimate located		
Mauritius					No recent, reliable estimate located		
Rwanda					No recent, reliable estimate located		
Seychelles					No recent, reliable estimate located		
Somalia					No recent, reliable estimate located		
Tanzania (United Republic of)					No recent, reliable estimate located		
Uganda					No recent, reliable estimate located		
North Africa							
Algeria					No recent, reliable estimate located		
Egypt	0.5	0.4 - 0.5	15 - 64	2006	Govt; Academic Research	HHS, SS	a, b, d
Libyan Arab Jamahiriya					No recent, reliable estimate located		
Morocco					No recent, reliable estimate located		
Sudan					No recent, reliable estimate located		
Tunisia					No recent, reliable estimate located		
Southern Africa							
Angola					No recent, reliable estimate located		
Botswana					No recent, reliable estimate located		
Lesotho					No recent, reliable estimate located		
Malawi					No recent, reliable estimate located		
Mozambique					No recent, reliable estimate located		
Namibia	<0.1		15 - 64	2000	ARQ		
Réunion					No recent, reliable estimate located		
South Africa	1.0	0.7 - 1.4	15 - 64	2008	ARQ	HHS	a, e
Swaziland					No recent, reliable estimate located		
Zambia	0.1		15 - 64	2003	UNODC Estimate		
Zimbabwe	0.1		15 - 64	2000	ARQ		
West and Central Africa							
Benin					No recent, reliable estimate located		
Burkina Faso					No recent, reliable estimate located		
Cameroon					No recent, reliable estimate located		
Cape Verde					No recent, reliable estimate located		
Central African Republic					No recent, reliable estimate located		
Chad					No recent, reliable estimate located		
Congo					No recent, reliable estimate located		
Congo (Dem. Rep. of the)					No recent, reliable estimate located		
Côte d'Ivoire					No recent, reliable estimate located		
Equatorial Guinea					No recent, reliable estimate located		
Gabon					No recent, reliable estimate located		
Gambia					No recent, reliable estimate located		
Ghana					No recent, reliable estimate located		
Guinea					No recent, reliable estimate located		
Guinea-Bissau					No recent, reliable estimate located		
Liberia					No recent, reliable estimate located		
Mali					No recent, reliable estimate located		
Mauritania					No recent, reliable estimate located		
Niger					No recent, reliable estimate located		
Nigeria	1.4	0.7 - 2.0	15 - 64	2008	ARQ	HHS	a, b, e
Saint Helena					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

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AMPHETAMINES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Sao Tome and Principe					No recent, reliable estimate located		
Senegal					No recent, reliable estimate located		
Sierra Leone					No recent, reliable estimate located		
Togo					No recent, reliable estimate located		
AMERICAS							
Caribbean							
Anguilla					No recent, reliable estimate located		
Antigua and Barbuda	0.6	0.2 - 1.2	15 - 64	2005	Government source	SS	d, e
Aruba					No recent, reliable estimate located		
Bahamas	0.4	0.1 - 1.1	15 - 64	2008	ARQ	SS	d, e
Barbados	0.2		12 - 65	2006	CICAD	HHS, z	
Bermuda					No recent, reliable estimate located		
British Virgin Islands					No recent, reliable estimate located		
Cayman Islands					No recent, reliable estimate located		
Cuba					No recent, reliable estimate located		
Dominica	0.9	0.3 - 1.6	15 - 64	2006	Government source	SS	d, e
Dominican Republic	1.0	<0.1 - 2.6	15 - 64	2008	ARQ	SS, z	d, e
Grenada	0.7		15 - 64	2005	ARQ		
Guadeloupe					No recent, reliable estimate located		
Haiti					No recent, reliable estimate located		
Jamaica	1.1	0.4 - 1.9	15 - 64	2006	Government source	SS	d, e
Martinique					No recent, reliable estimate located		
Montserrat					No recent, reliable estimate located		
Netherlands Antilles					No recent, reliable estimate located		
Puerto Rico	0.4	0.1 - 1.1	15 - 64	2005	Government source	SS	d, e
Saint Kitts and Nevis	0.2	0.1 - 0.6	15 - 64	2006	Government source	SS, z	d, e
Saint Lucia	1.2	0.4 - 1.9	15 - 64	2005	CICAD	SS, z	d, e
Saint Vincent and the Grenadines	0.6	0.2 - 1.3	15 - 64	2006	CICAD	SS, z	d, e
Trinidad and Tobago	0.7	0.2 - 1.4	15 - 64	2006	CICAD	SS, z	d, e
Turks and Caicos Islands	0.3		15 - 64	2003	UNODC Estimate		d, e
United States Virgin Islands					No recent, reliable estimate located		
Central America							
Belize	1.4		12 - 65	2005	CICAD	HHS, z	
Costa Rica	1.3		12 - 70	2006	ARQ		
El Salvador	3.3		12 - 65	2005	CICAD	HHS, z	
Guatemala	0.9		15 - 64	2005	UNODC Estimate		d, e
Honduras	0.8		15 - 64	2005	UNODC Estimate		d,e
Nicaragua	0.8		15 - 64	2003	UNODC Estimate		d
Panama	1.2		12 - 65	2003	CICAD	HHS, z	
North America							
Canada	0.7		15 - 64	2009	ARQ	HHS	
Mexico	0.2		12 - 65	2008	Govt. source (ENA)	HHS	
Saint Pierre and Miquelon					No recent, reliable estimate located		
United States of America	1.5		15 - 64	2009	Govt. source (SAMHSA)	HHS	
South America							
Argentina	0.6		15 - 64	2005	UNODC Estimate	SS, z	d, e
Bolivia (Plurinational State of)	0.5		12 - 65	2007	ARQ	HHS	
Brazil	0.7		12 - 65	2005	Government source	HHS, c	
Chile	0.4		15 - 64	2008	ARQ	HHS	
Colombia	0.5	<0.1 - 1.9	12 - 65	2008	Government source	HHS, SS	a, c, d, e
Ecuador	0.2		15 - 64	2005	UNODC Estimate	SS, z	d, e
Falkland Islands (Malvinas)					No recent, reliable estimate located		
French Guiana					No recent, reliable estimate located		
Guyana	0.5	0.1 - 1.1	15 - 64	2002	CICAD	SS, z	d, e
Paraguay	0.5		15 - 64	2005	UNODC Estimate	SS, z	d, e
Peru	0.2		12 - 64	2006	Govt.	HHS	

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,

x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

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AMPHETAMINES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Suriname	0.7		12 - 65	2007	Government source	HHS, z	
Uruguay	0.1		12 - 65	2006	ARQ		
Venezuela (Bolivarian Republic of)	0.6		15 - 64	2002	UNODC Estimate		d, e
ASIA							
Central Asia and Transcaucasian countries							
Armenia	<0.1		15 - 64	2005	UNODC Estimate	HHS	
Azerbaijan					No recent, reliable estimate located		
Georgia	0.6	0.1 - 1.1	15 - 64	2009	Government source/ NGO/Academic	SS	b, d, e
Kazakhstan					No recent, reliable estimate located		
Kyrgyzstan					No recent, reliable estimate located		
Tajikistan					No recent, reliable estimate located		
Turkmenistan					No recent, reliable estimate located		
Uzbekistan					No recent, reliable estimate located		
East and South-East Asia							
Brunei Darussalam	0.3		15 - 64	2006	UNODC Estimate		g
Cambodia	0.6		15 - 64	2004	UNODC Estimate		d, e
China					No recent, reliable estimate located		
China, Hong Kong SAR	0.4	<0.1 - 1.1	15 - 64	2008	Government source	SS	d, e
China, Macao SAR					No recent, reliable estimate located		
Guam	1.4	0.5 - 2.3	15 - 64	2007	Government source	SS	d, e
Indonesia	0.2		15 - 64	2008	ARQ	HHS	
Japan					No recent, reliable estimate located		
Korea (Dem. People's Rep.)					No recent, reliable estimate located		
Korea (Republic of)	0.1	<0.1 - 0.2	15 - 64	2004	ARQ	HHS	b, c, e
Lao People's Democratic Republic	1.4	1.1 - 1.7	15 - 64	2008	Academic research	SS	a, c, d, e
Malaysia	0.6		15 - 64	2005	UNODC Estimate		d, g, h
Mongolia					No recent, reliable estimate located		
Myanmar	0.2		15 - 64	2005	UNODC Estimate		d, f
Philippines	2.1	1.9 - 2.4	15 - 64	2008	Government source	HHS	c, e
Singapore					No recent, reliable estimate located		
Taiwan, Province of China	0.6		12 - 64	2005	AMCEWG		
Thailand	1.4		12 - 65	2007	ARQ	HHS	
Timor-Leste					No recent, reliable estimate located		
Viet Nam	0.2		15 - 64	2003	UNODC Estimate		h
Near and Middle East /South-West Asia							
Afghanistan	<0.1		15 - 64	2009	UNODC/ Govt. Source	HHS	
Bahrain					No recent, reliable estimate located		
Iran (Islamic Republic of)	0.1	0.1 - 0.2	15 - 64	2010	Government source	I	f, g
Iraq					No recent, reliable estimate located		
Israel	5.0	4.5 - 5.5	18 - 40	2008	ARQ	HHS	
Jordan	0.4		15 - 64	2001	UNODC Estimate		
Kuwait	0.3		15 - 64	2005	UNODC Estimate		g
Lebanon	0.4		15 - 64	2001	UNODC Estimate		d, e
Occupied Palestinian Territory					No recent, reliable estimate located		
Oman					No recent, reliable estimate located		
Pakistan					No recent, reliable estimate located		
Qatar					No recent, reliable estimate located		
Saudi Arabia	0.4		15 - 64	2006	UNODC Estimate		g
Syrian Arab Republic					No recent, reliable estimate located		
United Arab Emirates					No recent, reliable estimate located		
Yemen					No recent, reliable estimate located		
South Asia							
Bangladesh					No recent, reliable estimate located		
Bhutan					No recent, reliable estimate located		
India					No recent, reliable estimate located		
Maldives					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,

x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

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AMPHETAMINES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Nepal					No recent, reliable estimate located		
Sri Lanka					No recent, reliable estimate located		
EUROPE							
East Europe							
Belarus	0.4		15 - 64	2006	UNODC Estimate		g
Moldova (Republic of)	<0.1		15 - 64	2008	Government source	HHS	e
Russian Federation*	0.4	0.2 - 0.6	15 - 64	2007	ESPAD	SS	d, e
Ukraine	0.4	0.2 - 0.6	15 - 64	2007	ESPAD	SS	d, e
Southeast Europe							
Albania	<0.1		15 - 64	2004	ARQ		
Bosnia and Herzegovina	1.0	0.4 - 1.7	15 - 64	2008	ESPAD	SS	c, d, e
Bulgaria	1.0		15 - 64	2008	ARQ	HHS	
Croatia	0.7	0.6 - 0.8	15 - 64	2007	ESPAD	SS	d, e
Macedonia (TFYR)					No recent, reliable estimate located		
Montenegro	0.5	<0.1 - 0.9	15 - 64	2008	ESPAD	SS	d, e
Romania	<0.1		15 - 64	2007	Government source	HHS	e
Serbia	0.2	0.1 - 0.5	15 - 64	2006	Government sources	HHS	a, e
Turkey	0.2		15 - 64	2003	UNODC Estimate		
West & Central Europe							
Andorra					No recent, reliable estimate located		
Austria	0.5		15 - 64	2008	Government source	HHS	a
Belgium	0.9		15 - 64	2008	ARQ	HHS	
Channel Islands					No recent, reliable estimate located		
Cyprus	0.3		15 - 64	2009	ARQ	HHS	
Czech Republic	1.7		15 - 64	2008	Government source	HHS	
Denmark	1.2		16 - 64	2008	ARQ	HHS	
Estonia	1.0		15 - 64	2008	Government source	HHS	
Faeroe Islands	0.4	<0.1 - 0.8	15 - 64	2007	ARQ	SS	d, e
Finland	0.6		15 - 64	2006	ARQ		
France	0.2		15 - 64	2005	ARQ		
Germany	0.7		18 - 64	2009	ARQ	HHS	
Gibraltar					No recent, reliable estimate located		
Greece	0.2		15 - 64	2004	ARQ		
Greenland					No recent, reliable estimate located		
Hungary	0.5	0.2 - 0.8	18 - 64	2007	ARQ	HHS	
Iceland	0.7	0.6 - 0.9	15 - 64	2003	ESPAD	SS	
Ireland	0.4		15 - 64	2007	Government source	HHS	
Isle of Man	0.9	0.3 - 1.5	15 - 64	2007	ARQ	SS	d, e
Italy	0.6	0.6 - 0.7	15 - 64	2007	Government source/ ESPAD	HHS, SS	d, e
Latvia	0.9		15 - 64	2007	ARQ		
Liechtenstein	0.2		15 - 64	2005	UNODC Estimate		d
Lithuania	0.7		15 - 64	2008	ARQ	HHS	
Luxembourg					No recent, reliable estimate located		
Malta	0.9	0.6 - 1.2	15 - 64	2007	ESPAD	SS	d, e
Monaco	0.5	0.5 - 0.6	15 - 64	2007	ESPAD	SS	d, e
Netherlands	0.3		15 - 64	2005	ARQ	HHS	
Norway	1.1		15 - 64	2004	ARQ	HHS	
Poland	0.7		15 - 64	2006	ARQ	HHS	
Portugal	0.2		15 - 64	2007	ARQ	HHS	
San Marino					No recent, reliable estimate located		
Slovakia	0.3		15 - 64	2006	EMCDDA	HHS	
Slovenia	0.5	0.4 - 0.6	15 - 64	2007	ESPAD	SS	d, e
Spain	0.6		15 - 64	2010	Government source	HHS	
Sweden	0.8		15 - 64	2008	ARQ	HHS	
Switzerland	0.6	0.6 - 0.7	15 - 64	2007	ESPAD	SS	d, e
United Kingdom					No recent, reliable estimate located		
United Kingdom (England and Wales)	1.0		16 - 59	2010	Government source	HHS	

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

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AMPHETAMINES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
United Kingdom (Northern Ireland)	0.8		16 - 59	2008	Government source	HHS	
United Kingdom (Scotland)	1.4		16 - 64	2009	Government source	HHS	a
OCEANIA							
Oceania							
American Samoa	1.3	0.5 - 2.3	15 - 64	2007	Government source	SS	d, e
Australia	2.7		15 - 64	2007	Government source	HHS	
Christmas Islands					No recent, reliable estimate located		
Cocos (Keeling) Islands					No recent, reliable estimate located		
Cook Islands					No recent, reliable estimate located		
Fiji					No recent, reliable estimate located		
French Polynesia					No recent, reliable estimate located		
Kiribati					No recent, reliable estimate located		
Marshall Islands	2.7	1.4 - 4.0	15 - 64	2007	Government source	SS	d, e
Micronesia (Federated States of)					No recent, reliable estimate located		
Nauru					No recent, reliable estimate located		
New Caledonia					No recent, reliable estimate located		
New Zealand	2.1		16 - 64	2008	Government source	HHS	
Norfolk Island					No recent, reliable estimate located		
Northern Mariana Islands	1.2	0.4 - 2.1	15 - 64	2007	Government source	SS	d, e
Palau	1.6	0.6 - 2.6	15 - 64	2007	Government source	SS	d, e
Papua New Guinea					No recent, reliable estimate located		
Pitcairn					No recent, reliable estimate located		
Samoa					No recent, reliable estimate located		
Solomon Islands					No recent, reliable estimate located		
Tonga					No recent, reliable estimate located		
Tuvalu					No recent, reliable estimate located		
Vanuatu					No recent, reliable estimate located		
Wallis and Futuna Islands					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

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6.1.1.5 Ecstasy

ECSTASY

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
AFRICA							
East Africa							
Burundi					No recent, reliable estimate located		
Comoros					No recent, reliable estimate located		
Djibouti					No recent, reliable estimate located		
Eritrea					No recent, reliable estimate located		
Ethiopia					No recent, reliable estimate located		
Kenya	0.3	0.2 - 0.3	15 - 65	2007	Govt	HHS	b, e
Madagascar					No recent, reliable estimate located		
Mauritius					No recent, reliable estimate located		
Rwanda					No recent, reliable estimate located		
Seychelles					No recent, reliable estimate located		
Somalia					No recent, reliable estimate located		
Tanzania (United Republic of)					No recent, reliable estimate located		
Uganda					No recent, reliable estimate located		
North Africa							
Algeria					No recent, reliable estimate located		
Egypt					No recent, reliable estimate located		
Libyan Arab Jamahiriya					No recent, reliable estimate located		
Morocco	<0.1		15 - 64	2003	ARQ		
Sudan					No recent, reliable estimate located		
Tunisia					No recent, reliable estimate located		
Southern Africa							
Angola					No recent, reliable estimate located		
Botswana					No recent, reliable estimate located		
Lesotho					No recent, reliable estimate located		
Malawi					No recent, reliable estimate located		
Mozambique					No recent, reliable estimate located		
Namibia	<0.1		15 - 64	2000	ARQ		
Réunion					No recent, reliable estimate located		
South Africa	0.4		15 - 64	2004	UNODC Estimate		d, e
Swaziland					No recent, reliable estimate located		
Zambia	0.3		15 - 64	2003	UNODC Estimate		e, f
Zimbabwe					No recent, reliable estimate located		
West and Central Africa							
Benin					No recent, reliable estimate located		
Burkina Faso					No recent, reliable estimate located		
Cameroon					No recent, reliable estimate located		
Cape Verde	<0.1		15 - 64	2004	UNODC Estimate		d
Central African Republic					No recent, reliable estimate located		
Chad					No recent, reliable estimate located		
Congo					No recent, reliable estimate located		
Congo (Dem. Rep. of the)					No recent, reliable estimate located		
Côte d'Ivoire					No recent, reliable estimate located		
Equatorial Guinea					No recent, reliable estimate located		
Gabon					No recent, reliable estimate located		
Gambia					No recent, reliable estimate located		
Ghana					No recent, reliable estimate located		
Guinea					No recent, reliable estimate located		
Guinea-Bissau					No recent, reliable estimate located		
Liberia					No recent, reliable estimate located		
Mali					No recent, reliable estimate located		
Mauritania					No recent, reliable estimate located		
Niger					No recent, reliable estimate located		
Nigeria					No recent, reliable estimate located		
Saint Helena					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

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ECSTASY

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Sao Tome and Principe					No recent, reliable estimate located		
Senegal					No recent, reliable estimate located		
Sierra Leone					No recent, reliable estimate located		
Togo					No recent, reliable estimate located		
AMERICAS							
Caribbean							
Anguilla					No recent, reliable estimate located		
Antigua and Barbuda	0.2	<0.1 - 0.7	15 - 64	2005	Government source	SS	d, e
Aruba					No recent, reliable estimate located		
Bahamas	0.1	<0.1 - 0.6	15 - 64	2008	Government source	SS	d, e
Barbados	0.5		12 - 65	2006	CICAD	HHS	
Bermuda					No recent, reliable estimate located		
British Virgin Islands					No recent, reliable estimate located		
Cayman Islands					No recent, reliable estimate located		
Cuba					No recent, reliable estimate located		
Dominica	<0.1	<0.1 - 0.5	15 - 64	2006	Government source	SS	d, e
Dominican Republic	<0.1	<0.1 - 0.5	15 - 64	2008	Government source	SS	d, e
Grenada	0.2	<0.1 - 0.7	15 - 64	2005	Government source	SS	d, e
Guadeloupe					No recent, reliable estimate located		
Haiti	0.6	0.1 - 1.2	15 - 64	2005	CICAD	SS	d, e
Jamaica					No recent, reliable estimate located		
Martinique					No recent, reliable estimate located		
Montserrat					No recent, reliable estimate located		
Netherlands Antilles					No recent, reliable estimate located		
Puerto Rico	0.4	<0.1 - 1.0	15 - 64	2005	Government source	SS	
Saint Kitts and Nevis	0.4	<0.1 - 1.0	15 - 64	2006	Government source	SS	d, e
Saint Lucia					No recent, reliable estimate located		
Saint Vincent and the Grenadines	<0.1	<0.1 - 0.5	15 - 64	2006	CICAD	SS	d, e
Trinidad and Tobago	0.1	<0.1 - 0.6	15 - 64	2006	CICAD	SS	d, e
Turks and Caicos Islands	0.7		15 - 64	2003	UNODC Estimate		d, e
United States Virgin Islands					No recent, reliable estimate located		
Central America							
Belize	0.3		12 - 65	2005	Government source	HHS	
Costa Rica	0.2	0.1 - 0.4	12 - 70	2006	ARQ	SS	d, e
El Salvador	<0.1		12 - 65	2005	CICAD	HHS	a, e
Guatemala	<0.1		15 - 64	2005	UNODC Estimate		
Honduras	<0.1		15 - 64	2005	UNODC Estimate		d
Nicaragua	<0.1		12 - 65	2006	CICAD	HHS, c	e
Panama	0.4		12 - 65	2003	UNODC Estimate		d
North America							
Canada	1.1		15 - 64	2009	ARQ	HHS	
Mexico	<0.1		15 - 64	2002	Govt. source (CONADIC)		
Saint Pierre and Miquelon					No recent, reliable estimate located		
United States of America	1.4		15 - 64	2009	Govt. source (SAMHSA)	HHS	
South America							
Argentina	0.5		15 - 64	2006	Government source		
Bolivia (Plurinational State of)	0.1		12 - 65	2007	ARQ	HHS, c	
Brazil	0.2		12 - 65	2005	UNODC Estimate		
Chile	0.1		15 - 64	2008	ARQ	HHS	
Colombia	0.3		12 - 65	2008	Government source	HHS, c	
Ecuador	0.2		15 - 64	2005	UNODC Estimate		
Falkland Islands (Malvinas)					No recent, reliable estimate located		
French Guiana					No recent, reliable estimate located		
Guyana	0.1		15 - 64	2002	UNODC Estimate		
Paraguay	<0.1		15 - 64	2005	UNODC Estimate		
Peru	<0.1		12 - 64	2006	ARQ	HHS, c	

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,

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ECSTASY

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Suriname	0.1	<0.1 - 0.2	12 - 65	2007	Government source	HHS, c	e
Uruguay	0.2		12 - 65	2006	Government source	HHS, a, c	c, e
Venezuela (Bolivarian Republic of)	<0.1	<0.1	15 - 64	2005	Government source	HHS	a, e
ASIA							
Central Asia and Transcaucasian countries							
Armenia	0.1		15 - 64	2005	UNODC Estimate	HHS	
Azerbaijan					No recent, reliable estimate located		
Georgia	0.5	0.2 - 0.9	15 - 64	2009	ARQ	SS	a, b, d, e
Kazakhstan					No recent, reliable estimate located		
Kyrgyzstan					No recent, reliable estimate located		
Tajikistan					No recent, reliable estimate located		
Turkmenistan					No recent, reliable estimate located		
Uzbekistan					No recent, reliable estimate located		
East and South-East Asia							
Brunei Darussalam					No recent, reliable estimate located		
Cambodia	0.1		15 - 64	2003	UNODC Estimate		
China					No recent, reliable estimate located		
China, Hong Kong SAR	0.2	<0.1 - 0.8	15 - 64	2008	Government source	SS	d, e
China, Macao SAR	0.3		15 - 64	2002	UNODC Estimate		c, e
Guam					No recent, reliable estimate located		
Indonesia	0.2		15 - 64	2008	ARQ	HHS	
Japan					No recent, reliable estimate located		
Korea (Dem. People's Rep.)					No recent, reliable estimate located		
Korea (Republic of)	<0.1	<0.1	15 - 64	2004	ARQ	HHS	c, e
Lao People's Democratic Republic					No recent, reliable estimate located		
Malaysia	0.4		15 - 64	2003	UNODC Estimate		e, g
Mongolia					No recent, reliable estimate located		
Myanmar					No recent, reliable estimate located		
Philippines	0.2		15 - 64	2004	Government source	HHS	
Singapore					No recent, reliable estimate located		
Taiwan, Province of China	0.5		12 - 64	2005	AMCEWG		a
Thailand	0.3		12 - 65	2007	ARQ	HHS	
Timor-Leste					No recent, reliable estimate located		
Viet Nam	0.2		15 - 64	2003	UNODC Estimate		
Near and Middle East /South-West Asia							
Afghanistan					No recent, reliable estimate located		
Bahrain					No recent, reliable estimate located		
Iran (Islamic Republic of)					No recent, reliable estimate located		
Iraq					No recent, reliable estimate located		
Israel	0.7		18 - 40	2008	Government source	HHS	
Jordan					No recent, reliable estimate located		
Kuwait					No recent, reliable estimate located		
Lebanon	1.0	0.3 - 1.7	15 - 64	2009	Government source/ NGO/Academic	SS	d, e
Occupied Palestinian Territory					No recent, reliable estimate located		
Oman					No recent, reliable estimate located		
Pakistan					No recent, reliable estimate located		
Qatar					No recent, reliable estimate located		
Saudi Arabia					No recent, reliable estimate located		
Syrian Arab Republic					No recent, reliable estimate located		
United Arab Emirates					No recent, reliable estimate located		
Yemen					No recent, reliable estimate located		
South Asia							
Bangladesh					No recent, reliable estimate located		
Bhutan					No recent, reliable estimate located		
India					No recent, reliable estimate located		
Maldives					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,

x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

ECSTASY

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Nepal					No recent, reliable estimate located		
Sri Lanka					No recent, reliable estimate located		
EUROPE							
East Europe							
Belarus	0.3		15 - 64	2007	ESPAD	SS	c, d, e
Moldova (Republic of)	0.3		15 - 64	2008	Government sources	HHS	
Russian Federation*	0.7		15 - 64	2007	ESPAD	SS	d, e
Ukraine	0.7		15 - 64	2007	ESPAD	SS	d, e
Southeast Europe							
Albania	1.0	0.3 - 2.1	15 - 64	2006	Government sources	SS	d, e
Bosnia and Herzegovina	1.4	0.4 - 2.7	15 - 64	2008	ESPAD	SS	c, d, e
Bulgaria	0.7		15 - 64	2008	ARQ	HHS	
Croatia	0.8		15 - 64	2007	ESPAD	SS	d, e
Macedonia (TFYR)	0.8	0.2 - 1.8	15 - 64	2008	ESPAD	SS	d, e
Montenegro	0.5	0.1 - 1.5	15 - 64	2008	ESPAD	SS	d, e
Romania	0.1		15 - 64	2007	ARQ	HHS	
Serbia	0.6	0.4 - 0.9	15 - 64	2008	Government sources	HHS	a, e
Turkey	0.3		15 - 64	2003	UNODC Estimate		
West & Central Europe							
Andorra					No recent, reliable estimate located		
Austria	0.5		15 - 64	2008	Govt.	HHS	a
Belgium	0.9		15 - 64	2008	ARQ	HHS	
Channel Islands					No recent, reliable estimate located		
Cyprus	0.6		15 - 64	2009	ARQ	HHS	
Czech Republic	3.6		15 - 64	2008	Government	HHS	
Denmark	0.4		16 - 64	2008	ARQ	HHS	
Estonia	1.2		15 - 64	2008	Government	HHS	
Faeroe Islands	0.2	0.1 - 0.6	15 - 64	2007	ARQ	SS	d, e
Finland	0.5		15 - 64	2004	ARQ		
France	0.5		15 - 64	2005	ARQ		
Germany	0.4		18 - 64	2009	ARQ	HHS	
Gibraltar					No recent, reliable estimate located		
Greece	0.2		15 - 64	2004	ARQ		
Greenland					No recent, reliable estimate located		
Hungary	0.5	0.2 - 0.8	18 - 64	2007	ARQ	HHS	
Iceland	0.5		15 - 64	2007	ESPAD	SS	d, e
Ireland	1.2		15 - 64	2007	Government source		
Isle of Man	1.5	0.9 - 2.2	15 - 64	2007	ARQ	SS	d, e
Italy	0.7		15 - 64	2008	ARQ	HHS	
Latvia	1.5		15 - 64	2007	ARQ		
Liechtenstein	0.5		15 - 64	2005	UNODC Estimate		
Lithuania	1.0		15 - 64	2008	ARQ	HHS	
Luxembourg					No recent, reliable estimate located		
Malta	0.9		15 - 64	2007	ESPAD	SS	d, e
Monaco	0.9		15 - 64	2007	ESPAD	SS	d, e
Netherlands	1.2		15 - 64	2005	ARQ		
Norway	0.5		15 - 64	2004	ARQ		
Poland	0.3		15 - 64	2006	ARQ		
Portugal	0.4		15 - 64	2007	ARQ		
San Marino					No recent, reliable estimate located		
Slovakia	1.6		15 - 64	2006	EMCDDA	HHS	
Slovenia	0.7		15 - 64	2007	ESPAD	SS	d, e
Spain	0.8		15 - 64	2010	Government source	HHS	
Sweden	0.1		15 - 64	2008	ARQ	HHS	
Switzerland	0.3	0.1 - 0.5	15 - 64	2007	ARQ	HHS, SS	d, e
United Kingdom					No recent, reliable estimate located		
United Kingdom (England and Wales)	1.6		16 - 59	2010	Government source	HHS	

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

ECSTASY

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
United Kingdom (Northern Ireland)	1.5		16 - 59	2008	Government source	HHS	
United Kingdom (Scotland)	2.5		16 - 64	2009	Government source	HHS	
OCEANIA							
Oceania							
American Samoa					No recent, reliable estimate located		
Australia	4.2		15 - 64	2007	Government source/ NGO/Academic	HHS	
Christmas Islands					No recent, reliable estimate located		
Cocos (Keeling) Islands					No recent, reliable estimate located		
Cook Islands					No recent, reliable estimate located		
Fiji					No recent, reliable estimate located		
French Polynesia					No recent, reliable estimate located		
Kiribati					No recent, reliable estimate located		
Marshall Islands					No recent, reliable estimate located		
Micronesia (Federated States of)					No recent, reliable estimate located		
Nauru					No recent, reliable estimate located		
New Caledonia					No recent, reliable estimate located		
New Zealand	2.6		16 - 64	2008	Government source	HHS	
Norfolk Island					No recent, reliable estimate located		
Northern Mariana Islands					No recent, reliable estimate located		
Palau					No recent, reliable estimate located		
Papua New Guinea					No recent, reliable estimate located		
Pitcairn					No recent, reliable estimate located		
Samoa					No recent, reliable estimate located		
Solomon Islands					No recent, reliable estimate located		
Tonga					No recent, reliable estimate located		
Tuvalu					No recent, reliable estimate located		
Vanuatu					No recent, reliable estimate located		
Wallis and Futuna Islands					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

6.1.2 Treatment demand

6.1.2.1 Primary drugs of abuse among persons treated for drug problems in Africa

Country / Territory	Source	Treatment Year	Distribution of main drugs in percentages*								Treatment Provided **	Data Primarily Reflect
			Cannabis	Opioids	Cocaine	Amphetamine - type Stimulants	Methaqualone	Sedatives and Tranquilisers	Solvents and Inhalants	Khat		
Algeria	ARQ	1999/ 2009***	81.3%	6.6%	0.2%	-	-	-	2.1%	-	1,086	
Botswana	SENDU/ ARQ	2003/ 2006***	100.0%								311	
Burkina Faso	ARQ	2008	58.8%	-	20.6%	20.6%	-	-	-	-	65	a, d
Cape Verde	ARQ	2006									57	
Central African Republic	ARQ	2006	100.0%								58	
Egypt	ARQ	2007	50.1%	42.7%	-	7.2%	-	-	-	-	129,850	a
Eritrea	ARQ	2006	38.5%	11.5%	7.7%	-	-	-	42.3%	-	26	a
Ethiopia	ARQ	2006/ 2009***	18.8%	18.8%	-	-	-	-	-	62.5%	781	
Ghana	ARQ	2008	99.1%	0.1%	0.8%	-	-	-	-	-	1,066	a, d
Kenya	University [1]	2005	36.3%	37.8%	9.7%	0.5%	-	0.5%	1.2%	11.4%	402	
Lesotho	SENDU	2004	100.0%								54	d
Madagascar	ARQ	2007	60.8%	-	-	-	-	39.2%	-	-	148	a
Malawi	SENDU	2004	100.0%								796	
Mauritius	ARQ	2009	19.4%	80.6%	-	-	-	-	-	-	1,015	
Mozambique	SENDU	2004	33.3%	54.7%	11.4%	-	-	-	-	-	150	a
Namibia	ARQ	2005/ 2006***	2.4%	2.4%	24.4%	9.8%	61.0%	-	-	-	238	
Niger	ARQ	2006	69.2%	-	-	30.8%	-	-	-	-	168	
Nigeria	Govt.	2004	89.7%	1.2%	0.7%	2.0%	-	3.9%	3.7%	-	925	
Senegal	GAP	2005	78.0%	1.0%	2.0%	1.0%	-	-	11.0%	-	202	a
Seychelles	ARQ	2007	55.0%	45.0%	-	-	-	-	-	-	149	a, d
South Africa	ARQ	2009	39.0%	19.1%	8.2%	25.6%	4.1%	-	-	-	11,178	
Swaziland	SENDU	2004	92.2%	0.9%	0.9%	-	4.7%	0.9%	-	-	128	
Tanzania	SENDU	2004	62.7%	32.7%	-	-	-	-	-	-	340	
Togo	ARQ	2009	88.1%	4.0%	7.9%	-	-	-	-	-	151	d
Tunisia	ARQ	2009									828	
Zambia	ARQ	2005									233	
Total											150,405	
Average (unweighted)			64.0%	18.9%	5.0%	5.1%	3.7%	2.3%	3.2%	3.9%		

* Note that treatment definitions and reporting differ from country to country; totals which exceed 100% represent poly-drug use reporting.

** Figures may reflect number of persons or treatment episodes depending on Member State; figures exclude alcohol and nicotine.

*** The second year specified is for the number of people treated (second to last column).

Sources:
UNODC, Annual Reports Questionnaires (ARQ)
Community Epidemiology Network on Drug Use (SENDU)
UNODC Global Assessment Programme on Drug Abuse (GAP)

[1] Proxy: cohort of abusers identified from rehabilitation centres, treatment centres, hospitals, streets, and drug dens within 5 urban areas.

Data primarily reflect (codes)
a Geographically limited reporting (eg the Capital city)
b Publicly funded treatment
c NGO/ privately funded treatment
d Inpatient/ hospitalization modality
e Outpatient modality
f Limited subpopulation (eg prison, youth, etc)
g Opioid substitution treatment (eg methadone)
h First-time treatment entrants (not returning clients)
i Treatment admissions (not persons)

6.1.2.2 Primary drugs of abuse among persons treated for drug problems in the Americas

Country / Territory	Sources	Treatment Year	Distribution of main drugs in percentages*										Treatment Provided **	Data Primarily Reflect
			Cannabis	Opioids	Cocaine Group				Amphetamine-type stimulants		Solvents and Inhalants	Sedatives and Tranquilisers		
					Sum of all Cocaine	Cocaine	Basuco	Crack	Amphetamines-Group	Ecstasy-Group				
Argentina	ARQ	2008-09	37.0%	0.7%	45.4%	34.7%	10.7%		0.3%	0.4%	7.6%	8.7%	2,125	a
Bahamas	ARQ	2006-07	72.0%	0.5%	27.5%	27.5%			-	-	-	-	629	a,b
Barbados	ARQ	2006											111	
Bolivia (Plurinational State of)	ARQ	2005											14,396	
Brazil	ARQ	2005											850,000	
Canada	CAMH/ DATIS (1)	2009-10	32.5%	22.0%	33.4%	17.0%		16.4%	3.1%	2.4%	0.6%	3.9%	58,147i	a (Ontario
Chile	ARQ	2009	18.6%	-	76.0%	76.0%			0.3%	0.01%	0.3%	4.5%	8,712	a
Costa Rica	ARQ	2008	30.5%	0.5%	64.1%				-	-	-	-	3,059	
Dominican Republic	ARQ	2009	20.3%	9.0%	69.8%	69.8%			0.3%	0.6%	-	-	6,137	h
Ecuador	ARQ	2008	39.9%	4.2%	55.5%	55.5%			0.4%	-	-	-	3,550	d, e
El Salvador	ARQ	2004/ 2009***	13.8%	-	63.8%	17.2%		46.6%	-	-	-	-	6,001	d, e
Grenada	ARQ	2009	71.4%	-	27.0%	27.0%			-	-	-	-	252	
Guatemala	ARQ	2009	24.4%	-	68.0%	68.0%			2.2%	2.2%	3.1%	-	244	a,e
Haiti	ARQ/ Govt.	2002/ 2007***	35.4%	2.1%	37.5%	37.5%			-	-	-	6.3%	27	
Honduras	ARQ	2006											7,500	
Jamaica	ARQ	2008	52.7%	-	47.3%	47.3%			-	-	-	-	283	d
Mexico	ARQ	2009	21.2%	18.2%	26.9%				17.9%	-	11.4%	2.3%	38,802	c
Nicaragua	Govt.	2004											1,502	d, e
Panama	Govt.	2006											992	d, e
Paraguay	Govt.	2005	39.0%	1.4%	33.0%	22.0%	2.6%	8.4%	1.6%	0.2%	9.7%	15.1%	804	
Peru	Govt.	2009	13.6%	6.3%	41.8%				-	-	5.4%	4.4%	3,376	
Puerto Rico	Govt. (TEDS)	2009	20.8%	62.6%	12.6%	12.6%			-	-	-	0.8%	1,331	
Saint Kitts and Nevis	ARQ	2009	86.1%	-	13.9%	13.9%			-	-	-	-	44	f
Saint Lucia	ARQ	2005	17.5%	-	82.5%	82.5%			-	-	-	-	40	d
Saint Vincent and the Grenadines	ARQ/ Govt.	2004/ 2005***	75.3%	-	24.7%	24.7%			-	-	-	-	196	d
Trinidad and Tobago	ARQ	2006/ 2009***	48.8%	-	51.1%	51.1%			-	-	-	-	3,405	
Uruguay	ARQ	2009			43.6%		43.6%						4,396	
United States of America	Govt. (TEDS)	2008	29.3%	34.1%	19.5%	19.5%			10.9%		0.1%	1.5%	1,546,103	b
Venezuela (Bolivarian Republic of)	ARQ	2009	16.8%	8.6%	73.6%	38.8%	4.1%	30.7%	0.1%	0.2%		0.7%	5,097	a, b, c
Total													2,565,930	
North America			27.7%	24.8%	26.6%				10.6%	1.2%	4.0%	2.6%	1,643,052	
South America (incl. the Caribbean and Central America)			39.6%	1.9%	49.8%				0.3%	0.2%	1.5%	2.2%	922,878	
Average (unweighted)			37.9%	5.1%	46.6%				1.8%	0.3%	1.9%	2.3%		

* Note that treatment definitions and reporting differ from country to country; totals which exceed 100% represent poly-drug use reporting
** Figures may reflect number of persons or treatment episodes depending on Member State; figures exclude alcohol and nicotine.
*** The second year specified is for the number of people treated (second to last column).

Sources:
UNODC Annual Reports Questionnaires data (ARQ)
Substance Abuse and Mental Health Services Administration (SAMHSA), Treatment Episode Dataset TEDS, USA
Centre for Addiction and Mental Health (CAMH), Drug and Alcohol Treatment Information System (DATIS), Canada
(1) Number for treatment provided estimated by UNODC

Data primarily reflect (codes)
a Geographically limited reporting (eg the Capital city)
b Publicly funded treatment
c NGO/ privately funded treatment
d Inpatient/ hospitalization modality
e Outpatient modality
f Limited subpopulation (eg prison, youth, etc)
g Opioid substitution treatment (eg methadone)
h First-time treatment entrants (not returning clients)
i Treatment admissions (not persons)

6.1.2.3 Primary drugs of abuse among persons treated for drug problems in Asia

Country / Territory	Source	Treatment Year	Distribution of main drugs in percentages*								Treatment Provided **	Data Primarily Reflect
			Cannabis	Opioids	Cocaine	Amphetamine-type stimulants		Solvents and Inhalants	Sedatives and Tranquilisers	Other †		
						Amphetamines-Group	Ecstasy-Group					
Afghanistan	ARQ	2009									8,424	a
Armenia	ARQ	2009	-	70.0%	-	-	-	-	-	30.0%	257	
Azerbaijan	ARQ / UNODC Estimate	2003	20.0%	75.0%	-	-	-	5.0%	-			
Bangladesh	DAINAP	2007/ 2009***	15.0%	76.9%	-	-	-	-	-		3,800	a
Brunei Darussalam	DAINAP	2009	-	-	-	99.0%	-	1.0%	-		103	b
China	Govt. / DAINAP	2008/ 2009***	-	79.7%	-	19.1%	-	-	-		173,000	f
Cambodia	DAINAP	2009	0.3%	4.3%	-	90.0%	0.3%	-	-		1,305	f
Georgia	ARQ	2009	0.9%	88.1%	-	8.4%	-	-	2.6%		255	a
China, Hong Kong SAR	Govt / ARQ	2008/ 2009***	6.0%	57.9%	-	8.7%	-	-	-	27.4%	12,557	f / i
India	ARQ	2009	18.6%	65.8%	0.3%	0.3%	-	2.4%	12.2%		7,430	b
Indonesia	DAINAP	2009	11.9%	72.5%	0.6%	8.9%	3.3%	0.7%	2.2%		14,852	
Iran (Islamic Republic of)	Govt./ ARQ	2008/ 2009***	1.7%	83.4%	0.2%	2.6%	0.1%	-	-		660,000	
Israel	ARQ	2009									15,000	b
Japan	Govt. / DAINAP	2005/ 2008***	2.3%	-	-	55.1%	-	14.5%	-	28.2%	11,130	
Jordan	ARQ	1999	-	21.4%	-	45.2%	-	6.0%	-		85	
Kazakhstan	ARQ	2009	3.4%	95.8%	-	0.1%	-	0.7%	-		4,973	d
Kuwait	ARQ	2009	28.4%	31.2%	0.5%	21.8%	0.5%	1.5%	16.1%		197	d, f
Kyrgyzstan	ARQ	2009	2.5%	96.6%	-	-	-	-	-		322	
Lao People's Democratic Republic	DAINAP	2009	-	-	-	95.0%	-	-	-		1,964	a
Lebanon	ARQ / UNODC Estimate	2004/ 2009***	32.0%	57.0%	4.0%	0.5%	-	-	6.0%		1,022	f
China, Macao SAR	ARQ	2009	0.5%	81.0%	-	1.9%	-	-		16.6%	416	
Malaysia	DAINAP	2008/ 2009***	14.6%	73.2%	-	12.2%	-	-	-		15,645	
Maldives	ARQ	2003	13.0%	87.0%	-	-	-	-	-		126	d, e
Mongolia	ARQ	2001	28.6%	71.4%	-	-	-	-	-		7	
Myanmar	ARQ	2009	1.1%	96.7%	-	2.2%	-	-	-		1,066	a, b
Nepal	ARQ	2006									900	a
Oman	ARQ	2002	-	100.0%	-	-	-	-	-		7	f
Pakistan	ARQ	2006-07	40.7%	44.0%	-	-	-	-	-	15.4%	3,640	a
Philippines	DAINAP	2009	37.9%	-	1.5%	58.6%	1.6%	-	-		2,863	
Qatar	ARQ	2008									150	a, d
Korea (Republic of)	DAINAP	2009	2.2%	-	-	97.8%	-	-	-		324	
Saudi Arabia	Govt./ University	2005-06	55.8%	7.5%	-	72.8%	-	0.7%	5.5%		1,059	a, d
Singapore	ARQ	2009	5.0%	50.1%	-	26.7%	1.3%	-	9.0%	7.9%	535	
Syrian Arab Republic	ARQ	2006	0.2%	94.9%	0.9%	-	-	-	4.1%		674	
Sri Lanka	DAINAP	2009	23.0%	50.0%	-	-	-	-	-	27.0%	2,975	f
Taiwan, Province of China	NBCD DOH	2009	0.1%	73.1%	0.01%	22.1%	0.2%		4.2%		19,125	d
Tajikistan	Govt.	2008	0.1%	88.3%	-	-	-	-	-	11.6%	1,152	d
Thailand	DAINAP	2009	7.4%	3.1%	0.02%	82.4%	0.3%	5.4%	-		106,408	
Turkmenistan	ARQ	2007	3.3%	96.7%	-	-	-	-	-		28,720	d, e
United Arab Emirates	ARQ	2008/ 2009***	35.7%	64.3%	-	-	-	-	-		55	
Uzbekistan	ARQ	2009	7.9%	92.1%	-	-	-	-	-		5,497	b
Viet Nam	DAINAP	2008/ 2009***	0.8%	98.0%	-	0.4%	-	-	-		64,809	
Total											1,172,829	
Average (unweighted)			11.1%	59.1%	0.2%	21.9%	0.2%	1.0%	1.7%			

* Note that treatment definitions and reporting differ from country to country; totals which exceed 100% represent poly-drug use reporting.
** Figures may reflect number of persons or treatment episodes depending on Member State; figures exclude alcohol and nicotine.
*** The second year specified is for the number of people treated (second to last column).

† Other drug category refers to Tianeptine (Armenia), Ketamine (China, Macao SAR and Singapore), or otherwise unspecified.

Sources:
UNODC, Annual Reports Questionnaire (ARQ) and Field Office (FO) data
UNODC Drug Abuse Information Network for Asia and the Pacific (DAINAP).
National Bureau of Controlled Drugs (NBCD), Department of Health (DOH), Taiwan

Data primarily reflect (codes)
a Geographically limited reporting (eg the Capital city)
b Publicly funded treatment
c NGO/ privately funded treatment
d Inpatient/ hospitalization modality
e Outpatient modality
f Limited subpopulation (eg prison, youth, etc)
g Opioid substitution treatment (eg methadone)
h First-time treatment entrants (not returning clients)
i Treatment admissions (not persons)

6.1.2.4 Primary drugs of abuse among persons treated for drug problems in Europe

Country / Territory	Source	Treatment Year	Distribution of main drugs in percentages*								Treatment Provided **	Data Primarily Reflect
			Cannabis	Opioids	Cocaine	Amphetamine-type stimulants		Hallucinogens	Sedatives and Tranquilisers	Solvents and Inhalants	Other †		
						Amphetamines-group	Ecstasy-group						
Albania	EMCDDA	2007	5.6%	89.0%	2.2%	-	-	-	0.2%	-		2,070	b
Andorra	ARQ	2008		8.3%							91.7%	252	a, d
Austria	EMCDDA	2008	18.5%	69.0%	7.1%	1.6%	0.6%	0.3%	-	-		5,311	
Belarus	ARQ	2004/ 2008***	15.2%	63.2%	0.1%	3.6%	-	1.2%	3.0%	12.3%		4,843	d/ a, d, e
Belgium	ARQ	2006	34.0%	36.2%	18.9%	10.1%	0.8%	-	-	-		7,261	
Bosnia and Herzegovina	ARQ	2007/ 2008***	48.3%	48.3%	0.7%	1.7%	1.0%	-	-	-		563	a
Bulgaria	ARQ	2008	0.9%	97.1%	0.1%	1.6%	-	-	0.2%	-		2,009	a, d, e
Croatia	ARQ	2009	10.5%	82.7%	1.9%	1.8%	0.7%	-	2.4%	-		7,733	d, e
Cyprus	ARQ	2009	32.2%	50.4%	14.0%	0.4%	0.5%	-	1.1%	-		852	b
Czech Republic	ARQ	2009	13.1%	24.0%	0.4%	60.9%	0.1%	0.1%	-	0.5%		8,763	
Denmark	ARQ	2008	38.9%	41.4%	6.7%	9.9%	0.9%	0.02%	2.2%	0.1%		4,232	d, e
Estonia	EMCDDA	2008	1.3%	96.6%	-	1.8%	-	-	-	-		625	
Finland	ARQ	2008	11.0%	61.0%	-	19.5%	-	-	8.5%	-		3,369	
France	ARQ	2008	35.3%	51.0%	7.5%	0.3%	0.7%	0.3%	2.8%	-		90,757	e
Germany	ARQ	2008	31.8%	35.5%	14.7%	9.5%	4.9%	3.3%	-	0.3%		43,058	e
Gibraltar	ARQ	2008	23.8%	4.8%	66.7%	-	-	-	4.8%	-		41	d
Greece	EMCDDA	2008	8.7%	85.3%	4.0%	-	0.1%	-	-	-		4,682	
Macedonia (TFYR)	ARQ	2009	6.8%	92.0%	1.3%	-	-	-	-	-		1,212	
Hungary	ARQ	2009	71.2%	10.6%	2.4%	10.2%	1.0%	0.5%	3.4%	0.7%		4,317	
Iceland	ARQ	2007	33.3%	2.8%	16.7%	38.9%	11.1%	-	-	-		1,800	a
Ireland	EMCDDA	2008	18.3%	64.2%	11.7%	0.6%	1.6%	0.1%	-	-		6,387	
Isle of Man	Govt.	2009	39.4%	17.7%	17.1%	4.6%	4.6%	2.9%	13.7%	-		196	
Italy	ARQ	2009	9.3%	69.9%	16.2%	0.1%	0.3%	-	0.5%	-		166,386	
Latvia	ARQ	2009	19.1%	36.9%	0.7%	28.2%	0.2%	-	6.7%	3.3%	5.0%	466	b, e
Liechtenstein	ARQ	2006	81.3%	-	15.6%	3.1%	-	-	-	-		32	
Lithuania	ARQ	2009	0.8%	91.9%	0.2%	3.1%	-	-	1.5%	2.6%		5,954	
Luxembourg	EMCDDA	2008	0.6%	82.0%	13.5%	0.3%	2.8%	0.6%	-	-		327	
Malta	ARQ	2009	6.3%	83.8%	9.4%	-	0.5%	-	-	-		1,682	
Moldova (Republic of)	ARQ	2009	17.4%	82.6%	-	-	-	-	-	-		2,160	
Monaco	ARQ	2009										175	
Netherlands	ARQ	2008	25.9%	39.2%	29.9%	4.5%	0.6%	-	-	-		32,444	
Norway	Govt.	2008	16.9%	50.4%	1.6%	18.5%	-	-	-	-	12.5%	9,657	d, e, i
Poland	Govt./ ARQ	2006/ 2007***	2.9%	17.1%	0.3%	7.8%	-	0.4%	10.2%	1.3%	60.1%	12,582	d
Portugal	ARQ	2009	3.5%	49.8%	4.3%	0.02%	0.1%	-	0.1%	-	42.2%	36,668	
Romania	ARQ	2009	6.3%	74.0%	0.8%	0.2%	0.2%	-	-	-	18.6%	1,703	
Russian Federation	ARQ	2009	0.8%	95.2%	0.03%	0.3%	-	-	-	-		91,229	b
Slovakia	ARQ	2009	19.0%	42.6%	0.6%	30.1%	0.1%	-	3.1%	4.4%		1,909	
Slovenia	ARQ	2008	6.5%	86.5%	3.6%	0.1%	0.1%	-	3.2%	-		3,169	e
Spain	ARQ	2007	10.9%	39.9%	45.6%	0.8%	0.4%	0.1%	1.6%	-		50,555	
Sweden	ARQ	2008	19.9%	31.8%	1.6%	33.4%	0.3%	-	11.6%	-		4,298	d, e
Switzerland	ARQ	2007/ 2009***	26.0%	59.6%	13.7%	0.4%	0.4%	-	-	-		30,000	
Turkey	ARQ	2008	29.8%	53.0%	3.4%	0.1%	2.3%	-	2.3%	9.2%		2,145	d
Ukraine	ARQ	2009	12.0%	58.0%	0.2%	25.7%	-	0.1%	-	-		5,930	
United Kingdom	EMCDDA	2007-08	16.4%	61.9%	13.9%	3.5%	0.7%	0.3%	-	-	3.4%	132,003	d, e
Total Europe												791,807	
Total East & Southeast Europe												121,597	
Total West & Central Europe												670,210	
Average (unweighted) Europe			19.8%	54.4%	8.8%	8.0%	0.9%	0.2%	2.0%	0.8%			
Average (unweighted) East & Southeast Europe			14.0%	75.9%	1.0%	3.2%	0.4%	0.1%	0.7%	2.0%			
Average (unweighted) West & Central Europe			21.8%	46.9%	11.6%	9.7%	1.1%	0.3%	2.4%	0.4%			

* Note that treatment definitions and reporting differ from country to country; totals which exceed 100% represent poly-drug use reporting.

** Figures may reflect number of persons or treatment episodes depending on Member State; figures exclude alcohol and nicotine.

*** The second year specified is for the number of people treated (second to last column).

† Other drug category represents Ketamine and other sedatives and hypnotics (Romania), ICD10-F19 "Mental and behavioural disorders due to multiple drug use and use of other psychoactive substances" (Poland), or otherwise unspecified.

Sources:
UNODC, Annual Reports Questionnaires (ARQ)
European Monitoring Centre for Drugs and Drug Addiction (EMCDDA)

Data primarily reflect (codes)

a Geographically limited reporting (eg the Capital city)
b Publicly funded treatment
c NGO/ privately funded treatment
d Inpatient/ hospitalization modality
e Outpatient modality
f Limited subpopulation (eg prison, youth, etc)
g Opioid substitution treatment (eg methadone)
h First-time treatment entrants (not returning clients)
i Treatment admissions (not persons)

6.1.2.5 Primary drugs of abuse among persons treated for drug problems in Oceania

Country / Territory	Source	Treatment Year	Distribution of main drugs in percentages*							Treatment Provided **	Data Primarily Reflect
			Cannabis	Opioids	Cocaine	Amphetamine-type stimulants		Hallucinogens	Sedatives and Tranquilisers		
						Amphetamines-group	Ecstasy-group				
Australia	ARQ	2007-08	38.8%	23.3%	0.6%	20.2%	1.6%	-	-	82,019	b, i
New Zealand	DAINAP	2009	43.4%	41.3%	0.4%	13.7%	-	1.2%	-	5,038	b, d
Fiji	DAINAP	2006	87.2%	-	-	-	-	-	12.8%	312	f
Total										87,369	
Average (unweighted) †			41.1%	32.3%	0.5%	17.0%	0.8%	0.6%	-		

* Note that treatment definitions and reporting differ from country to country; totals which exceed 100% represent poly-drug use reporting.

** Figures may reflect number of persons or treatment episodes depending on Member State; figures exclude alcohol and nicotine.

*** The second year specified is for the number of people treated (second to last column).

† Fiji is excluded because of the disproportionate affect that the small number in treatment has on the unweighted mean

Sources:
UNODC Drug Abuse Information Network for Asia and the Pacific (DAINAP)

Data primarily reflect (codes)

a Geographically limited reporting (eg the Capital city)
b Publicly funded treatment
c NGO/ privately funded treatment
d Inpatient/ hospitalization modality
e Outpatient modality
f Limited subpopulation (eg prison, youth, etc)
g Opioid substitution treatment (eg methadone)
h First-time treatment entrants (not returning clients)
i Treatment admissions (not persons)

6.1.3 Health consequences

6.1.3.1 Drug-related death

Region / Country	Year of estimate	National estimate	Number of deaths	Reference population *	Rate per million (aged 15-64)	Ranking of drugs as primary cause of death								Fatal drug overdoses (%)
						Cannabis	Opioids	Cocaine	ATS	Ecstasy	Sedatives	Inhalents	Other	
AMERICAS														
North America														
Canada	2005	✓	2,182	23,377,266	93.3									
Mexico	2009	✓	4,562	71,376,666	63.9	2	4	1	5		3			
United States of America	2006	✓	38,396	210,501,532	182.4									
North America†			**45,100**		**147.9**									
Caribbean														
Bahamas	2007	✓	2	231,328	8.6								1	0%
Dominican Republic	2008	×	135			2		1		3				
Trinidad and Tobago	2009	✓	3	971,480	3.1			1						
Central America														
Costa Rica	2006	×	204			2	3	1			5		4	
El Salvador	2009	×	145	3,731,556	38.9									
South America														
Argentina	2006	✓	315	25,890,285	12.2			1	2					
Brazil	2007	✓	158	130,461,732	1.2	2	4	1	6		5	3		
Colombia	2000	✓	1,225	29,848,575	41.0		3	1					2	
Uruguay	2004	×	14											100%
Venezuela (Bolivarian Republic of)	2008	✓	48	5,822,473	8.2	2		1						
South America, Central America, Caribbean†			**range: 2,200 - 6,300**		**7.0 - 20.5**	**2**	**3**	**1**	**4**	**6**	**4**	**6**		
AFRICA														
East Africa														
Seychelles	2007	✓	5	59,058	84.7		1							80%
Southern Africa														
Namibia	2001	×	3				1							100%
South Africa	2009						1		2					
Zambia	2001?		7				1							29%
ASIA														
East and South-East Asia														
China	2002	✓	1,737	965,401,696	1.8									
China, Hong Kong SAR	2008	✓	155	5,289,006	29.3		1						2	
Japan	2009								1					
Myanmar	2009						1							
Viet Nam	2009	✓	2,184	59,827,591	36.5		1							
Near and Middle East /South-West Asia														
Afghanistan	2009	×	16	1,857,939	8.6		1							100%
Bahrain	2009	✓	25	564,893	44.3		1							100%
Iran (Islamic Republic of)	2008	✓	4,800	52,747,616	91.0		1							
Israel	2009						1		2					

Drug-related mortality with ranking of drugs as primary cause of death (2009 or latest year available)

Region / Country	Year of estimate	National estimate?	Number of deaths	Reference population *	Rate per million (aged 15-64)	Ranking of drugs as primary cause of death								Fatal drug overdoses (%)
						Cannabis	Opioids	Cocaine	ATS	Ecstasy	Sedatives	Inhalents	Other	
Jordan	2003	✓	52	3,908,966	13.3									
Kuwait	2009	✓	44	2,221,503	19.8									100%
Oman	2002	✓	5	1,865,299	2.7		1							
Pakistan	2009						1		2					
Qatar	2009						1							
United Arab Emirates	2009	✓	17	3,671,794	4.6		1						2	
Central Asia and Transcaucasian countries														
Azerbaijan	2007	✓	41	6,104,384	6.7		2				1			
Georgia	2008						1		2					
Kazakhstan	2008/ 2009**	✓	1,244	10,814,002	115.0		1							7%
Kyrgyzstan	2009						1							
Uzbekistan	2007/ 2009**	✓	129	18,202,649	7.1		1							42%
South Asia														
India	2008						1							
Asia†		**range: 15,300 - 140,200**			**5.6 - 51.5**		**1**		**2**		**3**			
					OCEANIA									
Australia	Various	✓	1,705	14,338,523	118.9		1	3	2					22%
Oceania†			**2,800**		**118.9**									
					EUROPE									
West & Central Europe														
Austria	2007	✓	195	5,667,083	34.4		1	2						90%
Belgium	2004	×	44				1	2						
Cyprus	2009	×	15	558,995	26.8	3	1	2						80%
Czech Republic	2008	✓	447	7,361,630	60.7		3		2			4	1	53%
Denmark	2008	✓	239	3,582,571	66.7		1	2	2					82%
Estonia	2002	✓	86	909,613	94.5									
Finland	2008	✓	244	3,542,832	68.9	2	1		3					
France	2007	✓	287	40,432,713	7.1		1	2	3	4				100%
Germany	2008	✓	1,449	54,427,876	26.6		1	2	3	4				
Gibraltar	2008	✓	1	20,614	48.5					1				0%
Greece	2004	✓	226	7,540,475	30.0		1							100%
Hungary	2009	✓	50	6,890,948	7.3	2	1	3	3					62%
Iceland	2007	✓	37	218,545	169.3		1		2		3			100%
Ireland	2005	✓	326	3,076,027	106.0		1	2		3		4		49%
Italy	2009	✓	484	39,261,602	12.3		1	3	4		4		2	100%
Latvia	2009	✓	43	1,549,789	27.7		1	4	2	3				42%
Liechtenstein	2008	✓	1	24,922	40.1		1							0%
Lithuania	2009	✓	68	2,264,376	30.0		2						1	81%
Luxembourg	2002	✓	35	331,468	105.6		1	2						100%
Malta	2009	✓	6	286,264	21.0		1							100%

Drug-related mortality with ranking of drugs as primary cause of death (2009 or latest year available)

Region / Country	Year of estimate	National estimate?	Number of deaths	Reference population *	Rate per million (aged 15-64)	Ranking of drugs as primary cause of death								Fatal drug overdoses (%)
						Cannabis	Opioids	Cocaine	ATS	Ecstasy	Sedatives	Inhalents	Other	
Monaco	2009	✓	0	20,475	0.0									
Netherlands	2008	✓	129	11,151,671	11.6		1	2					3	100%
Norway	2008	✓	179	3,187,637	56.2		1							
Poland	2007	✓	214	27,287,709	7.8		2	3					1	
Portugal	2006	✓	8	7,180,097	1.1									100%
Slovakia	2007	✓	102	3,920,448	26.0									31%
Slovenia	2005	✓	44	1,413,528	31.1		1	3					2	16%
Spain	2006	✓	1,638	32,950,551	49.7	4	1	2	5	6	3			50%
Sweden	2008	✓	419	6,052,357	69.2		1	3	2					51%
Switzerland	2008	×	129	5,124,258	25.2									
United Kingdom	2008	✓	2,278	40,716,118	55.9		1	3	4	5	2			
Southeast Europe														
Albania	2004	✓	8	2,111,663	3.8									100%
Bosnia and Herzegovina	2009	✓	1	2,664,722	0.4		1							100%
Bulgaria	2008	✓	74	5,215,908	14.2									
Croatia	2009	✓	90	2,987,872	30.1	2	1	4			2	5		69%
Macedonia (TFYR)	2009	✓	23	1,434,979	16.0		1	5	4		2		3	39%
Romania	2009	×	32	2,975,142	10.8		1				2		3	53%
Serbia	2008	✓	138	6,686,525	20.6		1	2						
Turkey	2007	✓	153	50,350,280	3.0		1							
East Europe														
Belarus	2008	✓	109	6,907,225	15.8	3	1		5			2	3	12%
Moldova (Republic of)	2009	✓	45	2,595,820	17.3									24%
Russian Federation	2008	✓	7,464	101,615,465	73.5									17%
Ukraine	2009	✓	7,597	32,169,000	236.2			1						100%
Europe†		**range: 25,200 - 26,700**			**45.6 - 48.4**	**5**	**1**	**2**	**3**	**6**	**4**	**7**		

Source: UNODC Annual Reports Questionnaire (ARQ)

Notes
† Regional total deaths and rates are estimates corrected for non-reporting countries. Number of deaths are rounded to nearest 100.
* Reference population refers to the population aged 15-64 for national estimates or the reference population as specified in the ARQ for partial country estimates or sub-populations
** All drug-related deaths refer to the first year stated, deaths from drug overdose to the second year. The percentage of fatal overdoses therefore reflects data from different years

Switzerland: Total drug-related deaths reported excludes two Cantons - estimated to be 10 cases in the calculation of the mortality rate
Romania: Includes only counties reporting with conclusive toxicological tests (representing under 20% of the population)
Belarus: Deaths among drug users registered on the Narcological Register
Russian Federation: Deaths among persons registered with the State Service for Drug Abuse Treatment

6.1.3.2 Hepatitis C among injecting drug users

Region	Country	Year Of Estimate	Prevalence (%)
Africa	Egypt	2007	55
	Kenya	2004	70
	Mauritius	2009	97
Americas	Argentina	2009	2
	Canada	2008	69
	Mexico	2005	96
	Uruguay	2004	22
Asia	Azerbaijan	2007	30
	Bangladesh	2004	54
	China, Hong Kong SAR	2009	50
	China, Macao SAR	2009	89
	Indonesia	2004	82
	Israel	2008	55
	Japan	2004	37
	Kazakhstan	2009	60
	Korea (Republic of)	2004	80
	Kuwait	2008	40
	Lebanon	2009	2
	Myanmar	2007	79
	Oman	2007	27
	Pakistan	2007	20
Europe	Albania	2006	22
	Austria	2007	42
	Belgium	2008	49
	Bosnia and Herzegovina	2006	67
	Bulgaria	2009	61
	Croatia	2009	42
	Czech Republic	2009	30
	Finland	2008	1
	France	2008	40
	Germany	2008	36
	Greece	2004	61
	Hungary	2009	24
	Iceland	2007	70
	Italy	2009	59
	Latvia	2007	74
	Lithuania	2008	95
	Luxembourg	2005	81
	Macedonia (TFYR)	2009	18
	Malta	2010	39
	Netherlands	2008	76
	Poland	2009	48
	Portugal	2009	29
	Romania	2009	57
	Russian Federation	2009	48
	Slovakia	2007	14
	Slovenia	2008	22
	Switzerland	2007	14
	Turkey	2003	15
	United Kingdom	2008	40
Oceania	Australia	2008	63
	New Zealand	2007	70

6.2 PRODUCTION

6.2.1 Afghanistan

Fact Sheet – *Afghanistan Opium and Cannabis Surveys 2010*[1]

	2009	Change on 2009	2010
Net opium cultivation (after eradication)[2]	123,000 ha (102,000-137,000)	0%	123,000 ha (104,000-145,000)
Cannabis cultivation[3]	10,000-24,000 ha	*	9,000-29,000 ha
No. of poppy-free provinces[4] No. of provinces affected by opium cultivation	20 14	No change No change	20 14
No. of provinces affected by cannabis cultivation[5]	17	+2	19
Opium poppy eradication	5,351	-57%	2,316 ha
Weighted average opium yield	56.1 kg/ha	-48%	29.2 kg/ha
Average cannabis resin (garda) yield	143 kg/ha	-12%	128 kg/ha
Potential production of opium in % of global potential opium production	6,900 mt 88%	-48%	3,600 mt 74%
Potential production of cannabis resin (garda)[6]	1,500-3,500 mt	*	1,200-3,700 mt
No. of household involved in opium cultivation[7] in % of total population	245,200 6%	+1%	248,700 6%
No. of households involved in cannabis cultivation	40,000 (25,000-60,000)	+18%	47,000 (27,000-88,000)
Average farm-gate price (weighted by production) of dry opium at harvest time	US$ 64/kg	+164%	US$ 169/kg
Average farm-gate price of cannabis resin (best quality, weighted by production) at the time of resin processing	US$ 35/kg	+146%	US$ 86/kg
Total farm-gate value of opium production in % of GDP[8]	US$ 438 million 4%	+38%	US$ 605 million 5%
Total farm-gate value of cannabis resin (garda) production	US$ 39-94 million	*	US$ 85-263 million
Potential gross export value of opiates in % of GDP	US$ 2.8 billion 26%	-50%	US$ 1.4 billion 11%
Potential net export value of opiates in % of GDP[8]	US$ 2.3 billion 21%	-48%	US$ 1.2 billion 9%
Average yearly gross income from opium of opium growing households	US$ 1,786	+36%	US$ 2,433
Average yearly gross income from cannabis of cannabis growing households	US$ 1,553	+93%	US$ 3,000
Income from opium per ha (gross/net)	US$ 3,600 / 2,005	+36% / +45%	US$ 4,900 / 2,900
Income from cannabis per ha (gross/net)	US$ 3,900 / 3,341	+131% / +150%	US$ 9,000 / 8,341

* Due to the uncertainty associated with the estimate, a change rate could not be calculated.

1 The information in this section comes from the Afghanistan Opium Survey 2010 (UNODC/Ministry of Counter Narcotics) and can also be found at http://www.unodc.org/unodc/en/crop-monitoring/index.html, and the preliminary Afghanistan Cannabis Survey 2010. Source unless otherwise indicated: National Monitoring System supported by UNODC.

2 Figures in brackets represent the upper and lower bounds of the estimation range.

3 Cannabis cultivation was defined as mono-crop cannabis cultivated in fields. Small-scale and mixed cultivation could not be considered.

4 Out of 34 provinces of Afghanistan. Poppy-free provinces are those which are estimated to have less than 100 ha of opium cultivation.

5 Cannabis cultivation was defined as mono-crop cannabis cultivated in fields. Small-scale and mixed cultivation could not be considered.

6 Garda is the local term used in Afghanistan for the powder obtained by threshing and sieving the harvested and dried cannabis plants. This process is repeated several times and results in different quality of garda (first, second, …) with varying proportions of resin and other plant matter. Garda is further processed into hashish.

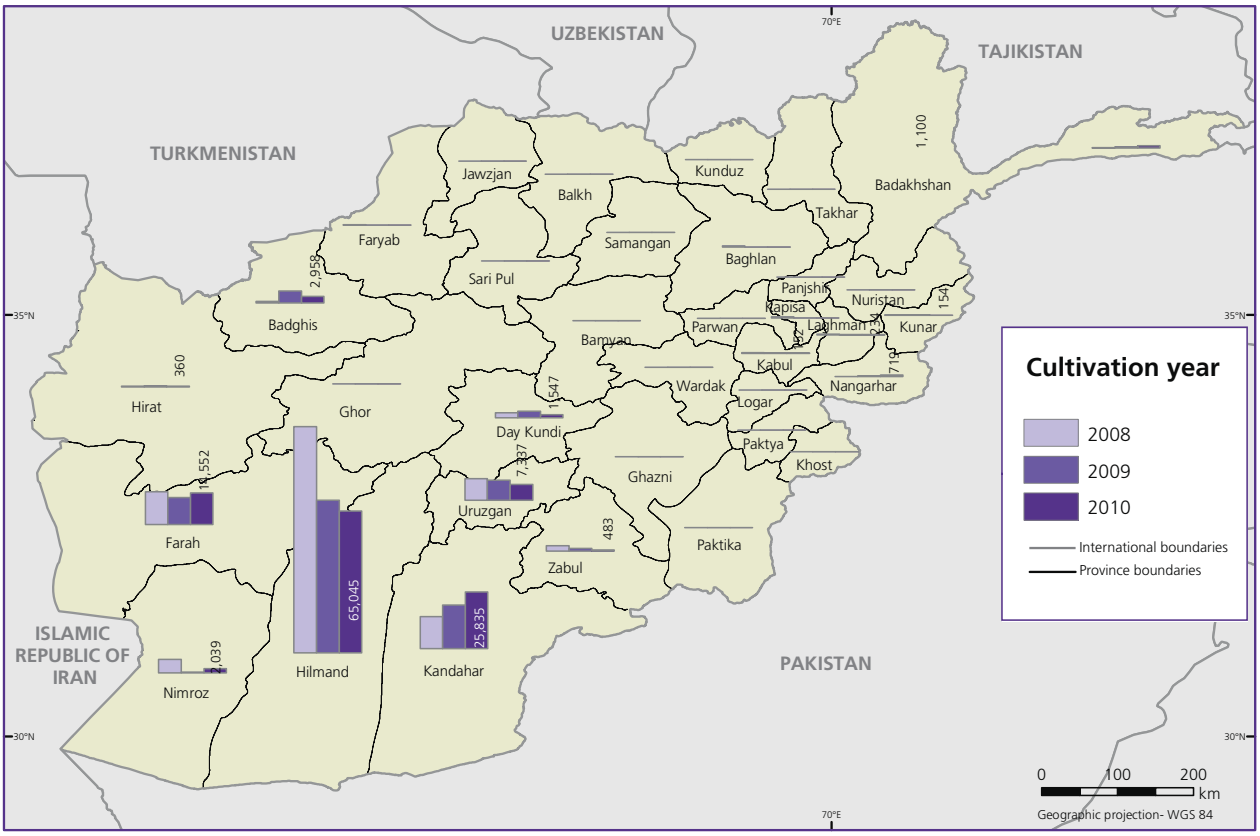
7 Estimates are based on a population of 24.0 million a for 2009 and a population of 24.5 million for 2010 and an average household size of 6.2 persons. Source: Gov. of Afghanistan, Central Statistical Office.

8 Nominal GDP of the respective year. Source: Gov. of Afghanistan, Central Statistical Office.

Afghanistan, regional distribution of opium poppy cultivation (ha), 2009 to 2010

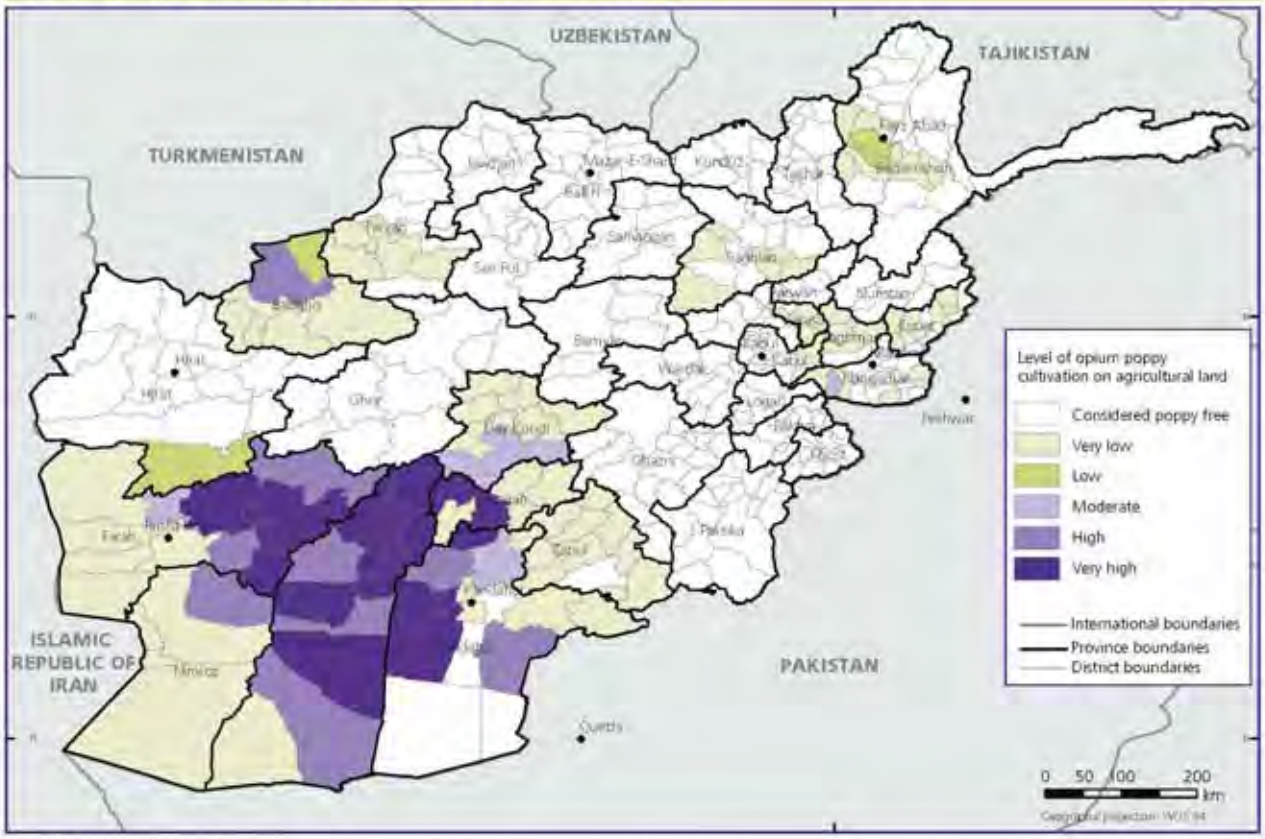
Region	2009 (ha)	2010 (ha)	Change on 2009	2010 (ha) as % of total
Southern	103,014	100,247	-3%	82%
Western	18,800	19,909	6%	16%
Eastern	593	1,100	97%	1%
North-eastern	557	1,107	87%	1%
Central	132	152	15%	0.1%
Northern	Poppy-free	Poppy-free	NA	NA
Rounded Total	**123,000**	**123,000**	**0%**	**100%**

Afghanistan, opium poppy cultivation at provincial level, 2008-2010



Source: MCN - UNODC Afghanistan Opium Survey 2010
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Afghanistan, opium poppy cultivation at district level, 2010



Source: MCN - UNODC Afghanistan Opium Survey 2010
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

6.2.2 Bolivia (Plurinational State of)

Fact Sheet – *Bolivia Coca Survey 2010*[9]

The figures from the 2010 report on coca cultivation were not yet available at the time of printing of this report.

	2009	Change on 2009	2010
Coca cultivation	30,900 ha		
Of which in the Yungas of La Paz	*20,900 ha*		
in Chapare	*9,700 ha*		
in Apolo	*300 ha*		
Of which permitted by Bolivian law 1008	*12,000 ha*		*12,000 ha*
Production of sun-dried coca leaf	54,800 mt		
Potential production of cocaine HCl	n.a.		
National weighted average farm-gate price of coca leaf (outside state market)	US$ 4.9/kg		
Total farm-gate value of coca leaf production	US$ 265 million		
GDP[10]	US$ 13.0 billion		
Farm-gate value of coca leaf production in per cent of GDP	2%		
Farm-gate value of coca leaf production in per cent of GDP of agricultural sector	14%		
Reported eradication of coca bush*	6,341 ha	+29%	8,200 ha
Reported seizure of sun-dried coca leaves*	1,624 mt	-37%	1,016 mt
Reported seizure of cocaine base*	21,970 kg	+17%	25,714 kg
Reported seizure of cocaine HCl*	4,922 kg	-31%	3,390 kg
Reported destruction of coca laboratories[11]*	4,888	+21%	5,922

* As reported by the Government of the Plurinational State of Bolivia. Eradication: includes voluntary and forced eradication.

9 The information in this section comes from the report on Coca Cultivation in Bolivia (UNODC/Government of Bolivia, June 2010), and can also be found on the internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html). Source unless otherwise indicated: National Monitoring System supported by UNODC.

10 Source: Instituto Nacional de Estadística de Bolivia (INE).

11 Including installations producing cocaine base, HCl or "recycling" precursors. Excluding coca leaf maceration pits.

6.2.3 Colombia

Fact Sheet - Colombia Coca Survey 2010[12]

	2009	Change on 2009	2010
Net coca cultivation (on 31 Dec, rounded)			
Without adjustmenfor small fields	68,000 ha	-16%	57,000 ha
With adjustment for small fields[13]	*73,000 ha*	*-15%*	*62,000 ha*
Of which[14] *Pacific region*	*27,020 ha*	*-5%*	*25,680 ha*
Central region	*18,050 ha*	*-15%*	*15,310 ha*
Putumayo-Caquetá region	*9,620 ha*	*-23%*	*7,360 ha*
Meta-Guaviare region	*13,130 ha*	*-34%*	*8,710 ha*
elsewhere	*5,320 ha*	*-11%*	*4,750 ha*
Potential production of cocaine (100% purity)			
Based on area without adjustment for small fields	410 mt	n.a.	n.a.
Based on area with adjustment for small fields	n.a.	n.a.	350 ml (350-400)
Average farm-gate price of coca paste	US$956/kg	-6%	US$1,015/kg
	COP2,047,970/kg	-6%	COP1,923,000/kg
Average wholesale price of cocaine* (of unknown purity in major cities)	US$2,147/kg	+14%	US$2,439/kg
	COP 4,587,000/kg	+1%	COP4,623,000/kg
Total farm-gate value of the production of coca leaf and its derivatives	US$496 million		n.a.
in per cent of GDP[15]	0.2%		n.a.
in per cent of agricultural sector	3%		n.a.
Reported aerial spraying of coca bush*	104,771 ha	-3%	101,939 ha
Reported manual eradication of coca bush*	60,544 ha	-28%	43,792 ha
Reported seizure of cocaine*	203 mt		215 mt
Reported destruction of coca processing laboratories*	2,888	-9%	2,623
Of which cocaine HCl processing lab.	278	-9%	254
Reported opium poppy cultivation*	356 ha	-3%	346 ha
Potential opium latex production**	26 mt		
Potential heroin production (rounded) **	1.1 mt		
Average farm-gate price of opium latex*	US$358/kg	+37%	US$489/kg***
Average wholesale heroin price*	US$9,993/kg	+7%	US$10,667/kg***
Reported seizure of heroin*	732 kg	-54%	337 kg

Note: Due to the introduction of an adjustment factor for small fields, 2009 figures are being revised.
* As reported by the Government of Colombia.
** Own calculations based on regional yield figures and conversion ratios from US Government/DEA scientific studies.
*** Preliminary, refers to January to October 2010, only.

12 The information in this section comes from the report on Coca Cultivation in Colombia (UNODC/Government of Colombia, June 2011), and can also be found on the internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html). Source unless otherwise indicated: National monitoring system supported by UNODC.

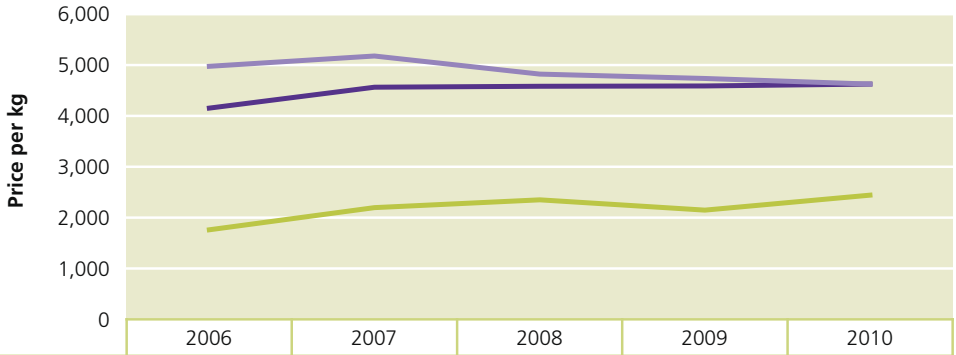
13 The spatial resolution of the satellite images ("pixel size") used for coca monitoring limits the detection of small fields below 0.25 ha. Based on studies with very high resolution imagery, a correction factor was calculated to minimize this effect and improve the accuracy of the estimate.

14 Regional area figures refer to area adjusted for small fields.

15 GDP of the respective year as reported by the Government.

Colombia, nominal and constant annual wholesale prices for cocaine HCl* (US$/kg and '000 COP/kg), 2006 to 2010

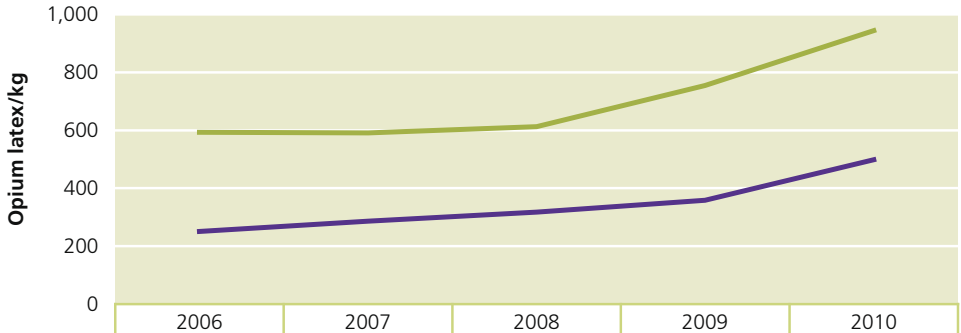
*Cocaine of unknown purity.
Source: DIRAN.



	2006	2007	2008	2009	2010
'000 COP/kg (nominal)	4,155	4,567	4,580	4,587	4,623
'000 COP/kg (constant, 2010=100)	4,976	5,175	4,819	4,733	4,623
US$/kg (nominal)	1,762	2,198	2,348	2,146	2,439

Colombia, annual farm-gate prices* for opium latex, 2006 to 2010

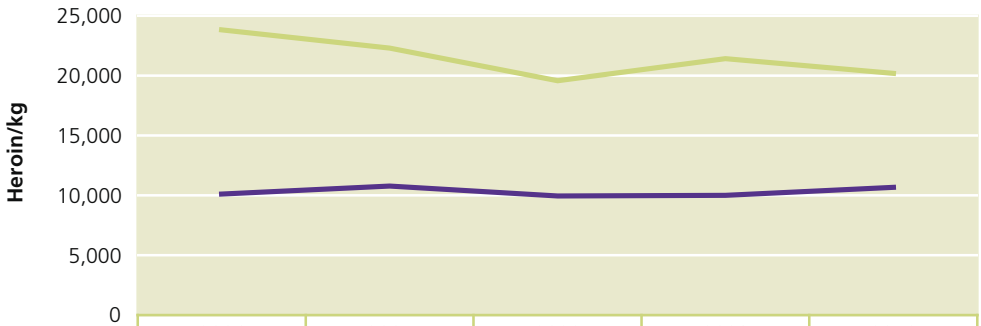
*Nominal prices. Source: DIRAN.



	2006	2007	2008	2009	2010
Opium latex (farm-gate), '000 COP/kg	593	591	612	754	944
Opium latex (farm-gate), US$/kg	251	286	318	358	498

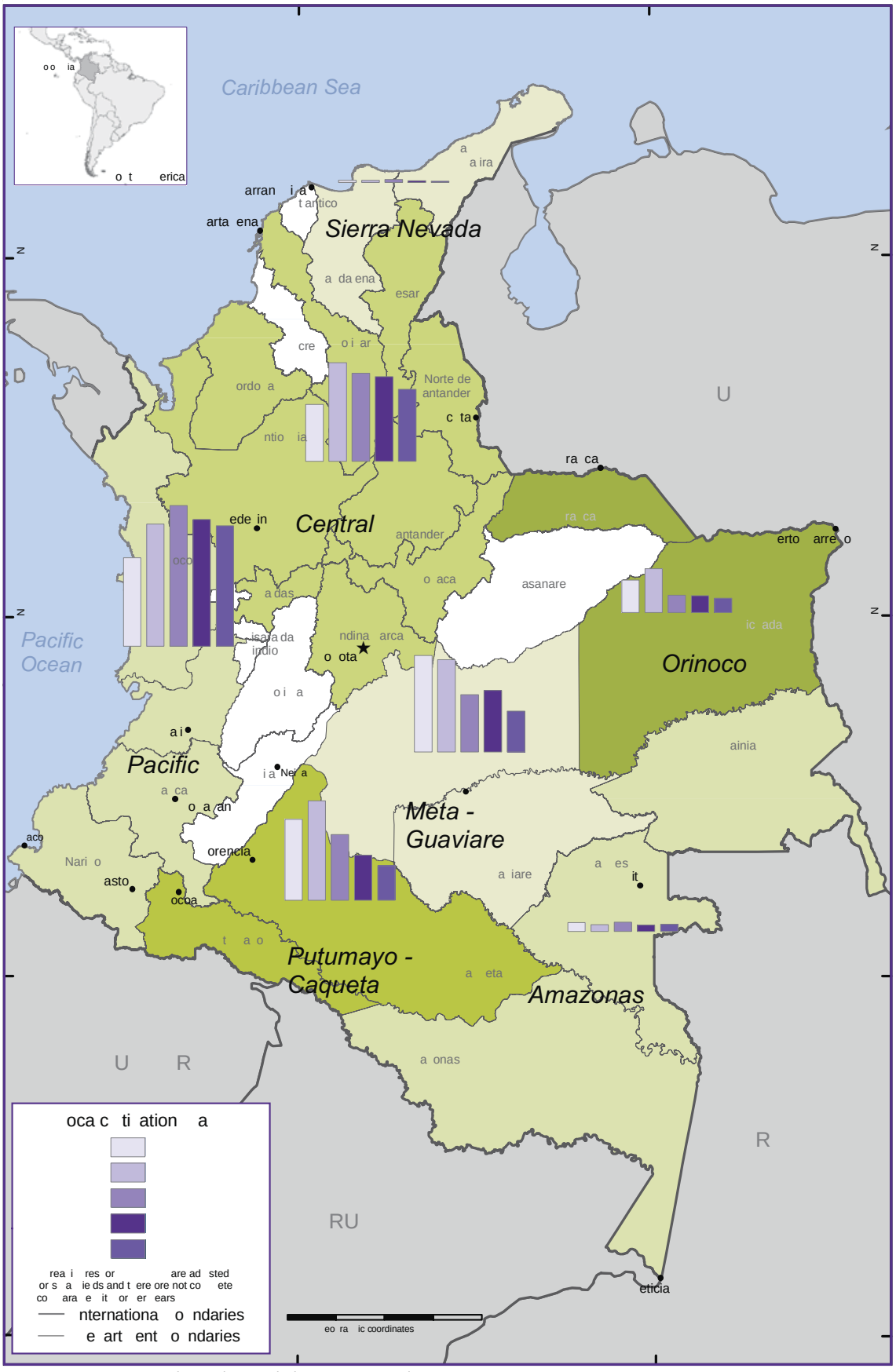
Colombia, annual wholesale price of heroin,* 2006 to 2010

*Nominal prices for heroin of unknown purity. Source: DIRAN.



	2006	2007	2008	2009	2010
Heroin (wholesale), '000 COP/kg	23,822	22,294	19,560	21,422	20,187
Heroin (wholesale), US$/kg	10,103	10,780	9,950	9,993	10,667

Colombia, coca cultivation by region (ha), 2006-2010



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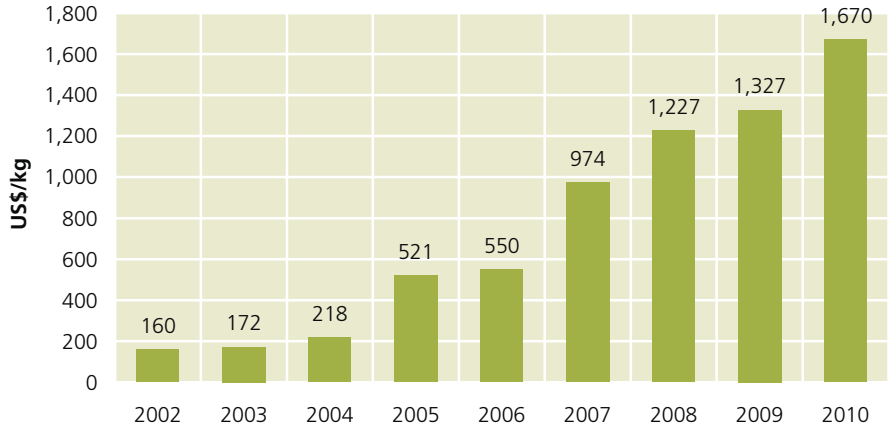
6.2.4 Lao People's Democratic Republic

Fact Sheet – Lao People's Democratic Republic Opium Survey 2010[16]

	2009	Change on 2009	2010
Opium poppy cultivation	1,900 ha (900-3,000)	+58%	3,000 ha (1,900-4,000)
Average dry opium yield[17]	6 kg/ha	na	6 kg/ha
Potential production of dry opium	11 mt (5.4-18)	+58%	18 mt (11.4-24.0)
Average retail/wholesale price of opium[18]	US$ 1,327 (350-2,440)	+26%	US$ 1,670 (580-2,700)
Eradication[19]	651 ha	-11%	579 ha

Lao People's Democratic Republic, annual opium prices (US$/kg), 2002 to 2010

Source: LCDC, Provincial authorities survey.



16 The information in this section comes from the report on Opium Poppy Cultivation in South-East Asia (UNODC/Governments of Lao PDR and Myanmar), and can also be found on the internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html). Source unless otherwise indicated: National monitoring system supported by UNODC. Figures in brackets represent the upper and lower bounds of the 90% confidence interval unless otherwise indicated.

17 In the absence of a recent yield survey, the yield per hectare estimated in 2007 was used.

18 Source: LCDC, Provincial authorities survey. Due to the limited market for opium, a clear distinction between farm gate, wholesale and retail prices could not be established. The range refers to the lowest and highest provincial price observed.

19 Source: LCDC. Eradication campaigns were conducted during and after the survey.

6.2.5 Myanmar

Fact Sheet - Myanmar Opium Survey 2010[20]

	2009	Change on 2009	2010
Opium poppy cultivation in Myanmar	31,700 ha (24,000 - 42,900)	+20%	38,100 ha (23,200 - 53,900)
Of which in Shan State	30,000 ha (24,000 - 40,000)	+17%	35,000 ha (22,700 - 50,100)
Average opium yield (weighted by area)	10.4 kg/ha	+46%	15.2 kg/ha
Potential production of dry opium	330 mt (214 - 447)	+76%	580 (350 - 820)
Opium poppy eradication[21]	4,087 ha	+102%	8,268 ha
Average farm-gate price of opium at harvest time	US$ 317/kg	-4%	US$ 305/kg
Total potential farm-gate value of opium production[22]	US$ 105 million (68 - 142)	+68%	US$ 177 million (107 - 250)
Estimated number of households involved in opium poppy cultivation	192,000 (160,000 - 225,000)	+17%	224,000 (102,000 - 342,000)
Of which in the Shan State	176,500 (141,200 - 235,300)	+17%	206,000 (134,000 - 295,000)
Opium-producing households in Shan State:			
Average yearly household income	US$ 700	+19%[23]	US$ 830
Income from opium sales	US$ 160	+125%	US$ 360
Per capita income	US$ 125	+19%	US$ 155
Non-opium poppy producing households in Shan State			
Household average yearly income	US$ 750	+13%[24]	US$ 850
Per capita income	US$ 133	+17%	US$ 155

Numbers in brackets refer to the lower and upper bound of the 95% confidence interval.

20 The information in this section comes from the report on Opium Poppy Cultivation in South East Asia (UNODC/Governments of Lao PDR and Myanmar, December 2010), and can also be found on the internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html).

21 Source: CCDAC.

22 The farm-gate value should calculated with the price of dry opium. However, the price of dry opium is difficult to establish in Myanmar because of the selling and storing practices of the farmers. The farm-gate value here is calculated with the price of fresh opium. This result in a lower estimate.

23 This is equivalent to a 10% increase in constant 2009 Kyats.

24 This is equivalent to a 5% increase in constant 2009 Kyats.

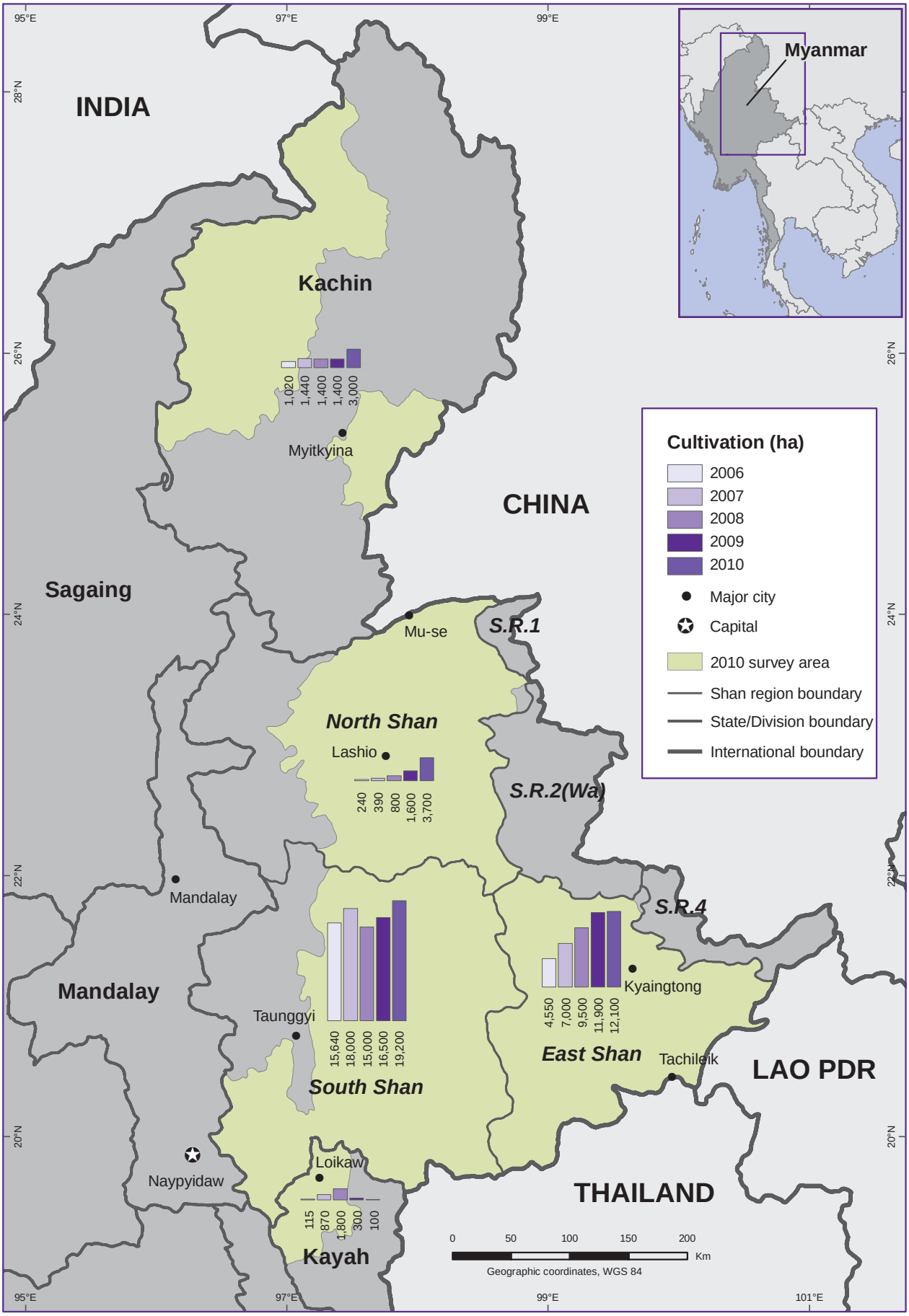
Myanmar, opium poppy cultivation by region (ha), 2008-2010				
Region	**2008**	**2009**	**2010**	**% of total area of opium poppy cultivation**
East Shan	9,300 (6,800 to 11,800)	11,900 (8,100 to 15,000)	12,100 (6,200 to 19,000)	32%
North Shan	800 (400 to 1,200)	1,600 (390 to 2,900)	3,700 (1,500 to 6,700)	10%
South Shan	15,500 (9,500 to 21,500)	16,500 (10,900 to 22,600)	19,200 (9,400 to 31,500)	50%
Shan State total	**25,300**	**30,000 (24,000 to 40,000)**	**35,000 (22,700 to 50,100)**	**92%**
Kachin	1,500 (1,100 to 1,900)	1,400 (1,100 to 1,700)	3,000 (500 to 3,800)	8%
Kayah	1,800 (1,800 to 2,500)	300[25] (60 to 700)	100	0.3%
National total (rounded)	**28,500 (17,900 to 37,000)**	**31,700 (20,500 to 42,800)**	**38,100 (23,200 to 53,900)**	**100%**

Numbers in brackets refer to the lower and upper bound of the 95% confidence interval.

Myanmar, reported eradication of opium poppy by region (ha), 2006-2010					
Region	**2006**	**2007**	**2008**	**2009**	**2010**
East Shan	32	1,101	1,249	702	868
North Shan	76	916	932	546	1,309
South Shan	3,175	1,316	1,748	1,466	3,138
Shan State total	**3,283**	**3,333**	**3,929**	**2,714**	**5,316**
Kachin	678	189	790	1,350	2,936
Kayah	0	12	12	14	13
Total within the surveyed area	**3,961**	**3,534**	**4,731**	**4,078**	**8,265**
Magwe	0	45	0	1	1
Chin	0	10	86	5	2
Mandalay	9	0	3	2	0
Sagaing	0	9	0	1	0
Other states	9	64	0	0	0
Total (national)	**3,970**	**3,598**	**4,820**	**4,087**	**8,268**

25 The estimates in Kayah for 2008 and 2009 are not directly comparable due to a change in methodology.

Myanmar, opium poppy cultivation (ha), 2006-2010



Source: Government of Myanmar - National Monitoring System supported by UNODC
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

6.2.6 Peru

Fact Sheet - Peru Coca Survey 2010[26]

	2009	Change on 2009	2010
Coca cultivation	59,900 ha	+2%	61,200 ha
Of which in Alto Huallaga	*17,500 ha*	*-26%*	*13,000 ha*
Apurímac-Ene	*17,500 ha*	*+13%*	*19,700 ha*
La Convención-Lares	*13,200 ha*	*+1%*	*13,300 ha*
Elsewhere	*11,700 ha*	*+29%*	*15,200 ha*
Weighted average sun-dried coca leaf yield	2,200 kg/ha	-5%	2,100 kg/ha
Potential production of sun-dried coca leaf[27]	128,000 mt	+1%	129,500 mt
Potential production of sun-dried coca leaf available for cocaine production	119,000 mt (102,400-134,200)	+1%	120,500 mt (103,000-136,300)
Average farm-gate price of sun-dried coca leaf	US$ 3.2/kg	-3%	US $ 3.1/Kg
Average farm-gate price of sun-dried coca leaf (weighted by production)[28]	US$ 3.0/kg	-7%	US $ 3.1/Kg
Average farm-gate price of coca paste	US$ 778/kg	-1%	US $ 784/Kg
Average price of cocaine HCl in coca cultivating regions	US$ 1,021/kg	-7%	US $ 947/Kg
Potential farm-gate value of sun-dried coca leaf[29]	US$ 384 million		
Reported eradication of coca cultivation*	10,025 ha	+2%	12,239 ha
Reported seizure of sun-dried coca leaves*	1,031 mt		
Reported seizure of coca paste*	9,914 kg	+34%	13,238 kg
Reported seizure of cocaine HCl*	10,744 kg	+63%	17,544 kg
Reported destruction of coca laboratories[30]*	1,242	+6%	1,317
Of which cocaine HCl processing laboratories	*25*		*21*

* As reported by the Government of Peru.

26 The information in this section comes from the report on Coca Cultivation in Peru (UNODC/Government of Peru, June 2011), and can also be found on the Internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html). Source unless otherwise indicated: National monitoring system supported by UNODC.

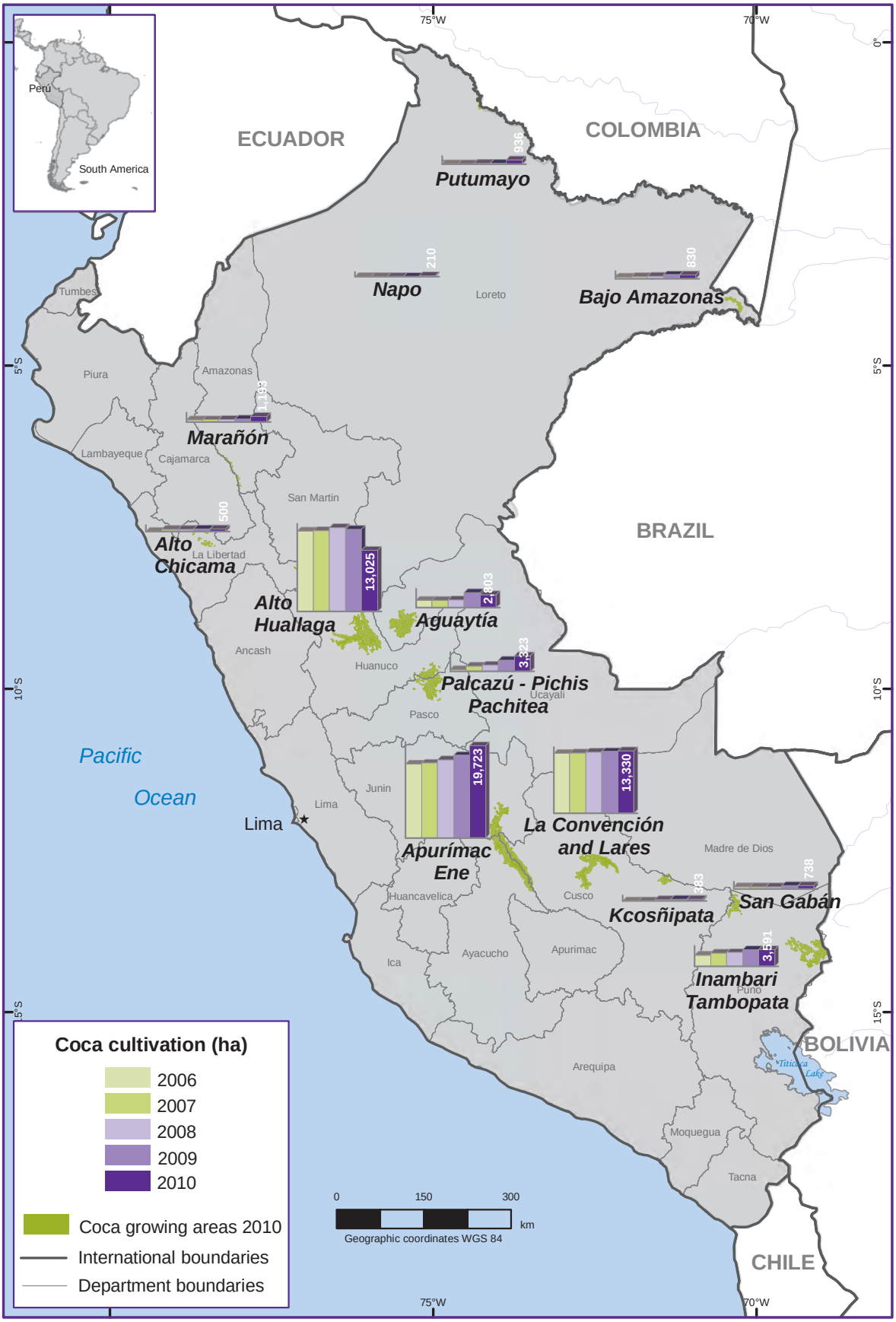
27 Includes all coca leaf potentially produced. For the calculation of coca leaf available for cocaine production, 9,000 mt of sun-dried coca leaf were deducted from this figure, which, according to Government sources, is the amount used for traditional purposes.

28 The weighted average price takes into account that different amounts of coca leaf are sold in different regions at different price levels.

29 Takes into account all coca leaf produced, irrespective of its use. For the calculation, the weighted average coca leaf price was used.

30 Excluding coca leaf macerations pits.

Peru, Coca cultivation by region, 2006-2010



Source: Government of Peru - National monitoring system supported by UNODC.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by United Nations.

Methodology

Considerable efforts have been made over the years to improve the estimates presented in the *World Drug Report,* which rely, to a large extent, on information submitted by Member States through the Annual Report Questionnaire (ARQ). Nonetheless, challenges remain in making such estimates because of data gaps and the varying quality of the available data. One major problem is the irregularity and incompleteness in ARQ reporting by Member States. Irregular reporting may result in absence of data for some years, and may influence the reported trend in a given year. Secondly, submitted questionnaires are not always complete or comprehensive, and thirdly, much of the data collected are subject to limitations and biases. These issues affect the reliability, quality and comparability of the information received.

Sources of information

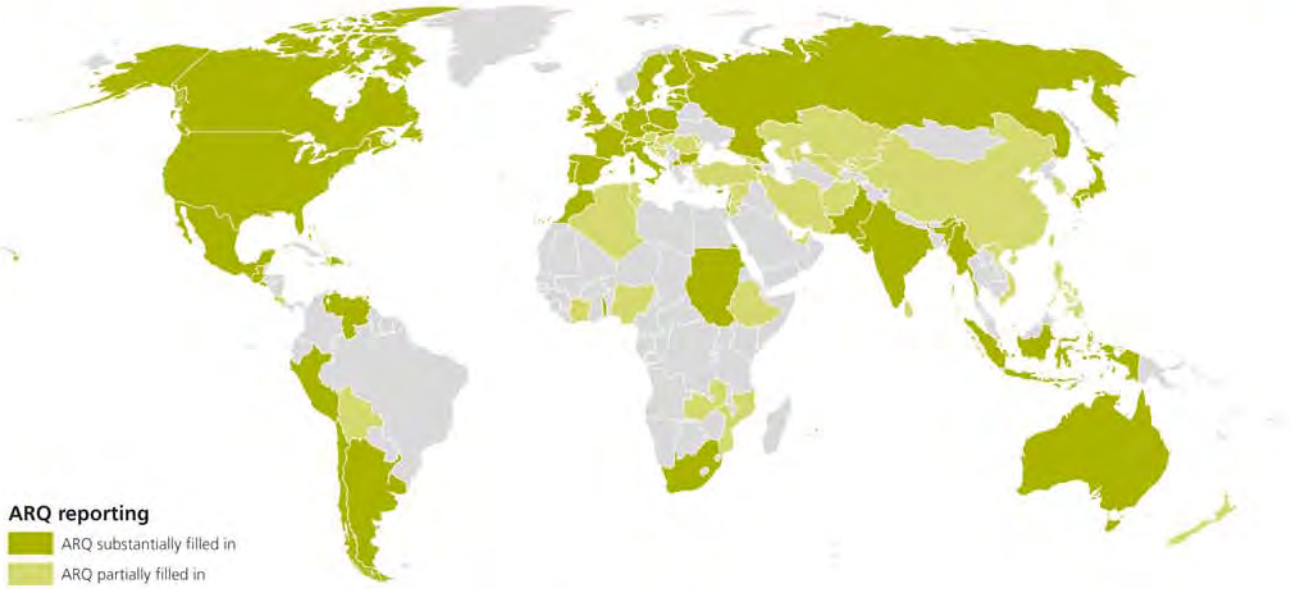
Under the International Drug Conventions, Member States are formally required to provide national drug control-related information annually to the 'Secretary-General' of the United Nations (that is, to UNODC). The Commission on Narcotic Drugs, the UNODC governing body on illicit drug issues, developed the Annual Reports Questionnaire (ARQ) to collect this information. The 2011 *World Drug Report* is based primarily on data obtained from the ARQs submitted by Governments over the period March 2010 to December 2010. The data collected during this period normally refer to the drug situation in 2009. UNODC distributed the questionnaire to 194 countries, as well as 15 territories, and received 107 replies to its questionnaire on Drug Abuse (Part II) and 106 replies to its questionnaire on Illicit Supply of Drugs (Part III). The best coverage was from countries in Europe (80% of countries filled in Part II and 88% filled in Part III), Asia (64% of countries filled in Part II and 62% Part III) and the Americas (59% of countries filled in Part II and 53% Part III). In the case of Africa, 27% of countries submitted Part II and 25% Part III, and for Oceania, 12% of countries submitted Part II and Part III.

In general, the quantity of information provided on illicit drug supply is significantly better than data provided on drug use. While 90% of the responses to Part III of the ARQ were 'substantially' completed, this was true for just 53% of the Part II. (ARQs which were more than 50% completed were classified as having been 'substantially filled in'; less than 50% completion was classified as 'partially filled in'). In order to analyse the extent to which Member States provided information, a number of key questions in the ARQs were identified:

- For Part II, Drug Abuse, the key questions referred to: trends in drug use (78% of the countries returning the ARQ), lifetime prevalence among the general population (54%), youth prevalence (54%), treatment (68%), prevalence of Hepatitis C (47%), HIV (48%) and Hepatitis B (41%) among injecting drug users, and drug-related mortality (34%).
- For Part III, the Supply of Drugs, this included the questions on: quantities of illicit drugs seized (95% of the countries returning the ARQ), trafficking (origin, routes and destination) (80%), prices and purity (85%), and drug-related arrests (91%).

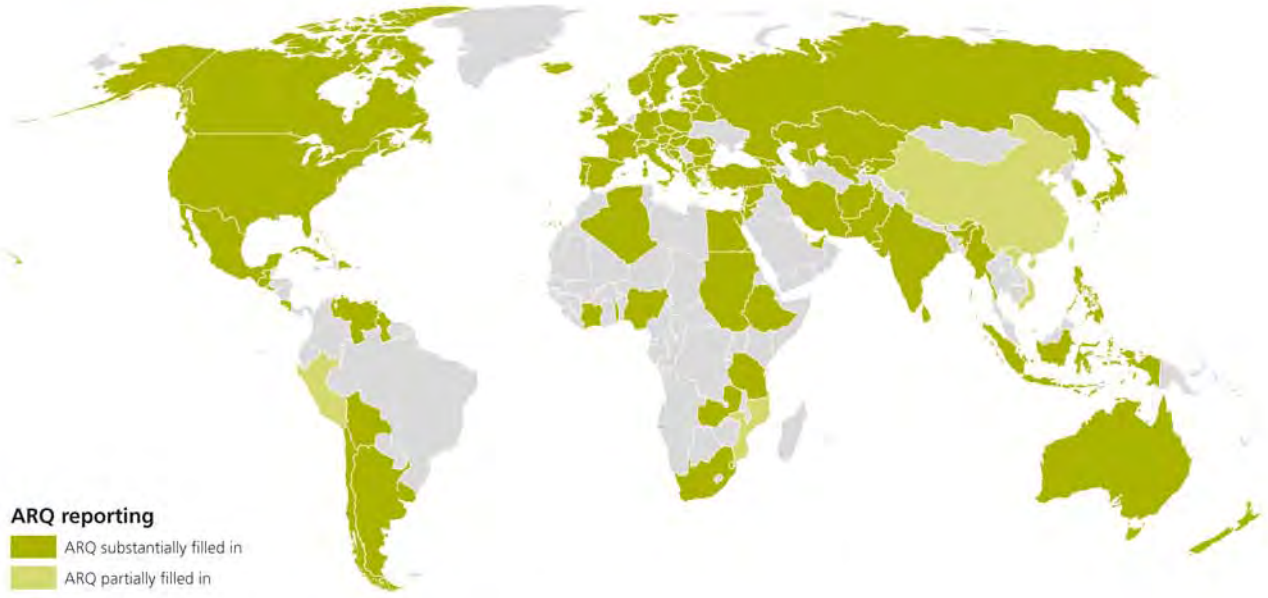
While the ARQ information forms the basis for the estimates and trend analysis provided in the *World Drug Report*, often, this is not sufficient to provide a comprehensive picture of the world's illicit drug markets. When necessary and where available, ARQ data are supplemented with data from other sources. As in previous years, seizure data was complemented primarily with data and reports from international organizations such as INTERPOL, the World Customs Organization, Europol, the Organization of American States /Inter-American Drug Abuse Control Commission (CICAD) as well as data provided by the Heads of National Law Enforcement Agencies at their regional meetings, and UNODC's 'Drug Use Information Network for Asia and the Pacific' (DAINAP). In addition, Government reports and online resources were used. Other sources included data published by the United States Department of State's Bureau for International Narcotics and Law Enforcement Affairs in its International Narcotics Control Strategy Report. Price and purity data for Europe was complemented with data from the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) and Europol, whereas precursor data are from the International Narcotics Control Board. Demand-related information was obtained through a number of additional sources, including the drug control agencies participating in the DAINAP network, as well as various national and regional epidemiological

Member states that provided annual reports questionnaire drug demand data for 2009



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Controlin Jammu and Kashmir agreed upon by India and Pakistan.The final status of Jammu and Kashmir has not yet beenagreed upon by the parties.

Member states that provided annual reports questionnaire drug supply data for 2009



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

networks such as EMCDDA and CICAD. National government reports and scientific literature were also used.

Data on drug consumption

Overview

UNODC estimates of the extent of illicit drug use in the world have been published periodically since 1997. Assessing the extent of drug use (the number of drug users) is a particularly difficult undertaking because it involves measuring the size of a 'hidden' population. Margins of error are considerable, and tend to increase as the scale of estimation is raised, from local to national, regional and global levels. Regional and global estimates are reported as ranges to reflect the information gaps. The level of confidence expressed in the estimates varies across regions and drug types.

A global estimate of the level of use of a specific drug involves the following steps:

1. Identification and analysis of appropriate sources (starting from the ARQ);
2. Identification of key benchmark figures for the level of drug use in all countries where data are available (annual prevalence of drug use among the general population aged 15-64) which then serve as 'anchor points' for subsequent calculations;
3. 'Standardization' of existing data if reported with a different reference population than the one used for the *World Drug Report* (for example, from age group 12 and above to a standard age group of 15-64) ;
4. Adjustments of national indicators to estimate an annual prevalence rate if such a rate is not available (for example, by using the lifetime prevalence or current use rates; or lifetime or annual prevalence rates among the student population). This includes the identification of adjustment factors based on information from neighbouring countries with similar cultural, social and economic situations where applicable;
5. Imputation for countries where data is not available, based on data from countries in the same subregion. Ranges are calculated by considering the 10th and 90th percentile of the subregional distribution;
6. Extrapolation of available results for a subregion were calculated only for subregions where prevalence estimates for at least two countries covering at least 20% of the population were available. If, due to a lack of data, subregional estimates were not extrapolated, a regional calculation was extrapolated based on the 10th and 90th percentile of the distribution of the data available from countries in the region.
7. Aggregation of subregional estimates rolled-up into regional results to arrive at global estimates.

For countries that did not submit information through the ARQ, or in cases where the data were older than 10 years, other sources were identified, where available. In nearly all cases, these were government sources. Many estimates needed to be adjusted to improve comparability (see below).

In cases of estimates referring to previous years, the prevalence rates were left unchanged and applied to new population estimates for the year 2009. Currently, only two countries measure drug prevalence among the general population on an annual basis. The remaining countries that regularly measure it - typically the more economically developed - do so usually every three to five years. Therefore, caution should be used when interpreting any change in global prevalence figures, as changes may in part reflect newer reports from countries or the exclusion of older reports, rather than actual changes in use at the global level.

Detailed information is available from countries in North America, a large number of countries in Europe, a number of countries in South America, the two large countries in Oceania and a limited number of countries in Asia and Africa. One key problem in national data is the level of accuracy, which varies strongly from country to country. Not all estimates are based on sound epidemiological surveys. In some cases, the estimates simply reflect the aggregate number of drug users found in drug registries, which cover only a fraction of the total drug using population in a country. Even in cases where detailed information is available, there is often considerable divergence in definitions used, such as chronic or regular users; registry data (people in contact with the treatment system or the judicial system) versus survey data (usually extrapolation of results obtained through interviews of a selected sample); general population versus specific surveys of groups in terms of age (such as school surveys), special settings (such as hospitals or prisons), et cetera.

To reduce the error margins that arise from simply aggregating such diverse estimates, an attempt has been made to standardize - as a far as possible - the heterogeneous data set. All available estimates were transformed into one single indicator – annual prevalence among the general population aged 15 to 64 - using transformation ratios derived from analysis of the situation in neighbouring countries, and if such data were not available, using global average estimates. The basic assumption is that though the level of drug use differs between countries, there are general patterns (for example, lifetime prevalence is higher than annual prevalence; young people consume more drugs than older people; males consume more drugs than females; people in contact

with the criminal justice system show higher prevalence rates than the general population, et cetera) which apply to most countries. It is also assumed that the difference between lifetime prevalence and annual prevalence among the general population or between lifetime prevalence among young people and annual prevalence among the general population, except for emerging drug trends, do not vary greatly among countries with similar social, cultural and economic situations.

Indicators used

The most widely used indicator at the global level is the annual prevalence rate: the number of people who have consumed an illicit drug at least once in the last twelve months prior to the study. Annual prevalence has been adopted by UNODC as one of key indicators to measure the extent of drug use. It is also part of the Lisbon Consensus on core epidemiological demand indicators which has been endorsed by the Commission on Narcotic Drugs. The key indicators are:

1. Drug consumption among the general population (prevalence and incidence);
2. Drug consumption among the youth population (prevalence and incidence);
3. High-risk drug use (number of injecting drug users and the proportion engaged in high-risk behaviour, number of daily drug users);
4. Utilization of services for drug problems;
5. Drug-related morbidity (prevalence of HIV, hepatitis B virus and hepatitis C virus among illicit drug consumers);
6. Drug-related mortality (deaths directly attributable to drug consumption).

Efforts have been made to present the drug situation from countries and regions based on these key epidemiological indicators.

The use of annual prevalence is a compromise between lifetime prevalence data (drug use at least once in a lifetime) and data on current use (drug use at least once over the past month). The annual prevalence rate is usually shown as a percentage of the youth and adult population. The definitions of the age groups vary, however, from country to country. Given a highly skewed distribution of drug use among the different age cohorts in most countries, differences in the age groups can lead to substantially diverging results.

Applying different methodologies may also yield diverging results for the same country. In such cases, the sources were analysed in-depth and priority was given to the most recent data and to the methodological approaches that are considered to produce the best results. For example, it is generally accepted that nationally representative household surveys are reasonably good approaches to estimating cannabis, ATS or cocaine use among the general population, at least in countries where there are no adverse consequences for admitting illicit drug use. Thus, household survey results were usually given priority over other sources of prevalence estimates.

When it comes to heroin use (or drug injecting), or problematic use of cocaine and ATS, annual prevalence data derived from national household surveys tend to grossly under-estimate such use, because heroin or other problem drug users often belong to marginalized or less socially integrated groups, and may not be identified as living in a 'typical' household (they may be on the streets, homeless or institutionalized). Therefore, a number of 'indirect' methods have been developed to provide estimates for this group of drug users, including benchmark and multiplier methods (benchmark data may include treatment demand, police registration or arrest data, data on HIV infections, other services utilization by problem drug users or mortality data), capture-recapture methods and multivariate indicators. In countries where there was evidence that the primary 'problem drug' was opiates, and an indirect estimate existed for 'problem drug use' or injecting drug use, this was preferred over household survey estimates of heroin use.

For other drug types, priority was given to annual prevalence data found by means of household surveys. In order to generate comparable results for all countries, wherever needed, the reported data was extrapolated to annual prevalence rates and/or adjusted for the preferred age group of 15-64 for the general population.

Extrapolation methods used

Adjustment for differences in age groups

Member States are increasingly using the 15-64 age group, though other groups are used as well. Where the age groups reported by Member States did not differ significantly from 15-64, they were presented as reported, and the age group specified. Where studies were based on significantly different age groups, results were typically adjusted. A number of countries reported prevalence rates for the age groups 15+ or 18+. In these cases, it was generally assumed that there was no significant drug use above the age of 64. The number of drug users based on the population age 15+ (or age 18+) was thus shown as a proportion of the population aged 15-64.

Extrapolation of results from lifetime prevalence to annual prevalence

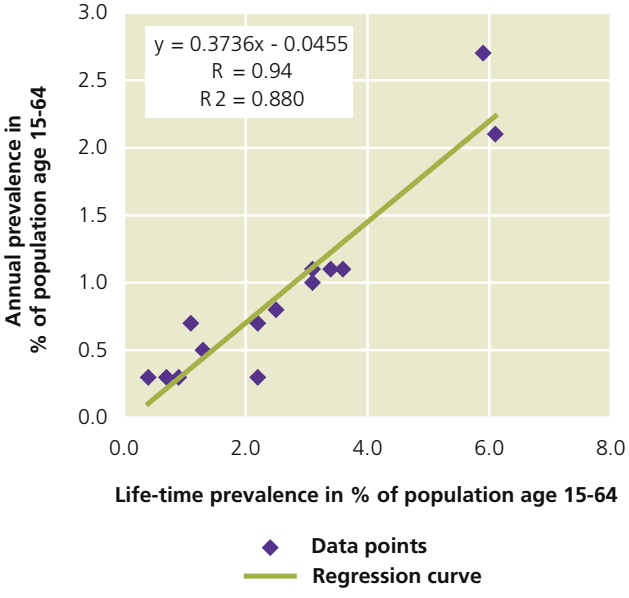
Some countries have conducted surveys in recent years without asking the question whether drug consumption

took place over the last year. In such cases, results were extrapolated to reach annual prevalence estimates. For example, country X in West and Central Europe reported a lifetime prevalence of cocaine use of 2%. Taking data for lifetime and annual prevalence of cocaine use in countries of West and Central Europe, it can be shown that there is a strong positive correlation between the two measures (correlation coefficient R = 0.94); that is, the higher the lifetime prevalence, the higher the annual prevalence and vice versa. Based on the resulting regression curve (y = annual prevalence and x = lifetime prevalence) it can be estimated that a country in West and Central European with a lifetime prevalence of 2% is likely to have an annual prevalence of around 0.7% (see figure). Almost the same result is obtained by calculating the ratio of the unweighted annual prevalence rates of the West and Central European countries and the unweighted lifetime prevalence rate (0.93/2.61 = 0.356) and multiplying this ratio with the lifetime prevalence of the country concerned (2% * 0.356 = 0.7%).

A similar approach was used to calculate the overall ratio by averaging the annual/lifetime ratios, calculated for each country. Multiplying the resulting average ratio (0.334) with the lifetime prevalence of the country concerned provides the estimate for the annual prevalence (0.387 * 2% = 0.8%). There is a close correlation observed between lifetime and annual prevalence (and an even stronger correlation between annual prevalence and monthly prevalence). Solid results (showing small potential errors) can only be expected from extrapolations done for a country in the same region. If instead of using the West and Central European average (0.387), the ratio found in the USA was used (0.17), the estimate for a country with a lifetime prevalence of cocaine use of 2% would decline to 0.3% (2% * 0.17). Such an estimate is likely to be correct for a country with a drug history similar to the USA, which has had a cocaine problem for more than two decades, as opposed to West and Central Europe, where the cocaine problem is largely a phenomenon of the last decade. Therefore, data from countries in the same subregion with similar patterns in drug use were used, wherever possible, for extrapolation purposes.

Annual and lifetime prevalence rates of cocaine use in West and Central Europe

Sources: UNODC, Annual Reports Questionnaire Data / EMCDDA, Annual Report.



Both approaches—the regression model and the ratio model—were used to determine upper and lower uncertainty range estimates calculated at a 90% confidence interval among those aged 15-64 years in the given country. The greater the range, the larger the level of uncertainty around the estimates. The range for each country is reported in the statistical annex, where available.

Extrapolations based on school surveys

Analysis of countries which have conducted both school surveys and national household surveys shows that there is, in general, a positive correlation between the two variables, particularly for cannabis, ATS and cocaine. The correlation, however, is weaker than that of lifetime and annual prevalence or current use and annual prevalence among the general population. But it is stronger than the correlation between opiate use and injecting drug use-related HIV cases, and between treatment and drug use.

These extrapolations were conducted by using the ratios between school surveys and household surveys of countries in the same region or with similar social structure where applicable. As was the case with extrapolation of results from lifetime prevalence to annual prevalence, two approaches were taken: a) the unweighted average of the ratios between school and household surveys in the comparison countries with an upper and lower uncertainty range estimate calculated at a 90% confidence interval; and b) a regression-based extrapolation, using the relationships between estimates from the other countries to predict the estimate in the country concerned, with an upper and lower uncertainty range estimate calculated at a 90% confidence interval. The final uncertainty range and best estimate are calculated using both models, where applicable.

Extrapolations based on treatment data

For a number of developing countries, the only drug use-related data available was treatment demand. In such cases, other countries in the region with a similar socio-economic structure were identified, which reported annual prevalence and treatment data. A ratio of people treated per 1,000 drug users was calculated for each country. The results from different countries were then

averaged and the resulting ratio was used to extrapolate the likely number of drug users from the number of people in treatment.

Making regional and global estimates of the number of people who use drugs and the health consequences

For this purpose, the estimated prevalence rates of countries were applied to the population aged 15-64, as provided by the United Nations Population Division for the year 2009.

Ranges have been produced to reflect the considerable uncertainty that arises when data are either extrapolated or imputed. Ranges (not absolutes) are provided for estimated numbers and prevalence rates in the Report. Larger ranges are reported for subregions and regions with less certainty about the likely levels of drug use – in other words, those regions for which fewer direct estimates are available, for a comparatively smaller proportion of the region's population.

Countries with one published estimate (typically those countries with a representative household survey, or an indirect prevalence estimate that did not report ranges) did not have uncertainty estimated. This estimate is reported as the 'best estimate'.

To account for populations in countries with no published estimate, the 10th and 90th percentile in the range of direct estimates was used to produce a lower and upper estimate. For example, there are three countries in the North Africa subregion with past year prevalence estimates for cannabis use: Algeria (a range from 5.2 – 6.4), Egypt (2.9 – 9.6) and Morocco (4.2, a point estimate). These are extrapolated to the population of the remaining three countries without prevalence data, namely the Libyan Arab Jamahiriya, Sudan and Tunisia. The 10th percentile of the lower bound of the uncertainty range (5,2, 2.9, and 4.2) is 3.2 and the 90th percentile of the upper bound (6.4, 9.6, and 4.2) is 8.9. The 3.2 and 8.9 figures are applied to the population of the remaining three countries without prevalence data for a subregional total lower and upper estimate.

In some cases, not all of a region's subregions had estimates due to a lack of country level data. For example, past year amphetamines-group prevalence was calculated for East and South-East Asia and the Near and Middle East/South West Asia, however the remaining subregions – South Asia and Central Asia – had no estimates. To calculate an overall Asia lower and upper estimate for populations in subregions with no published estimate, all of the countries throughout the region were considered using the 10th and 90th percentile of the regional distribution. These results were then combined with those subregions where an estimate was possible. One exception was South Asia's subregional opiate and cannabis estimates. In this case, India's population accounts for 85% of the six countries in the subregion, but reliable estimates of drug use for India were not available. Instead of using all prevalence estimates for Asia (that is, estimates from the Near and Middle East to East Asia) to determine India's contribution to the subregional uncertainty, it was determined that India's contribution was best reflected by its neighboring countries.

This produces conservative (wide) intervals for subregions where there is geographic variation and/or variance in existing country-level estimates; but it also reduces the likelihood that skewed estimates will have a dramatic effect on regional and global figures (since these would most likely fall outside the 10th and 90th percentile).

Estimates of the total number of people who used illicit drugs at least once in the past year

This year's Report used the same approach as last year. Two ranges were produced, and the lowest and highest estimate of each the approaches were taken to estimate the lower and upper ranges, respectively, of the total illicit drug using population. This estimate is obviously tentative given the limited number of countries upon which the data informing the two approaches were based. The two approaches were as follows:

Approach 1.

The global estimates of the number of people using each of the five drug groups in the past year were added up. Taking into account that people use more than one drug type and that these five populations overlap, the total was adjusted downward. The size of this adjustment was made based upon household surveys conducted in the USA, Canada, Australia, the United Kingdom, Italy, Brazil, Mexico, Germany, Spain, Argentina, Chile, the Plurinational State of Bolivia, Peru, Indonesia and the Philippines, which assessed all five drug types, and reported an estimate of total illicit drug use. Across these studies, the extent to which adding each population of users overestimated the total population was a median value of 126%. The summed total was therefore divided by 1.26.

Approach 2.

This approach was based on the average proportion of the total drug using population that comprises cannabis users. The average proportion was obtained from household surveys conducted in the same countries as for Approach 1 Across all of these studies, the median proportion of total drug users that comprised cannabis users was 75%. The range of cannabis users at the global level was therefore divided by 0.75.

Relative risk coefficient					
	Treatment index	IDU	Toxicity	Deaths index	Relative risk coefficient
		Index	Index		(average treatment, IDU, toxicity, death)
Opiates	100	100	100	100	100
Cocaine	85.3	47.8	88	18.5	59.9
Amphetamines	20.1	59.5	32	6.8	29.6
Ecstasy	3.8	6.1	20.7	1	7.9
Cannabis	9	0	1.5	0.6	2.8

Estimates of the number of 'problem drug users'

It is useful to make estimates of the number of drug users whose use is particularly problematic as this subgroup of drug users is most likely to come to the attention of health and law enforcement. Moreover, this subgroup's drug use has been estimated to cause the main public health and public order burden.

The number of problem drug users is typically estimated with the number of dependent drug users. Sometimes, an alternative approach is used. The EMCDDA uses 'injecting or long duration use of opioids, amphetamines or cocaine' to guide country-level indirect prevalence estimation studies of problem drug use.

In this Report, as in previous years, each of the five range estimates of the number of people using each of the five drug groups was converted into a 'heroin user equivalent'. This was calculated through the use of 'relative risk coefficients' (see table) derived from the UNODC Harm Index. This method enables the aggregation of results from different drugs into one reference drug

A lower range was calculated by summing each of the five lower range estimates; the upper end of the range was calculated by summing the upper range of the five estimates.

To obtain an estimate of the number of 'problem drug users', these totals were multiplied by the proportion of past year heroin users in the United States National Survey on Drug Use and Health (range 53-68% over the past six years of this survey). Hence, The LOW estimate of is the lower proportion (53%) multiplied by the lower estimated size of the heroin use equivalent population (28.6 million heroin user equivalents). The HIGH estimate is the higher proportion (68%) multiplied by the higher estimated size of the heroin use equivalent population (57.5 million heroin user equivalents). This gives a range of 15 to 39 million problem drug users globally.

Estimates of the prevalence of hepatitis C virus among injecting drug users

The prevalence of hepatitis C among injecting drug users is reported directly by Member States. The number of injecting drug users is obtained from the Reference Group to the UN on HIV and Injecting Drug Use[1] (preferred source), or otherwise as reported via the ARQ. To obtain an estimate of the prevalence at the regional and global level, country-level rates were weighted by the number of injecting drug users.

Estimates of the number of drug-related deaths

Drug-related deaths include those directly or indirectly caused by the intake of illicit drugs, but it may also include deaths where the use of illicit drugs was a contributory cause, including cases where drug use was involved in the circumstances of the deaths (for example, violence and traffic accidents). Member States report on drug-related deaths according to their own definitions and therefore care should be taken in making country comparisons.

The total number of drug-related deaths reported by Member States were aggregated at the regional level. To account for non-responding countries, an upper and lower estimate of the number of deaths was made using the 10th and 90th percentiles of the mortality rates for countries that did report within the same region. In North America, all countries reported and therefore, no range was given. In Oceania, only Australia reported on the number of deaths, and therefore, no variation in mortality rates across the region could be determined. Because of the lack of reported information on drug-related deaths in Africa, an alternative source was used.[2] The global estimate of the number of drug-related deaths is the sum of the regional estimates. The overall estimated number of deaths for a region was presented as a range to account for uncertainty, and also presented as a rate per 1 million population aged 15-64 to allow for some degree of comparison across regions.

1 Mathers BM, Degenhardt L, Phillips B, *et al.* (November 2008). "Global epidemiology of injecting drug use and HIV among people who inject drugs: a systematic review". *Lancet* 372 (9651): 1733–45

2 Degenhardt L, Hall W, Warner-Smith M, Lynskey M. Chapter 13: Illicit drug use. In: Ezzati M, Lopez A, Rodgers A, Murray CJL, eds. Comparative quantification of health risks: global and regional burden of disease attributable to selected major risk factors. Geneva, World Health Organization, 2003.

Drug cultivation, production and manufacture

Data on cultivation of opium poppy and coca bush and production of opium and coca leaf for the main producing countries (Afghanistan, Myanmar and the Lao People's Democratic Republic for opium and Colombia, Peru and the Plurinational State of Bolivia for coca) are mainly derived from national monitoring systems supported by UNODC in the framework of its Global Illicit Crop Monitoring Programme (ICMP). Estimates of cannabis cultivation in 2009 and 2010 in Afghanistan, as well as cannabis cultivation in 2003, 2004 and 2005 in Morocco, have also been produced by the ICMP-supported national monitoring systems. Estimates for other countries have been drawn from ARQ replies and various other sources, including reports from Governments, UNODC field offices and the United States Department of State's Bureau for International Narcotics and Law Enforcement Affairs.

A full technical description of the methods used by UNODC-supported national monitoring systems can be found in the respective national survey reports available at http://www.unodc.org/unodc/en/crop-monitoring/index.html .

Net cultivation

Not all the fields on which illicit crops are planted are actually harvested and contribute to drug production.

For Afghanistan, a system of monitoring opium poppy eradication is in place which provides all necessary information to calculate the net cultivation area. In Myanmar and the Lao People's Democratic Republic, the eradicated area of opium poppy is partly taken into account for the estimation of the net cultivation area. Not enough information is available to consider eradication carried out after the time of the annual opium survey.

A major difference between coca and other narcotic plants such as opium poppy and cannabis is that the coca bush is a perennial plant which can be harvested several times per year. This longevity of the coca plant should, in principle, make it easier to measure the area under coca cultivation. In reality, the area under coca cultivation is dynamic, changes all the time and it is difficult to determine the exact amount of land under coca cultivation at any specific point in time or within a given year. There are several reasons why coca cultivation is dynamic, including new plantation, reactivation of previously abandoned fields, abandonment, manual eradication and aerial spraying.[3]

Depending on the purpose, different concepts of area under coca cultivation can by useful, taking into account some or all of the factors described above. From a government's perspective, it may be interesting to monitor illicit cultivation attempts in a given year, by trying to capture all coca fields irrespective of whether they existed the whole year or only part of it (**gross cultivation area**). For estimating potential coca leaf and cocaine production, it would be necessary to measure the productive area and how long the fields were productive in the course of a year (**net productive area**). For other reasons, the area under cultivation at a specific cut-off date may be chosen, for example, to monitor the effect of law enforcement activities implemented in the preceding period (**area under cultivation at date x**). By definition, the net productive area and the area under cultivation at point x will be smaller than the gross cultivation area.

The area affected by coca cultivation in a given year, or **gross coca cultivation**, can be defined as the totality of all coca fields existing in that year, irrespective of whether they were newly planted, reactivated, abandoned, eradicated or sprayed during the course of that year.

For the calculation of the **net productive area**, two dimensions should be considered: the duration over which the field was in existence and productivity. The area of fields which did not exist over the full 12 months of a year should be subtracted from the gross cultivation figure, by a factor expressing their reduced productive time. In addition to the time factor, the reduced productivity of certain field types and the effects of eradication and spraying need to be taken into account.

- Young plants in new coca fields are not as productive as mature coca bushes.
- Eradicated coca fields may be replanted but have a lower yields as plants are not mature
- Coca bushes in a field sprayed with herbicide may either die (all or some) or have a reduced yield for some months.
- A reactivated field with mature coca bushes may reach full productivity faster than a newly planted field but still be less productive than a well maintained field

The effect on productivity could be added to the effect of time. For example, 20 ha which were eradicated after six months would only count as 10 productive hectares. Similarly, a factor can be introduced to reflect the reduced productivity as a result of aerial spraying. Efforts are being made to improve the estimation of the net productive area in the context of improving the accuracy of the cocaine production estimate.

In 2010, for the first time, the net productive area was estimated in addition to the net cultivation on 31 December, using information on manual eradication

3 Plant disease and pests are not considered here as their impact is likely to be captured in the coca leaf yield estimates.

Colombia, area concepts used for coca cultivation and production estimates, 2010

* All rounded and adjusted for small fields

	Net area (31 Dec 2010)*	Average area 2009/2010	Net productive area 2010
Area under coca cultivation (ha)*	62,000	67,500	77,500
Application	Used for area trend analysis	Used for coca leaf/cocaine estimate (lower bound of range)	Used for coca leaf/cocaine estimate (upper bound of range)

and spraying of coca bush and other sources to model the permanence (that is, the productive time span) of coca fields. Permanence factors for abandoned, sprayed and eradicated coca fields were established and applied. The resulting area was considerably larger than the net area on 31 December. In addition, the previous approach of using the average net area on 31 December of the two last surveys was used to calculate coca leaf production to maintain comparability with previous years. More research is needed on the permanence of coca fields and the consequences for coca leaf yield to improve the net productive area estimate.

In Colombia, an adjustment factor was introduced to include small coca fields into the area estimate, which could not be captured due to technical limitations. This was necessary as studies showed that the proportion of undetectable small fields below 0.25 ha has been increasing in recent years. The adjustment for small fields leads to a higher area estimate and is considered more accurate. Area figures for 2009 and 2010 were calculated with and without adjustment for small fields for comparability reasons. The adjustment varies from year to year, depending on the proportion of small fields present in each cultivation region, and the contribution of each region to the total in a specific year. Thus, the adjustment factor has to be calculated for each year separately. Efforts are under way to recalculate the time series for Colombia with the adjustment factor. As of now, the adjusted figures are only available for 2009 and 2010.

In the Plurinational State of Bolivia and Peru, the coca area as estimated from satellite imagery in the second half of the year was used as a proxy for the net productive area. Thus, eradication of coca bush is partly taken into account for the estimation of the net cultivation area. Not enough information is available to also consider eradication carried out after the time of the annual survey.

For countries not covered by UNODC's Illicit Crop Monitoring Programme, the reported net cultivation figure is used.

Yield[4] and production

To estimate potential production of opium, coca leaf and cannabis (herb and resin), the number of harvests per year and the total yield of primary plant material has to be established. The UNODC-supported national surveys take measurements in the field and conduct interviews with farmers, using results from both to produce the final data on yield.

Opium yield surveys are complex. Harvesting opium with the traditional lancing method can take up to two weeks as the opium latex that oozes out of the poppy capsule has to dry before harvesters can scrape it off and several lancings take place until the plant has dried. To avoid this lengthy process, yield surveyors measure the number of poppy capsules and their size in sample plots. Using a scientifically developed formula, the measured poppy capsule volume indicates how much opium gum each plant potentially yields. Thus, the per hectare opium yield can be estimated. Different formulas were developed for South-East and South-West Asia. In Afghanistan and Myanmar, yield surveys are carried out annually.

For coca bush, the number of harvests varies, as does the yield per harvest. In the Plurinational State of Bolivia and Peru, UNODC supports monitoring systems that conduct coca leaf yield surveys in several regions, by

Colombia, adjustment of coca area for small fields, 2009-2010 (ha)

	2009	2010	Change on 2009
Area without adjustment	68,000	57,000	-16%
Adjustment for small fields	5,000	5,000	0%
Area with adjustment	73,000	62,000	-15%

4 Further information on the methodology of opium and coca leaf yield surveys conducted by UNODC can be found in United Nations (2001): *Guidelines for Yield Assessment of Opium Gum and Coca Leaf from Brief Field Visits*, New York (ST/NAR/33).

harvesting sample plots of coca fields over the course of a year, at points in time indicated by the coca farmer. In Colombia, where the security situation does not allow for surveyors to return to the sample fields, only one harvest was measured, and the others were estimated based on information from the farmer. In all three coca cultivating countries, yield surveys are carried out only occasionally, due to the difficult security situation in many coca regions, and because of funding constraints.

Conversion factors

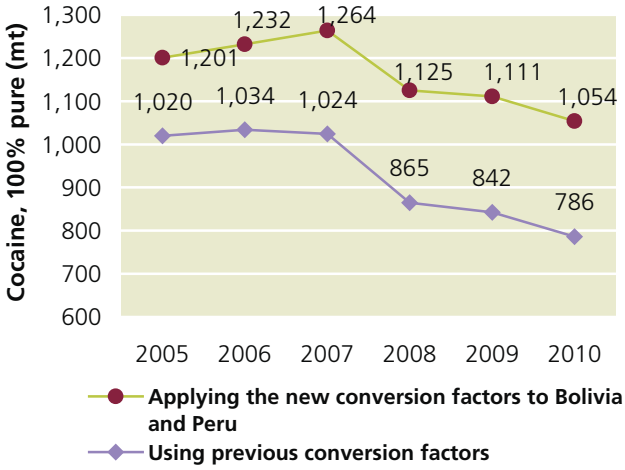
The primary plant material harvested - opium in the form of gum or latex from opium poppy, coca leaves from coca bush, and the cannabis plant - undergo a sequence of extraction and transformation processes, some of which are done by farmers onsite, others by traffickers in clandestine laboratories. Some of these processes involve precursor chemicals and may be done by different people in different places under a variety of conditions, which are not always known. In the case of opium gum, for example, traffickers extract the morphine contained in the gum in one process, transform the morphine into heroin base in a second process, and finally produce heroin hydrochloride. In the case of cocaine, coca paste is produced from either sun-dried (in the Plurinational State of Bolivia and Peru) or fresh coca leaves (in Colombia), which is later transformed into cocaine base, from where cocaine hydrochloride is produced.

The results of each step, for example, from coca leaf to coca paste, can be estimated with a conversion factor. Such conversion factors are based on interviews with the people involved in the process, such as farmers in Colombia, who report how much coca leaf they need to produce 1 kg of coca paste or cocaine base. Tests have also been conducted where so-called 'cooks' or 'chemists' demonstrate how they do the processing under local conditions. A number of studies conducted by enforcement agencies in the main drug-producing countries have provided the orders of magnitude for the transformation from the raw material to the end product. This information is usually based on just a few case studies, however, which are not necessarily representative of the entire production process. Farmer interviews are not always possible due to the sensitivity of the topic, especially if the processing is done by specialists and not by the farmers themselves. Establishing conversion ratios is complicated by the fact that traffickers may not know the quality of the raw material and chemicals they use, which may vary considerably; they may have to use a range of chemicals for the same purpose depending, on their availability and costs; and the conditions under which the processing takes place (temperature, humidity, et cetera) differ.

It is important to take into account the fact that the margins of error of these conversion ratios – used to calculate the potential cocaine production from coca leaf or the heroin production from opium - are not known. To be precise, these calculations would require detailed information on the morphine content of opium or the cocaine content of the coca leaf, as well as detailed information on the efficiency of clandestine laboratories. Such information is limited. This also applies to the question of the psychoactive content of the narcotic plants.

UNODC, in cooperation with Member States, is currently reviewing coca leaf to cocaine conversion ratios as well as coca leaf yields and net productive area estimates.[5] More research is needed to establish comparable data for all components of the cocaine production estimate.

Impact of conversion factors on global estimates of potential cocaine HCl production (mt)



Many cannabis farmers in Afghanistan and Morocco conduct the first processing steps themselves, either by removing the upper leaves and flowers of the plant to produce cannabis herb or by threshing and sieving the plant material to extract the cannabis resin. The herb and resin yield per hectare can be obtained by multiplying the plant material yield with an extraction factor. The complex area of cannabis resin yield in Afghanistan was investigated in 2009 and 2010. The yield study included observation of the actual production of resin, which is a process of threshing and sieving the dried cannabis plants. In Morocco, this factor was established by using information from farmers on the methods used and on results from scientific laboratories. Information on the yield was obtained from interviews with cannabis farmers.[6] The estimate of global cannabis herb and resin

5 More detailed information on the ongoing review of conversion factors was presented in the 2010 *World Drug Report*, p.251 ff.

6 For greater detail on studies with cannabis farmers, see: UNODC, *Enquête sur le cannabis au Maroc 2005*, Vienna, 2007.

production was not updated in 2010, given the high level of uncertainty and the continuing lack of information in many cannabis-cultivating countries.

Potential production

'Potential' heroin or cocaine production shows the total production of heroin or cocaine if all the cultivated opium or coca leaf were transformed into the end products in the respective producer country in the same year. However, part of the opium or coca leaf is directly consumed in the producing countries or in neighbouring countries, prior to the transformation into heroin or cocaine. In addition, significant quantities of the intermediate products, coca paste or morphine, are also consumed in the producing countries. Some products such as opium can be stored for extended periods of time and be converted into intermediate or final products long after the harvest year. These factors are partly taken into account: for example, consumption of coca leaf considered licit in the Plurinational State of Bolivia and Peru is not taken into account for the transformation into cocaine. Other factors, such as the actual amount of illicit coca paste or opium consumption and storage, are difficult to estimate and were not taken into account.

For cocaine, potential production of 100% pure cocaine is estimated. In reality, clandestine laboratories do not produce 100% pure cocaine but cocaine of lower purity which is often referred to as 'export quality'. For heroin, not enough information is available to estimate the production of heroin of 100% purity. Instead, potential production of export quality heroin is estimated, whose exact purity is not known and may vary.

Although it is based on current knowledge on the alkaloid content of narcotic plants and the efficiency of clandestine laboratories, 'potential production' is a hypothetical concept and is not an estimate of actual heroin or cocaine production at the country or global level. The concept of potential production is different from the theoretical maximum amount of drug that could be produced if all alkaloids were extracted from opium and coca leaf. The difference between the theoretical maximum and the potential production is expressed by the so-called laboratory efficiency, which describes which proportion of alkaloids present in plant material clandestine laboratories are actually able to extract.

Colombia

In 2010, for the first time, the net productive area was estimated, in addition to the previous approach of using the average area under coca cultivation of the reporting year and the previous year. For reasons of comparability, the latter was presented as the point estimate. A range was calculated whereby the estimate based on the previous methodology forms the lower bound, and the cocaine estimate based on the net productive area the upper bound. For years before 2010, the net productive area had not yet been calculated at the time of printing.[7]

Peru

Potential cocaine production in Peru is estimated from potential coca leaf production after deducting the amount of coca leaf estimated to be used for traditional purposes according to Government sources (9,000 mt of sun-dry coca leaf).

The Plurinational State of Bolivia

Potential cocaine production in the Plurinational State of Bolivia is estimated from potential coca leaf production after deducting the amount of coca leaf produced on 12,000 ha in the Yungas of La Paz where coca cultivation is authorized under national law.

Drug trafficking

Seizures

The analysis presented in this report is mainly derived from the ARQ responses covering the March 2010–December 2010 period. Including information from other sources, UNODC was able to obtain seizure data from 143 countries and territories for 2009. Seizures are thus the most comprehensive indicator of the drug situation and its evolution at the global level. Although seizures may not always reflect trafficking trends correctly at the national level, they tend to show reasonable representations of trends at the regional and global levels.

Countries may report seizures of drugs using a variety of units, primarily by weight (kg) but also in litres, tablets, doses, blotters, capsules, ampoules, et cetera. When reporting about individual countries in individual years UNODC endeavours to be as faithful as possible to the reports received, but often it is necessary to aggregate data of different types for the purposes of comparison. For the purposes of aggregation, conversion factors are used to convert the quantities into 'kilogram equivalents' (or 'ton equivalents').

The conversion factors affect seizure totals of amphetamine-type stimulants in particular, as a significant share of seizures of these drug types is reported in number of tablets. In previous editions of the *World Drug Report*, the factors used for ATS ranged between 30 mg and 100 mg per tablet, and were intended to reflect the amount of controlled substance in the tablet; these factors depended on the drug type but not on the reporting country.

7 More information on the results of the two approaches and the methodology used can be found in the report on coca cultivation in Colombia (UNODC/ Government of Colombia, June 2011) available on the internet at http://www.unodc.org/unodc/en/crop-monitoring/index.html.

Apart from seizures of ATS tablets, drug seizures are mainly reported to UNODC by weight. This includes seizures of ATS which are not seized in tablet form (for example, crystalline methamphetamine, ATS in powder form) as well as seizures of other drug types, such as heroin and cocaine. Moreover, ATS seizures made in tablet form are also sometimes reported by weight, and in some cases, the reported total weight possibly includes ATS seized in different forms. Reports of seizures by weight usually refer to the bulk weight of seizures, including adulterants and diluents, rather than the amount of controlled substance. Moreover, given the availability of data, accurate purity adjustments for bulk seizure totals in individual countries are feasible in a small minority of cases, as they would require information on purity on a case by case basis or statistically calibrated data, such as a weighted average or a distribution. The bulk weight of tablets is easier to obtain and less variable.

To improve the comparability of seizure totals across different years and countries, UNODC has revised the conversion factors used for ATS tablets to reflect the bulk weight of the tablets rather than the amount of controlled substance. The factors used in this edition of the *World Drug Report* are based on available forensic studies and range between 90 mg and 300 mg, depending on the region and drug type. The change has been implemented for all years up to and including 2009 (see table). The conversion factors remain subject to revision as the information available to UNODC improves.

All other conversion ratios remained unchanged from previous editions. Seizures quantified by volume (litres) are aggregated using a conversion ratio of 1 kilogram per liter, which applies to all drug types. Cannabis plants are assumed to have a weight of 100 grams.

Moreover, at various points in the analysis, purity adjustments are made where relevant and where the availability of data allows.

UNODC continues to record and report the disaggregated raw data, which are available in the seizure listings published online.[8] In these tables, seizure quantities are reproduced as reported. In the rest of the Report, seizure data are often aggregated and transformed into a unique measurement: seizures in 'kilogram equivalents'. For the purposes of the calculations a 'typical consumption unit' was assumed to be for cannabis herb, 0.5 g; for cannabis resin, 0.135 g; cocaine and morphine, 0.1 g; heroin, 0.03 g; LSD, 0.00005 g (50 micrograms); and opium, 0.3 g. For opiate seizures (unless specified differently in the text), it was assumed that 10 kg of opium were equivalent to 1 kg of morphine or heroin. Though these transformation ratios can be disputed, they provide a means of combining the different seizure reports into one comprehensive measure. The transformation ratios have been derived from those normally used by law enforcement agencies, in the scientific literature and by the International Narcotics Control Board, and were established in consultation with UNODC's Laboratory and Scientific Section.

Trafficking routes and volumes

Information of trafficking routes was mainly obtained from analyses of individual drug seizures reported to UNODC, as well as analyses of trafficking routes reported by Member States.

To calculate the volumes of drugs trafficked, the retail market size of each country was established by multiplying the number of drug users with best estimates on per capita drug consumption, derived from local studies. There is, however, still a lack of scientific studies on per

Weight of tablets in mg				
	Ecstasy (MDMA or analogue)	Amphetamine	Methamphetamine	Non-specified amphetamines
Africa	271	250	250	250
Asia (excluding Near and Middle East/ South-West Asia)	300	250	90	250
Europe	271	253	225	250
Central and South America and the Caribbean	271	250	250	250
Near and Middle East/ South-West Asia	237	170	250	250
North America	250	250	250	250
Oceania	276	250	250	250

8 See http://www.unodc.org/unodc/en/data-and-analysis/WDR.html

capita consumption and results must be treated as preliminary. Based on the estimates of the volumes consumed and knowing the main origins of the drugs and the seizures made, the volumes of the main drug flows were established

Market analysis

Drug price and purity data

Price and purity data, if properly collected and reported, can be powerful indicators of market trends. Trends in supply can change over a shorter period of time when compared with changes in demand and shifts in prices and purities are good indicators for increases or declines of market supply. Research has shown that short-term changes in the consumer markets are first reflected in purity changes while prices tend to be rather stable over longer periods of time. UNODC collects its price data from the ARQ, and supplements this data with other sources such as DAINAP, EMCDDA and Government reports. Prices are collected at farm-gate level, wholesale level ('kilogram prices') and at retail level ('gram prices'). Countries are asked to provide minimum, maximum and typical prices and purities. When countries do not provide typical prices/purities, for the purposes of certain estimates, the mid-point of these estimates is calculated as a proxy for the 'typical' prices/purities (unless scientific studies are available which provide better estimates). What is generally not known is how data were collected and how reliable it is. Although improvements have been made in some countries over the years, a number of law enforcement bodies have not yet established a regular system for collecting purity and price data.

Size and value of the market

Multiplying the volumes of drugs consumed in a country with the purity-adjusted retail prices gives the value of the market. In case no country-specific per capita use rates were available, regional estimates were used. Similarly, in case no country-specific prices were available, average subregional prices were used as a proxy. The same principle was applied to purities. Average subregional purities were used for countries that were not in a position to assess the purities of the drugs seized. Given the large number of assumptions in deriving the various country estimates from subregional or regional averages, all sizes of the market estimates must be treated with caution.

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Many illicit drug markets have reached global dimensions and require control strategies on a comparable scale. In that context, there is a need to better understand these transnational markets and the manner in which they operate. The yearly *World Drug Report* is a contribution towards that objective. This year's edition starts with an overview of the illicit drug situation worldwide and regionally, followed by more comprehensive discussions and statistical trends for the key transnational drug markets, namely opium/heroin, coca/cocaine, amphetamine-type stimulants and cannabis.

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EXHIBIT 32

Earleville – Table Modifications and Corrections

Table 4 in the Modified Application incorrectly referred to the existing beds in the Southern Region, rather than the Eastern Shore.

Table 4 in the Modified Application should have read as follows.

Table 4, Corrected
Existing Detox Beds
Eastern Shore, Maryland

Not Funded	**All Beds** (2)	**Detox Beds (20%)** (3)
Hudson Center	33	7
Warrick Manor	42	*9*
Total	*75*	*16*

Funded (1)	**All Beds**	**Detox Beds (20%)**
Whitsett Rehab Center	20	4
Total	*20*	*4*

Total Existing ICF Bed Inventory	**20**
Total Existing Not-Funded ICF Bed Inventory	***16***

(1) As identified by Department of Health and Mental Hygiene, Behavioral Health Administration Maryland Certified Treatment Locator
(2) Based on phone calls to the facilities, http://addictionresourceguide.com/, or the SAMHSA treatment locator
(3) Based on the 2013 The National Survey of Substance Abuse Treatment Services, attached as Exhibit 11

As discussed in response to Question 8, and in response to the Commission's completeness questions regarding the Upper Marlboro facility, Question 9, 41% of the beds at the three RCA proposed projects will be for detox and medically monitored treatment. The tables below update those in the Modified Application by applying this percentage to all Maryland facilities offering inpatient detox and residential services.

Modified Table 4
Existing Detox Beds
Applying RCA 41% blended average
Eastern Shore, Maryland

Not Funded	**All Beds** [2]	**Detox Beds (41%)**
Hudson Center	33	14
Warrick Manor	42	17
Total	*75*	*31*

Funded [1]	**All Beds**	**Detox Beds (41%)**
Whitsett Rehab Center	20	8
Total	*20*	*8*

Total Existing ICF Bed Inventory	**39**
Total Existing Not-Funded ICF Bed Inventory	***31***

(1) As identified by Department of Health and Mental Hygiene, Behavioral Health Administration Maryland Certified Treatment Locator
(2) Based on phone calls to the facilities, http://addictionresourceguide.com/, or the SAMHSA treatment locator

Modified Table 7
Regional ICF Bed Need Projection
Eastern Shore, Maryland

			MD 2010 Population[2]	MD 2014 Population[3]	MD 2019 Projected Population[3]
	Projected Population for 18 Years and older		350,176	407,905	418,847
a	**Estimated # of privately insured** [1]	*64.2%*	224,813	261,875	268,900
b	**Estimated # of Substance Abuse Users**	*8.64%*	19,424	22,626	23,233
c1	**Estimated Annual Target Population**	*25.00%*	4,856	5,657	5,808
c2	**Estimated # requiring Treatment**	*95.00%*	4,613	5,374	5,518
d	**Estimated Population requiring ICF (25-35%)**				
d1	Min %	*15.00%*	692	806	828
d2	Max %	*30.00%*	1,384	1,612	1,655
e	**Estimated Range requiring Readmission**				
e1	Min %	*10.00%*	69	81	83
e2	Max %	*10.00%*	138	161	166
f	**Range of Adults requiring ICF Care**				
	Min = (d1+e1)		761	887	910
	Max = (d2+e2)		1,522	1,773	1,821
g	**Gross # of Adult ICF Bed Needed**				
g1	Min = ((f*14 ALOS))/365)/0.85		34	40	41
g2	Max = ((f*14 ALOS))/365)/0.85		69	80	82
h	**Existing Non-Funded Inventory ICF beds** [4]		31	31	31
i	**Net Private ICF Bed Needed**				
	Min = (g1-h)		**3**	**9**	**10**
	Max = (g2-h)		**38**	**49**	**51**
j	**Net All ICF Bed Needed** [5]				
	Min = (gMin x 1.358 (pop w/out priv. ins.))- (hExisting beds)		**16**	**23**	**25**
	Max= (gMax x 1.358 (pop w/out priv. ins.))- (hExisting beds)		**62**	**78**	**81**

(1) 2013 National Health Interview Survey – CDC
(2) Maryland's Department of Planning database and Data Analysis
(3) Numbers based off ESRI data
(4) Number of existing beds modified to reflect 41% detox assumption. See Modified Table 4, *supra*.
(5) Prior Table 7 calculated Net ICF Bed Need by adding back in the 35.8% of the population that does not have private commercial insurance to the existing Net Private ICF/CD Bed Needed (line i). Because the Net Private Need subtracted existing beds, this method improperly discounted the Net Need for all patients (by discounting the total gross need by 1.358 x Existing Beds). Table 7 has been revised to discount Net All ICF Bed Needed by only 1 x Existing Beds.

Modified Table 9
Existing Detox Beds
Applying RCA 41% blended average
Maryland State

Not Funded (1)	**All Beds** (2)	**Detox Beds (41%)** (3)
Anchor @ Walden-Sierra	20	8
Father Martin's Ashley	100	41
Hudson Center	33	14
I'm Still Standing By Grace (3)	42	12
Warrick Manor	42	17
Total	*283*	*92*

Funded (1)	**All Beds**	**Detox Beds (41%)**
Arc House	16	7
Avery Treatment Center	32	13
Carroll Addiction Rehab Center	20	8
Finan Center, Jackson Unit		0
Massie Unit	25	10
Jackson Unit	0	0
Hope House	18	7
Mountian Manor, Baltimore City (4)	46	19
Pathways	20	8
Shoemaker Women's Program	19	8
Turek House	63	26
Whitsett Rehab Center	20	8
Gaudenzia at Park Heights (5)	-	-
Hope House, Anne Arundel (5)	-	-
Hope House, Laurel (5)	-	-
Mountian Manor, Emmitsville	-	-
Total	*186*	*114+*

Total Existing ICF Bed Inventory	**206+**
Total Existing Not-Funded ICF Bed Inventory	***92***

(1) As identified by Department of Health and Mental Hygiene, Behavioral Health Administration Maryland Certified Treatment Locator
(2) Based on phone calls to the facilities and/or http://addictionresourceguide.com/
(3) Facility self-identified number of residential and detox beds by phone
(4) BHA lists three buildings for the Baltimore City location. Two of the three are listed as funded.
(5) Applicant was not able to determine the number of beds.

Modified Table 10
ICF Bed Need Projection
Maryland State

			MD 2010 Population[2]	MD 2014 Population[3]	MD 2019 Projected Population[3]
	MD Population for 18 Years and older		4,420,588	4,612,691	4,793,500
	E. Shore Region Population for 18 Years and older		350,176	407,905	418,847
	MD Population 18 and older excluding E. Shore Region		4,070,412	4,204,786	4,374,653
a	**Estimated # of privately insured** [1]	*64.2%*	2,613,205	2,699,472	2,808,527
b	**Estimated # of Substance Abuse Users**	*8.64%*	225,781	233,234	242,657
c1	**Estimated Annual Target Population**	*25.00%*	56,445	58,309	60,664
c2	**Estimated # requiring Treatment**	*95.00%*	53,623	55,393	57,631
d	**Estimated Population requiring ICF (12.5-15%)**				
d1	Min % - All Regions excluding E. Shore	*12.50%*	6,703	6,924	7,204
d2	Max % - All Regions excluding E.Shore	*15.00%*	8,043	8,309	8,645
d3	Min % - E. Shore Region	*15.00%*	692	806	828
d4	Max % - E. Shore Region	*30.00%*	1,384	1,612	1,655
e	**Estimated Range requiring Readmission**				
e1	Min %	*10.00%*	739	773	803
e2	Max %	*10.00%*	943	992	1,030
f	**Range of Adults requiring ICF/CD Care**				
	Min = (d1+d3+e1)		8,134	8,503	8,835
	Max = (d2+d4+e2)		10,370	10,913	11,330
g	**Gross # of Adult ICF Bed Needed**				
g1	Min = ((f*14 ALOS))/365)/0.85		367	384	399
g2	Max = ((f*14 ALOS))/365)/0.85		468	492	511
h	**Existing Non-Funded Inventory ICF/CD beds** [4]		92	92	92
i	**Net Private ICF/CD Bed Needed**				
	Min = (g1-h)		**275**	**292**	**307**
	Max = (g2-h)		**376**	**400**	**419**
j	**Net All ICF Bed Needed** [5]				
	Min = (gMin x 1.358 (pop w/out priv. ins.))- (hExisting beds)	*35.8%*	**406**	**429**	**449**
	Max= (gMax x 1.358 (pop w/out priv. ins.))- (hExisting beds)	*35.8%*	**543**	**577**	**602**

(1) 2013 National Health Interview Survey – CDC
(2) Maryland's Department of Planning database and Data Analysis
(3) Numbers based off ESRI data
(4) Number of existing beds modified to reflect 41% detox assumption. See Modified Table 9, *supra*.
(5) Prior table 10 calculated Net ICF Bed Need by adding back in the 35.8% of the population that does not have private commercial insurance to the existing Net Private ICF/CD Bed Needed (line i). Because the Net Private Need subtracted existing beds, this method improperly discounted the Net Need for all patients (by discounting the total gross need by 1.358 x Existing Beds). Table 10 has been revised to discount Net All ICF Bed Needed by only 1 x Existing Beds.

Modified Table 12
Neighboring Providers

	Name of Facility	City	Total Beds	Detox Offered	Detox Beds	Private Pay Daily Rate	Distance from Facility (mi)
1	Williamsville Wellness	Hanover, VA	16	No	0	$833	*182*
2	Sagebrush	Great Falls, VA	N/Av	N/Av	N/Av	$1,167	*113*
3	Warwick Manor [1]	East New Market, MD	42	Yes	17	N/Av	*71*
4	Father Martin's Ashley [1]	Havre De Grace, MD	100	Yes	41	$857	*32*
5	Mountain Manor [1]	Emmitsburg, MD	46	Yes	19	$245	*120*
6	Hudson Health Services 1	Salisbury, MD	33	Yes	14	$575	*88*
7	Anchor of Walden [1]	Charlotte Hall, MD	20	Yes	8	N/Av N/ Av	*124*
8	I'm Still Standing By Grace [2]	Baltimore, MD	42	Yes	12	$1,000	*72*
9	Clarity Way	Hanover, PA	23	Yes	7		*89*
10	Caron Treatment Centers Adult P.C. Serv.	Wernersville, PA	257	Yes	10	$1,167	*76*
11	Retreat: Lancaster	Lancaster, PA	150	Yes	40	$1,000	*64*
12	Malvern Institute (two locations)	Malvern & Willow Grove, PA	172	Yes	42	$680	*61*
13	Mirmount	Media, PA	115	Yes	33	$625	*59*
14	MeadowWood	New Castle, DE	58	Yes	N/Av	$800	*30*
	Total / Average		**1074**		**243**		

Source: Applicant phone calls to facilities and SAMHSA Treatment Locator
(1) Applicant assumed that Maryland ICF facilities use 41% of their licensed beds for detox
(2) Facility identified number of beds used for detox via phone