2007–2008

PRACTITIONER UTILIZATION

Trends Among Privately Insured Patients

Released September 2010

Marilyn Moon, Ph.D., Chair
Rex W. Cowdry, M.D., Executive Director

Marilyn Moon, Ph.D.
Chair

Garret A. Falcone
Vice Chair

Reverend Robert L. Conway

John E. Fleig, Jr.

Tekedra McGee Jefferson, Esq.

Kenny W. Kan

Sharon Krumm, R.N., Ph.D.

Robert Lyles, Jr., M.D.

Barbara Gill McLean, M.A.

Roscoe M. Moore, Jr.,
D.V.M., Ph.D., D.Sc.

Kurt B. Olsen, Esq.

Sylvia Ontaneda-Bernales, Esq.

Darren W. Petty

Nevins W. Todd, Jr., M.D.

Randall P. Worthington

The Maryland Health Care Commission (MHCC) is a public, regulatory commission established in 1999 by the Maryland General Assembly through a merger of the Health Care Access and Cost Commission and the Maryland Health Resources Planning Commission. The MHCC mission is to plan for health system needs, promote informed decisionmaking, increase accountability, and improve access in a rapidly changing health care environment by providing timely and accurate information on availability, cost, and quality of services to policymakers, purchasers, providers and the public. The Commission is administratively located within the Maryland Department of Health and Mental Hygiene, and is composed of 15 members appointed by the Governor, with advice and consent of the Senate, for a term of four years.

The MHCC is required under Health-General Article §19-133(g)(2-4) to issue a report describing the level of payments to physicians and other health care practitioners. Each year since 1996, the MHCC has published a professional health services report that provides a detailed analysis of payments to physicians and other health care professionals for the care of privately insured Maryland residents under age 65. The reports are based on health care claims and encounter data that most health insurance plans serving Maryland residents submit annually to the MHCC.

MARYLAND
HEALTH CARE
COMMISSION

2007–2008

PRACTITIONER UTILIZATION

Trends Among Privately Insured Patients

Released September 2010

Center for Information Services and Analysis

Acknowledgments

This report would not have been possible without the assistance of private health insurance companies and health maintenance organizations (HMOs) that provided information (identified in Appendix C). The Maryland Health Care Commission is grateful to these organizations, which dedicated considerable staff time and computer resources, and to the many individuals who answered questions and reviewed results.

The development of the Medical Care Data Base (MCDB) and the preparation of this report were conducted under contract with Social & Scientific, Inc. (SSS), of Silver Spring, Maryland, with assistance from Avar Consulting of Rockville, Maryland, and Data and Analytic Solutions, Inc. (DAS), of Fairfax, Virginia. The overall effort at SSS was under the direction of Dr. Claudia Schur and Mr. Adrien Ndikumwami.

Dr. Lan Zhao of SSS's Center for Health Research and Policy conducted the analyses described in this report. The programming effort at SSS was led by Mr. Adrien Ndikumwami with assistance from Ms. Sanee Maphungphong (SSS), Ms. Kasey Chen (Avar), and Ms. Doreen Xu (DAS). They edited the payer data submissions, organized the MCDB, and completed the numerous data analyses in this report. Also at SSS, Ms. Polly Gilbert, Ms. Joan Holleman, and Ms. Bonnie Belkin edited the report, and Ms. Laura Spofford assisted in the graphic design and production of the report. The Commission thanks the SSS team.

Contents

Report Highlights 1

1. Introduction 3
Key Concepts 3
Key Terms 6

2. Decomposition of Spending on Professional Services: Volume, Complexity, and Price 9
How did changes in service volume, service complexity,
and payment affect growth in per-user expenditures? 12

3. Payment Rates for Professional Services 21
Differences in Payment Rate by Payer Market Share 22

APPENDIX A. Technical Background: Summary of Data, Methods, and Caveats for This Report . . 27

APPENDIX B. Supplemental Tables 29

APPENDIX C. Payers Contributing Data to This Report 31

Tables and Figures

TABLE 1-1: Count of All and Full-Year Users and Distribution of Users by Coverage Type, 2008 4

TABLE 1-2: Impact of Imputation of Capitated Services on the Number of Full-Year Users and Per-User Expenditure, 2007 and 2008 7

TABLE 2-1: Distribution of Full-Year Users and Expenditure Per User by All Users, Users' Coverage Type, Plan Type, Region, and Payer Market Share, 2007–2008 10

TABLE 2-2: Distribution of Full-Year Users and Mean of Risk Score by All Users, Users' Coverage Type, Plan Type, Region, and Payer Market Share, 2007–2008 11

TABLE 2-3: Number of Services Per User by All Users, Users' Coverage Type, Plan Type, Region, and Payer Market Share, 2007–2008 13

TABLE 2-4: RVUs Per Service by All Users, Users' Coverage Type, Plan Type, Region, and Payer Market Share, 2007–2008 14

TABLE 2-5: Percentage Change in Payment Per RVU by Coverage Type, Plan Type, Region, and Payer Market Share, 2007–2008 15

FIGURE 2-1A: Distribution of Coverage Type by Payer Market Share, 2008 16

FIGURE 2-1B: Distribution of Region by Payer Market Share, 2008 16

TABLE 2-6: Decomposition of Expenditure Per User by Market Share and Plan Type, 2008 17

FIGURE 2-2A: Percentage Paid Out-of-Pocket by Non-CDHP Coverage Type and Plan Type, 2008 . . 18

FIGURE 2-2B: Components of Out-of-Pocket Expenditures, 2008 18

TABLE 3-1: Distribution of Number of Services, Total RVUs, and Total Payment by Coverage Type, Plan Type, User Region, and Payer Market Share, 2008 21

TABLE 3-2A: Payment Rates and Distribution of RVUs by Provider Region and Payer Market Share, 2007–2008 23

TABLE 3-2B: Payment Rates and Distribution of RVUs for In-Network Services by Provider Region and Payer Market Share, 2007–2008 25

TABLE 3-2C: Payment Rates and Distribution of RVUs for Out-of-Network Services by Provider Region and Payer Market Share, 2007–2008 26

TABLE B-1: Distribution of Payments for Professional Services Used by Full-Year Users by Users' Risk Status and Coverage Type, 2008 29

TABLE B-2: Expenditure Per User by Coverage Type, Plan Type, Region, and Market Share, 2007 . . . 29

TABLE B-3: Distribution of Expenditure Risk Scores, 2008 30

TABLE B-4: Comparison of Median CDPS for Each Coverage Type with the Overall Median Score, 2008 30

TABLE C-1: Payers Contributing Data to This Report 31

Report Highlights

This report describes the use of professional health care services by privately insured Maryland residents less than 65 years of age, during calendar year 2008, and the payments made to practitioners for these services by insurance companies and patients. Unless otherwise noted, the data source for all analyses in the report is the Maryland Medical Care Data Base (MCDB), which contains information on privately insured professional services used by Maryland residents.[1] Unlike reports from previous years, this report includes capitated services; while these services lack payment information, improvements in data quality allowed imputation of payment amounts so that a fuller picture of all services and payments can be provided.[2]

Professional service use is characterized by three key measures: (a) the average annual expenditure per user; (b) the average number of professional services obtained during the year; and (c) the average complexity of these services, with complexity defined by the number of relative value units[3] (RVUs) per service. Payments to health care professionals are described using the average payment-per-RVU and the ratio of the actual expenditure per user to the payment that would have resulted if the Medicare fee schedule had been applied.

HIGHLIGHTS FROM THE REPORT

Growth in Per-User Spending

Between 2007 and 2008, the average expenditure per user for professional services among users insured for the entire year[4] grew by 5 percent, slightly greater than the 3 percent increase in the prior year. Similar to the prior year, the growth between 2007 and 2008 is mainly attributable to a 3 percent increase in the total number of services per user. There also was a 1 percent increase in the average service complexity (RVUs per service), while the average payment per RVU remained the same as in 2007. Per-capita personal income in Maryland has continued to keep pace with the growth in spending for professional services, with the result that, since 2004, per-user spending has continued to account for slightly more than 2 percent of per-capita personal income. The overall growth in average expenditure per user varied little by risk status, coverage type, or region, although the components of expenditure—service volume, complexity, and payment per RVU—grew at different rates by plan and by payer characteristics. Growth in per-user spending was higher for non-HMO plans than for HMO plans, 5 percent versus 3 percent, and grew slightly faster (by 1 percentage point) for users covered by the largest payers.

The overall patient cost-sharing burden for full-year users remained stable between 2007 and 2008, at 18 percent of expenditures in both years. Across coverage types, consumer-directed health plan (CDHP) users paid a relatively high share of their expenditures out-of-pocket—34 percent in 2008.

Expenditures for Professional Services Differ Significantly by Patient Risk

An expenditure risk score—which is a measure of a person's need for medical care—was calculated for each full-year user, and users were assigned to one of three categories: "low-risk," "medium-risk," or "high-risk."[5] User risk status is an important determinant of per-user expenditures, regardless of plan, payer, and other user characteristics. The average risk score changed little from 2007 to 2008, and the relative expenditures for different risk groups also were similar across years. In 2008, the annual expenditure for a medium-risk user was about twice that of a low-risk user, and the annual expenditure for a high-risk user was more than five times that of a low-risk user. The average expenditure per user in different coverage types is strongly influenced by the risk mix of the users. Users in the Maryland Health Insurance Plan (MHIP), the state's high-risk pool, had the highest average risk score and the highest average expenditure per user

[1] A detailed description of the MCDB is included in Appendix A, and the list of insurers who submitted 2008 insurance claim data to the MCDB is located in Appendix C.

[2] These changes are described in detail in Chapter 1 under Methodological Change in This Report on page 7.

[3] See *Key Terms* on page 6 for the definition of relative value units.

[4] See page 3 for the definition of a full-year user.

[5] See Chapter 1 for a description of the expenditure risk score and category assignment.

of all coverage types.[6] At the other end of the risk-score distribution, users enrolled in plans in the individual market and in CDHPs had the lowest risk scores and ranked at the bottom in average spending per user. The most favorable relationship between risk and expenditures occurred in public employer plans: these users had an above-average risk score but below-average spending per user. Spending was below average because public employer plans had the lowest average expenditure in each risk category among the non-CDHPs in both 2007 and 2008.

Differences by Payer Market Share

The two largest payers in Maryland account for about 70 percent of the market, whether measured by number of services, total resources (RVUs), or total payments. There are a number of differences between the two largest payers and the other payers, attributable to the geographic mix of the services they cover and the negotiating power conveyed to the largest payers by their larger market share. As in 2007, users covered by the largest payers were on average less healthy than those covered by other payers; in 2008, one-third of users covered by the largest payers were in the high-risk category, compared with 29 percent of users covered by other payers.[7] The difference in the distribution of user risk may reflect differences in the markets served by the two groups of payers: in both years, the largest payers were more concentrated in the Baltimore Metropolitan Area (BMA) while the other payers were more concentrated in the National Capital Area (NCA). Users in the NCA appeared to be healthier on average than users in the BMA. As in previous years, payment per RVU across all professional services were lower among the largest payers than among the other payers, 14 percent lower in 2008 (i.e., $35.0 versus $40.5). However, their difference in payment rates may be narrowing: the largest payers increased their average payment per RVU by 2 percent, while the other payers' payment rate fell by 2 percent between 2007 and 2008. Within each provider region, the largest payers had a lower payment rate than the other payers; both payer groups paid their highest rate to providers in the NCA. Services covered by the largest payers were more likely to be provided by participating providers. Payment per RVU (which includes patient obligations) for out-of-network services was about 71 percent higher than the payment rate for in-network services in 2008, but there was regional variation in this percentage difference that differed by payer group. Overall, the average out-of-network payment rate was lower among the largest payers than among the other payers; however, this was not true in every provider region.

[6] 2008 is the first year that data on full-year users in the MHIP were included in the MCDB.

[7] In 2007, capitated services were not used in estimating risk scores, although MHCC does not see evidence that this methodological change influenced the shift in risk.

1. Introduction

As required by Maryland Health–General Article §19-133(g)(2-4), the Maryland Health Care Commission (MHCC) has published a report on the use of, and spending on, professional medical services by state residents with private health insurance annually since 1996. The main purpose of the professional services report series is to:

- Describe the use of—and trends in use of—insured professional medical services by nonelderly Maryland residents with private health insurance
- Analyze the payments made by insurance companies and recipients for these services
- Provide timely analytic evidence on issues related to professional medical services for state policymakers and other interested parties when data permit.

As with all previous professional services reports, the Maryland Medical Care Data Base (MCDB) is the main data source for this 2007–2008 *Practitioner Utilization* report. The MCDB includes information for individuals covered by private insurance who use insured professional services during each year. Private health insurance plans that serve Maryland residents, with the exception of a number of small payers, have been submitting data for inclusion in the MCDB annually since 1996.[8]

This introductory chapter explains key concepts used in the report and describes methodological changes in this year's data analyses. Chapter 2 examines professional services from the users' perspective. It analyzes the relationship among price, volume, service complexity, and total per-user spending. Chapter 3 analyzes professional services from the payers' perspective. It examines whether payment rates for professional services differ by payer market share. Payment rates for in-network and out-of-network services also are compared between the largest payers and the other payers. Appendix A provides technical background, including a summary of data, methods, and caveats for this report. Appendix B includes tables that summarize the distribution of full-year users' expenditures for professional services in 2008 by user health status, as measured by expenditure risk scores and coverage type; the decomposition of per-user expenditure by user, plan, and payer characteristics in 2007; the value of risk scores at various percentiles; and the distribution of expenditure risk scores by user characteristics. Appendix C lists the payers contributing data to this report.

[8] See Appendix A for more detailed information on the MCDB, and Appendix C for the list of payers that contributed to the 2008 MCDB.

KEY CONCEPTS

Study Populations: All Users Versus Full-Year Enrollees

The MHCC's professional medical services reports are based on information from private insurers in Maryland for covered (insured) services used by nonelderly Maryland residents. If a privately insured nonelderly person did not use any covered professional services, and thus had no claim or encounter in a particular year, this individual will not appear in the MCDB and, therefore, will not be part of the analyses for that year. Findings in this report pertain only to the nonelderly privately insured who used one or more professional services (i.e., *the users*, rather than the whole nonelderly, privately insured population).

Among all users, some were enrolled in the same insurance plan for the entire year 2008. These *full-year users*, identified using enrollment and disenrollment dates, are the study population in Chapter 2 when professional services are examined from the users' perspective. Focusing on full-year users provides a more accurate estimation of annual service use and spending and a better understanding of how price, volume, and intensity contribute to changes in payments for professional services in Maryland.

TABLE 1-1: Count of All and Full-Year Users and Distribution of Users by Coverage Type, 2008

	All Users	Full-Year Users	Proportion of Full-Year Users to All Users
ALL	2,740,088	2,061,075	75%
COVERAGE TYPE			
Non-CDHP	91%	92%	76%
1: Individual Plan	5	5	71
2: Private Employer Plan	38	36	72
3: Public Employer Plan	37	42	86
4: CSHBP	10	8	62
5: MHIP	1	0	55
CDHP	9	8	66

NOTES: 1. CDHP = consumer-directed health plan; CSHBP = Comprehensive Standard Health Benefit Plan; MHIP = Maryland Health Insurance Plan.
2. Full-year users are those enrolled in the same insurance plan for the entire year. Enrollees who have more than one coverage type are assigned the coverage type associated with the highest total RVUs, payment, number of services, or the most recent recorded coverage type if the coverage types are tied to total RVUs, payment, and number of services.
3. Detail may not add to total due to rounding.

In 2008, there were about 2.7 million users, 1 percent more than in 2007 (data not shown).[9] Among non-consumer-directed health plans (non-CDHPs), private employer plans and public employer plans were two major sources of private health insurance for users of professional services: they covered about an equal share of users, and together they accounted for three-quarters of all users (Table 1-1). The Maryland Comprehensive Standard Health Benefit Plan (CSHBP) for small businesses and CDHPs covered 10 percent and 9 percent of users, respectively. Another 5 percent of users were covered through the individual market. The Maryland Health Insurance Plan (MHIP), the high-risk pool for individuals who cannot pass health underwriting in the nongroup market, covered about 1 percent of all users. Compared with 2007, the distribution of all users by coverage type changed slightly, possibly reflecting the impact of the economic downturn on the job market and its ripple effect on the availability and affordability of health insurance. There was a 2 percentage point and a 3 percentage point decrease in the share of users covered by private employer plans and the CSHBP, respectively, while the share in public employer plans increased by 2 percentage points (data not shown). CDHP health plans continued to attract more users. In 2008, CDHPs covered 9 percent of all users, a 3 percentage point increase from 2007.

[9] Changes in the number of users between years may reflect several factors, including the completeness of the data submitted by the payers and changes in the number of individuals covered by private insurance and in the share who used professional medical services.

As in 2007, three-quarters of users in 2008 were enrolled in the same plan for the entire calendar year (Table 1-1). Overall, the relationship between coverage type and the share of full-year users exhibits a similar pattern in 2007 and 2008. Individuals insured through public employers are most likely to be enrolled in the same plan for the entire year. This is not surprising, given that employment with public employers tends to be more stable than that with the private sector. The vast majority of users in public employer plans (86 percent in 2008) were full-year enrollees, resulting in a higher share of public employer plan enrollees among full-year users than among all users: 42 percent versus 37 percent in 2008. In contrast, those insured through the CSHBP for small businesses and through larger private employers account for slightly smaller shares of full-year users than of all users in both years. Compared with users in other types of employment-based non-CDHP coverage, those insured through the CSHBP are much less likely to hold insurance with the same plan throughout the calendar year: 62 percent in 2008. This may be the result of two factors: job turnover and the stability of plan offerings. The turnover rate of employees in small business and the turnover rate of small businesses themselves tend to be higher than that in their larger counterparts. In addition, the contract year for small employers often does not coincide with the calendar year. When employers in the CSHBP change plans or initiate or drop health insurance coverage during the calendar year, their employees become part-year enrollees in one or more plans.

Among all users, those in the MHIP are least likely to be full-year users—in 2008, only a little more than one-half of MHIP users were in the same plan the whole year. The low ratio of full-year users to all users in the MHIP is probably due mainly to the fact that MHIP enrollees can enroll any time during a year. In addition, because MHIP is a high-risk pool, it generally charges higher premiums than regular private health insurance, making it more likely that enrollees will drop the coverage due to financial constraints.

Users in CDHP plans were also less likely to be full-year users than average. In 2008, 66 percent of CDHP users were full-year users. As in 2007, the lower share of full-year users in CDHPs in 2008 reflects the continued relatively large growth in CDHP enrollment in 2008. Because this enrollment occurred throughout the year, it produced a relatively large share of users who were covered for less than a year.

User, Insurance Plan, Payer, and Provider Characteristics

Users, providers, and payers and the insurance plans they offer all play a role in determining the use and cost of professional services. In this report, we examine: (a) how the level of and the annual change in per-user expenditures and service utilization vary by user, plan, and payer characteristics; and (b) how payments per RVU vary by payer and provider characteristics.

USER CHARACTERISTICS: Health status and geographic location are two main user characteristics that affect the use of professional services. Health status determines the type and amount of professional services needed, while geographic location captures factors such as cost of living that affect expenditures on professional services.

- **Geographic region** divides the state into three areas: the Baltimore Metropolitan Area (BMA); the National Capital Area (NCA), including Montgomery and Prince George's counties in Maryland, Northern Virginia, and the District of Columbia; and the Other Maryland Area.
- **The Expenditure Risk Score** measures the need for medical care. The healthier a person, the less medical care he or she needs, regardless of his or her demographic and socioeconomic characteristics. We report utilization and spending for full-year users grouped by a measure of their need for medical care, here defined by the Chronic Illness and Disability Payment System (CDPS). The CDPS, developed by researchers at the University of California, San Diego, categorizes an individual's risk of having significant medical expenditures from the number and mix of diagnoses recorded on his or her insurance claims.

A risk score was calculated for each user enrolled for the entire year in the same data-reporting plan, using only professional service claims. The resulting distribution of scores was divided into thirds, and individuals were assigned to one of three categories—"low-risk," "medium-risk," or "high-risk"—based on their position in the distribution.

PLAN AND PAYER CHARACTERISTICS: Throughout this report, insurance plans and payers are categorized in the following dimensions:

- **Coverage type** differentiates between CDHPs and non-CDHPs, and among non-CDHPs, whether the private insurance is bought on an individual basis or through an employer. Among employer-sponsored plans, there are three groups—private employers, public employers, and the CSHBP for small businesses. There are two groups for plans purchased individually—those purchased through the regular individual market and those purchased through the MHIP. This year's data submission allows the reporting of MHIP as a separate coverage type, the first time since the MHIP was created by the Maryland legislature in 2002.
- **Plan type** distinguishes between health maintenance organizations (HMOs) and non-HMOs—typically preferred provider organizations (PPOs). HMOs and non-HMOs differ in the breadth of their provider networks and the extent to which the use of out-of-network provider services is reimbursed. PPOs have larger networks and offer more generous reimbursement for out-of-network services, while HMOs limit their reimbursement for out-of-network services to emergency care only.
- **Market share** separates the two largest payers from all other payers, because they may differ in their ability to lead rather than follow market trends.

KEY TERMS

TOTAL PAYMENTS FOR PRACTITIONER CARE Sum of payments from the insurer and patient, including the deductible, copayment or coinsurance, and balance billing amounts to be paid directly out-of-pocket by the patient, as reported on the claims data.

COUNT OF SERVICES A simple count of the number of services provided to patients (as listed on the bills), without regard to the cost or complexity of those services. The average number of services per user is used to capture the **volume** of professional services in this report.

RELATIVE VALUE UNITS (RVUS) OF CARE A measure of the quantity of care, in which more complex, resource-intensive (and typically more costly) services have a higher number of RVUs. A more sophisticated measure of the quantity of care than a simple count of services, RVUs measure the level of resources used to produce a particular service. RVUs are used to define both service complexity and payment rate in this report. The **complexity** of a group of services is defined by the average number of RVUs per service. The average unit price, or **payment rate**, is measured by the average payment per RVU. Medicare's physician payment system was used as the source of information on the number of RVUs for each service. For this report, RVUs from the 2008 Medicare fee schedule were applied to both 2007 and 2008 data.

COUNT OF SERVICE USERS A count of the encrypted patient identifiers reported by payers. Because payers may use different encryption systems for their different insurance products (plans), the count is made within each specific plan. Counts of users may overstate the actual number of users of practitioner services, because individuals who are insured under more than one product during a year will be counted separately under each.

PAYMENT AT MEDICARE PAYMENT LEVEL Medicare RVUs are added to each service in the MCDB by Current Procedural Terminology (CPT) code, and the Medicare conversion factor is applied to calculate payment for the service at the Medicare payment level.

PROVIDER CHARACTERISTICS: A provider's reimbursement for a service generally reflects the number of RVUs associated with the service—although other factors are involved—and differs by payer. Even for the same service within the same payer, the average price per unit of service—here measured as average payment per RVU—can vary based on the geographic location of the provider and whether the provider and payer have a payment agreement.[10]

- **Geographic region** divides the providers into four categories based on their geographic location, which may be outside Maryland. Providers in locations with higher resource costs tend to receive higher average payment per RVU. The provider regions include the BMA; the NCA (Montgomery and Prince George's counties in Maryland, Northern Virginia, and the District of Columbia), the Other Maryland Area, in Maryland or in adjacent states (excluding Virginia), and providers in more distant or unknown locations.
- **Participation status** indicates whether or not the provider who rendered a service had a payment agreement with the payer responsible for the reimbursement of the service. A service obtained from a nonparticipating provider is considered out-of-network.[11]

[10] A provider who has a payment agreement with a payer is a participating provider.

[11] Another scenario where a service is considered out-of-network is one in which the user was required to, but did not, obtain a referral for the service.

TABLE 1-2: Impact of Imputation of Capitated Services on the Number of Full-Year Users and Per-User Expenditure, 2007 and 2008

	2007		2008	
	With Imputation	Percentage Change After Imputation	With Imputation	Percentage Change After Imputation
NUMBER OF FULL-YEAR USERS	2,008,216	8%	2,060,039	8%
PER-USER EXPENDITURE				
All Full-Year Users	$1,092	6	$1,186	8
Full-Year Users with Some Capitated Services	1,435	19	1,561	22
Full-Year Users with Only Capitated Services	332	n/a	414	n/a

NOTES: 1. Full-year users are those enrolled in the same insurance plan for the entire year.
2. Capitated services include both services paid on a capitation basis and services reimbursed through a global contract with an intermediary organization.

Methodological Change in This Report

The MCDB's information on professional services includes both health care claims—with payment information—and encounter records, which do not have payment data.[12] Because they lack payment information and reliable procedure codes, encounter records were not included in the analyses in the past professional services reports. The exclusion of encounter records resulted in an underestimation of the utilization of, and spending on, professional services in users with one or more capitated services.

Improvement in data quality, particularly in the CPT code field, allowed the imputation of payments for capitated services in the 2008 MCDB. In 2008, 14 percent of all services, or 37 percent of all HMO services, were capitated (data not shown). Capitated services accounted for 7 percent and 18 percent of total RVUs and HMO RVUs, respectively.

Using payment information on noncapitated services within the same payer, we imputed payment for capitated services based on the CPT code associated with a service. The imputation affects two groups of users—those with only capitated services, and those with certain services paid through capitation during a plan year. Without imputation, the first group of users would have been excluded from the analyses; the second group of users would have been included, but would be associated with an underestimated per-user expenditure. In both 2007 and 2008, the number of full-year users included in the report analyses increased by 8 percent with imputation (Table 1-2). These full-year users spent on average $332 and $414 on professional services in 2007 and 2008, respectively. For full-year users with some but not all capitated services, per-user expenditure is about one-fifth higher after imputation in both 2007 and 2008. Overall, the inclusion of imputed payments for capitated services led to a 6 percent and 8 percent increase in per-user spending among all full-year users in 2007 and 2008, respectively.

[12] Encounter records include both capitated services and services reimbursed through a global contract with an intermediary organization. For simplicity, this report refers to services recorded in encounter records as "capitated services."

2. Decomposition of Spending on Professional Services: Volume, Complexity, and Price

In 2008, the average expenditure on professional services for a full-year user in Maryland was $1,186, 5 percent higher than in 2007 (Table 2-1). Nationally, the average spending on office-based medical provider visits for a nonelderly, privately insured, full-year user increased by 7 percent from 2006 to 2007.[13] As a share of the average annual per-capita income for state residents, per-user spending remained stable between 2007 and 2008. In both years, the average expenditure on professional services for a full-year user accounted for a little more than 2 percent of per-capita income (data not shown).

This chapter provides an in-depth examination of the level of, and growth in, per-user expenditures on professional services. Spending is decomposed in order to understand the contributions of service volume, service complexity, and price in determining the level of, and growth in, spending. This chapter also examines the variation in per-user expenditures by a number of user and market characteristics. The analyses are based on data for full-year users—users who were enrolled in the same plan for the entire calendar year. Following MHCC's convention for decomposing spending, service volume is captured through the number of services per user; complexity is measured by the average number of RVUs per service; and price is estimated through payment per RVU, with payment including both payer and user cost-sharing (out-of-pocket) amounts.

Overall, the analyses described in the following suggest that in 2008, differences in per-user spending across plan and user characteristics tend to be driven more by differences in per-user service volume than by service complexity or payment per RVU. The share of spending on professional services generated by high-risk users exceeds their share of users by a considerable margin, while the low-risk users have lower expenditures than their patient share would predict. The distribution of users with various risk statuses appears to be as important as per-user spending within each risk group in determining the overall per-user expenditure in a plan. The mix of users by risk category can change the overall ranking of per-user spending for a given group, even when a particular coverage type, plan type, payer market share, or user geographic region is associated with higher per-user spending across all risk categories.

The mix of users by expenditure risk varies by plan and market characteristics. Table 2-2 shows the average Expenditure Risk Score[14] for full-year users in 2008 by plan, user, and payer characteristics. Not surprisingly, users insured in the high-risk pool, the MHIP, had the highest average risk score—74 percent higher than the average risk score for all full-year users. On the other end of the distribution, users enrolled in plans in the individual market and in CDHPs had lower than average risk scores, consistent with the hypothesis that there is market selection and self-selection of healthier users into these types of plans. HMO users also appear to be healthier than their non-HMO counterparts, possibly reflecting the need of less healthy users for a wider range of services, which are more easily accessible through non-HMO products. Users from the NCA on average had lower risk scores than those from the BMA and the Other Maryland Area. Users covered by the largest payers appear to be less healthy than those covered by other payers; this is likely related to the mix of user risk scores in the markets where these payers operate—the largest payers insured more users from the BMA (where users have higher risk scores) than from the NCA (where they have lower risk scores) (a ratio of 3:2; data not shown), while other payers insured slightly more users from the NCA than from the BMA. The average risk score changed little from 2007 to 2008; the largest increase was only 2 percent for users enrolled in individual plans and for non-HMO users.

[13] Data source: the Medical Expenditure Panel Survey (MEPS), 2006 and 2007. The 2007 data are from the most updated MEPS available at the time of preparation of this report.

[14] See page 5 for a definition of Expenditure Risk Score.

TABLE 2-1: Distribution of Full-Year Users and Expenditure Per User by All Users, Users' Coverage Type, Plan Type, Region, and Payer Market Share, 2007–2008

	PERCENTAGE OF USERS, 2008				EXPENDITURE PER USER							
					All Users		Low-Risk Users		Medium-Risk Users		High-Risk Users	
		Low-Risk Users	Medium-Risk Users	High-Risk Users	2008	Percentage Change from 2007	2008	Percentage Change from 2007	2008	Percentage Change from 2007	2008	Percentage Change from 2007
ALL	100	35	33	32	$1,186	5%	$437	4%	$896	5%	$2,316	5%
COVERAGE TYPE												
Non-CDHP	100	35	33	32	1,193	5	438	5	899	5	2,324	5
1: Individual Plan	100	42	33	25	1,049	5	432	5	899	5	2,259	5
2: Private Employer Plan	100	36	33	31	1,205	5	459	6	932	6	2,386	6
3: Public Employer Plan	100	34	33	33	1,176	4	414	4	858	5	2,257	4
4: CSHBP	100	34	33	33	1,293	5	482	6	978	5	2,416	5
5: MHIP	100	14	28	57	2,205	n/a	583	n/a	1,113	n/a	3,151	n/a
CDHP	100	37	33	30	1,103	4	421	5	854	5	2,206	5
PLAN TYPE												
Non-HMO	100	34	33	33	1,262	5	453	5	940	5	2,415	5
HMO	100	37	33	30	1,067	3	414	3	826	3	2,143	4
REGION												
Baltimore Metropolitan Area	100	34	33	33	1,188	4	440	5	886	4	2,256	5
National Capital Area	100	38	33	30	1,210	4	448	3	939	4	2,460	4
Other Maryland Area	100	34	33	33	1,140	5	409	5	840	6	2,215	6
PAYER MARKET SHARE												
Largest Payers	100	34	33	33	1,193	5	425	5	884	5	2,280	5
Other Payers	100	38	33	29	1,170	4	459	4	920	4	2,405	5

NOTES: 1. CDHP = consumer-directed health plan; CSHBP = Comprehensive Standard Health Benefit Plan; MHIP = Maryland Health Insurance Plan; HMO = health maintenance organization.
2. Detail may not add to total due to rounding.
3. Reliable data on enrollment in the MHIP as an independent coverage type were not available until 2008.

TABLE 2-2: Distribution of Full-Year Users and Mean of Risk Score by All Users, Users' Coverage Type, Plan Type, Region, and Payer Market Share, 2007–2008

		MEAN	
	All Full-Year Users	2008	Percentage Change
ALL	2,061,075	1.25	1%
COVERAGE TYPE			
Non-CDHP	92%	1.26	1%
1: Individual Plan	5	1.04	2
2: Private Employer Plan	36	1.21	1
3: Public Employer Plan	42	1.31	1
4: CSHBP	8	1.29	1
5: MHIP	0	2.17	n/a
CDHP	8	1.19	0
PLAN TYPE			
Non-HMO	61	1.29	2
HMO	39	1.18	0
REGION			
Baltimore Metropolitan Area	44	1.29	1
National Capital Area	36	1.19	1
Other Maryland Area	21	1.27	1
PAYER MARKET SHARE			
Largest Payers	68	1.29	1
Other Payers	32	1.16	0

NOTES: 1. CDHP = consumer-directed health plan; CSHBP = Comprehensive Standard Health Benefit Plan; MHIP = Maryland Health Insurance Plan; HMO = health maintenance organization.
2. Detail may not add to total due to rounding.
3. 0% indicates <0.5%.
4. Reliable data on enrollment in the MHIP as an independent coverage type were not available until 2008.

Table 2-1 shows the distribution of users across expenditure risk categories for different coverage and plan types. Along with mean expenditures, this information provides evidence of the positive association between risk and per-user expenditures. The share of spending on professional services generated by high-risk users exceeds their share of users by a considerable margin, while the low-risk users have lower expenditures than their patient share would predict; this pattern holds for both 2007 and 2008 (Appendix B, Table B-1). In 2008, excluding users in individual plans and the MHIP, high-risk users comprised 30 percent to 33 percent of the users in each coverage type but were responsible for 60 percent to 64 percent of expenditures for professional services (Appendix B, Table B-1); in contrast, low-risk users were 34 percent to 37 percent of the users, but accounted for just 12 percent to 14 percent of the payments within each coverage type (again, excluding the individual market and the MHIP).

Compared with the other coverage types, individual plan users are less likely to be high risk, because this segment of the insurance market in Maryland is subject to individual medical underwriting and preexisting condition restrictions.[15] The lower risk of this population is reflected in their expenditure distribution, with 17 percent of professional service payments attributable to low-risk users and 55 percent attributable to high-risk users in 2008 (Appendix B, Table B-1). At the other end of the risk spectrum, high-risk users in the MHIP group accounted for 82 percent of MHIP

[15] A significant number of individuals in this market are denied coverage and purchase coverage through Maryland's high-risk pool, MHIP.

professional services expenditures, 20 percentage points higher than the overall share of professional service payments attributable to high-risk users. This skewed distribution reflects MHIP's role as a safety net for people who cannot find health insurance on the private market due to particular health conditions.

User risk status is an important determinant of per-user expenditures, regardless of plan, payer, and other user characteristics. On average, the annual expenditure for a medium-risk user is about twice that of a low-risk user, and the annual expenditure for a high-risk user is more than five times that of a low-risk user (Table 2-1). These ratios hold true without exception within each coverage type, plan type, user geographic region, and payer market share.

The mix of users by risk category can change the overall ranking of per-user spending for a given group, even when a particular coverage type, plan type, payer market share, or user geographic region is associated with higher per-user spending across all risk categories. For example, per-user spending in individual plans was higher than that for users in public employer plans for low- and medium-risk groups, and about the same for high-risk groups. However, the significantly healthier user mix in individual plans produced an average expenditure for individual plan users that was almost 11 percent lower than the average for those in public employer plans. For the largest payers, their low-, medium-, and high-risk users on average had an expenditure that was lower than the expenditure for users in each respective risk category covered by the other payers, yet the overall per-user expenditure for largest payers was 2 percent higher than that for other payers as a result of their less healthy mix of users.

When user risk status is controlled for (i.e., within each risk group), plan and payer characteristics and user geographic location have their own effects on per-user expenditure. Within each risk group, per-user expenditure varied by plan and by payer characteristics and user geographic region (Table 2-1). Among all non-CDHPs, per-user spending was lowest for those enrolled in public employer plans across all three risk categories; in contrast, per-user spending for MHIP users was the highest and was higher than that of users in public employer plans by 41 percent, 30 percent, and 40 percent for low-, medium-, and high-risk users, respectively. The high per-user expenditure for MHIP users is mainly the result of higher service volume. In 2008, the average number of services used by MHIP users was 77 percent higher than that of all full-year users. Their service complexity was somewhat higher, while their average payment rate—as measured by payment per RVU—was somewhat lower than the average—by 7 percent (Table 2-3) and 4 percent (Table 2-4), respectively. HMO users in the low-, medium-, and high-risk groups had an average annual spending on professional services that is 8 percent, 12 percent, and 11 percent lower than that of their non-HMO counterparts in 2008. Users insured by the largest payers had a lower average expenditure on professional services than those insured by other payers, regardless of their risk status. Users living in the BMA and the Other Maryland Area had similar average expenditures in 2008, both lower than those living in the NCA. Low-risk users in the NCA on average spent 2 percent more than low-risk users from the BMA, and medium- and high-risk users on average spent 6 percent and 9 percent more, respectively. The lower per-user spending for each risk category of BMA residents probably reflects the high proportion of BMA users enrolling in HMO products (data not shown).

How did changes in service volume, service complexity, and payment affect growth in per-user expenditures?

The main component underlying growth in per-user spending on professional services between 2007 and 2008 was an increase in the number of services per user. Spending on professional services per user grew by 5 percent in full-year users from 2007 to 2008. This growth is mainly attributable to a 3 percent increase in the total number of services per user and a 1 percent increase in the average service complexity (RVUs per service). Average payment per RVU remained the same as in 2007. Changes in the number of services per user are shown in Table 2-3; changes in the average service complexity, in Table 2-4, and changes in the average payment per RVU, in Table 2-5. The different user and plan characteristics influencing each of these components of spending are discussed here.

TABLE 2-3: Number of Services Per User by All Users, Users' Coverage Type, Plan Type, Region, and Payer Market Share, 2007–2008

	NUMBER OF SERVICES PER USER							
	All Users		Low-Risk Users		Medium-Risk Users		High-Risk Users	
	2008	Percentage Change from 2007	2008	Percentage Change from 2007	2008	Percentage Change from 2007	2008	Percentage Change from 2007
ALL	20.8	3%	9.1	3%	17.5	3%	37.1	4%
COVERAGE TYPE								
Non-CDHP	20.9	3	9.2	3	17.5	3	37.3	4
1: Individual Plan	18.6	5	9.1	5	17.5	4	35.9	5
2: Private Employer Plan	20.1	4	9.2	4	17.3	3	36.2	4
3: Public Employer Plan	21.2	1	8.9	1	17.2	2	37.3	2
4: CSHBP	23.3	7	10.4	7	19.4	5	40.1	7
5: MHIP	36.8	n/a	13.1	n/a	20.7	n/a	50.7	n/a
CDHP	19.5	4	8.9	4	17.0	5	35.1	5
PLAN TYPE								
Non-HMO	21.7	4	9.3	4	18.0	4	38.3	4
HMO	19.3	0	8.9	0	16.7	0	35.0	1
REGION								
Baltimore Metropolitan Area	21.4	3	9.3	4	17.9	3	37.4	4
National Capital Area	20.5	3	9.3	1	17.5	2	37.9	4
Other Maryland Area	19.8	4	8.5	4	16.4	4	35.2	4
PAYER MARKET SHARE								
Largest Payers	21.6	4	9.3	3	17.8	3	37.7	4
Other Payers	19.1	2	8.8	2	16.6	1	35.7	3

NOTES:
1. CDHP = consumer-directed health plan; CSHBP = Comprehensive Standard Health Benefit Plan; MHIP = Maryland Health Insurance Plan; HMO = health maintenance organization.
2. Detail may not add to total due to rounding.
3. 0% indicates <0.5%.
4. Reliable data on enrollment in the MHIP as an independent coverage type were not available until 2008.

The 2007-to-2008 growth in average expenditure per user varied little by risk status (shown in Table 2-1). The growth in service volume, service complexity, and average payment per RVU was similar across all three risk categories. When the components of per-user expenditures are compared across risk categories, it is apparent that differences are driven mainly by differences in service volume. The average annual number of services for a high-risk user in 2008 was about twice that of a medium-risk user, and about four times that of a low-risk user (Table 2-3). Compared with the differences in service volume, service complexity varied less across the risk categories. The average complexity of services used by high- and medium-risk users was about 31 percent and 8 percent higher, respectively, than the average complexity of services obtained by low-risk users. The relative magnitudes of difference in service volume and complexity by risk status in 2008 are almost identical to those observed in 2007 (data not shown).

Overall growth in expenditures per user varied little by coverage type, though the decomposition reveals differences in the growth of different components. From 2007 to 2008, per-user spending increased 4 percent for non-CDHP public employer plans and CDHPs and 5 percent for all other coverage types. The similar rates of growth in per-user spending across coverage types persist, even when user risk status is taken into consideration. However, the decomposition of per-user spending reveals varied contributions made by service volume, service intensity, and payment rate (as measured by

TABLE 2-4: RVUs Per Service by All Users, Users' Coverage Type, Plan Type, Region, and Payer Market Share, 2007–2008

	RVUs PER SERVICE							
	All Users		Low-Risk Users		Medium-Risk Users		High-Risk Users	
	2008	Percentage Change from 2007	2008	Percentage Change from 2007	2008	Percentage Change from 2007	2008	Percentage Change from 2007
ALL	1.6	1%	1.4	1%	1.5	1%	1.8	1%
COVERAGE TYPE								
Non-CDHP	1.6	1	1.4	1	1.5	1	1.8	1
1: Individual Plan	1.6	0	1.4	-1	1.5	0	1.8	0
2: Private Employer Plan	1.7	2	1.4	0	1.5	2	1.8	2
3: Public Employer Plan	1.6	1	1.4	-1	1.5	2	1.8	1
4: CSHBP	1.6	-1	1.4	0	1.5	-1	1.8	-1
5: MHIP	1.7	n/a	1.3	n/a	1.5	n/a	1.8	n/a
CDHP	1.6	1	1.4	1	1.5	0	1.8	1
PLAN TYPE								
Non-HMO	1.6	0	1.4	1	1.5	1	1.8	1
HMO	1.7	2	1.4	2	1.5	2	1.9	2
REGION								
Baltimore Metropolitan Area	1.6	1	1.4	1	1.5	1	1.8	1
National Capital Area	1.6	1	1.3	1	1.5	2	1.8	1
Other Maryland Area	1.6	1	1.4	1	1.5	1	1.8	1
PAYER MARKET SHARE								
Largest Payers	1.6	0	1.4	0	1.5	0	1.8	-0
Other Payers	1.7	3	1.4	3	1.5	4	1.9	4

NOTES: 1. CDHP = consumer-directed health plan; CSHBP = Comprehensive Standard Health Benefit Plan; MHIP = Maryland Health Insurance Plan; HMO = health maintenance organization.
2. Detail may not add to total due to rounding.
3. 0% indicates <0.5%.
4. Reliable data on enrollment in the MHIP as an independent coverage type were not available until 2008.

payment per RVU). For example, full-year users in public employer plans and in CSHBPs exhibited similar per-user spending increases (4 percent and 5 percent, respectively), but the underlying component changes were markedly different. For public employer plans, modest growth (about 1 percent) in all three components led to the overall 4 percent increase in per-user expenditures; in contrast, for the CSHBP, there was a significant (7 percent) increase in number of services per user, which was then offset by a 1 percent drop in both RVUs per service and payment per RVU, resulting in a 5 percent increase in the overall average spending for this group of users.

For users in individual market plans, private employer plans, and CDHPs, the main contributor to the growth in per-user expenditures was service volume (5 percent, 4 percent, and 4 percent, respectively), followed by service complexity for private employer plans and CDHPs (2 percent and 1 percent, respectively) and average payment rate for individual market plans (1 percent). Changes in service volume, complexity, and average payment rate from 2007 to 2008 varied for users with the same coverage type but different risk categories, but the variations are generally small. It is worth noting that unlike 2007, growth in per-user expenditure and its decomposition for CDHPs seem to be in line with non-CDHPs in 2008, suggesting

TABLE 2-5: Percentage Change in Payment Per RVU by Coverage Type, Plan Type, Region, and Payer Market Share, 2007–2008

	PERCENTAGE CHANGE IN PAYMENT PER RVU FROM 2007			
	All Users	Low-Risk Users	Medium-Risk Users	High-Risk Users
ALL	0%	0%	1%	0%
COVERAGE TYPE				
Non-CDHP	0	0	1	0
1: Individual Plan	1	1	1	0
2: Private Employer Plan	0	0	1	0
3: Public Employer Plan	1	1	1	1
4: CSHBP	-1	-1	0	-1
5: MHIP	n/a	n/a	n/a	n/a
CDHP	0	0	0	-1
PLAN TYPE				
Non-HMO	0	0	1	0
HMO	0	0	1	0
REGION				
Baltimore Metropolitan Area	0	0	1	0
National Capital Area	0	1	1	0
Other Maryland Area	1	0	1	1
PAYER MARKET SHARE				
Largest Payers	1	1	1	1
Other Payers	-1	-1	0	-1

NOTES: 1. CDHP = consumer-directed health plan; CSHBP = Comprehensive Standard Health Benefit Plan; MHIP = Maryland Health Insurance Plan; HMO = health maintenance organization.
2. Detail may not add to total due to rounding.
3. 0% indicates <0.5%.
4. Reliable data on enrollment in the MHIP as an independent coverage type were not available until 2008.

that spending patterns among those covered by CDHP products more closely resemble the non-CDHP market as the number of CDHP enrollees grows. Approximately 8 percent of full-year users were insured by CDHPs in 2008 (Table 1-1), up from 5 percent in 2007 (data not shown).

Growth in per-user spending was higher for non-HMO plans than for HMO plans. In 2008, per-user spending grew almost twice as fast among non-HMO plans as among HMO plans (5 percent versus 3 percent) (Table 2-1). The main driver for the relatively high growth rate in per-user spending for non-HMO plans was a 4 percent increase in service volume, while HMO users had, on average, almost the same service volume in 2008 as in 2007 (Table 2-3). Services rendered to HMO users were more complex in 2008, reflected in a 2 percent increase in RVUs per service, while there was no change in service complexity for services used by non-HMO users (Table 2-4). Payment rates—as measured by payment per RVU—remained stable for both non-HMO and HMO users between the two years (Table 2-5). The differences between HMO and non-HMO users in growth rates for overall per-user spending, as well as the spending components of service volume, complexity, and payment rate, were almost always the same across the three risk categories.

The growth rate in per-user expenditure on professional services was very similar across different Maryland regions. Users residing outside the NCA and the BMA (i.e., the Other Maryland Area) had slightly higher growth in service volume and average payment rate, resulting in a 1 percentage point higher growth rate in per-user expenditures. Across all regions, even looking across risk

FIGURE 2-1A: Distribution of Coverage Type by Payer Market Share, 2008

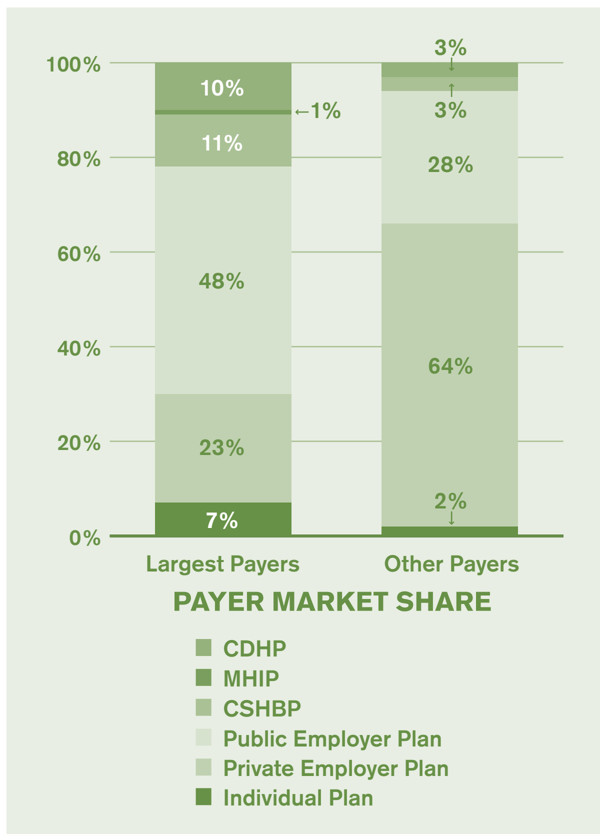
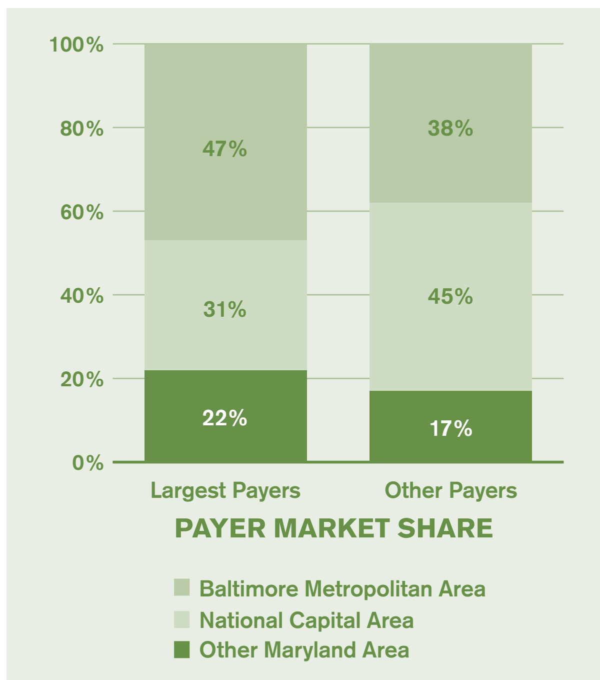


FIGURE 2-1B: Distribution of Region by Payer Market Share, 2008



categories, there was little variation in growth in payment rate or service complexity. Growth in service volume, on the other hand, varied across regions in the low- and medium-risk groups, with the NCA having slower growth than the BMA and the Other Maryland Area in number of services per user in these two risk groups.

Per-user expenditures grew slightly faster for users insured by the largest payers. In 2008, per-user expenditures grew 1 percentage point faster for users covered by the largest payers than for those covered by the other payers, resulting in slightly higher per-user expenditures for the largest payers than for other payers in that year. The small difference in the growth rate in per-user expenditures masks contrasting roles of service volume, complexity, and payment rate between the largest payers and the other payers. For the largest payers, the 5 percent increase in per-user expenditures was mainly the result of an increase in service volume (4 percent) and a slight increase in payment rate (1 percent). For the other payers, the 4 percent increase in per-user expenditures was the result of a relatively significant increase in service complexity (3 percent) and a modest growth in service volume (2 percent). The average payment rate dropped by 1 percent for the other payers, in contrast to the slight increase in payment rate for the largest payers.

The mix of users enrolled with the largest payers differs from the user mix of other payers in terms of coverage type, plan type, risk category, and region of residence. Slightly more than two-thirds of full-year users (68 percent) were covered by the largest payers in 2008 (Table 2-2), down from 72 percent (data not shown) in 2007. As in previous years, full-year users insured by payers other than the two largest payers in the state were highly concentrated in non-CDHP private employer plans (64 percent) and public employer plans (28 percent) (Figure 2-1A). The distribution by coverage type is more dispersed for full-year users insured by the two largest payers in the state—slightly less than one-half were enrolled in non-CDHP public employer plans, followed by 23 percent in non-CDHP private employer plans, and 11 percent in non-CDHP CSHBPs. The largest payers also have a much higher share of full-year users in CDHPs compared with other payers (10 percent versus 3 percent).

As in 2007, almost one-half of full-year users covered by the largest payers resided in the BMA, a little less than one-third in the NCA, and the rest

TABLE 2-6: Decomposition of Expenditure Per User by Market Share and Plan Type, 2008

CATEGORY	Non-HMO	HMO	All
LARGEST PAYERS			
Percentage of Users	67	33	100
Expenditure Per User	$1,234	$1,110	$1,193
Number of Services Received Per User	20.6	19.2	20.2
RVU Per Service	1.6	1.6	1.6
Payment Per RVU	36.9	35.6	36.5
Ratio of Expenditure Per User to Expenditure Per User at Medicare Payment Rate	0.93	0.91	0.93
OTHER PAYERS			
Percentage of Users	47	53	100
Expenditure Per User	$1,348	$1,009	$1,170
Number of Services Received Per User	19.0	17.2	18.1
RVU Per Service	1.6	1.4	1.5
Payment Per RVU	43.9	41.5	42.8
Ratio of Expenditure Per User to Expenditure Per User at Medicare Payment Rate	1.08	1.04	1.06

NOTE: Detail may not add to total due to rounding.

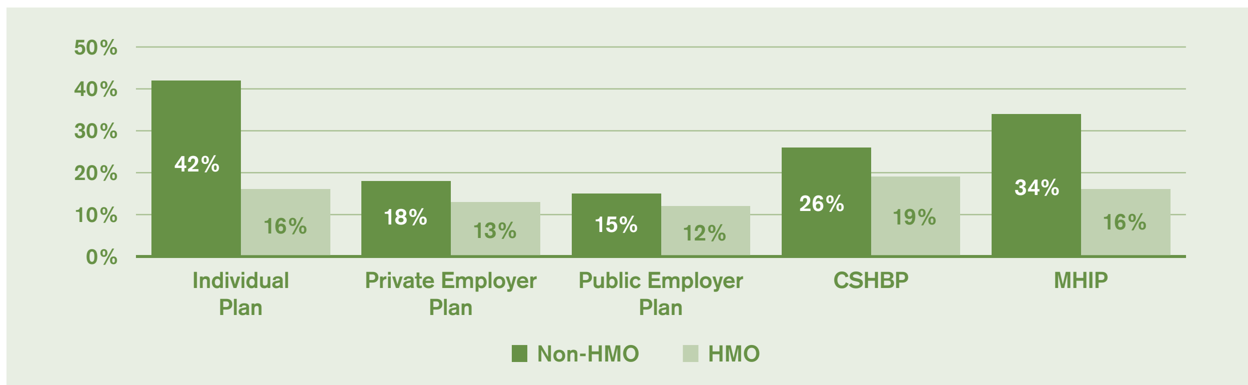
in the Other Maryland Area (Figure 2-1B). The other payers had a different composition of users by region of residence—almost one-half of their users (45 percent) resided in the NCA, followed by 38 percent in the BMA. The different distribution of users by region has implications for the two groups of payers, because user health risk and resource costs differ by region.

Users covered by the other payers were healthier than those covered by the largest payers, and the difference in user risk mix changed little from 2007 (data not shown) to 2008. In both years, one-third of users covered by the largest payers were in the high-risk category, compared with 29 percent of users covered by other payers (Table 2-1). As in 2007, two-thirds of full-year users covered by the largest payers in 2008 were enrolled in non-HMO plans, compared with slightly less than one-half of users covered by the other payers (Table 2-6).

Per-user expenditures for users covered by the largest payers and those covered by other payers differed, with these differences varying for non-HMO and HMO users. Average expenditures on professional services were slightly higher for users covered by the largest payers, compared with those covered by other payers—$1,193 versus $1,170, a difference of only 2 percent. The magnitude of this difference was greater for HMO users—users enrolled in the largest payers' HMO products had an average expenditure of $1,110 in 2008, 10 percent higher than that for those enrolled in the other payers' HMO products. However, for those in non-HMO plans in 2008, annual per-user spending among users covered by the largest payers was 8 percent lower than that among users covered by other payers: $1,234 versus $1,348 (Table 2-6). Regardless of payer market share, per-user expenditures by non-HMO users were higher than those by HMO users, but the difference between non-HMO and HMO users was much smaller among those covered by the largest payers than among those covered by the other payers (11 percent versus 34 percent).

Service volume and complexity differed by HMO- versus non-HMO status as well as by payer market share. The average complexity (RVUs per service) of non-HMO services was the same for each payer type, but the average complexity of HMO services was significantly higher (15 percent) for the largest payers than for the other payers (Table 2-6). Non-HMO and HMO users covered by the largest payers averaged 9 percent and 12 percent more services during the year, respectively, than their counterparts covered by other payers. For non-HMO and HMO services, the payment rate

FIGURE 2-2A: Percentage Paid Out-of-Pocket by Non-CDHP Coverage Type and Plan Type, 2008

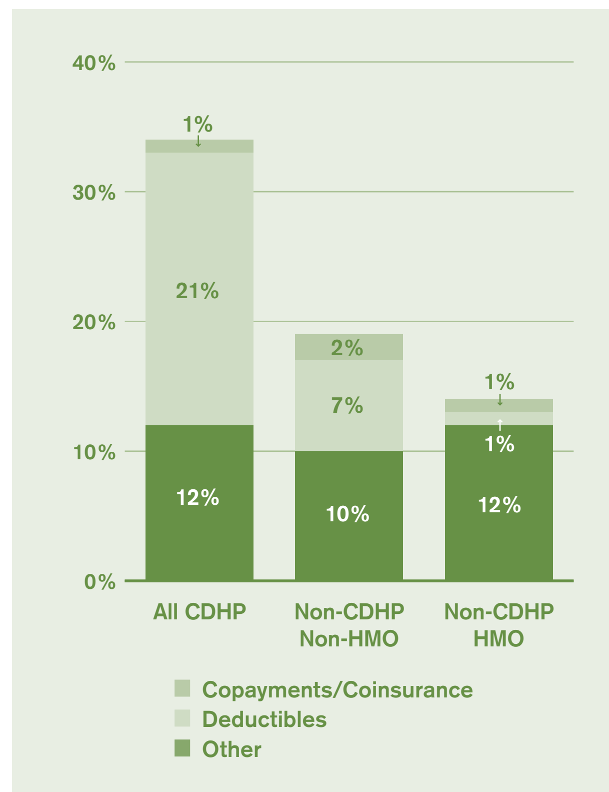


(average payment per RVU) was 16 percent and 14 percent lower, respectively, in the largest payers compared with the other payers in 2008.

Relative to what the spending per user would have been if their professional services had been paid according to the 2008 Medicare payment schedule, per-user payment for those covered by the largest payers was 7 percent lower overall for non-HMO users and 9 percent lower for HMO users (Table 2-6). In contrast, the average payment per user for those covered by the other payers was 6 percent higher than it would have been under the 2008 Medicare payment schedule, with an 8 percent and 4 percent difference for non-HMO users and HMO users, respectively.

The share of expenditures for professional services paid out-of-pocket varies by coverage type and plan type.[16] Payments made directly to providers by users of care reflect the cost-sharing (including deductibles, copayments, and coinsurance) required under the terms of their policies. The overall patient cost-sharing burden for full-year users—measured by the share of total spending paid out-of-pocket—remained stable between 2007 and 2008, at 18 percent in both years (data not shown). Patient cost-sharing generally differs by plan type, with HMO enrollees paying a lower proportion of total costs out-of-pocket, regardless of coverage type. Among non-CDHP coverage types, the difference in cost-sharing between non-HMO and HMO enrollees ranged from 3 percentage points for public employer plans to 26 percentage points for individual plans (Figure 2-2A), although the differences seem to have narrowed somewhat compared with those in 2007 (data not shown). The higher cost-sharing burden for non-HMO users may reflect the fact that non-HMO users—unlike those in HMOs—have coverage for out-of-network services, which require higher out-of-pocket payments (i.e., balance billing) compared with in-network services.

FIGURE 2-2B: Components of Out-of-Pocket Expenditures, 2008



[16] Capitated services were excluded in this subsection, because there is insufficient information available in the MCDB to impute patient out-of-pocket cost for capitated services. The comparison of cost-sharing between different groups of users holds true to the extent that cost-sharing is the same for capitated and noncapitated services.

Across the coverage types, non-CDHP public employer plans were associated with the lowest cost-sharing percentages in either HMO (12 percent) or non-HMO plans (15 percent) (Figure 2-2A). As expected, CDHP users paid a relatively high share of their expenditures out-of-pocket, 34 percent in 2008, due to the benefit structure of CDHPs (Figure 2-2B). However, as in 2007, the highest cost-sharing in 2008 was still borne by full-year users in non-HMO, non-CDHPs purchased in the individual market, although the share dropped from 45 percent in 2007 (data not shown) to 42 percent in 2008 (Figure 2-2A). The MHIP users also had relatively high cost-sharing: 34 percent was paid out-of-pocket by MHIP non-HMO users and 16 percent by MHIP HMO users.

Figure 2-2B shows that cost-sharing differed not only by level but also by composition between CDHP users and non-CDHP users. Overall, CDHP users' average out-of-pocket costs, measured as a share of the average expenditure per user, were 15 percentage points and 20 percentage points higher than those of non-CDHP non-HMO users and non-CDHP HMO users, respectively, in 2008. Most (60 percent) of the cost-sharing by CDHP users was due to deductibles, with copayments/coinsurance accounting for a little more than one-third of their out-of-pocket payments. For non-CDHP non-HMO users, the majority of their out-of-pocket costs (55 percent) were paid for copayments or coinsurance, with deductibles accounting for 36 percent of their cost-sharing. For non-CDHP HMO users, copayment/coinsurance payments accounted for nearly 90 percent of their out-of-pocket costs. The differences in the distribution of cost-sharing among deductibles, copayments, and coinsurance payments between CDHP and non-CDHP users reflect the special benefit design of CDHPs. The relatively high deductibles of CDHPs are designed as a cost-control tool; when facing high deductibles, CDHP enrollees are expected to make more informed decisions with regard to their medical care.

3. Payment Rates for Professional Services

This chapter examines differences in payment rates by payer market share. Payment rates for professional services—defined as the payment per RVU at the service level—are primarily based on negotiations between insurers and health care providers. When market share is concentrated in a small number of payers, they may hold price-setting power that conveys leverage in those negotiations and thus in setting lower payment rates. Unlike in Chapter 2, in which only services rendered to full-year users are included, the analyses in this chapter are based on all services, whether delivered to full-year or part-year users, in order to draw a full picture of payers' practices with regard to payment rates.

In the Maryland commercial market for insured health benefit plans, the distribution of market share is markedly skewed.[17] Overall, the two largest payers account for about 70 percent of the business, whether measured by number of services, total resources (RVUs), or total payments (Table 3-1). The remaining 30 percent of the market is shared by more than 20 payers. When examined by coverage type, the two largest payers appear to have an even more dominant presence in most markets, with the exception of the private employer market. Within the private employer market, payers other than the two largest covered a relatively higher share of services—more than one-half in 2008. As shown by their shares of services, total RVUs, and total payments in Table 3-1, these other

[17] Most, if not all, states have a similarly skewed distribution of market in the commercial market for insured health benefit plans.

TABLE 3-1: Distribution of Number of Services, Total RVUs, and Total Payment by Coverage Type, Plan Type, User Region, and Payer Market Share, 2008

	NUMBER OF SERVICES			TOTAL RVUs			TOTAL PAYMENT		
	All Payers	Largest Payers	Other Payers	All Payers	Largest Payers	Other Payers	All Payers	Largest Payers	Other Payers
ALL	100	72	28	100	73	27	100	70	30
COVERAGE TYPE									
Non-CDHP	100	70	30	100	71	29	100	68	32
1: Individual Plan	100	90	10	100	91	9	100	88	12
2: Private Employer Plan	100	48	52	100	49	51	100	46	54
3: Public Employer Plan	100	83	17	100	83	17	100	82	18
4: CSHBP	100	91	9	100	92	8	100	91	9
5: MHIP	100	100	0	100	100	0	100	100	0
CDHP	100	87	13	100	89	11	100	87	13
PLAN TYPE									
Non-HMO	100	77	23	100	77	23	100	74	26
HMO	100	63	37	100	65	35	100	62	38
USER REGION									
Baltimore Metropolitan Area	100	76	24	100	76	24	100	74	26
National Capital Area	100	64	36	100	66	34	100	62	38
Other Maryland Area	100	76	24	100	76	24	100	74	26

NOTE: CDHP = consumer-directed health plan; CSHBP = Comprehensive Standard Health Benefit Plan; MHIP = Maryland Health Insurance Plan; HMO = health maintenance organization.

payers also were relatively more likely to serve residents of the National Capital Area (NCA) than residents in other parts of Maryland and to provide HMO products rather than non-HMO products.

Differences in Payment Rate by Payer Market Share

In 2008, privately insured professional services were paid at the average rate of $36.5 per RVU, almost the same as in 2007 (Table 3-2A). Payment per RVU across all professional services was lower among the largest payers than among the other payers: $35.0 versus $40.5, a difference of 16 percent. The difference in the payment rate between the two groups of payers shrank from 2007 to 2008 as the rate paid by the largest payers increased by 1 percent, while that paid by the other payers fell by 1 percent.

Across all provider regions, payment rates were lower for services covered by the largest payers than those covered by the other payers. As indicated in Table 3-2A, within each region, the average payment rate for services covered by the largest payers was below the average payment rate of the other payers, with the differences ranging from a low of 6 percent in the Other Maryland Area to a high of 25 percent in the Other Service Areas in 2008. The price gap between the two groups of payers shrank slightly between 2007 and 2008. From 2007 to 2008, the overall payment rate for services covered by the largest payers increased slightly (1 percent to 2 percent) in all areas, while the overall payment rate for services covered by the other payers remained the same in the BMA and dropped between 1 percent and 4 percent in other areas.

Differences in payment rate by payer market share may reflect the advantage the largest payers have in setting prices because of their market dominance as well as the roles of other factors—such as the relative costs of providing professional services in different regions[18] and the share of services rendered by providers participating in a payer's network.

[18] Based on the extent of economic integration, we divided providers in the MCDB into four regions—the Baltimore Metropolitan Area (BMA); the National Capital Area (NCA), which includes Montgomery and Prince George's counties in Maryland, Northern Virginia, and the District of Columbia; the Other Maryland Area, which includes neighboring Delaware, Pennsylvania, and West Virginia; and the Other Service Areas.

The largest payers paid lower rates for in-network services than did their smaller counterparts, overall and in all Maryland regions, indicating the price-setting advantage that the largest payers had in the market for professional services. The largest payers raised the payment rates for in-network services by 2 percentage points over those in 2007, while the other payers kept their rates stable (Table 3-2B). The relative increase in payment rates by the largest payers reduced the rate difference between the two groups of payers. However, the largest payers still paid rates (measured by payment per RVU) that are 13 percent lower than the other payers in 2008—$33.5 versus $38.6. The difference in payment rates for in-network services by payer market share varied across provider regions, ranging from 6 percent in the Other Maryland Area to 20 percent in the Other Service Areas.

Payment rates for in-network services varied among regions regardless of payer market share, in part reflecting differences in resource costs. Aside from the relative negotiating power between a payer and a provider, payment rates also reflect differences in resource costs associated with the provider's location. Participating providers in locations with higher resource costs tend to receive higher rates from payers. In keeping with their relatively higher resource costs, providers located in the NCA received a higher average payment rate compared with other providers located in Maryland or other states, regardless of payer market share (Table 3-2B). The payment rate for in-network services rendered by providers in the BMA was 5 percent lower than that in the NCA for both groups of payers. Compared with the NCA rate, the largest difference in area payment rates for services covered by the largest payers occurred in the Other Service Areas, which had a 15 percent lower rate; for the other payers, the difference was greatest in the Other Maryland Area, with a rate that was 12 percent lower.

Services covered by the largest payers were more likely to be provided by participating providers. Table 3-2C shows the out-of-network share of services—measured as the proportion of RVUs accounted for by out-of-network providers—covered by the largest versus the other payers. Out-of-network services comprised about 9 percent of the professional services covered by other payers in 2008, 3 percentage points higher than the out-of-network share of services reimbursed by the

TABLE 3-2A: Payment Rates and Distribution of RVUs by Provider Region and Payer Market Share, 2007–2008

	ALL PRACTITIONER SERVICES						SERVICES PAID BY LARGEST PAYERS						SERVICES PAID BY OTHER PAYERS					
	Percentage of RVUs		Payment per RVU		RVU per Service		Percentage of RVUs		Payment per RVU		RVU per Service		Percentage of RVUs		Payment per RVU		RVU per Service	
	2008	Percentage-point change from 2007	2008	Percentage change from 2007	2008	Percentage change from 2007	2008	Percentage-point change from 2007	2008	Percentage change from 2007	2008	Percentage change from 2007	2008	Percentage-point change from 2007	2008	Percentage change from 2007	2008	Percentage change from 2007
ALL	100	0	36.5	1	1.6	1	100	0.0	35.0	2	1.6	0	100	0	40.5	-2	1.6	3
PROVIDER REGION																		
Baltimore Metropolitan Area	45	-1	35.2	1	1.8	3	47	-1.6	33.9	2	1.9	4	39	-1	39.5	0	1.5	-2
National Capital Area	32	0	38.4	1	1.7	2	29	0.3	36.3	2	1.7	1	41	1	42.4	-1	1.6	4
Other Maryland Area (Including DE, PA, WV)	14	0	35.3	0	1.6	-7	15	0.6	34.8	1	1.5	-10	13	0	37.0	-3	1.9	2
Other Service Areas	5	0	34.5	-2	1.0	9	4	0.3	30.7	1	0.8	1	6	0	41.2	-4	1.4	26

NOTE: 1. Details may not add to total due to rounding.
2. 0% indicates <0.5%.

largest payers. This difference in the share of out-of-network services between the largest and other payers is likely attributable to the smaller provider networks of the other payers.[19]

Across provider regions, both groups of payers had the lowest share of out-of-network services in the BMA (Table 3-2C). For the largest payers, services provided in the NCA were more likely to be provided by nonparticipating providers than were services provided in all other areas; for the other payers, the highest share of out-of-network services occurred in the Other Service Areas. Out-of-network services provided in the NCA tend to be less complex than services provided in most other areas, with the average RVU per service in the NCA lower than that in all other regions for the largest payers and in all but the Other Service Areas for the smaller payers.

Out-of-network services were paid at a higher rate than in-network services. This is not surprising, as providers in general accept reduced payment rates in exchange for a steadier source of patients when they elect to participate in a payer's network. In 2008, the overall average payment rate paid to out-of-network providers was $59.6 (Table 3-2C), 71 percent higher than the average payment rate for in-network services in 2008. The higher payment rates reflect payment rules for out-of-network covered services, which generally require non-HMO enrollees to pay an out-of-network provider the difference between the provider's billed amount and the payer's out-of-network reimbursement amount. The "balance billing" of non-HMO users translates into significantly higher cost-sharing for users of out-of-network services and (potentially) higher average payment rates for the out-of-network provider.

Out-of-network services were paid at a higher rate regardless of provider region or payer market share. The difference in payment rates for in-network services and out-of-network services varied markedly by payer market share—payment rates for out-of-network services were 75 percent higher for the largest payers and 58 percent higher for the other payers (Table 3-2B and Table 3-2C). The difference among providers located in Maryland and neighboring states also varied greatly by region, with overall differences ranging from 65 percent higher in the Other Maryland Area to 68 percent in the NCA. The regional difference for Maryland-based providers is especially prominent for the largest payers—in the BMA, out-of-network services were on average paid about two-thirds higher than in-network services, while in the NCA and the Other Maryland Area, the payment rate for out-of-network services was three-quarters higher than that for in-network services. The difference in payment rates for in-network services and out-of-network services varied much less by provider region for services covered by the other payers—the regional difference ranged from 47 percent in the Other Maryland Area to 61 percent in the BMA. This partly reflects the fact that the largest payers had a greater share of non-HMO users—who can be affected by provider balance billing—than did the other payers, 67 percent versus 47 percent (Table 2-6).

[19] A provider's decision to participate with a payer is influenced by the number of patients insured by any given payer; payers with more enrollees are likely to generate more patients for a provider than payers with fewer enrollees. Users in general incur higher out-of-pocket costs when using out-of-network services.

TABLE 3-2B: Payment Rates and Distribution of RVUs for In-Network Services by Provider Region and Payer Market Share, 2007–2008

	ALL PRACTITIONER SERVICES						SERVICES PAID BY LARGEST PAYERS						SERVICES PAID BY OTHER PAYERS					
	Percentage of RVUs In-Network		Payment per RVU In-Network		RVU per Service In-Network		Percentage of RVUs In-Network		Payment per RVU In-Network		RVU per Service In-Network		Percentage of RVUs In-Network		Payment per RVU In-Network		RVU per Service In-Network	
	2008	Percentage-point change from 2007	2008	Percentage change from 2007	2008	Percentage change from 2007	2008	Percentage-point change from 2007	2008	Percentage change from 2007	2008	Percentage change from 2007	2008	Percentage-point change from 2007	2008	Percentage change from 2007	2008	Percentage change from 2007
ALL	100	0	34.9	1	1.6	1	100	0	33.5	2	1.6	0	100	0	38.6	0	1.5	4
PROVIDER REGION																		
Baltimore Metropolitan Area	46	-1	34.2	2	1.8	3	49	-2	33.1	2	1.9	5	40	-1	38.1	3	1.5	-2
National Capital Area	32	0	36.6	2	1.7	2	29	0	34.8	2	1.7	1	41	0	40.2	1	1.6	5
Other Maryland Area (Including DE, PA, WV)	15	1	33.9	2	1.6	-8	15	1	33.5	2	1.5	-10	13	0	35.4	0	1.9	2
Other Service Areas	5	0	31.8	-2	1.0	12	4	0	29.4	1	0.8	0	5	0	36.8	-3	1.5	42

NOTE: 1. Details may not add to total due to rounding.
2. 0% indicates <0.5%.

TABLE 3-2C: Payment Rates and Distribution of RVUs for Out-of-Network Services by Provider Region and Payer Market Share, 2007–2008

	ALL PRACTITIONER SERVICES						SERVICES PAID BY LARGEST PAYERS						SERVICES PAID BY OTHER PAYERS					
	Percentage of RVUs Out-of-Network		Payment per RVU Out-of-Network		RVU per Service Out-of-Network		Percentage of RVUs Out-of-Network		Payment per RVU Out-of-Network		RVU per Service Out-of-Network		Percentage of RVUs Out-of-Network		Payment per RVU Out-of-Network		RVU per Service Out-of-Network	
	2008	Percentage-point change from 2007	2008	Percentage change from 2007	2008	Percentage change from 2007	2008	Percentage-point change from 2007	2008	Percentage change from 2007	2008	Percentage change from 2007	2008	Percentage-point change from 2007	2008	Percentage change from 2007	2008	Percentage change from 2007
ALL	7	0	59.6	-1	1.8	-4	6	0	58.7	4	1.9	-2	9	-0.8	60.9	-7.8	1.6	-7.0
PROVIDER REGION																		
Baltimore Metropolitan Area	4	-1	57.4	-3	2.0	2	4	0	55.1	2	1.9	0	7	-1.5	61.4	-8.7	2.1	4.3
National Capital Area	7	0	62.0	2	1.7	-5	6	0	60.8	10	1.8	-6	10	-0.4	63.3	-5.7	1.5	-4.8
Other Maryland Area (Including DE, PA, WV)	6	-1	56.1	-5	2.2	2	5	-1	58.7	0	2.0	-1	10	-1.7	52.0	-11.2	2.4	7.4
Other Service Areas	9	1	63.3	-10	1.2	-22	4	1	67.0	-13	2.2	12	18	1.5	62.0	-9.8	1.0	-27.6

NOTE:
1. Details may not add to total due to rounding.
2. 0% indicates <0.5%.
3. Out-of-network payment assumes the provider successfully collects a substantial payment from the patient, which is not always the case.

APPENDIX A.

Technical Background: Summary of Data, Methods, and Caveats for This Report

Tables and figures in this report are based on services and payments captured in the MCDB. The MCDB contains extracts of insurance claims[20] for the services of physicians and other medical practitioners such as podiatrists, psychiatrists, nurse practitioners, and therapists. Insurance companies and HMOs meeting certain criteria[21] are required to submit these data to MHCC under the Code of Maryland Regulations (COMAR) 10.25.06 on health care practitioner services provided to Maryland residents. For calendar year 2008, the Commission received usable data from 21 payers, including all major health insurance companies.[22] Data from Time Insurance Company were excluded this year for consistent comparison with 2007. A list of these 21 payers is included in Appendix C.

Each practitioner service generates a separate record in the MCDB. Patients are identified by concatenating the payer ID, plan-specific user ID (an encrypted number generated by each payer), the birth year and month of the user, and the user's gender. Insurers use a standard format for reporting the data. Each data record identifies the service provided; payments from the insurer and patient (for noncapitated care); practitioner specialty; user characteristics such as age, gender, and ZIP code of user residence; clinical diagnosis codes; and other attributes of care such as site of service and type of insurance coverage.

This report uses categories and definitions for region, coverage type, and market share comparable to those in previous reports. However, the definition of plan type (HMO versus non-HMO) has changed. In previous reports, plan type was assigned based on the type of delivery system and the coverage type associated with the user. In this report, plan type is based on the type of business that provided the plan, regardless of the reported delivery system type. In other words, all users enrolled in plans provided by licensed HMOs are defined as HMO users, and those enrolled in plans provided by life and health insurers are defined as non-HMO users. Users who were enrolled in more than one plan in a year or who moved from one region to another are assigned to the region or type of plan that is associated with the majority of their total payments. If two regions or two types of plans tie in terms of total payment, the user is assigned to the region or type of plan with the higher number of services. This methodological change mainly affects part-year users.

This report continues to employ two analytic tools that were introduced in the 2005 *Practitioner Utilization* report: risk status and enrollment period. Users have been grouped into low-risk, medium-risk, and high-risk groups based on their scores from the Chronic Illness and Disability Payment System (CDPS). This algorithm, developed by researchers at the University of California, San Diego, creates person-level risk scores from the service utilization data of the MCDB. It has been applied only to users who were enrolled in reporting plans for the entire year to avoid developing biased scores based on partial-year data. Resulting scores were used to categorize users as "low risk," "medium risk," or "high risk," based on the scores of the top one-third and bottom one-third of the distribution.[23] Plans reported enrollment data for the first time in 2005, making it possible to analyze those users who were enrolled all year. As a result, the decomposition of spending into volume, intensity, and payment level reported in Chapter 2 is not distorted by the anomalies introduced by including part-year enrollees.

One major improvement made in this year's report is the imputation of prices for capitated services, which made it possible to include capitated

[20] The MCDB also includes information on capitated services, but some capitated primary care is not submitted to MHCC.

[21] The companies are licensed in the state of Maryland and collect more than $1 million in health insurance premiums.

[22] A number of small payers received waivers from contributing data, but these payers together account for less than 1 percent of total health insurance premiums reported in Maryland.

[23] The resulting risk status groups do not each include exactly one-third of the population, because the cutoff score values applied to many users. Overall, about 32 percent of users were in each of the low-risk and medium-risk groups, while about 36 percent fell in the high-risk group.

services in the analyses. Previous practitioner utilization reports excluded capitated services due to their lack of payment information. The exclusion of capitated services resulted in an undercount of users of professional services—those who obtained only capitated services—and an understated total per-user values in HMO plans. In this report, we imputed payment for capitated services based on the Current Procedure Terminology (CPT) code associated with a service, using payment information on noncapitated services within the same payer. In both 2007 and 2008, the number of full-year users included in the report analyses increased by 8 percent with imputation (Table 1-2). Full-year users with only capitated services spent on average $332 and $414 on professional services in 2007 and 2008, respectively. For full-year users with some but not all capitated services, the average per-user expenditure is about one-fifth higher after imputation in both 2007 and 2008. Overall, the inclusion of imputed payments for capitated services led to a 6 percent and 8 percent increase in per-user spending among all full-year users in 2007 and 2008, respectively.

APPENDIX B. Supplemental Tables

TABLE B-1: Distribution of Payments for Professional Services Used by Full-Year Users by Users' Risk Status and Coverage Type, 2008

	All		Low-Risk		Medium-Risk		High-Risk	
	2007	2008	2007	2008	2007	2008	2007	2008
ALL USERS	100%	100%	13%	13%	24%	25%	64%	62%
COVERAGE TYPE								
Non-CDHP	94	91	12	13	24	25	64	62
1: Individual Plan	6	5	17	17	27	28	56	55
2: Private Employer Plan	40	38	13	14	25	25	62	61
3: Public Employer Plan	35	37	11	12	23	24	66	64
4: CSHBP	13	10	12	13	24	25	63	63
5: MHIP	0	1	NA	4	NA	14	NA	82
CDHP	6	9	14	14	25	25	62	60

NOTE: CDHP = consumer-directed health plan; CSHBP = Comprehensive Standard Health Benefit Plan; MHIP = Maryland Health Insurance Plan.

TABLE B-2: Expenditure Per User by Coverage Type, Plan Type, Region, and Market Share, 2007

CATEGORY	Percentage of User	Number of Users	Expenditure per User	Number of Services per User	RVU per Service
ALL	100%	1,616,002	$1,183	20.7	1.6
COVERAGE TYPE					
NON-CDHP	94	1,517,703	1,191	20.8	1.6
Individual Plan	6	99,843	1,006	17.7	1.6
Private Employer Plan	38	607,651	1,205	20.0	1.6
Public Employer Plan	38	606,417	1,195	21.7	1.6
CSHBP	12	193,575	1,254	22.2	1.6
CDHP	6	98,299	1,059	18.7	1.6
PLAN TYPE					
Non-HMO	74	1,189,986	1,200	20.8	1.6
HMO	26	426,016	1,137	20.3	1.6
REGION					
Baltimore Metropolitan Area	48	771,479	1,165	21.1	1.6
National Capital Area	32	515,775	1,255	20.8	1.6
Other Maryland Area	20	328,748	1,112	19.5	1.6
MARKET SHARE					
Largest Payers	72	1,169,441	1,167	21.3	1.6
Other Payers	28	446,561	1,225	19.1	1.6

NOTES:
1. CDHP = consumer-directed health plan; CSHBP = Comprehensive Standard Health Benefit Plan; HMO = health maintenance organization.
2. Data from P480, P520, and P620 were excluded due to incomplete data.

TABLE B-3: Distribution of Expenditure Risk Scores, 2008

RISK SCORE PERCENTILE	Risk Score
01	0.20
05	0.20
10	0.23
25	0.26
50	0.77
75	1.66
90	2.95
95	3.83
99	7.06

NOTE: Risk scores were generated using the Chronic Illness and Disability Payment System (CDPS), which takes into account the impact of both the number and the mix of diagnoses on health care expenditures.

TABLE B-4: Comparison of Median CDPS for Each Coverage Type with the Overall Median Score, 2008

CLASSIFICATION	Median CDPS	Ratio
ALL USERS	0.77	1.00
COVERAGE TYPE		
Non-CDHP	0.78	1.01
1: Individual Plan	0.58	0.75
2: Private Employer Plan	0.73	0.95
3: Public Employer Plan	0.81	1.04
4: CSHBP	0.81	1.05
5: MHIP	1.66	2.14
CDHP	0.73	0.94

NOTES:
1. CDHP = consumer-directed health plan; CSHBP = Comprehensive Standard Health Benefit Plan; CDPS = Chronic Illness and Disability Payment System; MHIP = Maryland Health Insurance Plan.
2. Risk scores were generated using the CDPS, which takes into account the impact of both the number and the mix of diagnoses on health care expenditures.

APPENDIX C.
Payers Contributing Data to This Report

TABLE C-1: Payers Contributing Data to This Report

PAYER	Payer Identification Number
Aetna Life and Health Insurance Company	P020
Aetna U.S. Healthcare	P030
American Republic Insurance Company	P070
CareFirst BlueChoice, Inc.	P130
CareFirst of MD, Inc.	P131
CIGNA Healthcare Mid-Atlantic Inc.	P160
Golden Rule Insurance Company	P320
Graphic Arts Benefit Corporation	P325
Guardian Life Insurance Company of America	P350
Unicare Life & Health Insurance Company	P471
Kaiser Foundation Health Plan of the Mid-Atlantic States, Inc.	P480
MAMSI Life and Health Insurance Co.	P500
MD-Individual Practice Association, Inc.	P520
The MEGA Life & Health Insurance Company	P530
Optimum Choice Inc.	P620
Coventry Healthcare of Delaware, Inc.	P680
State Farm Mutual Automobile Insurance Company	P760
United Healthcare Corporation	P820
Trustmark Insurance Company	P830
Union Labor Life Insurance Company	P850
United Healthcare of the Mid-Atlantic, Inc.	P870

4160 Patterson Avenue
Baltimore, Maryland 21215

Telephone: 410-764-3570
Fax: 410-358-1236
mhcc.maryland.gov