

# Maryland's Health Workforce Data Collection and Workforce Supply, Demand, and Distribution

**MHCC Presentation**

**December 19, 2013**



# Presentation Overview

---

- Maryland Health Workforce Study Goals
- Phase II Study Guiding Research Questions
- Overview of Phase II Study Methods
- Overview of the Health Workforce Simulation Model
- Review of Key Phase II Study Findings
- Conclusions
- Q&A



# Maryland Health Workforce Study Goals

---

- Phase I

- Assess broadly the quality and utility of data available to study the Maryland Health Care Work Force
- Identify types of data needed to assess current and future adequacy of supply of services and providers
- Assess data availability, data gaps and possible solutions

- Phase II

- Report on health care workforce characteristics and current distribution
  - Initial focus on primary care and mental health providers
  - Include other provider types based on identified priorities
- Provide information to support stakeholder collaboration



# Phase II Study Guiding Research Questions

---

1. In Maryland, are there specialties where supply and demand currently are not in balance? If so, which specialties, and what is the estimated gap between supply and demand?
2. Are there local geographic imbalances in adequacy of supply? If so, which specialties, which locations in the State and what is the estimated gap between supply and demand?
3. What are the potential implications of health care reform initiatives, emerging care delivery models and other market factors on Maryland's health workforce supply and demand?



## Phase II Study Methods

---

- Create and assess Maryland provider supply datasets.
  - Maryland’s health professions licensure boards served as primary data sources for estimating 2012 full time equivalent (FTE) supply for the healthcare professions
  - Licensure data was obtained in collaboration with the MHCC
- Estimate current supply and demand for health professions designated by the MHCC as high priority in supporting Maryland’s transition to health reform
  - Primary care physicians: general and family practice, general internal medicine, geriatrics, and general pediatrics
  - Mental health workforce: psychiatrists and psychologists



## Phase II Study Methods (Cont.)

---

- Estimate current supply for other professions
  - Social workers, counselors, physician assistants, pharmacists, nurses, and dentists
- Estimate current demand for select health professions
  - Created representative sample of population in each Maryland county
    - Demographics, household income, and insurance (from Census Bureau)
    - Health risk factors (from Centers for Disease Control and Prevention
      - Obesity, smoking, diabetes, cardiovascular disease, asthma, arthritis, hypertension, history of heart attack and stroke
  - Used IHS's Healthcare Demand Microsimulation Model
    - Applied national patterns of health care use to simulate demand for health care services for each person in representative sample
    - Applied national care delivery patterns to estimate demand for providers



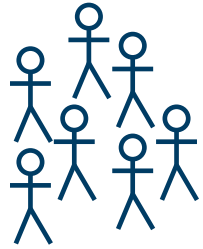
# Healthcare Demand Microsimulation Model

---

- Model data, methods, assumptions, and findings are summarized in several recent journal publications
  - An Aging Population and Growing Disease Burden Will Require A Large and Specialized Health Care Workforce By 2025. *Health Affairs*, 2013
  - Estimated Demand for Women's Health Services by 2020. *Journal of Women's Health*, 2013
  - Supply and demand analysis of the current and future US neurology workforce. *Neurology*, 2013
- Same modeling approach IHS is using to develop the federal Health Resources and Services Administration's (HRSA) workforce model
  - Models approx. 40 health professions
  - Models approx. 40 medical specialties



# Demand Model Ties Health Professions to Health Care Use



## Visit characteristics

- What profession/specialty?
- What tests or procedures provided?
- Number of prescriptions?
- What is the probability this visit could have been avoided or care provided in other setting or by other provider type?



# Summary of Key Study Findings

---

- Compared to most States, supply of primary care physicians and psychiatrists appears adequate to provide a national average level of care
- Substantial geographic variation in adequacy of supply exist throughout Maryland
  - Primarily metropolitan versus non-metropolitan issue
- Implications of evolving market factors on the health workforce are unclear, requiring further research
  - Expanded medical coverage under the Affordable Care Act projected to increase demand for primary care services in Maryland ~1.9% (83 physicians)



## MD Population Characteristics Compared to the U.S.

- Age distribution is similar to the U.S.
- Race/ethnicity profile differs from the U.S.
- Chronic disease prevalence is mostly similar to the U.S.
- Smoking and obesity prevalence higher in MD
- Rate of uninsured lower and income higher than the U.S.

Characteristics	US	MD	Difference
<b>Age group</b>			
0-5	3.9%	3.8%	-0.1%
6-12	9.1%	8.8%	-0.3%
13-17	6.6%	6.6%	0.0%
18-34	23.4%	23.4%	0.0%
35-44	12.9%	13.0%	0.1%
45-64	26.4%	27.6%	1.3%
65-74	7.6%	7.4%	-0.3%
75+	6.1%	5.6%	-0.5%
<b>Race/ethnicity</b>			
NH White	63.0%	54.0%	-9.0%
NH Black	12.3%	29.3%	16.9%
NH Other	7.7%	8.2%	0.5%
Hispanic	17.0%	8.6%	-8.4%
<b>Risk factors</b>			
Diabetes	8.8%	9.6%	0.8%
Hypertension	31.4%	25.6%	-5.8%
History heart attack	3.9%	3.8%	-0.1%
History stroke	2.6%	2.4%	-0.2%
Smoker	16.8%	20.1%	3.3%
Obese	25.3%	27.8%	2.5%
<b>Uninsured</b>	17.5%	12.3%	-5.2%
<b>Median Income (2012)</b>	\$ 51,059	\$ 71,076	\$ 20,017



# Primary Care and Psychiatrist FTE Provider Demand: MD Compared to U.S. and Highest/Lowest Ranked States

- MD ranks 7<sup>th</sup> highest among States in estimated per capita demand for primary care physicians.
  - Demand is highest nationally in MA, MI and AL and lowest in MT, WY and SD
- MD ranks 21<sup>st</sup> among States in estimated per capita demand for psychiatrists
  - Demand is highest nationally in MA, NY and AZ and lowest in UT, WY and NE.

FTE Demand per 10,000 Population			
State	Primary Care Physicians	State	Psychiatrists
MA	7.55	MA	1.63
MI	7.45	NY	1.57
AL	7.43	AZ	1.50
...			
<b>MD</b>	<b>7.38</b>	<b>MD</b>	<b>1.40</b>
...			
SD	6.63	NE	1.15
WY	6.58	WY	1.13
MT	6.49	UT	1.12
U.S. Total	7.11	U.S. Total	1.40



# Statewide Supply and Demand Summary

---

- Primary Care Physicians

- Estimated statewide FTE supply of primary care physicians is sufficient to provide a level of care equal to the national average (controlling for demographics and other demand drivers)
- FTE supply and demand estimates of 7.8 and 7.4 per 10,000 population, respectively
- Maryland appears to use fewer general & family practitioners and more general internists relative to national care delivery patterns
- Supply of general pediatricians appears adequate at the state level

- Mental Health Professions

- Supply of psychiatrists appears adequate to provide a national average level of care
- Caveats
  - National level of psychiatric care does not equal clinical guidelines/best practices
  - Many psychiatrists may not participate with insurance plans, lowering the effective available supply



# Estimated 2012 Maryland Statewide Adequacy of Supply for Select Health Professions/Specialties

<b>Profession</b>	<b>FTE Supply</b>	<b>FTE Demand</b>	<b>Supply - Demand</b>	<b>% Difference</b>	<b>FTE Supply Per 10,000 Pop.</b>	<b>FTE Demand Per 10,000 Pop.</b>
Total Primary Care	4,565	4,357	208	5%	7.8	7.4
General & Family Practice	1,167	1,623	-456	-28%	2.0	2.8
General Internal Medicine	2,252	1,733	519	30%	3.8	3.0
Geriatrics	85	58	27	47%	0.1	0.1
Pediatrics	1,061	943	118	13%	1.8	1.6
Psychiatry	985	821	164	20%	1.7	1.4
<i>Other Health Professions</i>						
Psychologists	2,278	N/A	N/A	N/A	3.9	N/A
Professional Counselors	9,131	N/A	N/A	N/A	4.0	N/A
Social Workers	14,982	N/A	N/A	N/A	6.0	N/A
Physician Assistants	2,045	N/A	N/A	N/A	3.7	N/A
Pharmacists	9,704	N/A	N/A	N/A	13.5	N/A
Nurses	61,348	N/A	N/A	N/A	85.1	N/A
Dentists	21,608	N/A	N/A	N/A	30.0	N/A



# County-Level Adequacy of Primary Care Supply

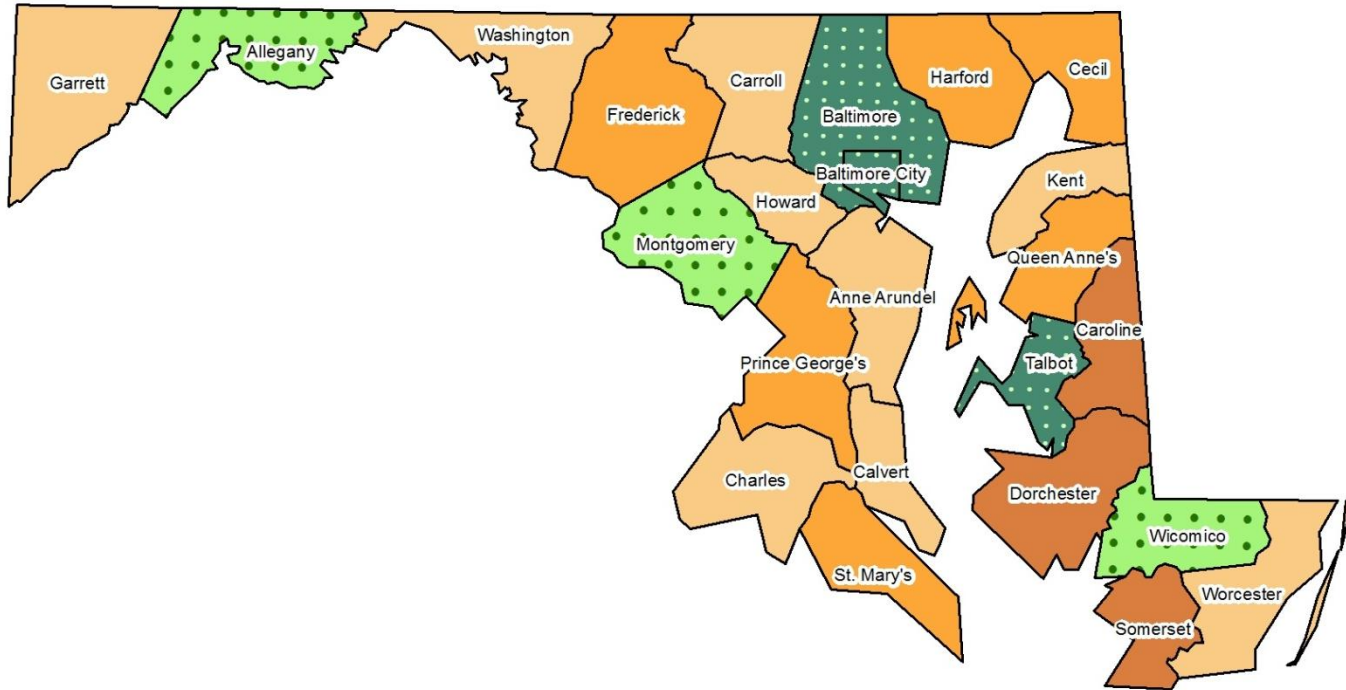
---

- Primary Care Physicians

- Supply appears to be sufficient to meet demand in about 11 counties, insufficient in about 13 counties
  - Sufficient defined as supply meets 90% or more of demand
- Counties with the largest percentage shortfalls are Somerset and Dorchester, both small communities on the Eastern shore (about half the demand is met)
- Counties where supply appears most adequate to meet demand include Baltimore City and County and Montgomery
  - Include large provider networks able to serve populations beyond their borders
  - Caveat: within these counties are likely subsets of the population without adequate access to care (for reasons other than supply)
- Analyzing county-level adequacy of supply is complicated by factors that may cause residents to seek care from providers located in other counties or elsewhere, including commuting patterns and influence of insurance coverage and large provider networks



# Maryland County-Level Adequacy of FTE Primary Care Physician Supply



## Shortage of Full Time Equivalent, Primary Care Physicians



# County-Level Adequacy of Supply of Psychiatrists

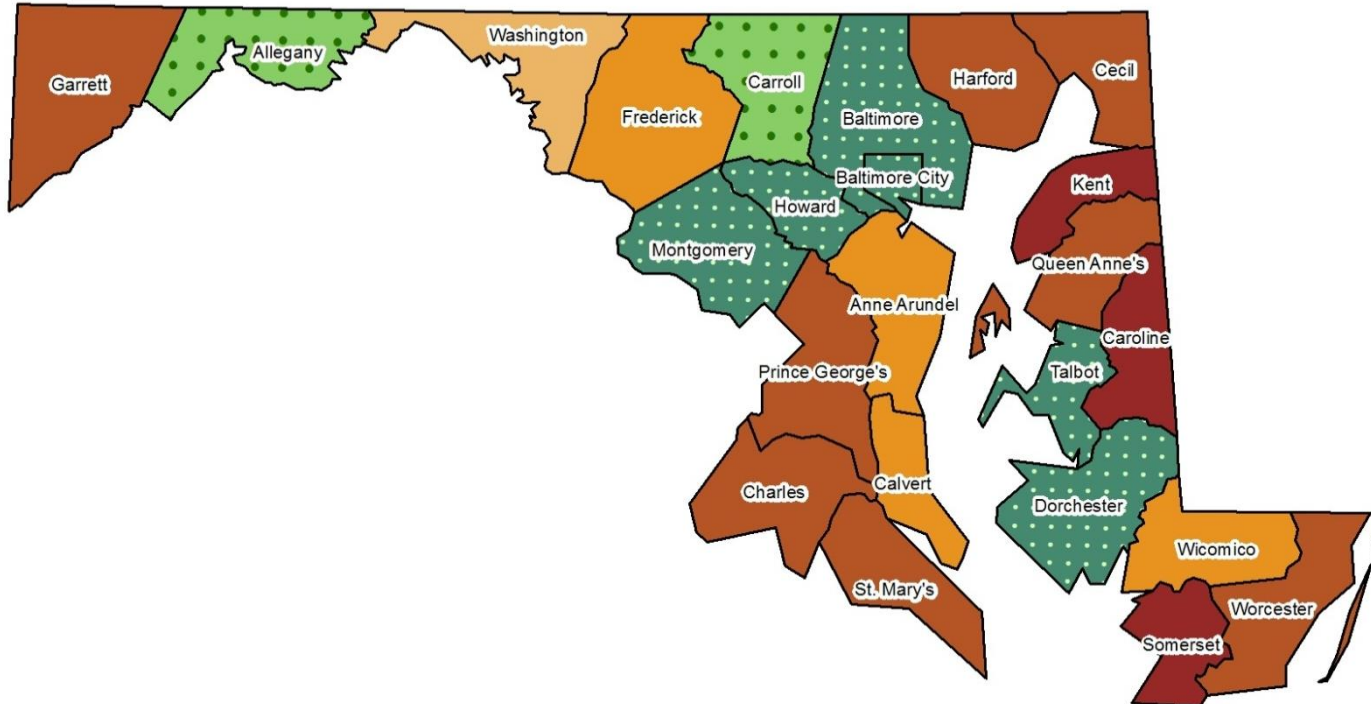
---

- Maryland's supply of psychiatrists appears sufficient to provide a national average level of care, but it is heavily concentrated in three large counties:
  - Baltimore County (25% of State-wide supply but 14% of demand)
  - Baltimore City (24% of State-wide supply but 11% of demand)
  - Montgomery County (22% of State-wide supply but 16% of demand)





# Maryland County-Level Adequacy of FTE Psychiatrist Supply



## Shortage of Full Time Equivalent, Psychiatrists



## Implications of Many Evolving Market Factors on the Maryland Health Workforce are Unclear

---

- Expanded insurance coverage under ACA will increase demand for many services, but less in MD compared to the U.S.

Specialty	% increase Maryland	% increase U.S.
Adult Primary Care	1.9	3.5
Allergy & Infectious Diseases	0.6	1.2
Cardiology	1.4	2.3
Dermatology	2.5	4.7
Endocrinology	0.2	0.3
General Surgery	1.3	2.3
Nephrology	0.3	0.5
Neurological Surgery	1.7	3.0
Neurology	1.9	3.3
Pulmonology	0.5	0.9
Radiology	2.6	4.6
Urology	1.8	3.3
Vascular Surgery	0.7	1.1

- Future implications of other ACA provisions and emerging care delivery models requires further research



# Conclusions: Study Phase I

---

- Maryland has the data infrastructure to estimate state and county level supply of many health professions
  - Data for physicians is quite comprehensive
  - Data on non-physician professions largely agrees with the federal minimum dataset recommendations, but areas for improvement
  - Maryland has data that can be used to forecast future supply and demand for health professionals
  - Maryland might consider developing a health workforce monitoring system to identify and track health workforce trends that may affect access, quality and costs



# Conclusions: Study Phase II

---

- Primary care physicians
  - Maryland's supply of primary care physicians is adequate to provide national average level of care
    - Further research on nurse practitioner and physician assistant supply needed to draw more definitive conclusions on adequacy of primary care services
  - Substantial geographic variation
  - Supply and demand will evolve over time to reflect expanded coverage under ACA, changing demographics, economic conditions, emerging care models and other factors
- Mental health
  - Maryland's supply of psychologists is adequate to provide national average level of care
  - Substantial geographic variation in adequacy of supply; supply concentrated in metropolitan areas
  - Additional research required to understand implications of expanded coverage for mental health services under ACA
- Other health providers
  - Supply and/or demand available for other professions, but supply not always available at the county level
  - Geographic distribution patterns similar to those of primary care and mental health

