

Michigan Physician Profile

This profile has been developed for the Center for Health Professions at the Michigan Health Council. It provides current data on the physician population in Michigan, information regarding issues that affect the supply and demand of physicians and, if possible, comparisons with national data. This information is being provided to help policymakers create strategies to address physician workforce needs in Michigan.

Exhibit 1 displays the basic demographic characteristics of physicians in Michigan.

EXHIBIT 1 Demographic Characteristics of Physicians in Michigan, 2008

Characteristic	Michigan
Total number of licensed physicians	42,305
Number of active, licensed physicians providing patient care	29,302*
Physicians providing patient care/Population (per 100,000) ratio	289
Gender	
Male	72%
Female	28%
Age	
<35 years	6%
35–44	18%
45–54	28%
55–64	28%
65+	19%
Race/Ethnicity	
African American	4%
American Indian/Alaskan Native	1%
Asian or Pacific Islander	17%
Hispanic	3%
Multiracial	1%
White	70%
Other/Unknown	4%

SOURCE: Michigan Department of Community Health, *Survey of Physicians*, 2008.

*The estimate of the number of physicians providing patient care in Michigan includes 66% of fully licensed physicians and all physicians enrolled in a graduate medical training program.

As of January 2008, a total of 42,305 physicians were licensed in Michigan. Of these, 31,695 are doctors of allopathic medicine (MD) and 6,550 are doctors of osteopathic medicine (DO). The remaining 3,235 MDs and 825 DOs hold an educational limited license while they are enrolled in a graduate medical training program. Not all of these

physicians are active in Michigan.¹ The ratio of Michigan physicians providing patient care of 289 per 100,000 is higher than the national ratio of 242 per 100,000.²

PHYSICIAN SPECIALTY

In the 2008 survey of fully licensed physicians in Michigan, about 34 percent of active physicians identified themselves as primary care doctors, that is, their primary specialty is family practice, general medicine, internal medicine, or general pediatrics (see Exhibit 2). This percentage has not changed since 2005 when physicians in the same license renewal cohort were surveyed. These data suggest that the number of new primary care physicians entering the workforce in Michigan is just keeping pace with the number of primary care physicians leaving the workforce in the last few years.

EXHIBIT 2

Distribution of Michigan Physicians by Specialty, 2005 and 2008

Specialty	2005	2008
Family practice	14	14%
General medicine	3	3
Internal medicine (general)	11	11
Pediatrics (general)	6	6
Other specialty	66	66

SOURCES: Michigan Department of Community Health, *Survey of Physicians*, 2005 and 2008.

NOTE: Data presented are for *active* physicians fully licensed in Michigan.

PHYSICIAN EDUCATION AND TRAINING

- More than one-third (39 percent) of the physicians active in Michigan attended a medical school in Michigan (see Exhibit 3).
- Almost two-thirds (61 percent) completed a residency program in Michigan.
- 15 percent did a post-residency fellowship in Michigan.
- 28 percent of Michigan physicians are categorized as an international medical graduate (IMG) and 26 percent of physicians in the United States are IMGs.
- Michigan is ranked fourth in the nation for the number of students enrolled in a public allopathic or osteopathic medical school for the 2007–2008 academic year,³ while ranking eighth in the nation for population.⁴

¹ Active is defined as providing patient care *in Michigan* or working as a physician *in Michigan* with no time in patient care.

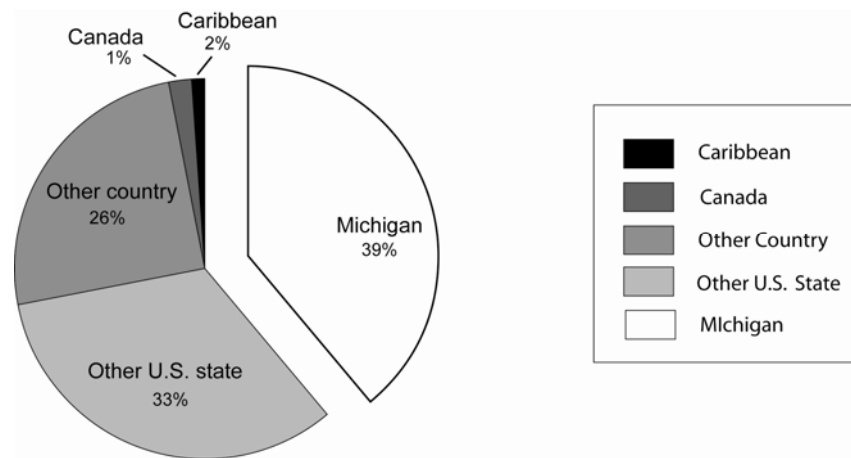
² American Medical Association, *Physician Characteristics and Distribution in the United States* (Chicago: Survey & Data Resources, American Medical Association, 2008).

³ Association of American Medical Colleges Center for Workforce Studies, *2007 State Physician Workforce Data Book* (N.p.: Association of American Colleges, November 2007). [Online, accessed 11/17/08.] Available: <http://www.aamc.org/workforce/statedatabooknov2007.pdf>.

⁴ United State Census Bureau, *Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2000 to July 1, 2008*. [Online, accessed 11/17/08.] Available: <http://www.census.gov/popest/states/NST-ann-est.html>

EXHIBIT 3

Education Background of Fully Licensed Active Physicians, Michigan, 2008



SOURCE: Michigan Department of Community Health, *Survey of Physicians*, 2008.

- In the 2007–2008 academic year, Michigan had 3,208 students⁵ enrolled in a public allopathic (2,461 students) or osteopathic (747 students) medical school.
- In the 2007–2008 academic year, Michigan ranked ninth in the nation for the number of residents and fellows (4,442) being trained in the state.⁶

PHYSICIAN FORECAST FOR MICHIGAN

In 2005, Michigan’s Blue Ribbon Physician Workforce Committee commissioned the Center for Health Workforce Studies at the State University of New York to project Michigan’s physician supply and demand through the year 2020. The forecast of physician *supply* took the number and composition of the current supply of active physicians in Michigan, and of new entrants into the physician workforce; the rates of separation from the workforce (e.g., retirement, death); and the rates of physicians migrating into and out of the state into consideration. The report shows a 5 percent increase in physician supply per 100,000 population (see Exhibit 4).

⁵ Association of American Medical Colleges Center for Workforce Studies, *2007 State Physician Workforce Data Book*.

⁶ Ibid.

EXHIBIT 4
Michigan Physician Supply Forecast 2005–2020

Year	Physicians	Population	Physicians per 100,000 population
2005	30,366	10,207,421	297
2010	31,756	10,428,683	305
2015	32,814	10,599,122	310
2020	33,462	10,695,993	313
Percent change 2005–2020	10%	5%	5%

SOURCE: Center for Health Workforce Studies, University at Albany, State University of New York, *Physician Supply and Demand in Michigan through 2020*, February 2006.

NOTE: Data in this table are forecasted numbers that the Center for Health Workforce Studies calculated using baseline data from the American Medical Association's 2004 data master file.

The forecast of physician *demand* used utilization rates and the size and composition of the state's expected population as factors for determining the possible demand for physicians through the year 2020. The report projected a 6–19 percent increase in demand for physician services through the year 2020 (see Exhibit 5).

EXHIBIT 5
Michigan Physician Demand Forecast 2005–2020

Year	Demographic only scenario*	Trend scenario**	Population	Demographic only scenario, physicians per 100,000 population	Trend scenario, physicians per 100,000 population
2005	30,366	30,366	10,207,421	297	297
2010	31,488	32,687	10,428,683	302	313
2015	32,686	35,222	10,599,122	308	332
2020	33,888	37,907	10,695,993	317	354
Percent change 2005–2020	12%	25%	5%	6%	19%

SOURCE: Center for Health Workforce Studies, University at Albany, State University of New York, *Physician Supply and Demand in Michigan through 2020*, February 2006.

NOTE: Data in this table are forecasted numbers that the Center for Health Workforce Studies calculated using baseline data from the American Medical Association's 2004 data master file.

* Demographic Scenario: The baseline model, which "assumes that utilization rates of physician services would remain constant by age, gender, practice setting, insurance status, location of service, and physician specialty. Essentially, in the baseline model, the only input that changes is the size and composition of the population."

** Trend Scenario: "Scenarios allowing for variation in the level of insurance in the population; variation in the age-specific utilization of physician services; the elimination of excess, unnecessary physician service provision; and the effect of the economy on the demand for physicians..."

Comparing the forecasted supply and demand shows that Michigan could face a shortage of 426–4,445 physicians (1–12 percent) by the year 2020. The report also predicts that the greatest shortages in 2020 will be for the following specialties, listed in order of greatest need:

- Family physicians (211–592 physicians; 4–10 percent shortage)
- General surgeons (200–484 physicians; 11–22 percent shortage)
- Cardiologists (203–338 physicians; 23–33 percent shortage)
- Orthopedic surgeons (123–241 physicians; 19–36 percent shortage)
- Psychiatrists (95–313 physicians; 7–19 percent shortage)
- Internists (67–302 physicians; 1–5 percent shortage)
- Radiologists (61–298 physicians; 4–16 percent shortage)

Other specialties that will experience shortages include abdominal surgery, neurosurgery, ophthalmology, otolaryngology, thoracic surgery, transplant surgery, and urology. The report predicts that for one specialty, emergency medicine, there may be a 10-25% surplus by the year 2020.

The U.S. Department of Health and Human Services (DHHS), Health Resources and Services Administration, Bureau of Health Professions (HRSA) notes the difficulty in calculating accurate projections.

While the future national supply of physicians is relatively straightforward to project in the aggregate, projections by medical specialty are more difficult to calculate because a large number of factors influence specialty choice. Furthermore, the number of medical school graduates has been relatively constant over the past two decades while the number of physicians choosing a particular specialty can vary substantially from year to year.⁷

Nevertheless, in 2006, HRSA projected physician supply and demand through 2020. The projections of physician supply and physician requirements took into consideration the number and composition of the supply of active physicians⁸ in the United States and of new entrants into the physician workforce; and the rates of separation from the workforce (e.g., retirement, death). The report shows shortages in some of the same specialties that Michigan expects to experience. HRSA projects that “[national] demand for non-primary care physicians will grow faster than supply... and specialties such as general surgery, urology, ophthalmology, cardiology, pathology, orthopedic surgery, other internal medicine subspecialties, otolaryngology, radiology, and psychiatry [will see] demand grow much faster than supply.”⁹

FACTORS AFFECTING PHYSICIAN WORKFORCE SUPPLY

There are multiple, complex factors that affect the physician workforce supply (the number of physicians available to provide direct patient care) in Michigan. Some of the contributing factors include the retirement plans of physicians; work pattern differences

⁷ U.S. Department of Health and Human Services (DHHS), Health Resources and Services Administration, Bureau of Health Professions (HRSA), *Physician Supply and Demand: Projections to 2020* (Washington, D.C.: HRSA, October 2006). [Online, accessed 11/12/08.] Available: <http://bhpr.hrsa.gov/healthworkforce/reports/physiciansupplydemand/default.htm>.

⁸ The data analyzed by HRSA came from the American Medical Association and the American Osteopathic Association. “Active” is defined here as physicians “working more than 20 hours per week in professional activities.” The estimates provided in HRSA’s 2006 report include only physicians under age 75.

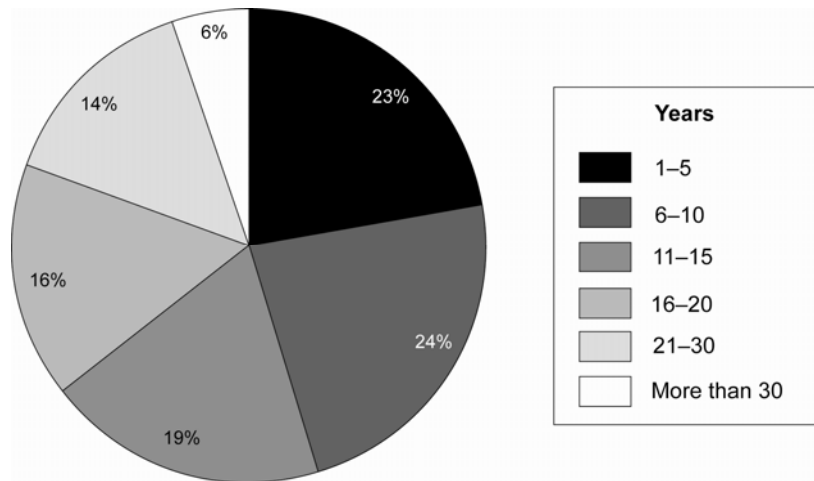
⁹ HRSA, *Physician Supply and Demand: Projections to 2020*.

among older and younger physicians and male and female physicians; practice specialty; the cost of education and training; and the varying supply of international medical graduates.

Retirement

Among active physicians in Michigan surveyed in 2008, about 47 percent are aged 55 or older and will reach retirement age (65–70 years old) within the next 10–15 years. When physicians were asked when they planned to retire, about 45 percent of active physicians said that they plan to practice only one to ten more years (see Exhibit 6). About 19 percent said that they plan to practice 11 to 15 more years.

EXHIBIT 6
Plans to Continue Practicing, Active Physicians, Michigan, 2008



SOURCE: Michigan Department of Community Health Survey of Physicians, 2008.

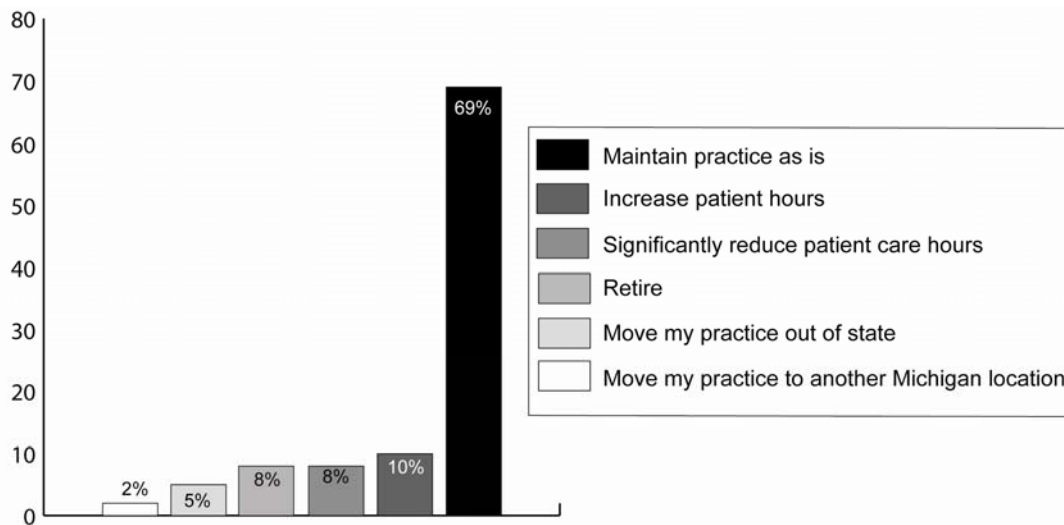
NOTE: Data presented are for *active* physicians fully licensed in Michigan. Percentages do not equal 100 percent due to rounding.

- In the next three years, about 79 percent of physicians plan to maintain their practice hours or increase patient hours (see Exhibit 7).
- About 12 percent of physicians plan to significantly reduce patient care hours or retire within the next three years.
- The reason given most often for cutting back hours or retirement is age, followed by increasing administrative/regulatory burden and inadequate reimbursement for services.¹⁰

¹⁰ Michigan Department of Community Health, *Survey of Physicians, 2008* (Lansing, Mich.: MDCH, 2008).

EXHIBIT 7

Practice Plans of Active Physicians for the Next Three Years, Michigan, 2008



SOURCE: Michigan Department of Community Health Survey of Physicians, 2008.

NOTE: Data presented are for *active* physicians fully licensed in Michigan. Physicians were asked to “mark all that apply,” so percentages equal more than 100 percent.

Differences in Work Patterns

The balance between work and home life differs for older and younger physicians and for male and female physicians. Physicians who are younger, male, or practicing in a specialty other than primary care are likely to spend more time providing patient care.

- In 2005, about 33 percent of Michigan physicians aged 25–34 said they spend more than 50 hours per week providing patient care compared to 25 percent or less of physicians in all other age groups.
- About 27 percent of male physicians and 13 percent of female physicians said they spend more than 50 hours per week providing patient care.
- About 27 percent of specialists and 17 percent of primary care physicians said they spend more than 50 hours per week providing patient care.¹¹
- Physicians also spend time in professional activities. For example, about 48 percent of physicians spend time teaching and 19 percent spend time in research.¹²
- Female physicians tend to provide fewer hours of patient care, are less likely to work in rural areas, and retire earlier than their male colleagues.
- The number of female physicians continues to increase; close to 50 percent of medical school graduates since 2005 are women. These factors could eventually have an effect on the supply of physicians available for patient care.¹³

¹¹ Michigan Department of Community Health, *Survey of Physicians, 2005* (Lansing, Mich.: MDCH, 2005).

¹² Michigan Department of Community Health, *Survey of Physicians, 2008* (Lansing, Mich.: MDCH, 2008).

Physician Specialty

According to the American Medical Association, there has been a small but steady increase in primary care physicians—in 1975, 33 percent of physicians were primary care, in 1990, 34 percent, and in 2006, 35 percent.¹⁴ Recent data from the Michigan survey of physicians shows that the proportion of physicians in primary care has remained constant over the past few years. About 34 percent of active, fully licensed physicians surveyed in 2008 are in primary care specialties¹⁵ Fewer medical school graduates are choosing to go into primary care specialties. In a recent study of medical students only 2 percent of fourth-year medical students planned to work in internal medicine.¹⁶

Observers suggest that “decreased career satisfaction of primary care physicians, declining income, and the widening gap in reimbursement between sub-specialists and primary care physicians may all be influencing career choice.”¹⁷ The National Health Policy Forum suggests that the higher reimbursements made to some specialists are due in part to the higher dollar value placed on the services that they provide (e.g., cardiology, radiology), in addition to the ancillary services that allow for additional revenues to these specialty practices that primary care providers do not provide.¹⁸

Costs of Education and Training

Both loan interest rates and tuition rates are on the rise, making educational debt a growing burden. Medical students who graduated in 2006 will have about \$151,000 debt on average after completing a three-year residency if they attended a public medical school or about \$206,000 of debt after completing a three-year residency if they attended a private medical school.¹⁹ Monthly payments would be \$1,718 and \$2,336, respectively, with a ten-year payment plan; or \$1,022 and \$1,389, respectively, with a 25-year payment plan. With an estimated monthly income of \$18,050 (before taxes), debt repayment will cost 6–13 percent of a new physician’s monthly income.²⁰ As Paul Jolly states in his *Health Affairs* article on medical school debt, “It would be reasonable to assume that graduates with high indebtedness would gravitate toward specialties that

¹³ HRSA, *Physician Supply and Demand: Projections to 2020*.

¹⁴ American Medical Association, *Physician Characteristics and Distribution in the United States*.

¹⁵ Michigan Department of Community Health, *Survey of Physicians, 2008* (Lansing, Mich.: MDCH, 2008).

¹⁶ Karen E. Hauer, Steven J. Durning, Walter N. Kernane, et al., Factors Associated with Medical Students’ Career Choices Regarding Internal Medicine, *Journal of the American Medical Association* 300, no.10 (September 10, 2008), 1154–64. [Online, accessed 11/17/08.] Available: <https://jama.ama-assn.org/cgi/content/full/300/10/1154>.

¹⁷ Dale A. Newton and Martha S. Grayson, Trends in Career Choice by US Medical School Graduates, *The Journal of the American Medical Association* 290, no.9 (September 3, 2003).

¹⁸ Laura A. Dummit, Primary Care Physician Supply, Physician Compensation, and Medicare Fees: What is the Connection, *National Health Policy Forum Issue Brief*, no. 827 (November 2, 2008). [Online, accessed 11/17/08.] Available: http://www.nhpf.org/pdfs_ib/IB827_Physician_Income_11-03-08.pdf

¹⁹ Estimates of loans include interest gained while payments are deferred.

²⁰ Association of American Medical Colleges, *Medical School Tuition and Young Physician Indebtedness: An Update to the 2004 Report* (Washington, D.C.: AAMC, October 2007). [Online, accessed 11/12/08.] Available: https://services.aamc.org/Publications/index.cfm?fuseaction=Product.displayForm&prd_id=212&prv_id=256.

promise greater incomes. Many studies have looked for such a relationship between indebtedness and specialty choice, but there is as yet no convincing evidence of a connection.”²¹ The American Medical Student Association believes that “the debt burden may be partly responsible for the measurable decline in students entering primary care fields in favor of more lucrative specialties and believes more research must be undertaken to decipher a more precise relationship.”²²

A 2004 national survey of students whose academic achievements would qualify them for medical school showed that reasons for *not* applying to medical school included cost, the length of time it takes to become a physician, and the lifestyle demands. Cost was the top deterrent for African American, Hispanic, and Native American students.²³

International Medical Graduate (IMG) Importation

Over 5,000 international medical graduates (IMGs) participate in United States graduate medical education programs each year under the H or J visa programs. The H1 is a temporary work visa which allows a physician to work in the US for six years for a particular employer, including residency/fellowship positions. The J1 is a temporary visa for individuals who are pursuing a specific educational objective such as residency/fellowship training. Following their residency, IMGs with a training visa (J-1) may apply for a visa waiver, which allows them to stay in the United States if they enter into an employment contract to practice medicine full-time for at least three years in a federally designated health professional shortage area (HPSA).²⁴ (Without the waiver, they must return to their home country for at least two years.) Michigan had 1,719 IMGs in residency/fellowship programs in 2006.²⁵

In 2007, Michigan was ranked sixth in the country for the number of active physicians who graduated from an international medical school.²⁶ A decrease in the number of IMGs in the United States could affect health care services in vulnerable areas due to our reliance on IMGs to provide care for patients in HPSAs.²⁷ Lower numbers of IMGs could result from a decrease in the number of J-1 visas for foreign national IMGs (which means that fewer foreign nationals can stay in the United States following training),²⁸ an increase in global demand for health care services, or stricter immigration policies.

²¹ Paul Jolly, Medical School Tuition and Young Physicians' Indebtedness, *Health Affairs* 24, no. 2 (March/April 2005).

²² American Medical Student Association, *Medical Student Debt*, 2008. Available online at: www.amsa.org/student/studentdebt.cfm.

²³ Ibid.

²⁴ HRSA, *Physician Supply and Demand: Projections to 2020*.

²⁵ Association of American Medical Colleges, *2007 State Physician Workforce Data Book* (Washington, D.C.: AAMC, December 2007). Available online at: www.aamc.org/workforce/statedatabooknov2007.pdf

²⁶ Ibid.

²⁷ Darrel G. Kirch and David J. Vernon, Confronting the Complexity of the Physician Workforce Equation, *The Journal of the American Medical Association* 299, no. 22 (June 11, 2008).

²⁸ E. Ritzpatrick and T. Wallowicz, International Medical Graduates in the United States: Trends and Statistics, *Association for Hospital Medical Education News* (Spring 2008). [Online, accessed 11/12/08.] Available: <http://www.ahme.org/files/publications/news/2008spring.pdf>.

FACTORS DRIVING DEMAND FOR PHYSICIAN WORKFORCE

There also are multiple factors that affect the demand for physicians (i.e., the number of physicians supported by the healthcare market). Some of the contributing factors include insurance coverage for health services; changes in the delivery of health care; the economic status of the population as a whole; and changes in the demographic characteristics of the general population and patterns of the use of health care.

Changes in the Delivery of Health Care

New technology

Some technological and other medical advances can create demand for new physician services, while others increase the life span of many older adults, also creating demand for existing services. As people are able to live longer with chronic conditions, their demand for health care will increase. Other advances, such as telemedicine, may also increase demand for physician services while reducing barriers to access. However, while technology can increase demand, it can also decrease demand for certain physician services. For example, gene therapy²⁹ could prevent chronic conditions, thus decreasing the demand for certain services that would have been necessary prior to treatment.³⁰

There is agreement that consumers use the Internet to research health information. However, there are conflicting reports regarding how consumers' use of the Internet affects the demand for physician services. In a national survey of adult Internet users, "more than 90 percent of respondents said that using the Internet had no effect on [their use of] either physician visits or telephone contacts."³¹ In another national report, 28 percent of respondents said that information received online "affected their decision about whether or not to visit a doctor."³²

Nonphysician professionals

The growing production of nonphysician professionals (e.g., nurse practitioners and physician assistants) who might provide direct patient care could have an impact on the demand for the number of physicians needed to serve patients in the future. The U.S. Bureau of Labor Statistics estimates a 27 percent increase in employment between 2006 and 2016 for physician assistants (PAs). This rapid growth "reflects the expansion of health care industries and an emphasis on cost containment, which results in increasing use of PAs by health care establishments. Physicians and institutions are expected to employ more PAs to provide primary care and to assist with medical and surgical procedures because PAs are cost-effective and productive members of the health care

²⁹ Definition: alteration of somatic or germ-line DNA to correct or prevent disease; the process of inserting a gene artificially into the genome of an organism to correct a genetic defect or to add a new biologic property or function with therapeutic potential (www.webmd.com).

³⁰ HRSA, *Physician Supply and Demand: Projections to 2020*.

³¹ L. Baker, T. H. Wagner, S. Singer, and M. Bundorf, Use of the Internet and E-mail for Health Care Information: Results from a National Survey, *The Journal of the American Medical Association* 289, no 18 (May 14, 2003).

³² S. Fox, L. Rainie, J. Horrigan, et al., *The Online Health Care Revolution: How the Web Helps Americans Take Better Care of Themselves* (Washington, D.C.: Pew Internet and American Life Project; November 26, 2000).

team. Physician assistants can relieve physicians of routine duties and procedures.”³³ In a 2008 survey of active physician assistants in Michigan, 38 percent reported working in primary care and about 62 percent reported working in specialties other than primary care.³⁴ While increasing the ability of physicians to see more patients, nonphysician professionals also decrease the demand for physicians for a given population.³⁵

Insurance coverage

Medical insurance coverage and the type of insurance are significant factors that affect the frequency with which people consult a physician. How much insurance costs, the amounts of deductibles or copays, and whether a physician or the services needed are covered by insurance can all affect access and utilization of physician services and certain physician specialties. It is likely that universal health coverage would increase the demand for physician services. An analysis by the Congressional Budget Office indicates that “providing the uninsured population with coverage that is similar to a typical employment-based plan would increase total demand for physicians’ services and hospital care by between 2 percent and 5 percent.”³⁶ Universal coverage makes health care affordable for individuals who previously did not have insurance or the financial means to go to the doctor when necessary or to receive preventive care.

Economic Status of the Population as a Whole

HRSA reported in 2006 that there is a direct correlation between the country’s economy and the demand for physician services. HRSA reports that “each 10 percent increase in GDP [gross domestic product] per capita results in a 7.5 percent increase in demand for physician services.”³⁷

Aging of the General Population

Older adults (those aged 65 and older) use more health care than younger people. The population of adults aged 65 and older is projected to double between 2000 and 2030 (forecasted to be up to 70 million people). Medical and technological advances in the last half-century have led to longer life spans, and the population of adults aged 85 and older is expected to more than double between 2000 and 2030. This will lead to a potentially dramatic increase in the demand for health care services in the next 20 years.

³³ U.S. Bureau of Labor and Statistics, *Occupational Outlook Handbook*, 2008–09 Edition. [Online, accessed 11/12/08.] Available: <http://www.bls.gov/oco/ocos081.htm>.

³⁴ Michigan Department of Community Health, *Survey of Physician Assistants, 2008* (Lansing, Mich.: MDCH, 2008).

³⁵ HRSA, *Physician Supply and Demand: Projections to 2020*.

³⁶ Congress of the United States Congressional Budget Office, *Key Issues in Analyzing Major Health Insurance Proposals* (Washington, D.C.: CBO, December 2008).

³⁷ HRSA, *Physician Supply and Demand: Projections to 2020*.