FSMB Census of Licensed Physicians in the United States, 2018

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ABSTRACT: There are 985,026 physicians with Doctor of Medicine (MD) and Doctor of Osteopathic Medicine (DO) degrees licensed to practice medicine in the United States and the District of Columbia, according to physician census data compiled by the Federation of State Medical Boards (FSMB). These qualified physicians graduated from 2,089 medical schools in 167 countries and are available to serve a U.S. national population of 327,167,434. While the percentage of physicians who are international medical graduates have remained relatively stable over the last eight years, the percentage of physicians who are women, possess a DO degree, have three or more licenses, or are graduates of a medical school in the Caribbean have increased by varying degrees during that same period.

This report marks the fifth biennial physician census that the FSMB has published, highlighting key characteristics of the nation's available physician workforce, including numbers of licensees by geographic region and state, type of medical degree, location of medical school, age, gender, specialty certification and number of active licenses per physician. The number of licensed physicians in the United States has been growing steadily, due in part to an expansion in the number of medical schools and students during the past two decades, even as concerns of a physician shortage to meet health care demands persist. The average age of licensed physicians continues to increase, and more licensed physicians appear to be specialty certified, though the latter finding may reflect more comprehensive reporting. This census was compiled using the FSMB's Physician Data Center (PDC), which collects, collates and analyzes physician data directly from the nation's state medical and osteopathic boards and is uniquely positioned to provide a comprehensive snapshot of information about licensed physicians. A periodic national census of this type offers useful demographic and licensure information about the available physician workforce that may be useful to policy makers, researchers and related health care organizations to better understand and address the nation's health care needs.

Introduction

State and territorial medical and osteopathic boards (collectively referred to as state medical boards) in the United States license and regulate physicians and other health care professionals, such as physician assistants. They are governed and statutorily regulated by each jurisdiction's respective Medical Practice Act. To legally practice medicine in the United States or its territories, physicians must hold an active medical license issued by the state or territory in which they practice. The Federation of State Medical Boards (FSMB) Physician Data Center (PDC), established in 2004, regularly receives and analyzes physician licensure and disciplinary data from state medical boards and is uniquely positioned to provide a comprehensive snapshot of actively licensed physicians.

SINCE 2010, THE FSMB HAS CONDUCTED A BIENNIAL CENSUS OF ACTIVELY LICENSED PHYSICIANS USING DATA OBTAINED DIRECTLY FROM THE NATION'S STATE MEDICAL BOARDS...

Because physicians represent a vital population of trained professionals working to meet the health care needs of a growing population, a periodic census of their numbers and demographic shifts may provide state and federal policy makers, researchers and related health care organizations useful information for workforce modeling locally, regionally and nationally to better address the nation's current and future health care needs. Since 2010, the FSMB has conducted a biennial census of actively licensed physicians using data obtained directly from the nation's state medical boards to better understand the available physician supply in the United States and the District of Columbia.[1-4]

Providing up-to-date information about licensed physicians also supports state medical boards and the populations they serve. Such information, for example, has in recent years helped inform policy decisions at the state level about the need for the creation or expansion of medical schools.

Despite a steady growth over time of actively licensed physicians, fears of an impending physician shortage relative to the general population remain compelling and current. Generally consistent with previous reports it has issued, an analysis this year by the Association of American Medical Colleges (AAMC) projects a shortage of between 46,900 to 121,900 physicians by 2032.[5] Much of the projected shortage and concern is related to the growing and aging population, reflecting both the increasing health care needs of older individuals as well as the practice patterns of aging physicians, who may work fewer hours or retire. Younger physicians, too, may be working fewer hours as they seek a better work-life balance. According to the U.S. Census Bureau, the year 2030 will mark an important demographic shift in the U.S. population, when all baby boomers (individuals born between 1946 and 1964) will be older than 65 years of age.[6] By 2035, for the first time in U.S. history, adults 65 years and older are also projected to outnumber children under 18 years of age.[6]

There is persistent concern that the inadequate number of graduate medical education (GME) residency positions for the growing number of medical school graduates may exacerbate the shortage of practicing physicians, particularly in certain specialties. A 2017 survey of MD-granting U.S. medical school deans indicated that 44% were concerned about their students' ability to find residency positions of their choice.[7] These concerns reflect, at least in part, the fact that the majority of Medicare-funded GME residency positions have been capped at 1996 levels under the 1997 Balanced Budget Act. While relatively small numbers of additional residency positions have since been created through supplementary sources of funding and federal legislation, and new residency programs have been permitted to use Medicare funding for GME in hospitals without a previous history of such programs, analysts fear these efforts have been insufficient to address overall physician workforce needs, especially in primary-care fields. Between 2002 and 2012, for example, primary-care GME trainees (in such fields as family medicine, internal medicine and pediatrics) declined by 15%, when accounting for population growth.[8] Other research using 10-year projections indicates that the growth rate of U.S. residency positions will likely outpace the growth rate of U.S. medical school graduates. Certain subspecialties, such as orthopedics, are, however, at greater risk to experience a shortage of residency positions.[9] Avoiding a physician shortage will necessitate a multi-faceted understanding of evolutionary transitions in medical education, regulatory and health care delivery.

THERE IS PERSISTENT CONCERN THAT THE INADEQUATE NUMBER OF GRADUATE MEDICAL EDUCATION (GME) RESIDENCY POSITIONS FOR THE GROWING NUMBER OF MEDICAL SCHOOL GRADUATES MAY EXACERBATE THE SHORTAGE OF PRACTICING PHYSICIANS...

Although the need for physicians is expected to outpace supply, several metrics in addition to the number of actively licensed physicians suggest a slow but steady growth in the existing physician pipeline. Starting with undergraduate medical education as the foundation of that supply, there have been substantial increases in the past two decades in the number of medical schools and medical students. From 2002 to 2019, the Liaison Committee on Medical Education (LCME), which is authorized by the U.S. Department of Education to accredit MD-granting schools, has reported an increase in the number of fully, provisionally or preliminarily accredited medical schools in the United States from 125 to 153.[7,10] Similarly, from 2002 to 2019, the American Osteopathic Association's Commission on Osteopathic College Accreditation (COCA), which is authorized by the U.S. Department of Education to accredit DO-granting schools, reported an increase in the number of accredited DO-granting schools from 20 to 38.[7,11] First-year medical school enrollment overall has increased by 29% for MD-granting schools and 163% for DO-granting schools from 2002 to 2017.[7,12,13] In GME, as well, the 2019 National Resident Matching Program's (NRMP) match between graduating medical students and residency programs yielded the largest cohort to date, with 38,376 active applicants (including many international medical graduates and more than half of all osteopathic medical students) applying for 35,185 first- and second-year residency positions.[14]

Several complementary developments have taken place in recent years to better address the nation's health care needs, including diversification of health care models, greater utilization of digital health platforms and novel state-based legislative approaches, such as the Interstate Medical Licensure Compact (IMLC). These are improving access to care and, in the case of the IMLC, support the ability of qualified physicians to practice more easily across state borders, in person or through telemedicine.[15] The IMLC has thus far been adopted into law by 29 states, the District of Columbia and Guam to expedite the licensing of qualified physicians who wish to practice in multiple states.[16] From April 2017, when the IMLC first began processing requests, through March 2019, more than 3,000 physicians have used this service to obtain more than 5,400 medical licenses among participating states.[17]

THE DATA FOR THIS CENSUS WAS OBTAINED FROM THE FSMB'S PHYSICIAN DATA CENTER (PDC), WHICH SERVES AS A NATIONAL REPOSITORY OF DEMOGRAPHIC, EDUCATIONAL, TRAINING, LICENSURE, SPECIALTY CERTIFICATION AND DISCIPLINARY DATA...

There has been greater attention placed on the rise of integrated health care delivery models to more efficiently coordinate patient care with nurses, pharmacists and other health care practitioners, and to help meet health care demands. Health care workforce projections are increasingly taking into account the role of accountable care organizations, consumers' expanded use of retail clinics and increased utilization of highly skilled health care professionals other than physicians.[5] More than 10% of the U.S. population, for example, is now getting its health care under an accountable care organization contract, while more than 2,800 retail health clinics are providing health care to those who may otherwise be underserved by accessible primary care physicians.[5,18-20] Concerns about a physician shortage in years to come may need to be tempered as a result of these trends in health care delivery.

Technology has continued to increase the scope of digital health to include not only telemedicine, but also artificial or augmented intelligence (AI), to supplement the traditionally labor-intensive in-person roles performed by physicians. One promising example is the use of AI to rapidly sift through large amounts of electronic health records (EHRs) and other clinical data to maximize the level of information needed to better prevent, detect and treat various illnesses.[21,22] Another application is the use of this technology to more accurately analyze X-rays and other pictures to help identify certain medical ailments, such as skin cancer, retinal conditions and tuberculosis.[23-27] One concern of state medical boards regarding AI relates to when the technology is used not as an adjunct to a physician's care but in its stead through, for example, a direct-to-consumer electronic model, where lines of responsibility and accountability may be blurred if and when the technology fails or falls short.

Methodology

The FSMB's member boards include all 70 state and territorial medical boards in the United States, the District of Columbia and several U.S. territories (Guam, Northern Mariana Islands, Puerto Rico and the U.S. Virgin Islands). For the purposes of this census, physician licensure data from 65 state boards overseeing the licensing of physicians in the United States and the District of Columbia are included. The U.S. territories are not included because data from these jurisdictions are not always current or received in a timely manner to facilitate analysis. This methodology was also used in previous physician censuses published by the FSMB, which may facilitate easier and more accurate comparisons among them.

The data for this census was obtained from the FSMB's Physician Data Center (PDC), which serves as a national repository of demographic, educational, training, licensure, specialty certification and disciplinary data on all licensed physicians with MD and DO degrees, as well as of physician assistants. The database represents the nation's only comprehensive source of current and accurate information about licensed physicians from U.S. state and territorial jurisdictions that grant or renew licenses to practice medicine.

Physician records are typically created in the PDC when U.S. medical students or international medical graduates (IMGs) first register to sit for the United States Medical Licensing Examination (USMLE), a multi-step assessment that was created in 1992 and is co-sponsored by the FSMB and the National Board of Medical Examiners (NBME). Passage of the USMLE is a fundamental

requirement for all U.S. and IMG physicians with an MD degree to become eligible for state medical licensure.

Medical students at osteopathic medical schools more commonly take the Comprehensive Osteopathic Medical Licensure Examination (COMLEX-USA), which was also created in the early 1990s, though many also take one or more steps of the USMLE for secondary purposes, such as to increase their chances of matching into competitive GME residency programs. For osteopathic medical students who opt to solely take the COMLEX-USA for licensure eligibility and do not register to take the USMLE, and for physicians who were first licensed before the introduction of these two national licensure exams and therefore took older assessments — such as those administered by the NBME, the National Board of Osteopathic Medical Examiners (NBOME) or the FSMB's Federation Licensing Examination (FLEX) — the PDC creates their first records in its data files from licensure data provided directly by state medical boards.

When the PDC receives any additional physician data, whether from a licensing examination entity, a state medical board or another organization, each record is matched for accuracy against a master physician table. This systematic process ensures accuracy and allows the PDC to centralize all data across time and multiple jurisdictions.

Updates to both allopathic and osteopathic physician licensure data, including any disciplinary actions physicians may have received, primarily come from the state boards who license these physicians. In the aggregate, the PDC now contains more than two million records from physicians who

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were formerly or are currently licensed to practice medicine. To ensure accuracy of the database and up-to-date information, all state medical boards provide updated physician licensure data to the PDC at least quarterly, with almost all state boards providing the data even more frequently — some as often as weekly. To determine the number of licensed physicians in 2018, the most recent data received by the PDC from state boards during the 2018 calendar year was used.

Other organizations supplement physician-record information in the FSMB's PDC database. For example, the American Board of Medical Specialties (ABMS) and the American Osteopathic Association (AOA) regularly provide the PDC with updated medical specialty and subspecialty certification. While specialty certification is not required for physicians to receive a medical license in the U.S., these credentials are an important attribute for state medical boards to know and to better understand the physician workforce. The PDC also matches physician records against the National Provider Identifier (NPI), a unique 10-digit identification number issued to physicians and other health care providers by the Centers for Medicare and Medicaid Services of the U.S. Department of Health and Human Services, using the National Plan and Provider Enumeration System (NPPES) Downloadable File, and cross-references its physician records to identify and flag physicians who may be deceased. The PDC's incorporation of specialty certification, NPI number and death records further distinguishes its data as a comprehensive and up-to-date source of physicians licensed within its membership.

...THERE ARE 985,026 ACTIVELY LICENSED PHYSICIANS IN THE UNITED STATES AND THE DISTRICT OF COLUMBIA, REFLECTING A NET INCREASE OF 16%, OR 134,941 PHYSICIANS, FROM THE FSMB'S FIRST PHYSICIAN CENSUS IN 2010...

Results

The 2018 physician census demonstrates there are 985,026 actively licensed physicians in the United States and the District of Columbia,* reflecting a net increase of 16%, or 134,941 physicians, from the FSMB's first physician census in 2010, when there were 850,085 licensed physicians. Between 2010 and 2018, the actively licensed physician population has grown more diverse in terms of several demographic characteristics summarized in Table 1, which categorizes the licensed physician

* Subsequent references in this article to the U.S. include the District of Columbia.

Table 1
Population Characteristics

Licensed Physicians in the United States and the District of Columbia, 2010 and 2018	2010[a]		2018	
	Counts	Percentages	Counts	Percentages
Total	**850,085**	**100.0%**	**985,026**	**100.0%**
Degree				
Doctor of Medicine (MD)	789,788	92.9%	892,583	90.6%
Doctor of Osteopathic Medicine (DO)	58,329	6.9%	89,764	9.1%
Unknown	1,968	0.2%	2,679	0.3%
Medical School				
U.S. and Canadian Graduates (MD or DO)	649,736	76.4%	748,398	76.0%
International Graduates	188,598	22.2%	222,708	22.6%
Unknown	11,751	1.4%	13,920	1.4%
Age				
Less than 30	16,519	1.9%	16,250	1.6%
30-39 years	184,120	21.7%	219,711	22.3%
40-49 years	214,595	25.2%	233,192	23.7%
50-59 years	215,541	25.4%	213,860	21.7%
60-69 years	138,815	16.3%	191,794	19.5%
70+ years	75,627	8.9%	106,349	10.8%
Unknown	4,868	0.6%	3,870	0.4%
Gender				
Male	583,315	68.6%	630,598	64.0%
Female	252,861	29.7%	346,005	35.1%
Unknown	13,909	1.6%	8,423	0.9%
Certified by an ABMS/AOA Specialty Board[b]				
Yes	633,733	74.5%	807,451	82.0%
No	216,352	25.5%	177,575	18.0%
Number of Active Licenses				
1	657,208	78.4%	767,978	78.0%
2	142,423	15.7%	152,422	15.5%
3 or more	50,454	5.8%	64,626	6.6%

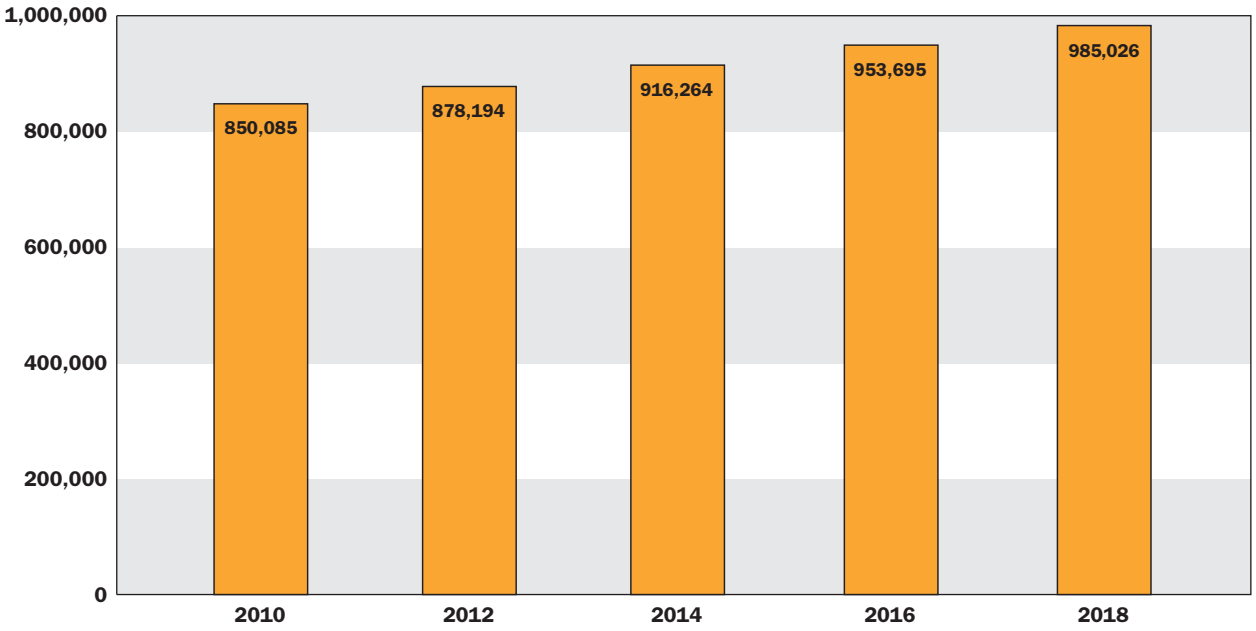
a. Counts for licensed physicians by medical school, age and gender have been revised and updated since the 2010 census.

b. FSMB matched physician license data with ABMS and AOA certification data to obtain counts of physicians with an active license in the U.S. and District of Columbia who also hold one or more active specialty or subspecialty certificates from an ABMS or AOA member board. The counts included in this census may vary from counts reported by the ABMS and AOA. ABMS Board Certification counts measure a broader geographic base and additional specialty related degrees. The number of certified physicians for 2010 includes only those with ABMS certifications because the FSMB did not receive AOA certification data until 2015. As with all counts and percentages in the 2018 FSMB Census, resident physician licenses were excluded when such licenses could be identified.

Source: 2018 FSMB Census of Licensed Physicians.

Figure 1

Licensed Physicians in the United States and the District of Columbia by Year



Source: 2018 FSMB Census of Licensed Physicians.

population by degree, medical school location, age, gender, specialty certification and number of active licenses.

The incremental growth of actively licensed physicians in each census is largely attributed to newly licensed physicians. In the 2017 and 2018 calendar years, state medical boards issued a total of 178,324 new medical licenses to newly- and subsequently-licensed physicians in one or more jurisdictions. When looking at first-time licenses alone, state medical boards issued 33,624 medical licenses to physicians for the very first time, accounting for 19% of all newly-issued licenses during that time.

IN THE 2017 AND 2018 CALENDAR YEARS, STATE MEDICAL BOARDS ISSUED A TOTAL OF 178,324 NEW MEDICAL LICENSES TO NEWLY- AND SUBSEQUENTLY-LICENSED PHYSICIANS IN ONE OR MORE JURISDICTIONS.

When comparing the licensed physician population by type of medical degree, the overwhelming majority (91%) of physicians hold a Doctor of Medicine (MD) degree, while 9% hold a Doctor of Osteopathic Medicine (DO) degree. The licensed DO population continues to grow at a faster rate than for physicians with MD degrees. Between 2010 and 2018, the number of licensed DOs increased from 58,329 to 89,764, or by 54%, compared with an increase of 13% for MDs from 789,788 to 892,583.

The licensed physician population has continued to maintain diversification in terms of the location for medical school education. More than three-quarters (76%) of the licensed population are U.S. or Canadian medical graduates (USMGs) and approximately one-quarter (23%) are international medical graduates (IMGs). One percent of all licensed physicians have an unknown medical-school listing in the database because the information is either not collected by state medical boards or not made available to the FSMB.

Further highlighting the diversity of medical school training, licensed physicians in 2018 graduated from a total of 2,089 medical schools in 167 countries from around the world. This represents an increase from 2010, when licensed physicians graduated from 1,926 medical schools in 161 countries. Between 2010 and 2018, the number of licensed USMGs increased by 15%, while the number of IMGs increased by 18%.

Table 2 outlines the top 10 medical schools offering MD and DO degrees with the largest number of graduates who are actively licensed to practice medicine, revealing that a smaller number of osteopathic medical schools account for a greater percentage of their graduates who are actively licensed than for medical schools offering the MD degree. The 10 allopathic schools with the largest number of graduates (n = 91,205) account for slightly more than 10% of all licensed allopathic physicians, while the 10 osteopathic schools with the largest number of graduates (n = 59,038) account for more than half (66%) of all licensed osteopathic physicians.

FURTHER HIGHLIGHTING THE DIVERSITY OF MEDICAL SCHOOL TRAINING, LICENSED PHYSICIANS IN 2018 GRADUATED FROM A TOTAL OF 2,089 MEDICAL SCHOOLS IN 167 COUNTRIES FROM AROUND THE WORLD.

Table 3 lists the top 10 international medical schools with the largest number of graduates who are actively licensed in the United States. These schools account for 47,582, or 21%, of all licensed IMGs in the United States. The largest number of licensed IMGs have graduated from schools in India (n = 50,173; 23%), followed by the Caribbean (n = 40,689; 18%), Pakistan (n = 13,019; 6%), the Philippines (n = 12,744; 6%) and Mexico (n = 10,066; 5%). Physicians who graduated from all other international medical schools (n = 96,017) constitute the remaining 42% of IMGs who are licensed in the United States in 2018 (Figure 2).

Table 2
U.S. Medical Schools and Colleges of Osteopathic Medicine

U.S. Medical Schools and Colleges of Osteopathic Medicine with the Largest Number of Graduates Licensed in the United States and the District of Columbia, 2018	City and State	Number of Licensed Physicians
Medical School		
Indiana University School of Medicine	Indianapolis, IN	11,828
University of Minnesota Medical School	Minneapolis, MN	10,198
Wayne State University School of Medicine	Detroit, MI	9,209
SUNY Downstate Medical Center	Brooklyn, NY	8,903
Ohio State University College of Medicine and Public Health	Columbus, OH	8,820
Jefferson Medical College of Thomas Jefferson University	Philadelphia, PA	8,802
University of Illinois College of Medicine	Chicago, IL	8,720
University of Texas Medical Branch	Galveston, TX	8,283
University of Texas Southwestern Medical Center at Dallas	Dallas, TX	8,247
New York Medical College	Valhalla, NY	8,195
College of Osteopathic Medicine		
Philadelphia College of Osteopathic Medicine	Philadelphia, PA	9,220
Des Moines University, College of Osteopathic Medical Center	Des Moines, IA	7,455
Kansas City University of Medicine and Biosciences	Kansas City, MO	6,954
Kirksville College of Osteopathic Medicine	Kirksville, MO	5,710
NY Institute of Technology College of Osteopathic Medicine	Old Westbury, NY	5,524
Michigan State University College of Osteopathic Medicine	East Lansing, MI	5,099
Western University, College of Osteopathic Medicine of the Pacific	Pomona, CA	4,955
Midwestern University, Chicago College of Osteopathic Medicine	Downers Grove, IL	4,865
Lake Erie College of Osteopathic Medicine	Erie, PA	4,847
Nova Southeastern University, College of Osteopathic Medicine	Fort Lauderdale, FL	4,409

Source: 2018 FSMB Census of Licensed Physicians.

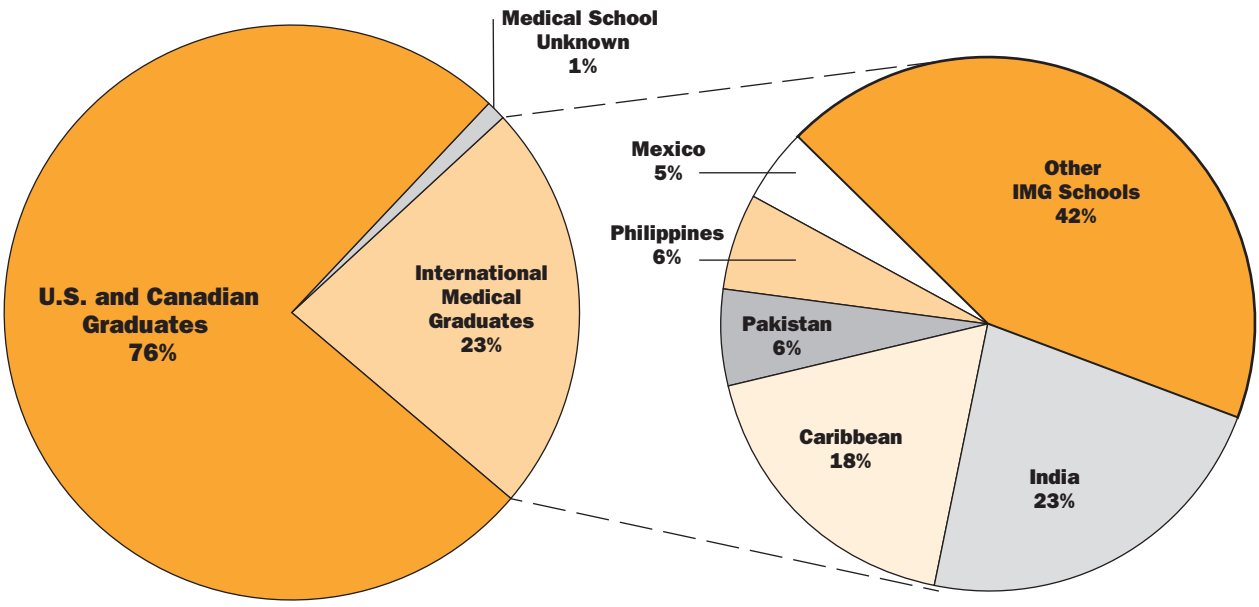
Table 3
International Medical Schools

International Medical Schools with the Largest Number of Graduates Licensed in the United States and the District of Columbia, 2018	Country	Number of Licensed Physicians
International Medical School		
St. George's University	Grenada	10,791
Ross University	Dominica	9,930
Universidad Autonoma de Guadalajara	Mexico	5,742
American University of the Caribbean	Saint Maarten	4,708
University of Santo Tomas	Philippines	4,188
Dow Medical College, University of Karachi	Pakistan	3,232
University of Damascus	Syria	2,762
Osmania Medical College	India	2,159
University of the Punjab, King Edward Medical College	Pakistan	2,072
University of the East, Ramon Magsaysay Memorial Medical Center	Philippines	1,998

Source: 2018 FSMB Census of Licensed Physicians.

When comparing the countries and regions with the five largest number of licensed IMGs between 2010 and 2018, the number of physicians who graduated in four of these locations increased in number (India, the Caribbean, Pakistan and Mexico) (Figure 3). Graduates from medical schools in India continue to represent the largest population of IMGs who are actively licensed, while graduates from medical schools in the Caribbean have had the largest growth between 2010 and 2018, increasing from 22,820 to 40,689 physicians, or 78%. For reasons that are not readily apparent, the number of physicians who graduated from the Philippines has decreased by 15% between 2010 (n = 14,946)

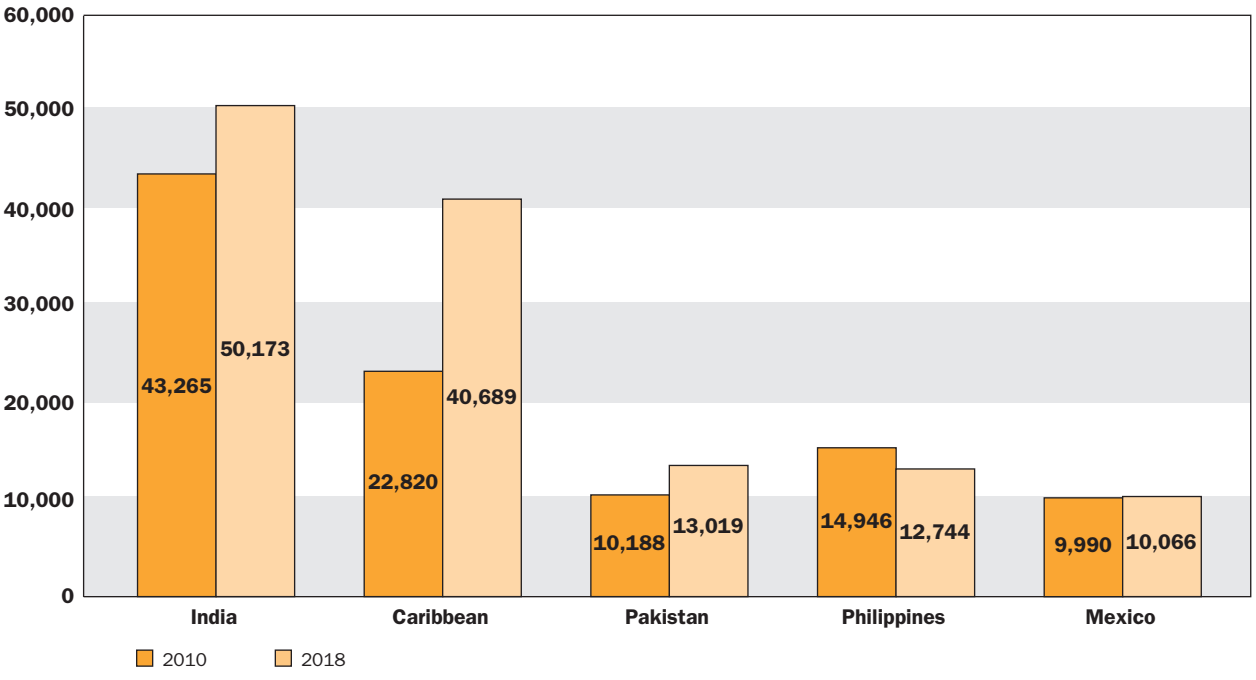
Figure 2
Licensed Physicians in the United States and the District of Columbia by Location of Medical School Graduation, 2018



Source: 2018 FSMB Census of Licensed Physicians.

Figure 3

Locations with the Largest Number of Licensed IMGs in the United States and the District of Columbia, 2010 and 2018



Source: 2018 FSMB Census of Licensed Physicians.

and 2018 (n = 12,744) and has dropped in ranking from representing the third largest population of IMGs to the fourth.

Parallel with the growth of medical school graduates from the Caribbean, the percentage of licensed physicians from this region who are also U.S. citizens continues to grow, and at a faster rate during the past eight years. From 2010 to 2018, the percentage of Caribbean medical school graduates who are U.S. citizens increased from 48% (n = 11,783) to 62% (n = 15,481) (Figure 4).

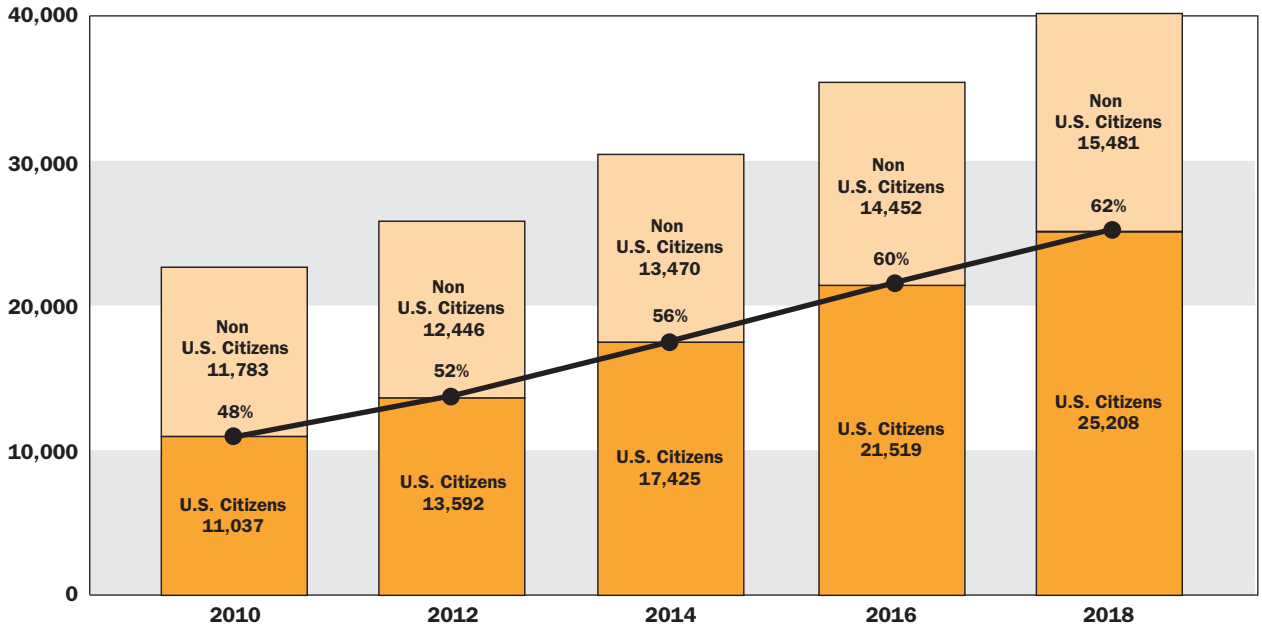
The average age of licensed physicians, a key metric that enables better understanding of the aging of the licensed physician population, continues to rise. In 2018, the mean age of licensed physicians is 51.5 years (SD = 13.7 years), which is almost a year higher than the mean age of 50.7 years (SD = 13.2 years) reported in 2010. Figure 5 displays the age distribution of licensed physicians in 2010 and 2018 and demonstrates a marked growth over time of physicians who are 60 years of age or older. In 2018, 30% of licensed physicians are 60 years of age or older, up from 25% in 2010. Between 2010 and 2018, licensed physicians who are 60 years of age or older increased by 39%, compared to 13% for those physicians 49 years of age or younger. Age differences also exist in other comparisons: DOs, Caribbean medical graduates and females tend to be younger. More specifically, licensed DOs tend to be younger (46.1 years, SD = 12.5 years) than MDs (52.0 years, SD = 13.7 years). Licensed Caribbean medical graduates also tend to be younger (45.1 years, SD = 11.8 years) than the general physician population. Similarly, licensed female physicians are on average younger (46.8 years, SD = 11.9 years) than male physicians (53.8 years, SD = 14.0 years).

THE AVERAGE AGE OF LICENSED PHYSICIANS, A KEY METRIC THAT ENABLES BETTER UNDERSTANDING OF THE AGING OF THE LICENSED PHYSICIAN POPULATION, CONTINUES TO RISE.

The percentage of licensed females continues to rise, although males still constitute much of the licensed population overall. In 2018, 64% of

Figure 4

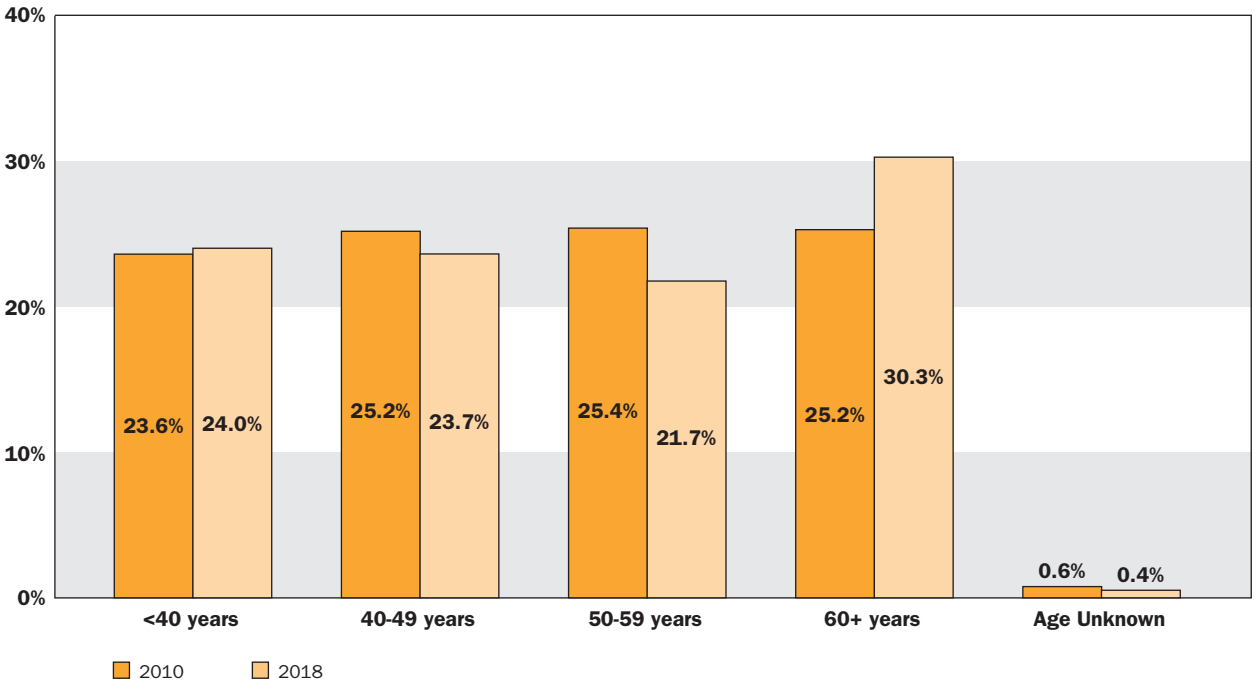
U.S. Citizenship for Licensed Caribbean Medical School Graduates in the United States and District of Columbia by Year



Source: 2018 FSMB Census of Licensed Physicians.

Figure 5

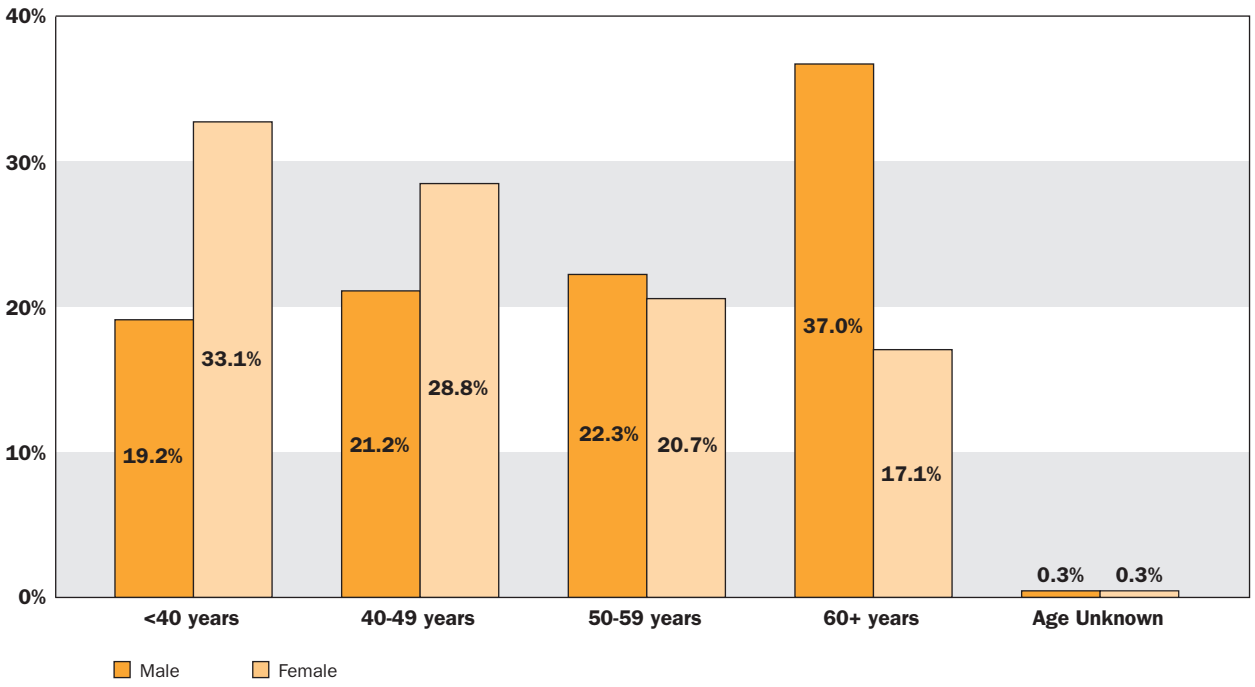
Licensed Physicians in the United States and the District of Columbia by Age, 2010 and 2018



Source: 2018 FSMB Census of Licensed Physicians.

Figure 6

Licensed Physicians in the United States and the District of Columbia by Gender and Age, 2018



Source: 2018 FSMB Census of Licensed Physicians.

licensed physicians are male, 35% are female and in 1% of cases their gender is unknown because the information is not collected by state medical boards or not available to the FSMB (Table 1). From 2010 to 2018, the licensed female-physician population increased by 37%, compared to 8% for male physicians.

When comparing the licensed physician population by gender and age, a greater percentage of female physicians continue to fall within younger age categories than male physicians. In 2018, 33% of female physicians are 39 years of age or younger, compared to 19% for male physicians. When looking at physicians who are 60 years of age or older, 37% are male and 17% are female (Figure 6).

More than 8 out of 10 (82%) licensed physicians in 2018 are board-certified by either the ABMS or the AOA. The percentage of physicians who are specialty-certified varies greatly by age category: 20% of licensed physicians who are less than 30 years old are specialty-certified by the ABMS or AOA, peaking at 92% for physicians 40 to 49 years old and then decreasing to 68% for physicians who are 70 years of age and older (Figure 7). Although younger physicians are the least likely to hold any specialty certification, the percentage holding a certification under 30 years old has increased from 11% in 2010**

WHEN COMPARING THE LICENSED PHYSICIAN POPULATION BY GENDER AND AGE, A GREATER PERCENTAGE OF FEMALE PHYSICIANS CONTINUE TO FALL WITHIN YOUNGER AGE CATEGORIES THAN MALE PHYSICIANS.

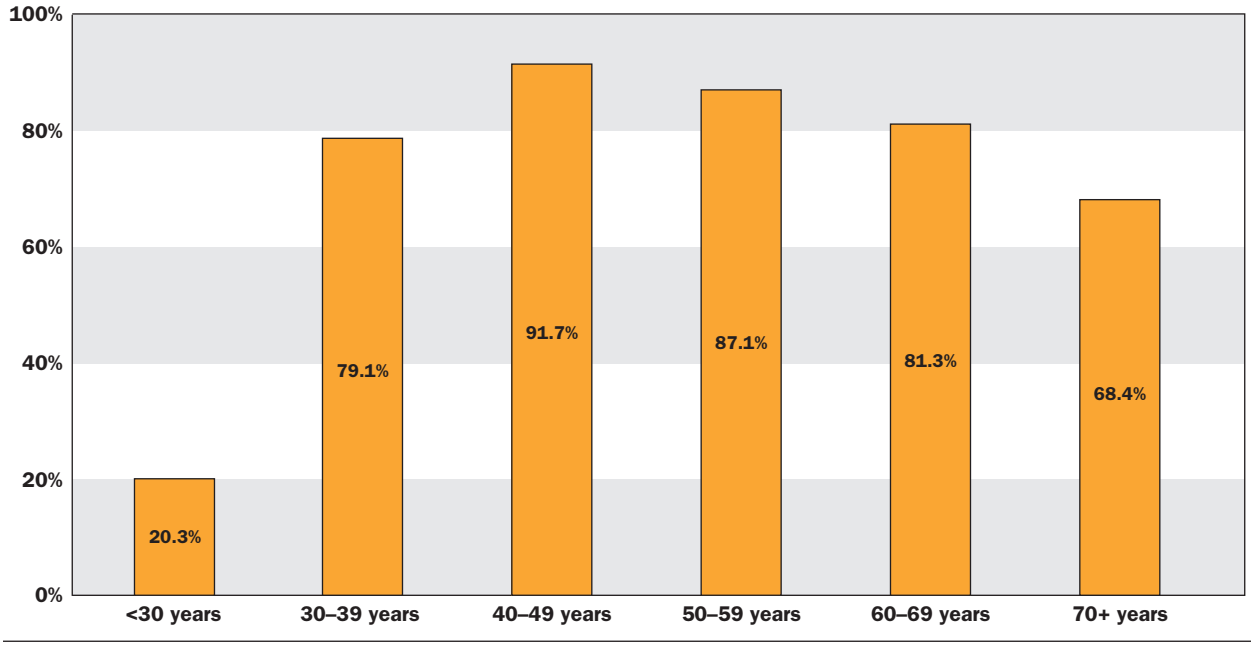
to 20% in 2018. Specialty certification also varies by medical school: USMGs are slightly more likely (83%) to hold an ABMS or AOA certification than IMGs (78%).

In 2018, 78% of physicians held one license, 15% held two licenses and 7% held three or more licenses (Table 1). Only 14 physicians held licenses in all 50 states and the District of Columbia in

** The number of certified physicians for 2010 includes only those with ABMS certifications.

Figure 7

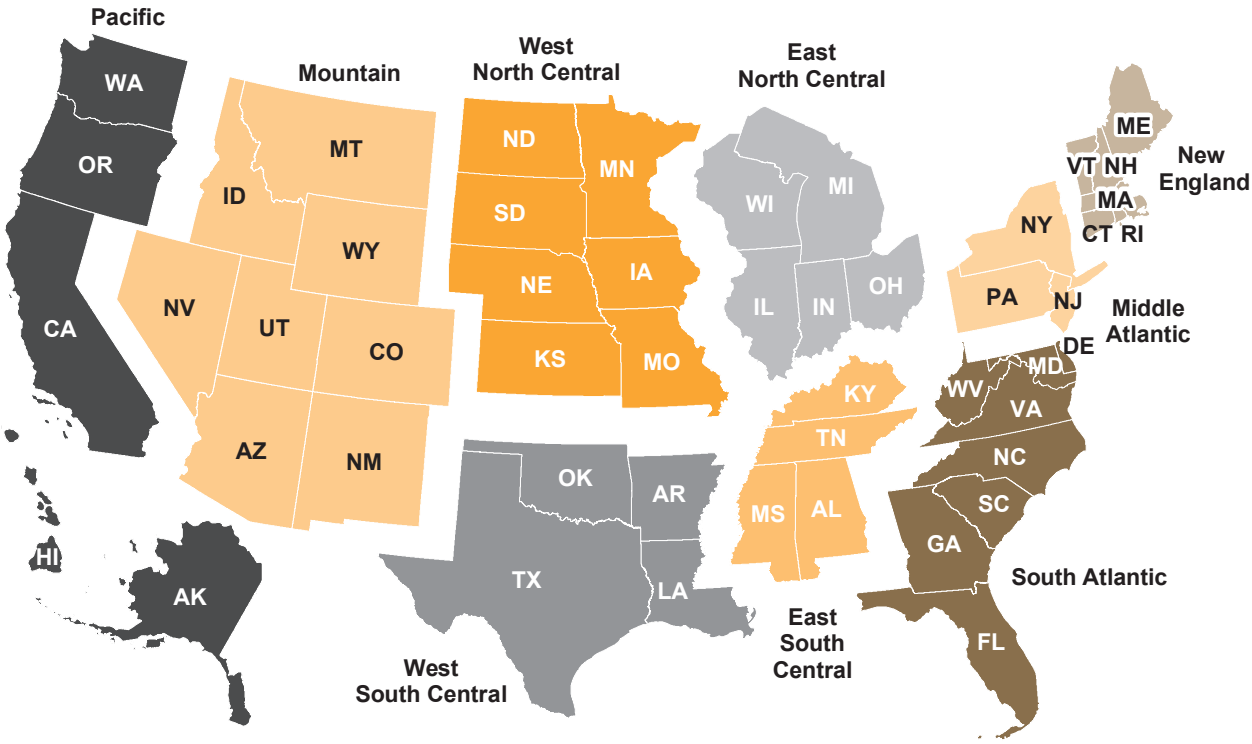
Licensed Physicians with ABMS or AOA Certifications in the United States and District of Columbia by Age, 2018



Source: 2018 FSMB Census of Licensed Physicians.

Figure 8

U.S. Census Bureau Divisions of the United States



2018. While the number of active licenses a physician holds has remained relatively similar between 2010 and 2018, there are more notable differences in the percentage of physicians who hold multiple licenses by gender and specialty certification. Male physicians, for example,

985,026 PHYSICIANS HELD A TOTAL OF 1,356,995 LICENSES ACROSS THE NATION TO SERVE A TOTAL U.S. POPULATION OF 327,167,434 PEOPLE IN 2018.

are more likely to hold multiple licenses (24%) compared to female physicians (19%). Physicians who hold an ABMS or AOA certification are also more likely to hold multiple licenses (24%) than physicians without a specialty certification (14%).

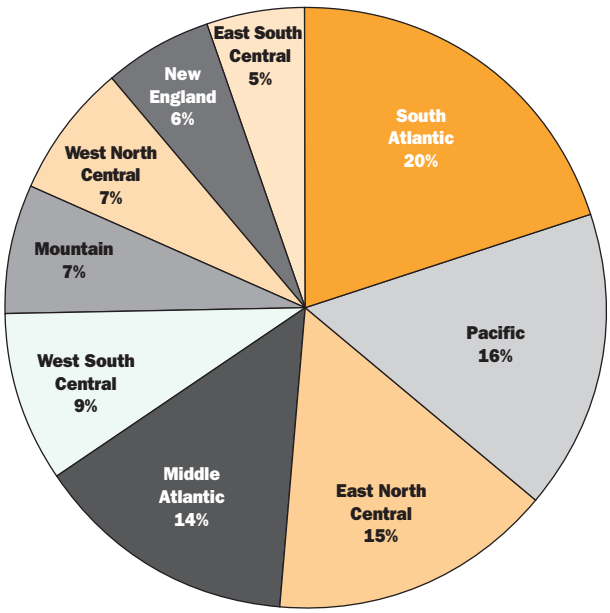
Figure 8 is a geographic map of the United States that is divided into nine divisions used by the U.S. Census Bureau. Using these geographic divisions, Figure 9 shows the percentage of the more than 1.3 million licenses held by the 985,026 physicians in 2018. Sixty-five percent of all licenses are held in four divisions: The South Atlantic (20%), Pacific (16%), East North Central (15%) and Middle Atlantic (14%).

Table 4 provides the number of physicians with active licenses by each state. 985,026 physicians held a total of 1,356,995 licenses across the nation to serve a total U.S. population of 327,167,434 people in 2018. These physicians represent a physician-to-population ratio of 301 licensed physicians per 100,000-population.

Discussion

The 2018 FSMB census provides up-to-date demographic and licensure information about actively licensed physicians, a population that has continued to grow and diversify. Providing current information for this population is a vital component to health care workforce planning and helps promote the FSMB's mission of supporting state medical and osteopathic boards, with the end goal of keeping patients safe. Three highlighted trends from the 2018 census are discussed below. They include a general growth and diversification of the physician population, aging within the physician population and a high

Figure 9
Distribution of Active Licenses in the United States and the District of Columbia by U.S. Census Bureau Division, 2018



Source: 2018 FSMB Census of Licensed Physicians.

rate at which physicians are obtaining or retaining specialty certification.

Growth and diversification of the physician population. The number of licensed physicians in the United States is growing, due in large part to significant increases in the number of medical schools and students during the past two decades. The number of accredited U.S. medical schools has increased by 22% to 153 since 2002, and the

THE NUMBER OF LICENSED PHYSICIANS IN THE UNITED STATES IS GROWING, DUE IN LARGE PART TO SIGNIFICANT INCREASES IN THE NUMBER OF MEDICAL SCHOOLS AND STUDENTS DURING THE PAST TWO DECADES.

number of accredited DO-granting schools has nearly doubled, now reaching 38.[7,11] First-year medical school enrollment has, accordingly, increased by 29% for MD-granting schools and 163% for DO-granting schools between 2002 and 2017.[7,12,13] This census reflects that growth, with an

Table 4
Licensed Physicians by State and the District of Columbia, 2018

Licensed Physicians by State[a] and the District of Columbia, 2018	Licensed Physicians	Population Counts[b]	Physicians Per 100,000 Population
United States	985,026	327,167,434	301
Alabama	16,595	4,887,871	340
Alaska	4,495	737,438	610
Arizona	27,535	7,171,646	384
Arkansas	10,814	3,013,825	359
California	157,638	39,557,045	399
Colorado	25,070	5,695,564	440
Connecticut	20,146	3,572,665	564
Delaware	5,795	967,171	599
District of Columbia	11,513	702,455	1,639
Florida	80,011	21,299,325	376
Georgia	37,320	10,519,475	355
Hawaii	9,931	1,420,491	699
Idaho	6,599	1,754,208	376
Illinois	47,494	12,741,080	373
Indiana	31,264	6,691,878	467
Iowa	12,712	3,156,145	403
Kansas	10,351	2,911,505	356
Kentucky	19,528	4,468,402	437
Louisiana	17,538	4,659,978	376
Maine	7,290	1,338,404	545
Maryland	30,279	6,042,718	501
Massachusetts	35,817	6,902,149	519
Michigan	43,145	9,995,915	432
Minnesota	24,964	5,611,179	445
Mississippi	10,836	2,986,530	363
Missouri	27,950	6,126,452	456
Montana	6,044	1,062,305	569
Nebraska	10,147	1,929,268	526
Nevada	10,075	3,034,392	332
New Hampshire	7,374	1,356,458	544
New Jersey	39,259	8,908,520	441
New Mexico	9,407	2,095,428	449
New York	97,592	19,542,209	499
North Carolina	41,878	10,383,620	403
North Dakota	4,207	760,077	553
Ohio	48,471	11,689,442	415
Oklahoma	13,764	3,943,079	349
Oregon	16,101	4,190,713	384
Pennsylvania	56,981	12,807,060	445
Rhode Island	5,543	1,057,315	524
South Carolina	20,642	5,084,127	406
South Dakota	4,642	882,235	526
Tennessee	24,340	6,770,010	360
Texas	83,334	28,701,845	290
Utah	11,546	3,161,105	365
Vermont	3,715	626,299	593
Virginia	38,977	8,517,685	458
Washington	30,174	7,535,591	400
West Virginia	8,280	1,805,832	459
Wisconsin	27,675	5,813,568	476
Wyoming	4,197	577,737	726
State and D.C. Totals[c]	**1,356,995**	**327,167,434**	

a. State counts are based on physician data recorded by the FSMB using state medical board license files from 2018 and reflect the number of physicians with an active license. Resident physician licenses were excluded when such license could be identified.

b. U.S. Census Bureau, Population Division, July 2018

c. Physician counts by state do not sum to 985,026 because some physicians maintain active licenses in more than one jurisdiction.

increase of 102,795 licensed MDs and 31,435 licensed DOs from 2010 to 2018.

The ratio of physicians to the general population is also growing in the United States. As previously noted, the physician-to-population ratio in the United States was 301 licensed physicians per 100,000 population in 2018. While the growth of the licensed physician population may appear to run counter to projections made by various organizations that the United States faces physician shortages, an examination of the FSMB's licensure data provides some insight. The number of physicians who are receiving their first medical license is growing but at a slower pace than the number of physicians who are not renewing their medical licenses: First-time licensed physicians have increased 21% from 27,036 to 32,601 between 2010 and 2018, compared to a 105% increase from 7,919 to 16,244 for physicians who are not renewing any of their licenses. Considering that health care delivery demands appear to be growing faster than the overall licensed physician population, a physician shortage may indeed be a concern.

FROM 2010 TO 2018, THE LICENSED FEMALE PHYSICIAN POPULATION INCREASED BY 37%, COMPARED TO 8% FOR MALE PHYSICIANS. FEMALE PHYSICIANS ACCOUNT FOR APPROXIMATELY 35% OF LICENSED PHYSICIANS, UP FROM 30% IN 2010.

The physician population is also showing greater diversification in terms of where physicians graduate from medical school. The 2018 census shows the greatest number of medical schools attended by licensed physicians since the inception of the FSMB's physician census in 2010. Physicians included in the census have graduated from a total of 2,089 medical schools in 167 countries from across the world. With licensed physicians now representing 2,089 medical schools worldwide in 2018 compared to 1,926 in 2010, the location of medical training is more diverse.

An increase in licensed female physicians is also contributing to a more diversified physician population and to its overall growth. From 2010 to 2018, the licensed female physician population increased by 37%, compared to 8% for male physicians. Female physicians account for approximately 35% of licensed physicians, up from 30% in 2010. The class that entered medical school in 2017 marked the first time in history that more females entered U.S. medical schools than males,[28] an indication that the male-to-female licensed physician ratio will continue to shift in the years to come.

Aging physicians. This census, combined with the FSMB's previous censuses, indicates that the mean age of the total population of licensed physicians in the United States continues to rise. In 2018, the mean age of licensed physicians reached 51.5 years, with 30% of these physicians 60 years of age or older. With a larger segment of licensed physicians becoming older, medical regulators, policy makers and other stakeholders are more closely examining the impact of aging physicians on the physician workforce — and policy discussions on this topic are likely to increase. Research has shown that although cognitive function tends to decrease with age, there is also greater variability in function as age increases.[29,30] Some regulators are considering standards to ensure older practitioners are competent to practice, while avoiding ageism and unnecessary reductions in the physician workforce.[31] As the physician population ages, Physician Health Programs (PHPs), which can help balance confidentiality, physician wellness and public protection, may be relied upon more heavily to support the physician workforce.

Rates of specialty certification. Licensed physicians in the United States continue to be highly trained. The 2018 census reports that more than eight out of 10 licensed physicians are now board certified by either the ABMS or the AOA. While the percentage of licensed physicians who are board certified is highest around 40 to 59 years of age, younger physicians, who are less than 30 years old, are the least likely to hold any specialty certification — likely because initial ABMS certification in a specialty typically requires no fewer than three years following the successful completion of accredited training.[32] Notwithstanding this finding, the percentage of younger physicians who

LICENSED PHYSICIANS IN THE UNITED STATES CONTINUE TO BE HIGHLY TRAINED. THE 2018 CENSUS REPORTS THAT MORE THAN 8 OUT OF 10 LICENSED PHYSICIANS ARE NOW BOARD CERTIFIED BY EITHER THE ABMS OR THE AOA.

are board certified is increasing. In 2010, 11% of licensed physicians younger than 30 years of age held an ABMS certification; when also including AOA certification, this percentage reached 20% in 2018. Specialty certification also varies by medical school: USMGs are slightly more likely (83%) to hold an ABMS or AOA certification than IMGs (78%).

WELL-MANAGED HEALTH WORKFORCE PLANNING WILL BECOME INCREASINGLY IMPORTANT IN THE YEARS AHEAD, ESPECIALLY AS THE NATION ENTERS A PERIOD OF PHYSICIAN SHORTAGES AND RAPID CHANGES IN HEALTH DELIVERY MODELS, SUCH AS ADVANCEMENTS IN DIGITAL HEALTH.

Well-managed health workforce planning will become increasingly important in the years ahead, especially as the nation enters a period of physician shortages and rapid changes in health delivery models, such as advancements in digital health. The next physician census, anticipated in 2020, may provide additional insight and updated demographic information to guide policy makers in this dynamic environment. ■

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