

The Graduate Medical Education (GME) Report: An Assessment of Opportunities for Graduates of Texas Medical Schools to Enter Residency Programs in Texas

**A Report to the Texas Legislature
per Texas Education Code, Section 61.0661**

October 2022

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The mission of the Texas Higher Education Coordinating Board (THECB) is to serve as a resource, partner, and advocate for Texas higher education, resulting in a globally competitive workforce that positions Texas as an international leader.

Agency Vision

The THECB will be recognized as an international leader in developing and implementing innovative higher education policy to accomplish our mission.

Agency Philosophy

The THECB will promote access to and success in quality higher education across the state with the conviction that access and success without quality is mediocrity and that quality without access and success is unacceptable.

The THECB's core values are:

Accountability: We hold ourselves responsible for our actions and welcome every opportunity to educate stakeholders about our policies, decisions, and aspirations.

Efficiency: We accomplish our work using resources in the most effective manner.

Collaboration: We develop partnerships that result in student success and a highly qualified, globally competent workforce.

Excellence: We strive for excellence in all our endeavors.

The Texas Higher Education Coordinating Board does not discriminate on the basis of race, color, national origin, gender, religion, age or disability in employment or the provision of services.

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Table of Contents

Executive Summary.....	i
Key Findings.....	i
Conclusion	ii
Introduction	1
Texas Physician Workforce	2
Current Physician Workforce Trends	2
Licensed Physicians.....	2
Physician Demographics.....	3
COVID-19 Impact	4
Physician Aging and Wellness.....	4
Projected Physician Supply and Demand	5
Population Aging and Growth	5
Physician Retention	6
Medical Education Pipeline.....	8
Undergraduate Medical Education	8
Newly Established Medical Schools.....	9
Medical School Applicants.....	9
Medical School First-Year Enrollments.....	10
Medical School Graduates.....	11
Graduate Medical Education	12
Texas Residency Program Opportunities	13
First-Year Filled Texas Residency Positions	14
Medical Education Funding.....	17
Medical School Funding	17
Graduate Medical Education Funding	17
Texas Higher Education Coordinating Board GME Initiatives.....	18
Graduate Medical Education Residency Expansion	18
GME Expansion Program	18
GME Planning and Partnership Grants.....	18
Family Practice Residency Program	20
Joint Admissions Medical Program	20
Emergency and Trauma Care Education Partnership Program.....	20
Statewide Preceptorship Program	21
Conclusion.....	22

Figures

Figure 1. Texas Direct Patient Care Physician Supply, 2010-2020	2
Figure 2. Newly Licensed Physicians in Texas, 2012-2021	3
Figure 3. Primary Care and Other Specialists, Direct Patient Care Physicians in Texas, 2011-2020	6
Figure 4. Unduplicated Applicants at Texas Public Medical Schools, 2013-2022	10
Figure 5. First-Year Enrollments at Texas Medical Schools, 2016-2021	11
Figure 6. Texas Medical School Graduates, 2012-2021	12
Figure 7. Location of Texas GME Programs with Filled First-Year Residency Positions in 2021	14
Figure 8. First-Year Filled Residency Positions in Texas by Public Institution, 2013-2021	15
Figure 9. Residency Positions Needed to Achieve the Goal of a 1.1 to 1 Ratio of GME First-Year Residency Positions to Texas Medical School Graduates, 2012-2026	16
Figure 10. Location of Entities Receiving a Planning and Partnership Grant and Resulting Newly Established Programs with First-Year Residency Positions, 2014-2021	20

Tables

Table 1. Race/Ethnicity of Direct Patient Care Physicians, 2020	4
Table 2. Texas Medical Schools.....	8
Table 3. Texas Higher Education Coordinating Board Grant Programs Supporting Medical Education	18
Table 4. GME Planning and Partnership Grants, 2014-2021	19

Appendices

Appendix A: Medical Specialties with First-Year Resident Positions	23
Appendix B: Texas Programs/Tracks (by Sponsoring Institution) that Offered First-Year Residency Positions for Academic Year 2022-2023	24

Executive Summary

The medical education system nationwide faces persistent and intensifying challenges, including high medical student debt, inadequate supply and geographic distribution of physicians, and lack of diversity in medical student applicants and enrollment, which ultimately leads to underrepresented groups in the physician workforce.

The 83rd Texas Legislature, Regular Session, transferred, redesignated, and amended Section 61.051(a-4), Texas Education Code, to Subchapter C, Chapter 61, Section 61.0661, which requires the Texas Higher Education Coordinating Board (THECB) to assess the adequacy of opportunities for graduates of Texas medical schools to enter graduate medical education in this state. The THECB is required to report the results of the assessment not later than December 1 of each even-numbered year to the governor, the lieutenant governor, the speaker of the House of Representatives, and the standing committees of the Senate and House of Representatives with primary jurisdiction over higher education.

The THECB presents the following information in accordance with TEC, Section 61.0661:

- A comparison of the number of first-year graduate medical education positions available annually with the number of medical school graduates
- A statistical analysis of recent trends in, and projections of, the number of medical school graduates and first-year graduate medical education positions in the state
- Methods and strategies for achieving a ratio for the number of first-year graduate medical education positions, relative to the number of medical school graduates in the state, of at least 1.1 to 1
- An evaluation of current and projected physician workforce needs in the state, by total number and by specialty, for the development of additional first-year graduate medical education positions
- An examination of whether the state should ensure that a first-year graduate medical education position is created for each new medical student position established by a medical or dental unit

Key Findings

Texas is the second most populous state with a population of 29,145,505. By 2050, the population aged 65 and over is expected to triple and the Hispanic population is expected to more than double in size. While Texas continues to be an appealing location for physicians to practice, it also continues to have fewer active patient care physicians and primary care physicians per 100,000 per population and ranks well below the national average in both categories. Physician supply and demand projections for Texas and the nation continue to predict physician demand growing faster than supply through 2032. Population growth and aging continue to be the primary driver, which means a higher demand for primary care specialties. The specialties of general internal medicine, family medicine, pediatrics, and psychiatry are projected to have the most significant shortages in 2032. Geographic physician distribution in Texas remains an issue as well, with data from 2020 showing 30 counties in Texas were without a physician.

Texas also continues to have a lack of diversity in the physician workforce with the Department of State Health Services reporting that African American and Hispanic physicians were underrepresented when compared to the same Texas population. A diverse and representative physician workforce is necessary

to promote enhanced access to care, improve health care quality, and better meet the needs of an increasingly diverse population.

Texas continues to do better than most states with retaining physicians who complete medical education in state. In 2020, 63.1% of primary care physicians in Texas (indicating attendance at a U.S. medical school) reported attending a Texas medical school. Although in 2021, a historic year for medical license applications and issue, only 22% of newly licensed physicians were graduates of Texas medical schools.

There are currently 16 medical schools in Texas, and both applicants and first-year entering enrollments continue to increase. In 2006, the Association of American Medical Colleges asked its member institutions to increase medical school enrollments by 30% from 2002 enrollment levels. Texas increased enrollments by 73% between the years 2002 and 2021. The increase in entering medical students is attributed to increases in total enrollments at all medical schools and the opening of six new medical schools since 2016. A seventh new medical school is expected to begin enrolling students in 2023.

Texas medical schools continue to have high graduation rates, with 96% of students graduating in 2021. The numbers of graduates continue to increase with growing first-year enrollments and the opening of new medical schools. The opportunity for a Texas medical school graduate to enter a Texas residency program is limited to the number of residency programs that accept first-year residents. Texas had approximately 2,275 first-year filled residency positions in 2021. Achieving the goal of 1.1 first-year entering residency positions for each medical school graduate will allow every Texas medical graduate an opportunity to remain in the state for residency training and will allow graduates from other states an opportunity to enter a Texas residency program. Projections indicate that the 1.1 to 1 goal will not be met in Fiscal Year (FY) 2024-2025 if new first-year residency positions are not created.

Conclusion

As Texas continues to increase its diverse population, there will be a growing demand for physicians to provide adequate health care for the residents of the state. Since the state has substantially increased the number of medical schools in the last decade, it is essential to increase the number of residency positions as well to meet the 1.1 to 1 goal the state has established. This goal ensures that all graduates of Texas medical schools have the opportunity to enter a Texas residency program. This goal is imperative to meet since the state invests significantly in medical school students and wants to retain as many graduates as possible to contribute to growing the Texas physician workforce.

Since 2013, the state has established several grant programs to support medical education. This investment will need to be maintained to provide medical school graduates ample opportunities for obtaining first-year residency positions in the state. Without the funding to grow the number of first-year residency positions, Texas medical school graduates will be forced to leave the state and are less likely to return to Texas to practice.

Introduction

This report concerns graduates who have completed coursework at a Texas medical school and continue their education and training in a Texas residency program. Coursework at a medical school is considered “undergraduate medical education,” while residency training is considered “graduate medical education” or “GME.” Every two years, as required by Texas Education Code (TEC), Section 61.0661, Texas Higher Education Coordinating Board (THECB) staff assess whether there are adequate opportunities for graduates of Texas medical schools to enter graduate medical education (i.e., a residency program). In 2011, the 82nd Texas Legislature, Regular Session, passed House Bill (HB) 2908, which directed the THECB to include this information in the agency’s five-year strategic master plan. In 2013, the THECB was directed to submit a separate report. This report fulfills that legislative directive.

This 2022 report is the sixth report to present the current state of the Texas physician workforce, educational pipeline, and THECB administered GME initiatives. The first report was published in 2012 with updates every two years. This 2022 report also presents updated data, including information on undergraduate medical and osteopathic medical school students, graduate medical education and residents, the current physician workforce, as well as updated conclusions and recommendations.

In accordance with TEC, Section 61.0661, the following information is presented:

- A comparison of the number of first-year graduate medical education positions available annually with the number of medical school graduates
- A statistical analysis of recent trends in, and projections of, the number of medical school graduates and first-year graduate medical education positions in the state
- Methods and strategies for achieving a ratio for the number of first-year graduate medical education positions, relative to the number of medical school graduates in the state, of at least 1.1 to 1
- An evaluation of current and projected physician workforce needs in the state, by total number and by specialty, for the development of additional first-year graduate medical education positions
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Texas Physician Workforce

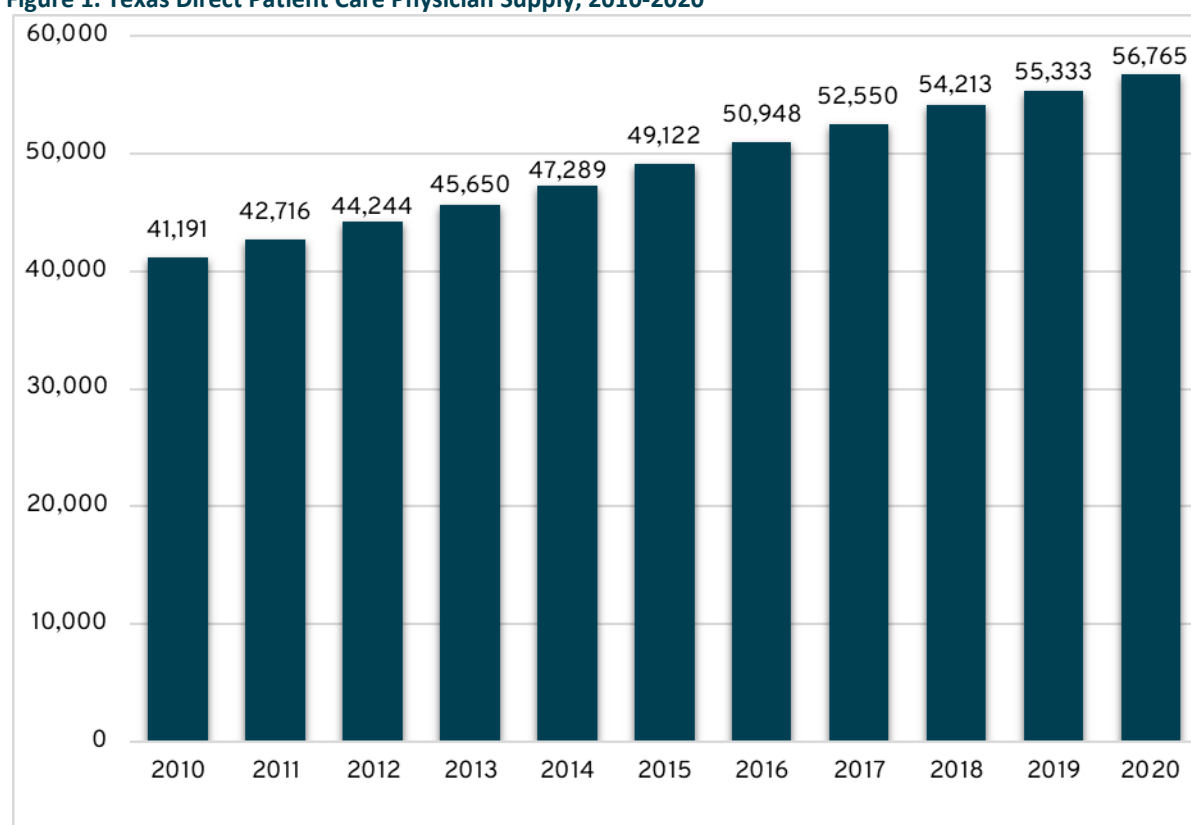
The Texas physician workforce includes physicians educated and trained in the state, as well as physicians educated in other states or countries. The latter group comes to Texas either to continue their training in a Texas GME program or to join or establish a medical practice.

Current Physician Workforce Trends

Licensed Physicians

Texas continues to be an appealing location for physicians to practice. For the last decade, the physician workforce has expanded at an unparalleled pace. From 2010 to 2020, the number of patient care physicians actively practicing in Texas increased 38% (Figure 1).

Figure 1. Texas Direct Patient Care Physician Supply, 2010-2020

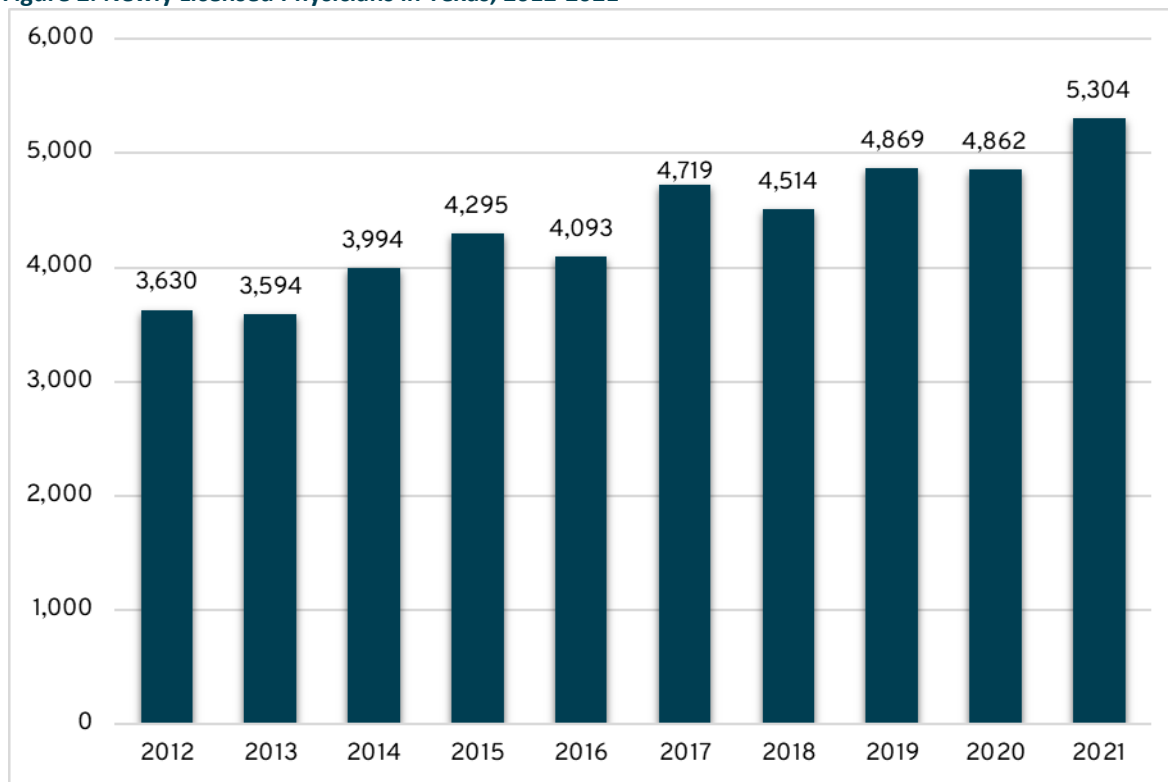


Source: Department of State Health Services, September 2020

In 2021, the Texas Medical Board (TMB) received an unprecedented 7,010 medical license applications. A record number 5,304 new licenses were issued (Figure 2) that same year.

Additionally, in 2021, Texas joined the Interstate Medical Licensure Compact (IMLC), a voluntary, expedited licensing process that allows qualifying physicians to practice in multiple states. There are currently 34 states participating in the IMLC. The TMB began accepting applications for Texas compact licensing on March 1, 2022, and this streamlined process is expected to further increase the numbers of newly licensed physicians.

Figure 2. Newly Licensed Physicians in Texas, 2012-2021



Source: Texas Medical Board, September 2022

Of note, the TMA Committee on Physician Distribution and Health Care reported in their Texas Physician Workforce Update for 2022 that more than 3 out of 4 of the newly licensed physicians in 2021 were graduates of medical schools outside of Texas. Only 22% had completed medical school in Texas.

Physician Demographics

According to a June 2021 press release, the American Medical Association adopted a new policy to increase diversity in the physician workforce, stating that studies show a diverse and representative physician workforce promotes enhanced access to care, improves health care quality, and better meets the needs of an increasingly diverse population.

Direct patient care physicians are those that work directly with patients and do not include researchers, administrators, or teachers. The Texas Health and Human Services' 2020 Direct Patient Care Physicians Fact Sheet reported the following key demographic findings:

Race/Ethnicity. African American and Hispanic physicians were underrepresented when compared to the same Texas population (Table 1).

Table 1. Race/Ethnicity of Direct Patient Care Physicians, 2020

Race/Ethnicity	Texas Population	Direct Patient Care Physicians
White/Caucasian	40.9%	57.0%
Black/African American	12.0%	6.2%
Hispanic/Latino	39.8%	7.6%
Other	29.2%	7.3%

Source: Texas Health and Human Services' 2020 Direct Patient Care Physicians Fact Sheet

Gender. In 2020, 35.1% of direct patient care physicians were female and 64.9% were male. Among those aged 40 years or under, 48.8% were female and 51.2% were male.

COVID-19 Impact

In 2020, COVID-19 escalated challenges to the state's health care system. Governor Greg Abbott declared a state of disaster on March 13, 2020, and waived certain regulations to increase health care capacity. In August 2020, the TMB reported issuing more than 2,300 emergency licenses for physicians. Governor Abbott also eased regulations related to physician-in-training permit holders in GME programs to allow more involvement with proper physician oversight. The Liaison Committee on Medical Education and the Accreditation Committee on Graduate Medical Education continue to provide guidance to medical schools and GME institutions regarding the safety and well-being of medical students, residents, faculty, and patients during the COVID-19 pandemic. COVID-19 continues to disrupt the entire health care system, and the full impact on the physician workforce may not be known for years to come.

Physician Aging and Wellness

According to a 2020 Association of American Medical Colleges (AAMC) report, 2 in 5 physicians currently working will be age 65 or greater in the next decade, which could impact the availability of physicians needed to meet the healthcare needs of patients. The median percentage of active physicians who are age 60 or older in the United States is 32.9%. Texas is lower at 29.4%, ranking second lowest in the nation.

An aging physician workforce is not the only factor contributing to availability of physicians. Threats to physician well-being is prompting some physicians to accelerate plans for retirement or leaving the medical profession altogether. According to the 2018 Survey of America's Physicians conducted for The Physicians Foundation, 40% of physicians "often or always" experience feelings of burnout. TMA analysis of the survey revealed that 49% of Texas physicians "often or always" experience feelings of burnout and 54% reported morale as "somewhat or very negative." A 2021 COVID-19 impact update to the survey showed a jump in the percentage of nation's physicians experiencing feelings of burnout "often or always" from 40% to 60%.

Projected Physician Supply and Demand

Population Aging and Growth

According to the U.S. Census Bureau's 2020 Census of Population and Housing, Texas is the second-most populous state with a population of 29,145,505. Population estimates released in 2021 rank Texas number 1 in the top 10 states for numeric growth between 2020 and 2021, and number 7 for percentage growth during the same time. The Texas Demographic Center's population projections in January 2019 show continued growth as more people move into the state.

The state's changing demographics include significant increases among two populations: people over 65 years of age and Hispanics. The number of Texans over 65 years of age are projected to more than triple in size from 2.6 million in 2010 to almost 8.3 million in 2050. Additionally, the Hispanic population is projected to double in size from just under 10 million in 2010 to 20.2 million by 2050. An aging and more diverse Texas population will continue to exert significant demands on current and future physicians and the health care system at large.

Even though Texas attracts many physicians to the state, the need for more physicians is a concern because the Texas physician workforce has faced a shortage for several decades. According to the Association of American Medical Colleges' 2021 State Physician Workforce Data Report, Texas continues to have fewer active patient care physicians per 100,000 population than the nation as a whole. The ratio of active patient care physicians to population in Texas increased from the 2010 level of 176.1 per 100,000 to the 2020 level of 204.6 per 100,000. Still, Texas is well below the 2020 national average of 247.5 active patient care physicians per 100,000 people and ranks 42nd among states in this category.

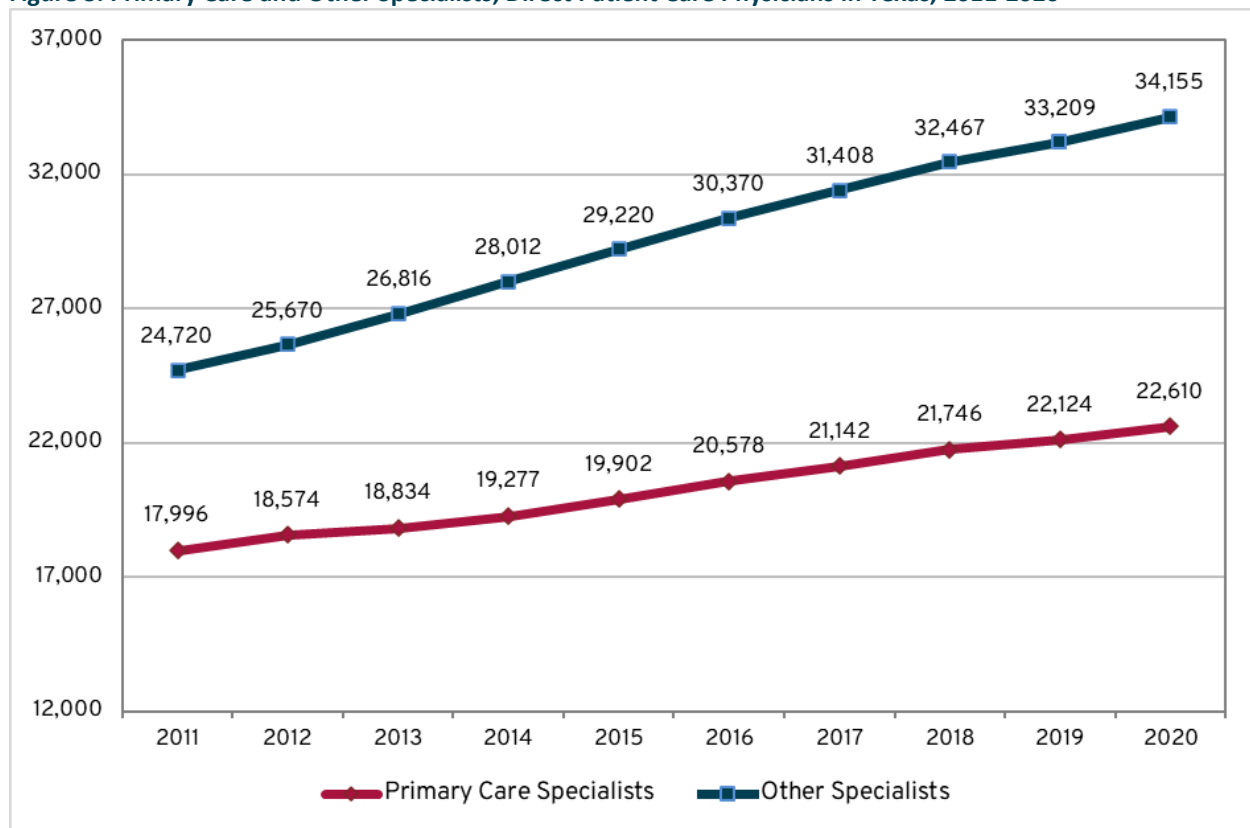
While there is not an established optimal level of physicians per 100,000 population, research studies have shown that the type of physicians within a community affect the cost and quality of health care. Communities with more primary care physicians (those practicing in the specialties of family medicine, internal medicine, obstetrics and gynecology, and pediatrics) have lower health care costs and report higher quality of health.

Texas primary care physicians per 100,000 population increased between 2010 and 2020; however, Texas continues to have fewer active primary care physicians than most other states, with 74.3 active primary care physicians per 100,000 population. Texas ranks 46th among states in this category and is below the national ratio of 94.4 per 100,000 population.

Physician supply and demand projections for Texas and the nation continue to predict physician demand growing faster than supply through 2032. Population growth and aging continue to be the primary driver, which means a higher demand for primary care specialties. A May 2020 Texas Department of State Health Services (DSHS) report projected there will be shortages of primary care physicians in every region of Texas by 2032. The report also predicts the shortages will worsen in the coming years.

Figure 3 shows the numbers of primary care and other specialty physicians in Texas between 2011 and 2020. During this period, the number of primary care physicians in Texas increased by 26%, while the increase in other specialty care physicians was 38%. While the difference between the percentage increases is not drastic, they reflect the ongoing trend in the number of other specialty physicians outpacing the number of primary care physicians since 2002.

Figure 3. Primary Care and Other Specialists, Direct Patient Care Physicians in Texas, 2011-2020



Source: Texas Department of State Health Services, September 2020.

Among the 35 physician specialties included in the DSHS report, the specialties of general internal medicine, family medicine, pediatrics, and psychiatry are projected to have the most significant shortages in 2032. General internal medicine is projected to have the greatest absolute shortage with an additional 2,607 full-time equivalent (FTE) physicians needed statewide to meet projected demand. Family medicine is projected to have the greatest shortage increase in FTEs, as the shortage of family medicine physicians statewide is projected to increase from 1,034 FTEs in 2018 to 2,495 FTEs in 2032. Specialties with projected surpluses by 2032 include emergency medicine, anesthesiology, and plastic surgery.

In addition to current and projected physician shortages, geographic distribution of physicians continues to be a concern for public policymakers. DSHS direct patient care physicians by county data from September 2020 show that there were 30 Texas counties without a physician. Strategies to improve distribution of physicians include physician loan repayment programs and improving the medical education pipeline.

Physician Retention

Studies have shown that a physician's choice of practice location may be associated with where the physician was educated and trained. The 2021 AAMC State Physician Workforce Data Report states that 38.2% of physicians were actively practicing in the state where they received their undergraduate medical education (UME), while 46% were actively practicing in the state where they completed their most recent graduate medical education training. The highest retention rates at 67.5% were seen among physicians who completed both undergraduate and graduate medical education in the same state. In addition, 46% of physicians graduating from a public medical school were actively practicing in

the same state. Texas continues to do better than most states with retaining physicians who complete UME, GME, or both UME and GME in the state. A notable finding in the DSHS 2020 Primary Care Physicians Fact Sheet is that 63.1% of Texas primary care physicians (of those indicating attendance at a U.S. medical school) attended a Texas medical school.

Texas national active physician retention rankings

- 2nd with 59.3% of physicians retained from UME (state median 39.7%)
- 3rd with 61.3% physicians retained from public UME (median 43.7%)
- 5th with 59.0% physicians retained from GME (state median 45.1%)
- 3rd with 81.1% physicians retained from UME/GME (state median 69.7%)

Medical Education Pipeline

In the U.S., the traditional educational pathway to become a physician includes graduation from a four-year college, graduation from an accredited U.S. osteopathic or allopathic medical school, or international medical school, which takes four years, and completion of a graduate medical education training experience (internship or residency), which takes one to seven years. Training may then continue in a subspecialty and/or fellowship, which requires additional time, usually a year or two, to complete. The education and training of a physician is a lengthy and expensive process and commonly takes 10 to 14 years.

The cost of becoming a physician varies by state and by medical school. In comparison to the nation, according to the AAMC, Texas' public medical schools granting MD degrees have relatively low tuition and fees for in-state, first-year students, with an average cost of \$24,184 in Academic Year 2021-2022, compared with a national average of \$39,104 in tuition and fees for public medical schools. A Texas resident attending a public medical school out of state would be charged around \$60,000 for tuition and fees.

The AAMC reports that 73% of 2021 medical school graduates nationwide have education debt, and their median debt load was \$200,000, a 4% increase compared to \$192,000 in 2017.

Undergraduate Medical Education

At the time of this report, Texas has 16 medical schools that offer the Doctor of Medicine (MD) or Doctor of Osteopathic Medicine (DO) degrees. Of these, 13 are public; one, Baylor College of Medicine in Houston, is private, although it receives state funding; one, The University of the Incarnate Word, is private and does not receive state funding at this time; and one, initially established as a partnership between Texas Christian University (TCU) and University of North Texas Health Science Center (UNTHSC), but recently announced TCU will be the sole degree-granting entity (now called Texas Christian University, Burnett School of Medicine), is private and does not receive state funding at this time (Table 2). Thirteen medical schools provide allopathic training and grant the MD degree, and three provide osteopathic training, granting the DO degree.

Table 2. Texas Medical Schools

Texas Medical Schools	Locations
Baylor College of Medicine	Houston
Sam Houston State University College of Osteopathic Medicine (SHSU-COM)	Conroe
Texas A&M University Health Science Center (TAMUHSC), College of Medicine	Bryan/College Station, Dallas, Round Rock, Houston, Temple
Texas Christian University, Burnett School of Medicine	Fort Worth
Texas Tech University Health Sciences Center Medical School	Amarillo, Lubbock, Odessa
Texas Tech University Health Sciences Center-El Paso, Paul L. Foster School of Medicine	El Paso
The University of Texas at Austin (UT-Austin) Dell Medical School	Austin

Texas Medical Schools	Locations
The University of Texas Health Science Center at Houston, McGovern Medical School	Houston
The University of Texas Health Science Center at San Antonio (UTHSC-SA) Long School of Medicine	San Antonio
The University of Texas Medical Branch at Galveston, School of Medicine	Galveston
The University of Texas Rio Grande Valley (UTRGV) School of Medicine	Harlingen, Edinburg, McAllen
The University of Texas Southwestern Medical Center (UT Southwestern) School of Medicine	Dallas
The University of Texas at Tyler School of Medicine (UT-Tyler)	Tyler
The University of the Incarnate Word (UIW) School of Osteopathic Medicine at Brooks City Base	San Antonio
University of Houston (UH) College of Medicine	Houston
University of North Texas Health Science Center at Fort Worth, Texas College of Osteopathic Medicine	Fort Worth

Newly Established Medical Schools

TCU's medical school enrolled its first class of 60 MD students in July 2019, UH College of Medicine enrolled its first class of 30 MD students in July 2020, SHSU-COM enrolled its first class of 75 DO students in August 2020, and UIW in San Antonio awarded its first 137 degrees in May 2021. UT-Tyler School of Medicine will enroll its inaugural class of 40 in fall 2023.

Medical School Applicants

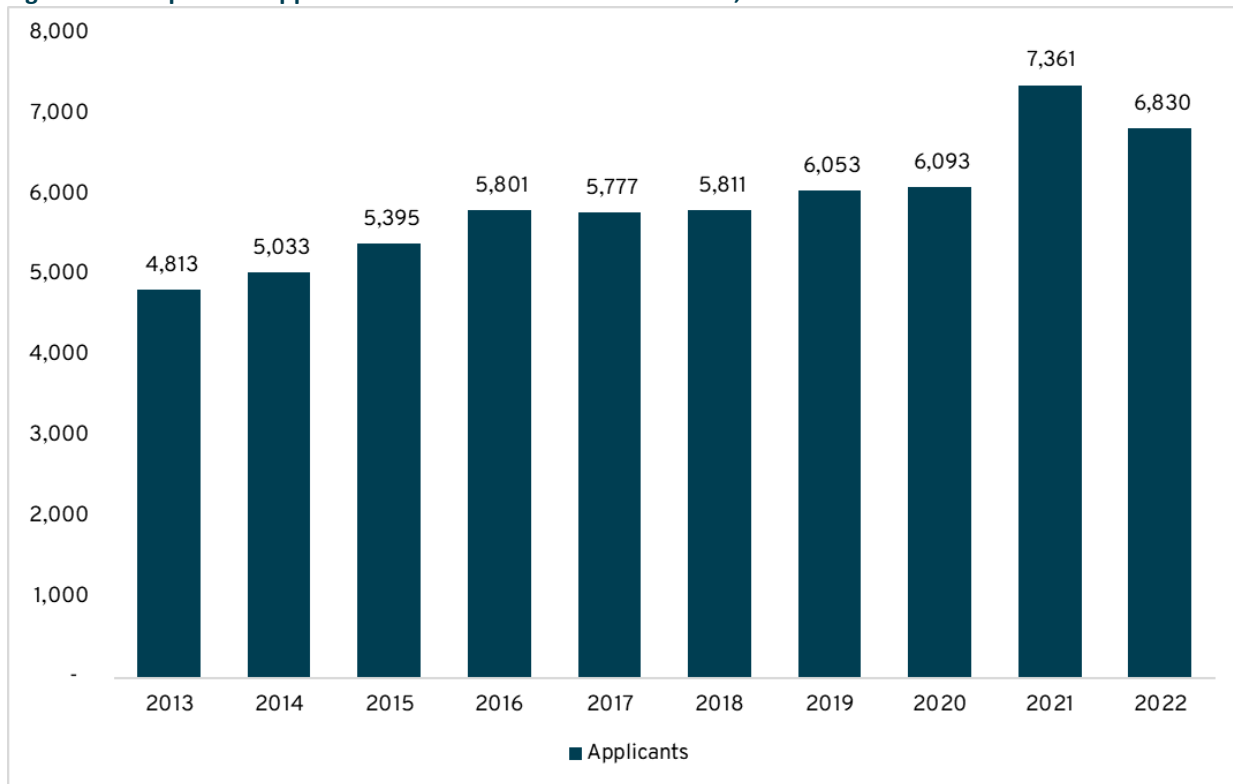
Medical school applicants typically apply to more than one medical school.

Texas offers applicants a coordinated submission process where one application may be submitted to all Texas public medical schools through the Texas Medical and Dental Schools Application Services (TMDSAS). Texas public medical schools report annual enrollment data to TMDSAS.

Since 2002, the number of unduplicated applicants to Texas public medical schools has steadily increased. From 2013 to 2022, the number of applicants reported by TMDSAS increased by 41.9% (Figure 4). From 2020 to 2021 there was a substantial national increase in applicants. The AAMC reports a national increase of 17.8% with no single reason noted for the heightened interest. For Texas, the increase was 20.8% from 2020 to 2021. The applicant numbers for 2022 decreased by 7.2%, which could suggest a gradual return to pre-pandemic levels over the next few years.

Medical schools do not have set admissions numbers, and the entering class sizes may vary from year to year. Some variation in class size occurs because applicants may receive admissions offers from several medical schools. In some cases, more applicants than anticipated may decide to enroll, which may result in an increase in class size.

Figure 4. Unduplicated Applicants at Texas Public Medical Schools, 2013-2022



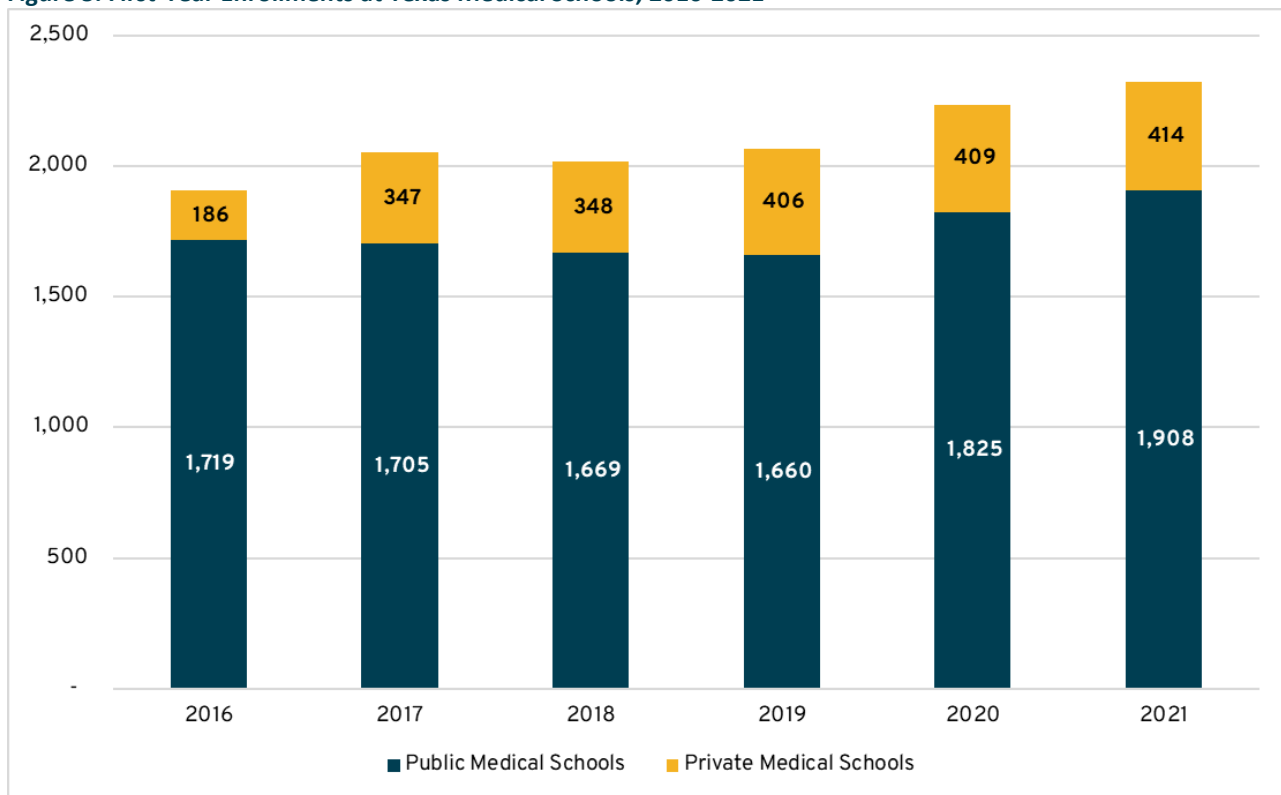
Source: Texas Medical and Dental Schools Application Services (TMDSAS), September 2022

Note: Statistics only include TMDSAS applicants and not dual degree or special programs who may not have applied through TMDSAS. Applicants to The University of the Incarnate Word School of Osteopathic Medicine and TCU/UNTHSC School of Medicine are not included. Baylor College of Medicine applicants are not included in the years 2013 through 2020.

Medical School First-Year Enrollments

Figure 5 illustrates first-year enrollments at both private and public Texas medical schools for the most recent five-year period. During this time, there was a 22% increase in enrollments. In 2006, the AAMC asked its member institutions to increase medical school enrollments by 30% from the 2002 enrollment levels. Texas responded to this request by increasing enrollments 73% during the period between 2002 (1,342) and 2021 (2,234). The increase in entering medical students reflects both the total increased enrollments at all medical schools and the opening of new medical schools.

Figure 5. First-Year Enrollments at Texas Medical Schools, 2016-2021

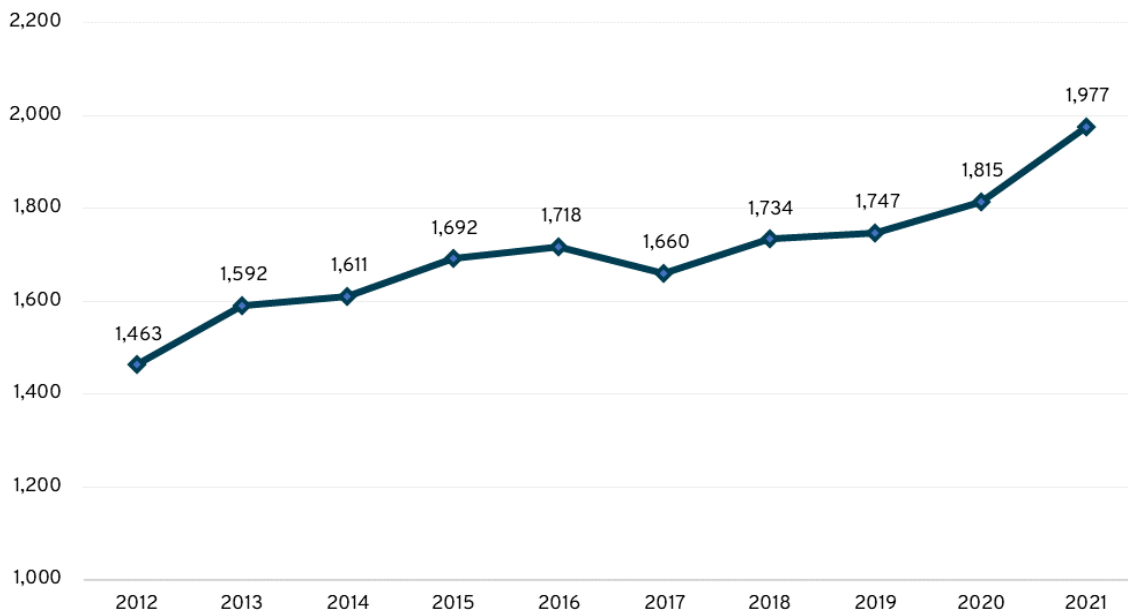


Source: Public Schools - THECB CBM001; TMA, October 2022

Medical School Graduates

Between 2012 and 2021, Texas medical schools experienced a 35% increase in graduates (Figure 6). Although there was a decline in 2017, a continued rise from 2018 through 2021 reflects the expansion of first-year entering medical school enrollments and the establishment of new medical schools. Texas medical schools continue to have a high rate of graduation, with 96% of the first-year entering class of 2017 graduating in 2021.

Figure 6. Texas Medical School Graduates, 2012-2021



Source: THECB CBM009, October 2022

Graduate Medical Education

Physicians, in most states, are required to complete at least one year of residency training before they may be fully licensed to begin practicing medicine. After completion of medical school, physicians fill entry-level positions referred to as a Post-Graduate Year 1 (PGY-1) or first-year residency positions. While in residency training, physician residents care for patients under the supervision of physician faculty and participate in educational and research activities. The residency programs are typically one to seven years in length. When physicians complete training in an accredited program, they may be eligible to take specialty board certification examinations and begin practicing independently. Additionally, some residents may choose to continue training in a subspecialty fellowship.

Before 2020, both the Accreditation Council on Graduate Medical Education (ACGME) and the American Osteopathic Association (AOA) provided accreditation for residency and fellowship programs. In 2014, the ACGME entered an agreement with the AOA and the American Association of Colleges of Osteopathic Medicine to have a single accreditation system in place by 2020. Currently in effect, this allows both MD and DO graduates to complete their training in ACGME-accredited programs. ACGME-accredited sponsoring institutions, which are entities with ultimate providing financial and academic responsibility for one or more accredited GME programs, are tasked with educational programs and/or health care services. According to the ACGME Data Resource Book, Academic Year 2021-2022, Texas had 55 sponsoring institutions responsible for 840 accredited training programs.

Sponsoring institution type groups self-reported by ACGME-accredited entities for the 2021-2022 academic year include:

- Academic Medical Center/Medical School
- Ambulatory Care Clinic/Office
- Children's Hospital
- Community Hospital
- Consortium

- Federally Qualified Health Center
- General/Teaching Hospital
- Independent Academic Medical Center
- Other
- Pathology Lab/Medical Examiner's Office
- Specialty Hospital
- Veterans Administration

Unlike college or medical school experience, resident physicians are contractually obligated to the residency program. Resident physicians enter a contractual arrangement with programs through a unique national matching process. Most senior medical students, graduates of international medical schools, and other physicians select their residency training through participation in the National Resident Matching Program (NRMP), which has established a uniform date of appointment and commitment to residency programs. Before the single accreditation system, osteopathic medical graduates could also choose to participate in the AOA Match program.

The NRMP process (called The Match) occurs in March. Graduating physicians of accredited U.S. medical schools and qualifying international medical graduates submit their list of preferences for residency programs, which may include several medical specialty areas and different geographic locations for their future residency training. Concurrently, each residency program submits a rank-ordered list of their preferred future residents. The two lists are then matched, and the future residents and residency programs are notified of their contractual commitments. Following graduation from medical school in the spring, medical school graduates generally begin residency training in July.

Typically, residency programs and medical specialties that fill all available positions through The Match are viewed as more competitive. NRMP data indicates that the total number of residency applicants has exceeded the number of positions available nationally for many years. According to the NRMP, the 2022 Match offered the largest number of first-year residency positions, with 36,277 positions offered, the 19th consecutive annual increase. The number of physicians registering in The Match in 2022, 47,675, was a decrease of 1,025 from 2021. Of those registered, 42,549 fully completed the process, including 19,902 U.S. senior MD graduates; 7,303 U.S. senior DO graduates; 1,700 previous graduates of U.S. medical schools; 714 previous graduates of U.S. DO schools; and 12,912 foreign-trained graduates.

Texas Residency Program Opportunities

The opportunity for a Texas medical school graduate to enter a Texas residency program is limited to the number of residency programs that accept first-year residents. First-year residency positions are available in some, but not all, medical specialties. Medical specialty areas that provide first-year residency positions are provided in [Appendix A](#). Other residency programs require physician residents to complete at least one year of training in another specialty, most commonly internal medicine, before they may enter the specialty program. Residency programs that require completion of a year or more of training before entering tend to be highly specialized.

[Appendix B](#) lists the Texas programs/tracks (by sponsoring institution) that offered first-year residency positions for Academic Year 2022-2023.

First-Year Filled Texas Residency Positions

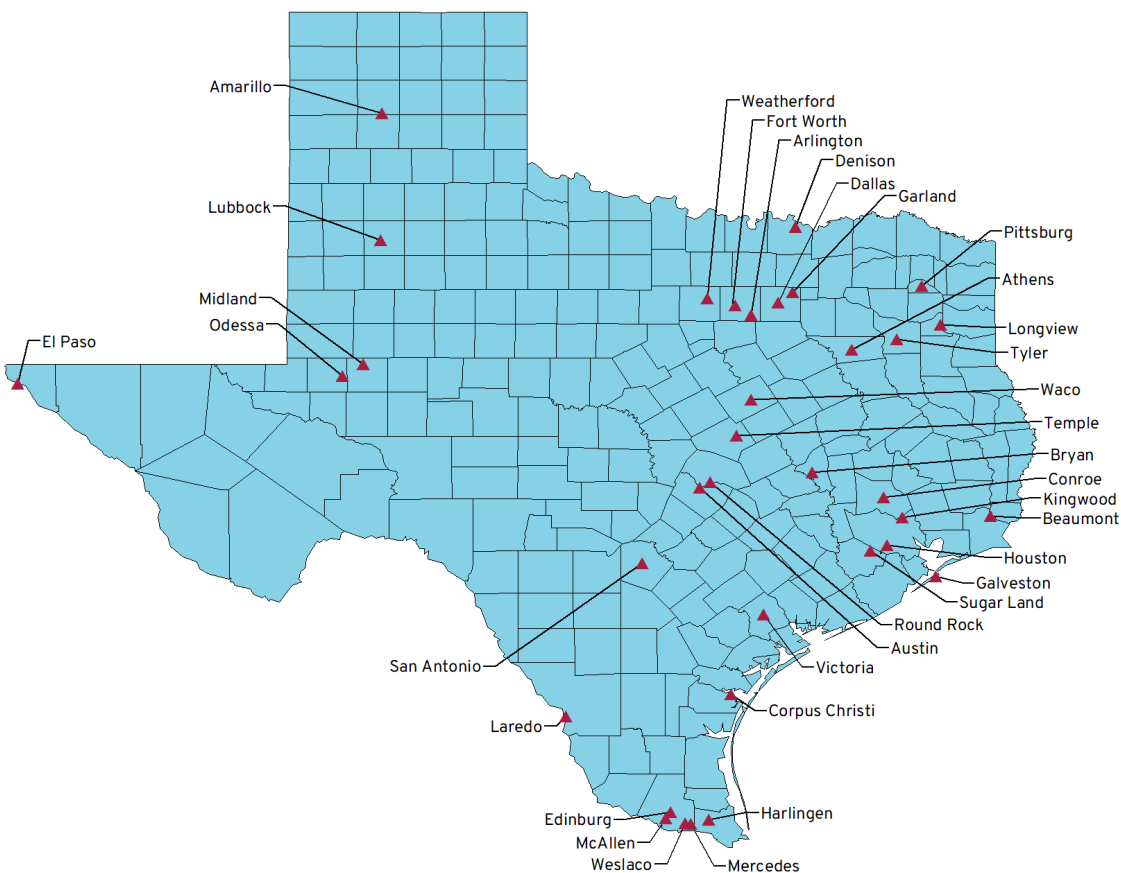
The number of first-year filled residency positions varies from year to year and depends largely on sponsoring institutions having adequate resources to educate, train, supervise, and pay for residents for the entire length of the program.

Resident physicians received an average annual stipend of approximately \$60,000 in 2020-21, according to an AAMC report. In addition to having the financial resources to provide residents' stipends, the sponsoring entity must also have adequate faculty to supervise residents. Supervision requirements vary by type of residency program. Sponsoring institutions must also ensure there are sufficient patient care opportunities for residents to gain the required experience to prepare them for independent practice.

While residents are under the supervision of faculty physicians, they provide a variety of patient care services, including diagnosis and performance of medical procedures. Often residents treat patients who have limited or no financial resources. Residents practice under the supervision of faculty physicians and, therefore, do not bill patients for their services.

Figure 7 shows the distribution of residency programs with filled first-year position opportunities in Texas.

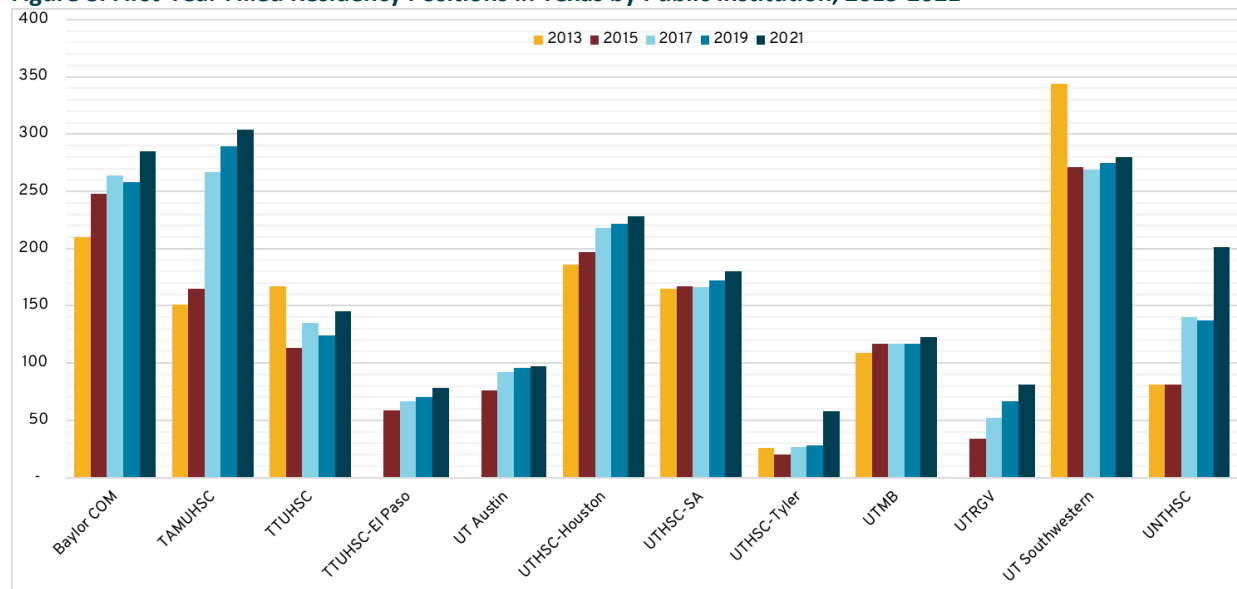
Figure 7. Location of Texas GME Programs with Filled First-Year Residency Positions in 2021



Source: THECB CBM00R

Figure 8 shows the number of Texas first-year filled resident positions reported by public institutions. Independent programs are not required to report data to the THECB. In addition, some programs may have previously been affiliated with another institution, resulting in numbers of positions shifting between institutions.

Figure 8. First-Year Filled Residency Positions in Texas by Public Institution, 2013-2021

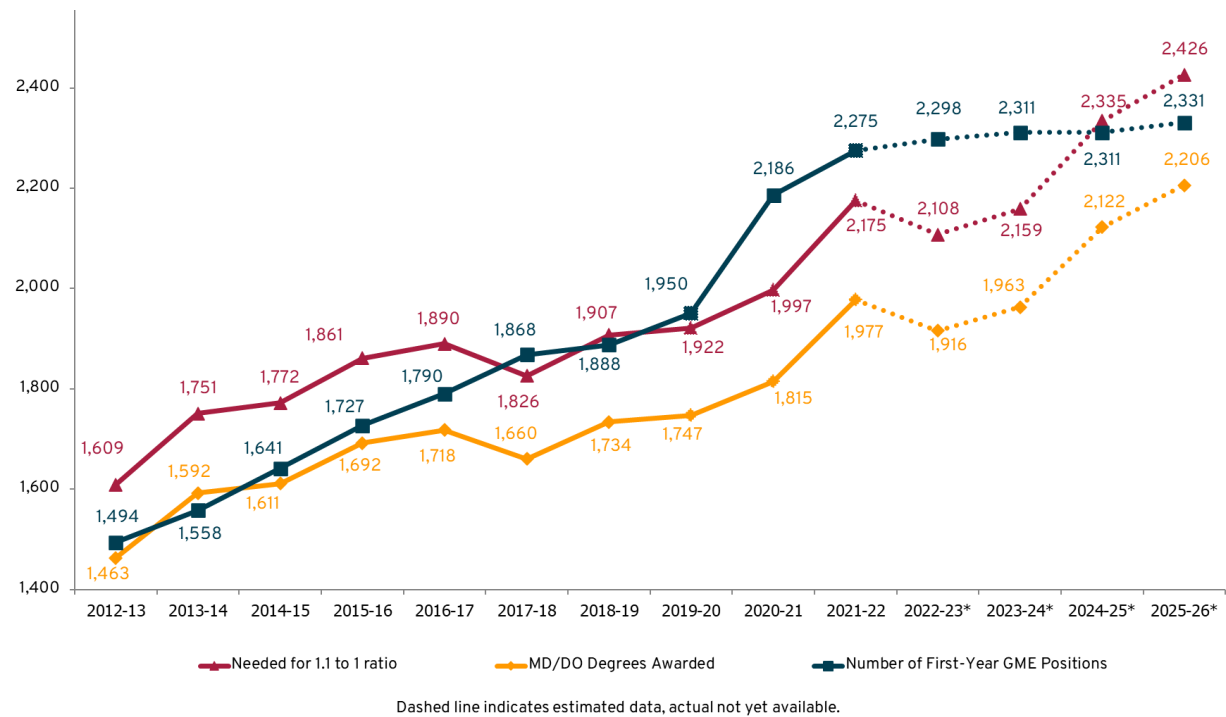


Source: THECB CBM00R; October 2022

Note: UT-Austin Dell Medical School became the sponsoring institution for residency programs located in Austin that were previously sponsored by UT Southwestern, and UTRGV became the sponsoring institution for residency programs located in the Rio Grande Valley that were previously sponsored by UTHSC-SA. TAMUHSC became affiliated with several previously independent residency programs. The University of Texas MD Anderson Cancer Center does not offer first-year residency positions.

From 2012 through 2021, the number of Texas first-year filled residency positions exceeded the number of Texas medical school graduates, except in 2013. As shown in Figure 9, achieving the goal of 1.1 first-year entering residency positions for each medical school graduate will allow every Texas medical graduate an opportunity to remain in the state for residency training and will allow graduates from other states an opportunity to enter a Texas residency program.

Figure 9. Residency Positions Needed to Achieve the Goal of a 1.1 to 1 Ratio of GME First-Year Residency Positions to Texas Medical School Graduates, 2012-2026



Source: THECB CBM009, CBM00R; ACGME and AOA, October 2022

Note: Medical school graduates are based on a 95% graduation rate and include the addition of six new medical schools since 2016

*Estimated data

Medical Education Funding

Medical School Funding

Most public Texas medical schools receive formula funding to support the instruction and operation of their osteopathic and allopathic medical students through a prescribed formula. The amount of formula funding support that Texas public medical schools and the private Baylor College of Medicine receive is set forth in the state's biennial budget document, the General Appropriations Act (GAA).

For the current 2022-23 biennium, I&O Formula funding was maintained at \$45,732 per medical student for each fiscal year, the same amount provided in the prior biennium. The most recent funding amount is 15% less than the original \$54,000 (unadjusted dollars) per medical student provided each fiscal year when the health-related institutions' formula funding was established in 1999.

The private Baylor College of Medicine also receives formula funding to support its undergraduate medical students. Its formula funding is trustee to the THECB and is provided to the institution to support its Texas students. This arrangement also allows the institution to leverage additional funding through the Texas Health and Human Services Medicaid program.

Graduate Medical Education Funding

The federal financing of graduate medical education is complex and presents limited opportunities for existing teaching hospitals to add new hospital-based residency programs and/or residency positions to existing programs. The Balanced Budget Act of 1997 froze resident positions funded through Medicare at 1996 levels for hospitals that provided training at that time. Medicare has been the largest funder of GME programs since 1965. The "cap" on positions has forced existing teaching hospitals to seek out creative funding solutions to expand existing or create new residency programs.

The 2003 Medicare Modernization Act reassigned 3,000 unused Medicare-funded positions, and another 1,354 were redistributed under the Affordable Care Act. In addition, rural hospitals starting GME programs and urban hospitals starting GME programs that include rural training have been granted some cap adjustments.

The Consolidated Appropriations Act of 2021 allows for the creation and distribution of 1,000 new GME positions, which is the first expansion in Medicare-funded positions since 1996. Funded positions will be distributed beginning in FY 2023 with 200 positions released annually. No hospital will receive more than 25 full-time equivalent residency positions, and priority will be given to rural hospitals, hospitals training in excess of current caps, programs established after January 1, 2020, and hospitals serving health professional shortage areas.

Texas provides some funding to support residency training affiliated with health-related institutions through a formula allocation. In the 2022-23 biennium, health-related institutions received \$5,970 per medical resident each fiscal year to support faculty costs related to supervising a resident and maintain the same funding amount provided in the 2020-21 biennium. This level of support equates to about 4% of the estimated cost of \$150,000 to educate a resident annually.

Texas Higher Education Coordinating Board GME Initiatives

There are a number of grant programs the THECB administers related to undergraduate and graduate medical education. Table 3 shows these programs and their legislative appropriations for the last five biennia. This section also includes a description of each program.

Table 3. Texas Higher Education Coordinating Board Grant Programs Supporting Medical Education

	FY 14–15	FY 16–17	FY 18–19	FY 20–21	FY 22 -23
Graduate Medical Education Expansion Program	\$14,250,000	\$53,000,000	\$97,050,000	\$157,200,000	\$199,050,000
Family Practice Residency Program	\$5,030,000	\$16,780,000	\$10,000,000	\$10,000,000	\$9,500,000
Joint Admissions Medical Program	\$10,206,794	\$10,206,794	\$10,206,794	\$10,206,794	\$9,696,794
Emergency Trauma Care Education Program	\$4,755,450	\$5,419,338	\$4,154,152	\$3,926,829	\$3,914,406
Statewide Preceptorship Program	0	\$3,000,000	\$3,000,000	\$3,000,000	\$2,850,000

Graduate Medical Education Residency Expansion

GME Expansion Program

The 83rd Texas Legislature, Regular Session, initiated several new programs to address the shortage of first-year residency positions. The initial effort, which started in FY 2014, appropriated more than \$14 million in General Revenue to the THECB to administer grant programs that support efforts to increase the number of first-year residency positions. Funding has continued through FY 2022-2023 with an appropriation for the biennium of \$198,571,310. GME Expansion Program funding has supported the creation of 472 new first-year residency positions between 2014 and 2021.

GME Planning and Partnership Grants

The GME Planning and Partnership Grants program was established in 2013 by the Texas Legislature to assist in increasing the number of entities with first-year residency positions. The program provides support for hospitals, medical schools, and community-based health centers in the state interested in

creating a new residency program with first-year residency positions. The program encourages new partnerships between applicants and existing GME programs.

The GME Planning and Partnership Grants program received an appropriation for the FY 2022-2023 biennium of \$478,690. The THECB will release a request for applications for the next planning grant awards in spring 2023. Table 4 lists the numbers of and amounts for awards granted from 2014 through 2021.

Table 4. GME Planning and Partnership Grants, 2014-2021

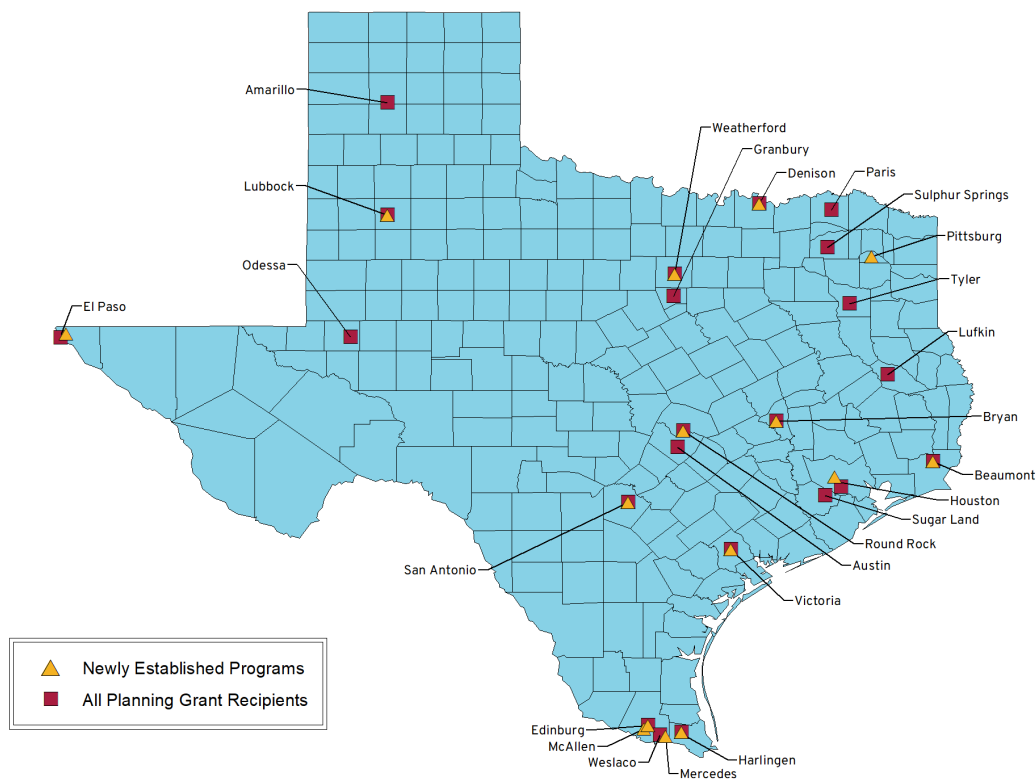
Award Year	Awards Granted	Total Award Amount
2014	8	\$1,200,000
2015	1	\$150,000
2016	11	\$2,734,975
2019	4	\$999,579
2021	11	\$2,750,000

Source: THECB, October 2022

As a result of these planning grants, 19 new residency programs received national accreditation and enrolled their first residents, creating 154 new first-year residency positions.

Figure 10 shows the location of awarded entities as well as the resulting newly established programs with first-year residency positions.

Figure 10. Location of Entities Receiving a Planning and Partnership Grant and Resulting Newly Established Programs with First-Year Residency Positions, 2014-2021



Source: THECB, October 2022.

Family Practice Residency Program

Texas family medicine residency programs receive additional funding through the THECB's Family Practice Residency Program. Under this program, eligible family medicine residency programs received an additional amount of \$5,005.49 per resident in FY 2022, down from \$5,889.43 per resident in FY 2020. These funds, combined with the formula allocation, cover approximately 11% of the estimated cost of training a family medicine resident.

Joint Admissions Medical Program

The Joint Admission Medical Program is a unique medical school pipeline established by the 77th Legislature in 2001 to support and encourage highly qualified, economically disadvantaged Texas students pursuing a medical education. This includes a partnership between 13 Texas medical schools and 68 public and private four-year undergraduate institutions.

Emergency and Trauma Care Education Partnership Program

The Emergency and Trauma Care Education Partnership Program was established in 2011 and provides funding support for emergency and trauma care partnerships between graduate medical education programs and hospitals to increase training opportunities in the medical specialty/subspecialty areas of emergency medicine, pediatric emergency medicine, and surgical critical care. The program provides

similar support for partnerships between hospitals and graduate professional nursing programs to increase the education and training experiences in emergency and trauma care for registered nurses pursuing graduate-level education.

Statewide Preceptorship Program

The Statewide Preceptorship Program (SPP) provides funding support to preceptorship programs in three primary care specialties: family practice, general internal medicine, and general pediatrics. The programs encourage Texas medical students to choose primary care careers by offering direct student support for a monthlong experience in one of the specialties. The SPP began in FY 2008 and operated until FY 2011. State appropriations ceased for FY 2012-2015; however, in FY 2016, state appropriations resumed, and for FY 2022-2023, the Legislature appropriated \$2,850,000.

Conclusion

As Texas continues to increase its diverse population, there will be a growing demand for physicians to provide adequate healthcare for its residents. Since the state has substantially increased the number of medical schools in the last decade, it is essential to increase the number of residency positions as well to meet the 1.1 to 1 goal the state has established. This goal ensures that all graduates of Texas medical schools have the opportunity to enter a Texas residency program. This goal is imperative to meet since the state invests significantly in medical school students and wants to retain as many graduates as possible to contribute to growing the Texas physician workforce.

Since 2013, the state has established several grant programs to support medical education. This investment will need to be maintained to provide medical school graduates ample opportunities for obtaining first-year residency positions in the state. Without the funding to grow the number of first-year residency positions, Texas medical school graduates will be forced to leave the state and are less likely to return to Texas to practice.

Appendix A: Medical Specialties with First-Year Resident Positions

Anesthesiology	Pediatrics
Dermatology	Physical medicine and rehabilitation
Emergency medicine	Plastic surgery
Family medicine	Plastic surgery – integrated
Internal medicine	Preventive medicine
Medical genetics and genomics	Psychiatry
Neurological surgery	Radiation oncology
Neurology	Radiology-diagnostic
Child neurology	Interventional radiology – independent
Nuclear medicine	Interventional radiology – integrated
Obstetrics and gynecology	Surgery
Ophthalmology	Vascular surgery – integrated
Orthopaedic surgery	Thoracic surgery – integrated
Osteopathic neuromusculoskeletal medicine	Urology
Otolaryngology – head and neck surgery	Internal medicine/Pediatrics
Pathology – anatomic and clinical	

Source: ACGME Data Resource Book, Academic Year 2021-2022

**Appendix B: Texas Programs/Tracks
(by Sponsoring Institution) that Offered First-Year Residency Positions for
Academic Year 2022-2023**

Sponsoring Institution	Number of Programs/Tracks Offering First-Year Residency Positions for AY 2022-23
Baptist Hospital of Southeast Texas	1
Baylor All Saints Medical Center Fort Worth	5
Baylor College of Medicine	39
Baylor Scott and White Medical Center – Round Rock	2
Baylor University Medical Center	10
CHRISTUS Health	4
Conroe Medical Education Foundation	1
DeTar Healthcare System	1
Driscoll Children’s Hospital	1
HCA Healthcare Corpus Christi Medical Center – Bay Area	1
HCA Healthcare Las Palmas Del Sol	3
HCA Houston Healthcare/University of Houston	7
HCA Medical City Healthcare UNT-TCU Graduate Medical Education	9
John Peter Smith Hospital (Tarrant County Hospital District)	6
Memorial Hermann Health System	1
Methodist Health System Dallas	5
Methodist Hospital (Houston)	12
St. David’s Healthcare Graduate Medical Education	2
Texas A&M College of Medicine – Scott and White Medical Center	18
Texas A&M University School of Medicine	2
Texas Health Resources	5
Texas Institute for Graduate Medical Education and Research (TIGMER)	5
Texas Tech University Health Sciences Center (Permian Basin)	11
Texas Tech University Health Sciences Center at Lubbock	16
Texas Tech University HSC El Paso	12
Texoma Medical Center	1
University of Texas at Austin Dell Medical School	18
University of Texas Health Science Center at Houston	27
University of Texas Health Science Center at Tyler	7
University of Texas Health Science Center San Antonio Joe and Teresa Lozano Long School of Medicine	20
University of Texas Medical Branch Hospitals	19
University of Texas Rio Grande Valley	14
University of Texas Southwestern Medical Center	31
Waco Family Medicine - Institute	1

Source: NRMP Program Results 2018-2022 Main Residency Match; ACGME Sponsoring Institutions; prepared by THECB

Note: Not all ophthalmology and urology programs may be included since some programs only match first-year positions through the San Francisco (SF) Match for Ophthalmology and American Urological Association (AUA) Match for Urology. These matching services do not provide public Match data by program. In addition, if a program matched outside NRMP, the data will not be included in this appendix.

Texas Higher Education

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This document is available on the Texas Higher Education Coordinating Board website:
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