

TEXAS HEALTH CARE POLICY COUNCIL

PHYSICIAN WORKFORCE AND GRADUATE MEDICAL EDUCATION IN TEXAS



DECEMBER 2008

CONTENTS

EXECUTIVE SUMMARY

SECTION ONE:

PHYSICIAN WORKFORCE FROM A NATIONAL PERSPECTIVE	7
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SECTION TWO:

CHARACTERISTICS OF THE PHYSICIAN WORKFORCE IN TEXAS	11
---	----

SECTION THREE:

DISCUSSION OF PHYSICIAN WORKFORCE POLICY QUESTIONS	25
--	----

SECTION FOUR:

POLICY OPTIONS	31
----------------	----

APPENDIX A:

STAKEHOLDER FORUM SUMMARY	35
---------------------------	----

APPENDIX B:

SUMMARY OF STATE PHYSICIAN WORKFORCE REPORTS	45
--	----

APPENDIX C:

PROJECTIONS OF PHYSICIAN, NURSE PRACTITIONER, AND PHYSICIAN ASSISTANT WORKFORCE REQUIREMENTS FOR TEXAS, 2007-2025	53
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APPENDIX D:

GLOSSARY	59
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ACKNOWLEDGEMENTS	61
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TEXAS HEALTH CARE POLICY COUNCIL

-POLICY REPORT- PHYSICIAN WORKFORCE AND GRADUATE MEDICAL EDUCATION IN TEXAS

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EXECUTIVE SUMMARY

SUMMARY

A central statutory charge to the Texas Health Care Policy Council (the Council) is to assess the state's health workforce needs and conduct workforce planning activities. In 2006, the Council developed a health workforce strategic plan entitled "Commitment to Health Workforce Planning: A Strategy for Addressing Texas' Health Workforce Needs." One of the primary findings highlighted in the strategic plan is that an adequate supply of qualified workers is a major concern for health care providers and is essential for health care quality and the economic viability of the Texas health care system. This is particularly important in rural and underserved areas of Texas, where recruitment and retention of health care professionals continues to be a challenge.

This report assesses the status of the physician workforce, projects the number of physicians Texas will need in 2025 to maintain the state's current physician-to-population ratios, and identifies several policy options to:

- ★ enhance the medical regulatory environment in Texas;
- ★ expand the number of graduate medical education (GME) residents training in Texas; and
- ★ address the inequities in the geographic distribution of physicians through:
 - ★ incentives for innovations in GME training;
 - ★ a nationwide media and marketing campaign, and
 - ★ additional support of existing state programs that support economically disadvantaged students and encourage practice in rural or other medically underserved areas (MUAs) in Texas.

BACKGROUND

LEGISLATIVE CHARGE

Section 26 of Senate Bill 10, 80th Texas Legislature, directed the Council to conduct a study on GME needs in preparation for the 81st legislative session. The bill directs the Council to coordinate the study with the Institute of Demographic and Socioeconomic Research at The University of Texas at San Antonio, the Regional Center for Health Workforce Studies at the Center for Health Economics and Policy of The University of Texas Health Science Center at San Antonio, and the Texas Medical Board (TMB).

TEXAS HEALTH CARE POLICY COUNCIL

The interim study is to focus on increasing GME programs and slots and physicians practicing medical specialties and to: (1) examine feasibility of using a percentage of physician licensing fees to increase GME programs and slots; (2) put emphasis on and recommend a plan of action for increasing GME programs and slots in medically underserved areas of the state, and physicians practicing specialties underrepresented in the state; and (3) determine number of medical residents who obtain a license to practice medicine in the state on completion of a GME program.

The results of the study, including the data considered in preparing the study, must be reported to the Governor, Lieutenant Governor, Speaker of the House, House Committee on Public Health, and Senate Committee on Health and Human Services by December 1, 2008.

SUMMARY OF THE COUNCIL'S WORK

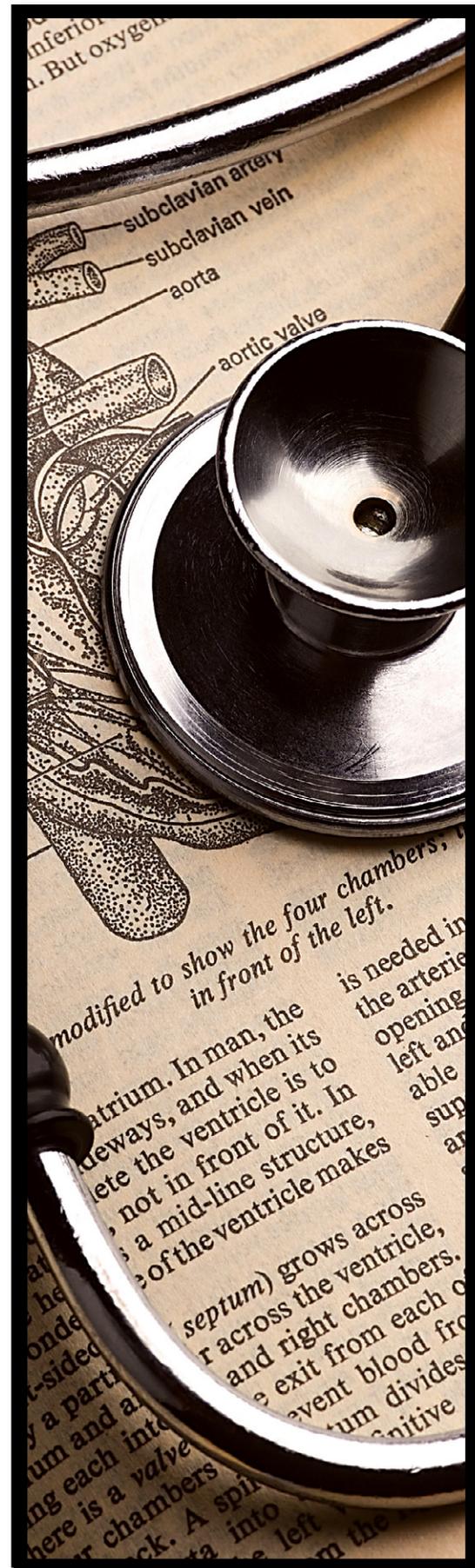
To inform the work of the Council, the Council co-hosted a physician workforce stakeholder forum with the Texas Medical Association (TMA) in April 2008 to assess the physician workforce needs for Texas and the role of GME programs. The 75 attendees received presentations from the Association of American Medical Colleges (AAMC), the Texas Institute of Demographic and Socioeconomic Research, the Statewide Health Coordinating Council, the Texas Higher Education Coordinating Board (Coordinating Board), and the TMA.

The event was designed to provide participants from various stakeholder groups, including medical schools, teaching hospital professional associations, and state health agencies, with an opportunity to offer input into the study and to provide a forum for discussion of the state's physician workforce needs. The forum was attended by several legislative offices as well, including the offices of the: Lieutenant Governor, Speaker of the House, Senate Finance Committee, Senate Health and Human Services Committee, House Appropriations Committee, House Public Health, and House Select Committee on Higher and Public Education Finance. A more detailed summary of the forum is available in Appendix A.

The Council and the Texas Health Workforce Planning Partnership, a standing subcommittee of the Council, also held a total of four public meetings in 2008 to receive expert testimony and to discuss the key findings and recommendations included in this report.

KEY FINDINGS

- ★ Demographic changes present challenges for the future and will affect the demand for physicians and impact the delivery of health care in Texas.
- ★ The number of new physicians practicing in Texas has increased significantly and is expected to continue to grow.
- ★ Despite significant growth in new physicians practicing in Texas, over the next decade population growth is projected to outpace physician supply increases.
- ★ The demographics and characteristics of Texas physicians are changing.
- ★ Texas rates of physicians per 100,000 population are below national rates. This is particularly evident in border and rural areas of Texas, where the rates are typically below the state's rate for direct patient care (DPC) specialties.
- ★ Despite efforts at both the federal and state level, distribution of physicians remains a challenge for the state.
- ★ Texas medical school enrollments are at historically high levels. Entry-level enrollments are on track to meet the AAMC's recommended 30 percent growth rate.
- ★ The number of residency positions in Texas is growing but doesn't match the growth in entry-level medical school enrollments.
- ★ Physicians are more likely to remain in the state in which they complete their residency training.
- ★ Although state general revenue (GR) funding for GME in the current biennium is higher than in the previous two biennia, total funding for GME has decreased. Since 2005, the Texas Legislature has not provided state GR to support Medicaid GME at hospitals.
- ★ The State Demographer's middle (2000-2004) growth scenario implies a need for a 50 percent increase in specialists, and a 40 percent increase in primary care physicians by 2025.
- ★ A projected supply of 51,876 DPC physicians in 2025 is just below the 54,023 DPC physicians for which the State Demographer projects a need under the middle (2000-2004) growth scenario.
- ★ Greater use of non-physician practitioners, particularly physician assistants and nurse practitioners, may alleviate the potential shortage of physicians and increase access to care.



POLICY OPTIONS

GME-RELATED RECOMMENDATIONS

Below are several recommendations the Council considered that are GME-related and are included in the scope of this report. The Council, believes implementation of these recommendations is essential to ensuring Texas has an adequate supply of physicians in the future.

Establish a New Residency Training Innovation Grant Program

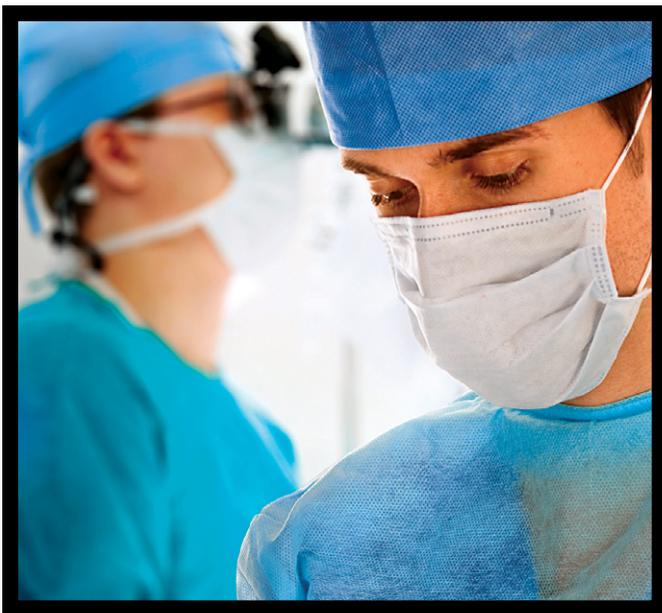
Establish a new Residency Training Innovation Grant Program to promote innovation and exploration of new GME training models to address future practice needs, with a particular focus on physician preparation for practice in rural and other underserved areas, or in underrepresented specialties. The Council on Graduate Medical Education's 19th Report, "Enhancing Flexibility in Graduate Medical Education", suggests that non-hospital clinical venues could include private medical practices, health maintenance organizations, and community health centers among others. The expected outcome of each grant project will be to: (1) promote innovation in the production of well-trained physicians that meet the diverse community needs in Texas; and (2) demonstrate the measurable effects and sustainability of innovative training models.

The Council supports the creation of this new program with the initial appropriation of \$5.0 million in funding to the Coordinating Board for FY 2010-11.

Increase Formula Funding for GME

The number of graduates from Texas medical schools is expected to be about 1,433 by 2012 compared to the current 1,314 graduates. In comparison, there are currently 1,481 entry-level GME slots. According to the Coordinating Board's 2008 "Projecting the Need of Medical Education in Texas" report, the "...state should encourage growth of more first-year residency positions with a goal of 10 percent more first-year, entry-level residency positions than graduating medical students."

To help ensure the state can accommodate future Texas medical school graduates and to attract medical graduates from other states and countries, the Council supports adding new GME positions. The 80th Texas Legislature appropriated \$62.8 million in GME formula funding in Fiscal Year (FY) 2008-09, a base value of \$5,600 per resident. For FY 2008-09, health-related institutions are required to use GME formula funding to increase the number of resident slots and to support faculty costs relating to GME.

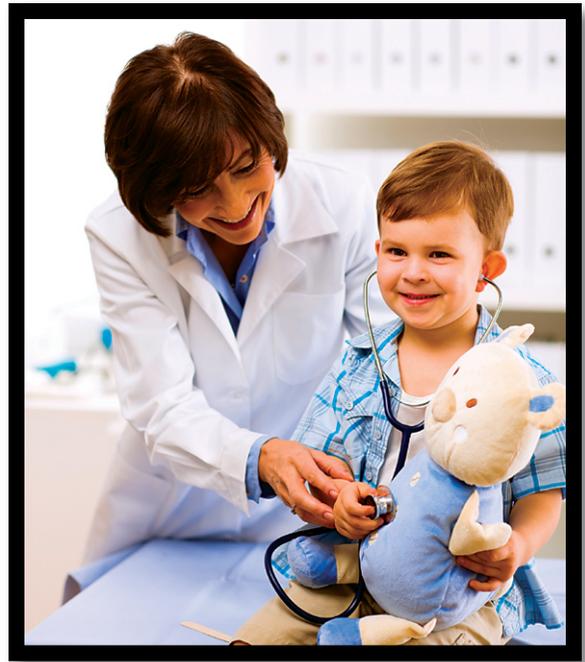


The Council supports \$16.5 million in additional formula funding for FY 2010-11 to increase funding per resident from \$5,600 to \$7,500 per year. To achieve the Coordinating Board's goal to increase the number of first-year residency slots by 10 percent more than medical school graduates, an additional 150 first-year entry residency positions are needed by 2012. The Council encourages the health-related institutions to offer new residency positions with any additional GME funding.

Increase Funding for the Texas Family Practice Residency Program

The Family Practice Residency Program was established to increase the number of physicians selecting family practice as a specialty and improve the distribution of physicians to rural and underserved communities. Since its inception in 1977, the program has provided support to 7,100 family practice residents.

The 80th Texas Legislature appropriated \$17.5 million for this program in FY 2008-09. The Council supports \$14.6 million in additional funding to the Coordinating Board for FY 2010-11 to expand this program. If additional funding were provided, the per-resident funding level would increase from its current level of \$12,600 to \$15,000. Additional funding would allow three residency programs not currently supported to receive funding.



Enhance GME Data Collection

The Coordinating Board should maintain and expand the collection of data related to GME so they can make recommendations relating to future funding based on outcomes as it relates to practice type, location, and retention in Texas. Residency programs that have success in training under-represented specialties, or residents that locate in rural or underserved areas should receive additional financial support through state grants or additional formula incentives.

OTHER PHYSICIAN WORKFORCE RECOMMENDATIONS

Below are several recommendations the Council considered that are not GME-related and thus fall outside the scope of this report. The Council, however, believes implementation of these recommendations is essential to ensuring Texas has an adequate supply of physicians in the future.

Enhance the Medical Regulatory Environment in Texas

The Council supports additional funding to the TMB in the amount of \$2.5 million for the purpose of further streamlining the licensure and enforcement process and thereby improving the medical regulatory environment in Texas.

Launch a Nationwide Physician Recruitment Campaign

Launch a nationwide media and communications recruitment and marketing campaign to increase the number of physicians migrating to Texas, with a particular emphasis on underrepresented specialists and physicians that establish medical practices in rural or underserved areas in Texas.

The Council supports the appropriation of \$400,000 to the Office of Rural and Community Affairs to support the administration of a recruitment and marketing campaign.

Increase Funding for the Physician Loan Repayment Program

The Physician Loan Repayment Program is a nationally recognized program designed to recruit physicians to serve in rural or other MUAs of the state. With 60 percent of the program's participants still practicing in health care shortage areas, 72 percent staying in the Rio Grande Valley, and almost 51 percent still practicing in rural Texas, this program is an important tool in addressing the distribution of physicians in Texas. The 2008 annual loan repayment of \$9,000 was not competitive with amounts offered by other states with similar programs. To address this issue, the Coordinating Board is implementing the following increased loan repayment amounts based on years of service in the program:

- ★ \$13,000 for first-year providers;
- ★ \$15,000 for second- and third-year providers;
- ★ \$18,000 for fourth-year providers; and
- ★ \$20,000 for fifth-year providers.

The 80th Texas Legislature appropriated \$922,047 for this program in FY 2008-09. The Council supports \$2.0 million in new funding (\$2.9 million total) to the Coordinating Board for FY 2010-11 to expand this program. This additional funding will sustain increased loan repayment amounts and increase participation in the program.

Research and Explore New Health Care Service Delivery Models

Texas' academic health centers, health professional associations, and other health care system participants should identify novel delivery models that incorporate strong principles of patient safety, oversight, and accountability. Under new and different health care delivery models not contemplated at the time the practice acts and board rules were developed, providers may be able to provide safe, high-quality care. Therefore, the health professions regulatory boards and other bodies regulating health professions and facilities should be encouraged to grant waivers, on a case-by-case basis, to providers or facilities that develop and propose novel models of care delivery that the regulatory bodies reasonably believe will meet their public safety goals. Individuals or institutions proposing such waivers would need to include a strong evaluation component and regular reports back to the regulatory body.

Increase Funding for the Joint Admission Medical Program

The Joint Admission Medical Program provides services to support and encourage highly qualified, economically disadvantaged students pursuing a medical education. Students receive both undergraduate and medical school support through mentoring and scholarships. As of fall 2008, there were 284 students participating in the program.

The 80th Texas Legislature appropriated \$5.6 million for this program in FY 2008-09. The Council supports an increase of \$10.0 million in additional funding to the Coordinating Board for FY 2010-11 to expand this program. This additional funding will support 105 new students in the program.

FISCAL IMPACT

The total cost of the recommendations outlined above for FY 2010-11 is \$51.0 million. The TMB collected \$39.7 million in revenue over the agency's biennial budget for FY 2008-09. It is anticipated that the TMB will collect at least this level of excess revenue in FY 2010-11. This excess revenue could be used to fund a majority of the policy options discussed above.

SECTION ONE:

PHYSICIAN WORKFORCE FROM A NATIONAL PERSPECTIVE

Is there a physician workforce shortage or surplus? This question has been debated over the last 28 years with expert predictions of a physician surplus in the 1980s and 90s. Most experts are now predicting a looming physician shortage. A few experts, however, believe that we have enough physicians already and that adding more physicians will not result in better health care. The information in this section summarizes the recommendations of several national organizations – the Association of American Medical Colleges (AAMC), the Council on Graduate Medical Education (COGME), and the Dartmouth Atlas of Health Care – on adequacy of the physician workforce in the United States.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

The AAMC Center for Workforce Studies recommends a 30 percent growth in enrollments by 2015 as a preemptive measure to mitigate a predicted national physician shortage of 123,000 physicians by 2025. The AAMC's shortage prediction is based on the following trends:

The AAMC represents 129 accredited U.S. medical schools; nearly 400 major teaching hospitals and health systems; and 94 academic and scientific societies.

- ★ Limited U.S. medical school enrollment growth in the last 20 years.
- ★ Projected population growth trends and the aging of America (population over 65 years of age will double from 2000 to 2030). At current rate of physician production, the AAMC anticipates the U.S. population will begin to grow faster than physician supply by 2015.
- ★ High expectations among Americans of the U.S. health care delivery system; likely to be exemplified by the baby-boomer generation as they reach retirement age over the next decade.
- ★ As a reflection of the lack of growth in medical school enrollments in the past 20 years and the overall aging of the baby-boomer generation, the physician workforce is also experiencing an aging trend. Physicians over age 55 doubled from 1985 to 2006, and now number 253,000.
- ★ Younger physicians appear to work fewer hours.
- ★ Continued rise in health care utilization, particularly among Americans over age 45.
- ★ Lack of evidence that new medical interventions and advancements in health care delivery will result in decreased physician demand. Conversely, recent trends indicate new procedures result in greater demand. For example, recent advances in treating and managing cancer are creating greater demands for health care among the growing numbers of cancer survivors.

Some U.S. medical schools are responding to AAMC's call to action with close to 30 new schools under development or in planning stages, for an estimated 5,500 additional enrollments by 2013. Entry-level enrollments in Texas medical schools are on track to meet AAMC's recommended 30 percent growth rate.

Despite the gains in medical school enrollments, AAMC reports that states have generally been slow to expand graduate medical education (GME) programs. Increasing numbers of international medical graduates, a 26 percent increase since 1996, are training in U.S. GME programs. Most increases, particularly in internal and family medicine, occurred in specialties passed over by U.S. medical graduates. Much of recent GME growth has been in sub-specialty programs, not entry-level training positions.

The AAMC has made the following recommendations:

- ★ Improvements in efficiencies and effectiveness of medical care are needed to maximize available physician workforce.
- ★ To impact physician geographic mal-distribution, there is a need for: 1) loan repayment and other fiscal incentives to practice in underserved areas; 2) research on factors that influence a physician's choice of practice location; 3) evaluation of the role of academic health centers in reaching out to underserved areas; 4) innovative practice models such as part-time or volunteer positions to better allow physicians to fill health care gaps in underserved areas; and 5) a need for interdisciplinary training of physicians and increased use of non-physician practitioners.
- ★ Expansion of the National Health Service Corps awards by 1,500 a year.

COUNCIL ON GRADUATE MEDICAL EDUCATION

Concerns about physician shortages have fueled demand for information on health professional workforce trends and training issues. To help meet the demand for information, the COGME has published several reports, including the 16th and 19th reports which are summarized below. The 16th Report, "Physician Workforce Policy Guidelines for the United States, 2000-2020," assesses the current and future supply and demand for physicians in America. The 19th Report, "Enhancing Flexibility in Graduate Medical Education," elaborates on the premise of the 16th Report and finds that if workforce demands are to be met, the number of graduate medical trainees needs to be expanded and the delivery of education needs to improve.

The COGME was authorized by Congress in 1986 to provide ongoing assessment and make policy recommendations to the nation with respect to the adequacy of the supply and distribution of physicians in the United States.

The 16th Report, "Physician Workforce Policy Guidelines for the United States, 2000-2020"

In this report, the COGME assessed the likely future supply, demand, and need for physicians in the U.S. through 2020 for both generalists and non-generalist physicians. The report forecasts future supply based on age, gender, specialty distribution, educational background, and current trends of new entrants into residency training from domestic and foreign medical schools. The report differentiates between demand and need. Demand is projected based on current demand by the insured and uninsured, whereas need assumes that the whole population will use medical services at the higher (insured) rate.

The report found that the supply of U.S. practicing physicians will increase from 781,200 in 2000 to 971,800 in 2020. However, after 2010 the growth in supply will slow due to aging in the current physician population. After 2015, population growth will exceed the rate of growth in the physician workforce. The most probable aggregate projection suggests that the supply of physicians will reach 1.02 million full-time equivalents (FTEs) in 2020, bringing the per capita number of physicians up to 298 per 100,000 population, compared with 283 per 100,000 population in 2000.

Demand and need projections are likely to grow over the same period. The U.S. population is expected to grow by 18 percent between 2000 and 2020 and the number of Americans over 65 will increase from 35 to 54 million. Both of these factors are expected to drive demand for physician services up to between 1.03 and 1.24 million FTEs by 2020. The need for physician services is expected to grow even more dramatically to between 1.09 and 1.17 million FTEs in 2020.

The 16th Report makes a number of recommendations for physician workforce planning. Among these are to:

- ★ increase the number of physicians entering residency from 24,000 a year to 27,000 by 2015;
- ★ increase total enrollment in U.S. medical schools by 15 percent from their 2002 levels;
- ★ increase the number of residency and fellowship positions eligible for Medicare funding;
- ★ develop systems to track the supply, demand, need, and distribution of physicians;
- ★ undertake specialty-specific studies to inform the medical education community;
- ★ promote efforts to increase the productivity of physicians including alternative models of care, utilization of new technologies, and introduction of reimbursement policies to support productivity enhancements;
- ★ expand programs and develop policies that address geographic mal-distribution, improve access to underserved communities, and promote workforce diversity; and
- ★ undertake a comprehensive reassessment within the next four years to guide future decisions on medical education capacity.

The 19th Report, “Enhancing Flexibility in Graduate Medical Education”

As per the recommendations of the previously discussed report, the COGME issued “Enhancing Flexibility in Graduate Medical Education” to guide future decisions on medical education capacity. It found that, despite increasing medical school enrollments, several constraints on GME could result in an increasing number of U.S.-trained physician residents without a proportional increase of independent physicians at the end of the medical education pipeline.

Increased flexibility in curriculum, structure, funding, and accreditation of GME programs could address this foreseeable constraint on the physician workforce. Among the report’s recommendations are:

- ★ increase funded GME positions by 15 percent;
- ★ decentralize training sites, allowing for new training venues and enhancing the quality of training for residents;
- ★ revise rules governing Centers for Medicare and Medicaid Services (CMS) that restrict the application of Medicare GME funds to limited-care sites;
- ★ assess and rewrite statutes and regulations that constrain flexible GME policies to respond to emergency situations;
- ★ develop ways for local and regional groups to determine workforce needs, assign accountability, allocate funding, and develop innovative training models which meet the needs of the community and trainees; and
- ★ link continued funding to meeting pre-determined performance goals.

DARTMOUTH ATLAS OF HEALTH CARE

For more than 20 years, the Dartmouth Atlas Project has documented significant variations in how medical resources are distributed and used in the United States. The project uses Medicare data to provide comprehensive information and analysis about national, regional, and local markets, as well as individual hospitals and their affiliated physicians.

Since 1996, the Dartmouth Atlas of Health Care has been examining patterns of health care delivery and practice across the United States, as well as evaluating the quality of health care.

Several relevant observations regarding physician workforce trends have emerged from the Dartmouth Atlas Project. The Dartmouth researchers have documented dramatic variations in physician supply across the country. Projections of a 10 percent physician shortage based on national supply ratios have led the COGME, the AAMC, and others to call for increases in physician education. However, the regional supply of physicians across the country varies by more than 50 percent in some cases (169.4 physicians per 100,000 population in the lowest quintile of regions versus 271.8 physicians per 100,000 population in the highest quintile of regions), with no corresponding variation in quality, access, outcomes, or patient satisfaction. Areas with higher physician supply ratios do have higher utilization rates and costs.

The observation that similar quality, access, outcomes, and patient satisfaction can be achieved in regions with very different physician supply ratios suggests several corollaries:

- ★ National physician supply ratios are not an appropriate metric for determining adequacy of regional physician supply.
- ★ If utilization rates for medical services in the whole country mirrored those in areas with the lowest physician supply ratios, the current levels of physician supply, medical school enrollment, and GME would be more than adequate to meet future demand, with no decrease in quality, access, outcomes, or patient satisfaction.
- ★ There are limited, if any, individual- or population-health benefits to high physician supply ratios.
- ★ Increasing the physician supply ratio (e.g., by funding medical school or GME growth) in a region with a low physician supply (e.g., Texas) is not likely to improve individual or population health, but is likely to increase regional health care costs. Other public health programs and health care interventions can lead to improvements in individual and population health at much lower cost than increasing medical school enrollments and funding GME.

OTHER STATE STUDIES

In the last five years, 20 other states have conducted physician workforce studies. Summaries of many of these reports are available in Appendix B.

SECTION TWO:

CHARACTERISTICS OF THE PHYSICIAN WORKFORCE IN TEXAS

TEXAS DEMOGRAPHICS

KEY FINDING

Demographic changes present challenges for the future and will affect the demand for physicians and impact the delivery of health care in Texas.

- ★ Texas is the second largest state in the United States. With a population change of 3 million between 2000 and 2007 (14.6 percent increase), Texas had the largest numerical increase and is the fourth fastest growing state.
- ★ The population of Texas is projected to continue to grow and change according to age and racial/ethnic composition. The state's non-Anglo population is expected to grow at a faster rate than the Anglo population, and the number of persons age 65 or older is projected to account for a larger share of the state's population.
- ★ The number of, and costs associated with visits to physicians, length of hospital stays, and nursing home residents are expected to grow in both the short- and long-term.
- ★ Demographics, along with health care utilization trends, life style factors, rates of major and chronic illnesses, and public expectations, may affect the demand for physicians.

CURRENT PHYSICIAN SUPPLY

KEY FINDING

The number of new physicians practicing in Texas has increased significantly and is expected to continue to grow.

- ★ Approximately 45,057 physicians are actively practicing in Texas (42,195 MDs and 2,861 DOs). Of that number, approximately 37,177 provided direct patient care (DPC) to Texans in 2007 (see Figure 1).

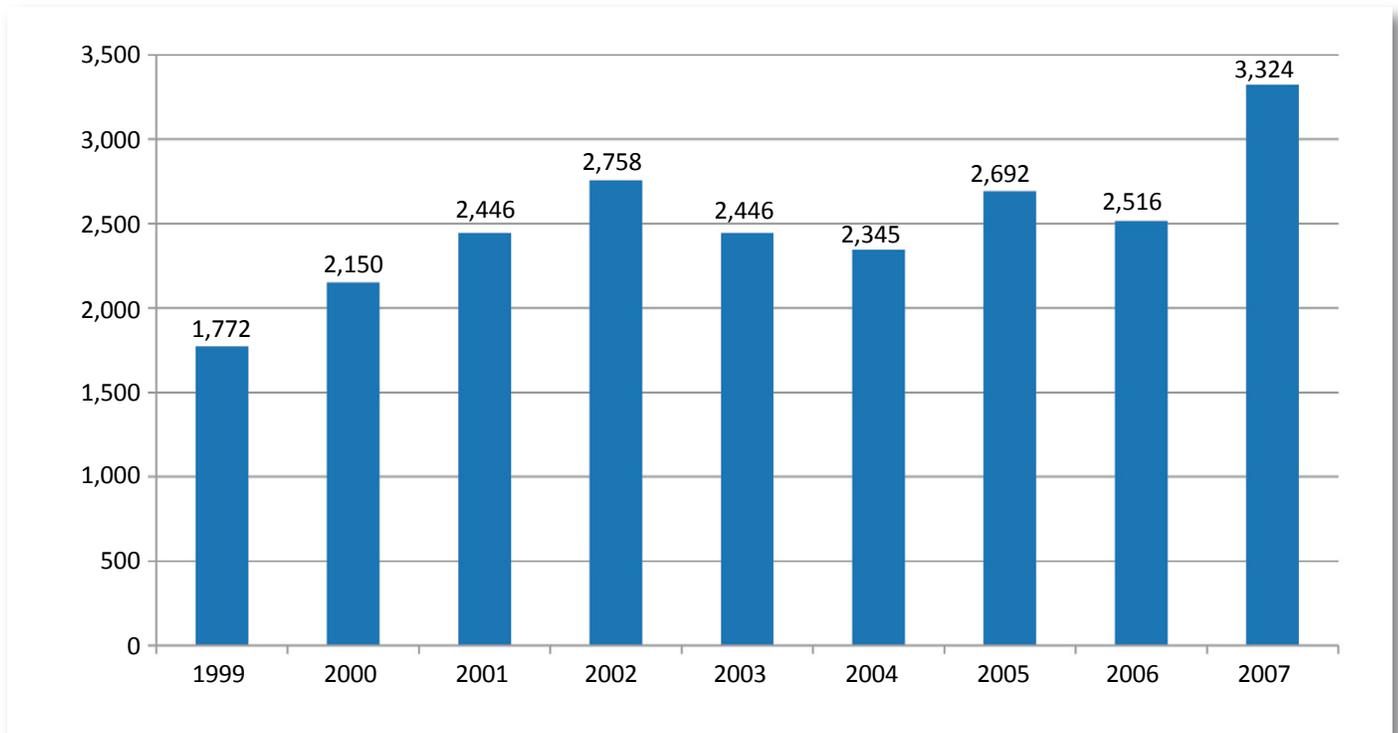
FIGURE 1: TOTAL LICENSED ACTIVELY PRACTICING PHYSICIANS, 2007

TOTAL LICENSED ACTIVE PHYSICIANS	45,057
DEGREE TYPE	
MD	42,195
DO	2,861
PRACTICE TYPE	
DPC	37,177
Medical School Teaching/Faculty	3,525
Research	384
Administrative Medicine	804
In Training (Resident/Fellow)	1,959

Note: The Health Professions Resource Center usually excludes Military and Government records from the statistics for DPC and PC Physicians. They are included here as "Total Licensed Active Physicians" as this category includes all physicians with an Active status code in all Practice Settings but are not included in the DPC total. Locum Tenens, those that indicated "Not in Practice" in the Practice Address field, and those with a Practice Type of "Not in Practice" or "Unknown" are excluded.

- ★ Since the passage of medical liability reform in 2003, the Texas Medical Board (TMB) has licensed 10,878 new physicians (see Figure 2). By comparison, 8,391 new physicians were licensed in the four years preceding the passage of liability reform (1999-2002).
- ★ In 2007, the TMB received a record 4,041 physician licensure applications, and issued a record 3,324 new licenses.
- ★ The TMB issued 811 more licenses in 2007 than 2006, almost a one-third increase.
- ★ Texas is a net importer state. In 2007, of the new Texas licensees, 43 percent were from other states, 31 percent were from Texas, and 26 percent were from another country.

FIGURE 2: NEW PHYSICIAN LICENSES ISSUED, FY 99 - FY 07



Source: TMB

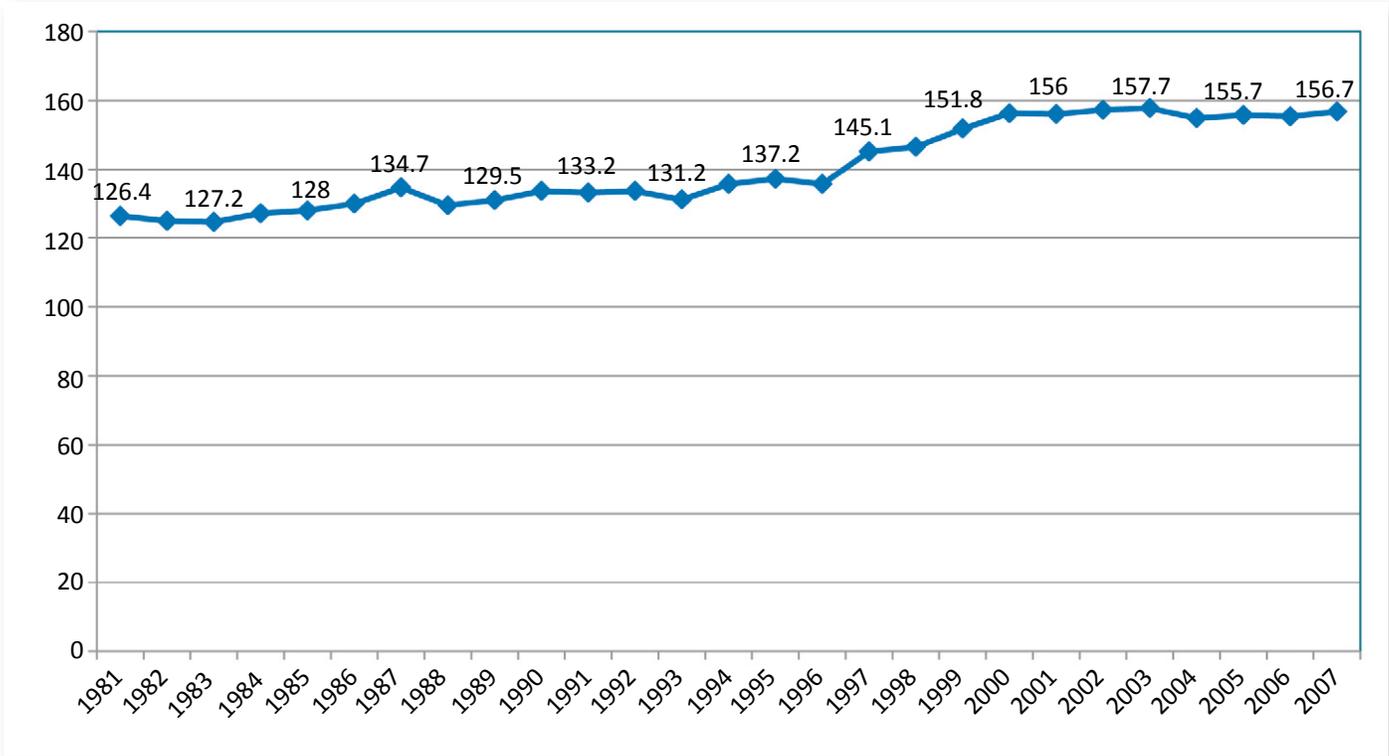
TEXAS DPC PHYSICIAN TO POPULATION RATIO

KEY FINDING

Despite significant growth in new physicians practicing in Texas, over the next decade population growth is projected to outpace physician supply increases.

- ★ The Texas ratio of DPC physicians, 156.7 per 100,000 population, has grown over the last 20 years, as shown in Figure 3, but due to population growth and other factors, has remained flat since 2000. However, because population growth is expected to supersede growth in physician supply, this ratio is projected to decline to 154.7 per 100,000 population by 2015.

FIGURE 3: TRENDS FOR TEXAS DPC PHYSICIANS PER 100,000 POPULATION



Source: CHS, HPRC, and DSHS. All specialties are included. Physicians in the following practice settings are excluded: teaching, research, military, residency or administrative positions, inactive, and retired.

- ★ The number of DPC physicians has increased from 33,094 in 2002 to 37,177 in 2007. During this time period, Texas gained 9,866 new physicians, but lost 5,783 because the physician either became inactive (2,646), entered a federal setting (319), left Texas (1,287), stopped providing DPC (1,516), or for other reasons (15). The majority of DPC physicians gained since 2002 were from outside of Texas (6,094).
- ★ Of the DPC physicians in Texas, 16,120 provide primary care (PC) services (see Figure 4).
- ★ Texas border counties have also experienced an increase in DPC physicians, growing from 2,207 in 2002 to 2,468 in 2007. The majority of this increase is due to new licensees (394), physicians coming from out-of-state (56), and new physicians entering DPC (57).

FIGURE 4: TOTAL LICENSED DPC PHYSICIANS – 2007

TOTAL LICENSED DPC PHYSICIANS	37,177
DEGREE TYPE	
MD	34,766
DO	2,410
SPECIALITY	
PC	16,120
Family Practice/Medicine	5,481
General Practice	735
Obstetrics and/or Gynecology	2,274
General Internal Medicine	4,640
Pediatrics	2,959
Geriatrics	31

Note: Military/Government records, resident/fellows, researchers/administrators, and Locum Tenens are not included.

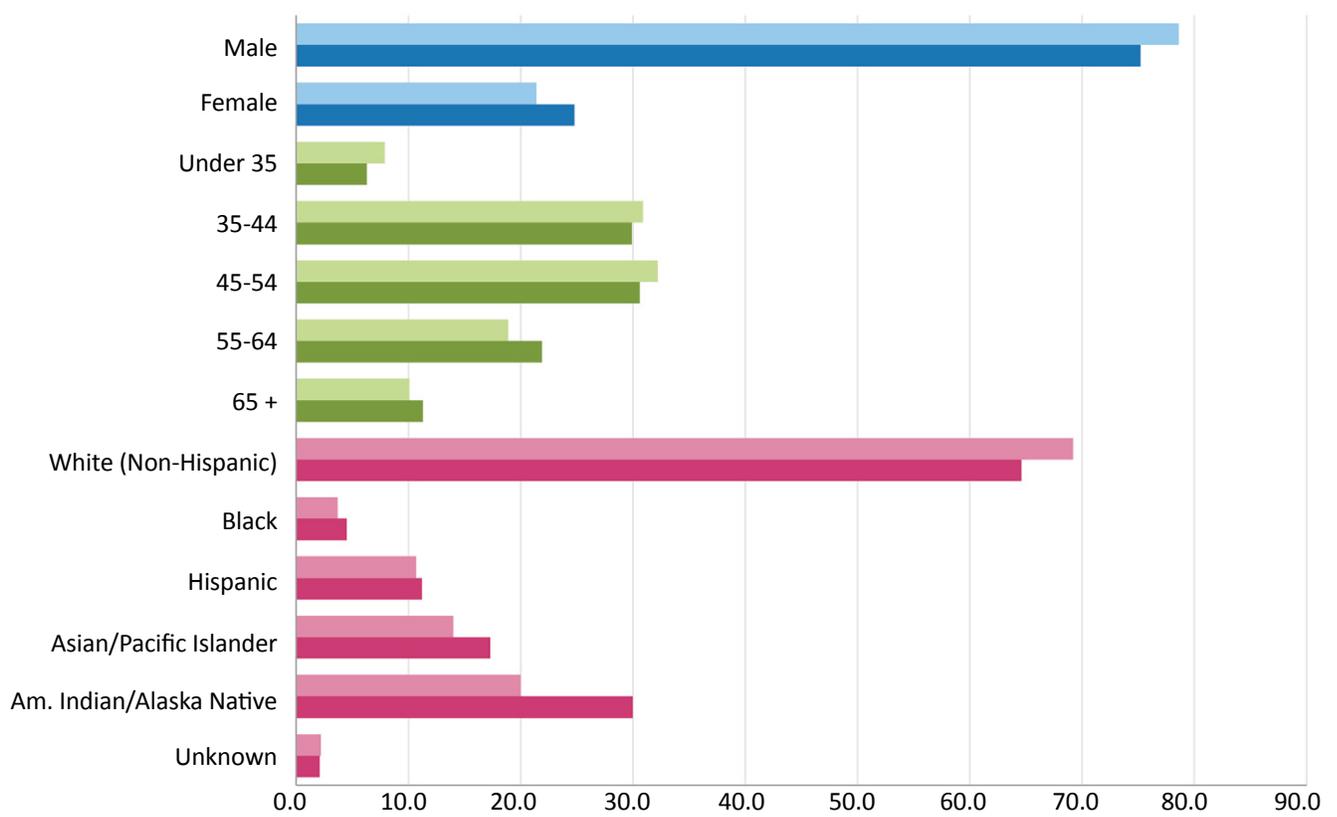
TEXAS DPC PHYSICIAN DEMOGRAPHICS

KEY FINDING

The demographics and characteristics of Texas physicians are changing.

- ★ Between 2002 and 2007, the number of female, Hispanic, and other minority physicians increased (see Figure 5).
- ★ Conversely, the number of male and Anglo physicians decreased between 2002 and 2007.
- ★ The number of DPC physicians in Texas over age 55 continues to increase. Physicians aged 50 and older has grown from 6,622 in 1997 to 10,313 in 2007.

FIGURE 5: TEXAS DPC PHYSICIAN PROFILE CHANGE: 2002 AND 2007



(Values in percent)	GENDER		AGE				
	MALE	FEMALE	UNDER 35	35-44	45-54	55-64	65+
2002 TOTAL: 33,094	78.6	21.4	7.9	30.9	32.2	18.9	10.1
2007 TOTAL: 37,177	75.2	24.8	6.5	29.9	30.6	21.9	11.3
	RACE/ETHNICITY						
	WHITE	BLACK	HISPANIC	ASIAN/PAC. ISL.	AM. IND./AK NAT.	UNKNOWN	
2002 TOTAL: 33,094	69.2	3.7	10.7	14.0	0.2	2.2	
2007 TOTAL: 37,177	64.6	4.5	11.2	17.3	0.3	2.1	

Source: HPRC, and DSHS. Includes active, DPC, and non-federal physicians.

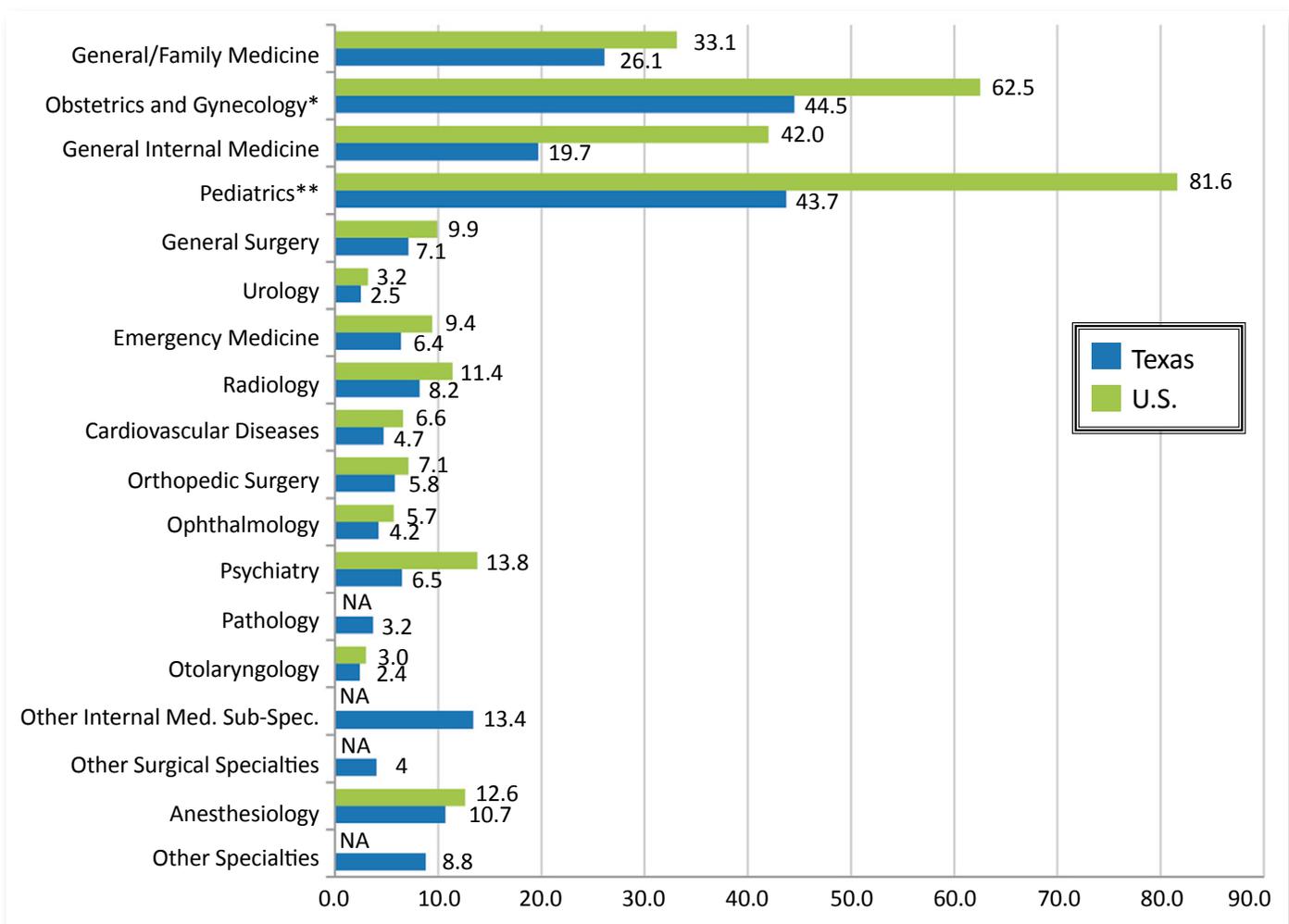
PHYSICIAN AND MEDICAL SPECIALTY DISTRIBUTION

KEY FINDING

Texas rates of physicians per 100,000 population are below national rates. This is particularly evident in border and rural areas of Texas, where the rates are typically below the state's rate for DPC specialties.

- ★ Of 40 medical specialties, Texas is comparable to U.S. rates for only two specialties, allergy/immunology and colon/rectal surgery. Texas fell below the U.S. rates for 37 specialties with the lowest U.S. rates in vascular medicine and psychiatry.
- ★ As the population ages, demand for specialists that provide the care particular to the needs of the over-65 demographic is expected to rise significantly, including critical care, cardiology, geriatrics, oncology, and rheumatology. Specialties that are significantly below national averages are neurosurgery (especially along the border), obstetrics and gynecology, pediatrics, and psychiatry.
- ★ Texas has lower ratios than the national average for almost every DPC specialty for which U.S. data is available (see Figure 6). While it is informative to compare Texas supply ratios to national averages, there is no evidence that national averages are ideal supply ratios.

FIGURE 6: TEXAS AND U.S. SUPPLY RATIOS PER 100,000 POPULATION BY DPC SPECIALTIES, 2006



* Ratios per 100,000 females ages 15-44. ** Ratios per 100,000 children ages 0-18. Source: U.S. data obtained by TMA

GEOGRAPHIC DISTRIBUTION

KEY FINDING

Despite efforts at both the federal and state level, distribution of physicians remains a challenge for the state.

- ★ Geographic distribution of physicians continues to be a challenge. For all specialties, the ratio of physicians per 100,000 population in both urban and rural border areas, are lower than the Texas averages (see Figure 7). Likewise, the ratios in the rural areas, both border and non-border, are lower than the Texas averages, except for general/family medicine physicians, where the rural non-border ratio is higher than the Texas average.

FIGURE 7: TEXAS SUPPLY RATIOS BY DPC SPECIALTIES AND GEOGRAPHIC LOCATION, 2006 (PER 100,000 POPULATION)

SPECIALTY	RURAL BORDER	RURAL NON-BORDER	URBAN BORDER	URBAN NON-BORDER	TEXAS
General/Family Medicine	19.9	32.6	16.7	26.3	26.1
Obstetrics and Gynecology*	11.7	24.9	34.8	48.6	44.5
General Internal Medicine	6.9	12.3	15.1	21.6	19.7
Pediatrics**	18.6	18.4	38.1	48.3	43.7
General Surgery	3.7	5.9	5.7	7.5	7.1
Urology	0.8	1.3	1.5	2.8	2.5
Emergency Medicine	0.8	4.0	3.6	7.3	6.4
Radiology	1.6	3.9	4.6	9.4	8.2
Cardiovascular Diseases	1.1	1.6	3.1	5.4	4.7
Orthopedic Surgery	0.8	2.7	3.8	6.6	5.8
Ophthalmology	0.8	1.9	3.5	4.7	4.2
Psychiatry	0.8	3	2.6	7.6	6.5
Pathology	0.0	1.1	2.3	4.3	3.7
Otolaryngology	0.0	1.1	1.7	2.7	2.4
Other Internal Medicine Sub-Specialties	1.6	3.0	8.5	15.7	13.4
Other Surgical Specialties	0.3	0.7	2.4	4.7	4.0
Anesthesiology	0.3	2.7	6.3	12.6	10.7
Other Specialties	1.1	2.1	5.0	10.4	8.8

* Ratios per 100,000 females ages 15-44.

** Ratios per 100,000 children ages 0-18.

Source: CHS, HPRC, and DSHS

★ About 14 percent of the Texas population is rural, but only 7.1 percent of Texas DPC physicians practice in rural Texas (see Figure 8).

FIGURE 8: DPC PHYSICIANS BY SPECIALTY, 2007

SPECIALTY	QTY	RATIO PER 100,000 POP.	PERSONS PER PROVIDER	% IN RURAL COUNTIES	AVG. AGE	% 55 AND OLDER	% IN WHOLE-COUNTY HPSAs*	% IN PARTIAL-COUNTY HPSAs*
General Surgery	1,627	6.9	14,584	10.6	53	42.0	3.2	79.3
Urology	562	2.4	42,222	6.4	53	46.3	1.2	82.0
Emergency Medicine	1,573	6.6	15,085	6.4	46	24.4	2.2	79.8
Radiology	1,990	8.4	11,924	5.6	50	34.9	1.4	83.5
Cardiovascular Surgery	1,132	4.8	20,962	4.6	50	33.1	1.1	82.4
Orthopedic Surgery	1,370	5.8	17,320	5.7	52	38.5	1.3	80.8
Ophthalmology	956	4.0	24,821	5.8	52	42.7	1.0	82.7
Psychiatry	1,536	6.5	15,448	5.2	55	47.7	1.1	85.2
Pathology	852	3.6	27,850	3.6	52	39.4	0.5	87.1
Otolaryngology	543	2.3	43,699	5.7	52	39.0	0.7	79.0
Other Internal Medicine Sub-specialties	3,219	13.6	7,371	3.0	50	34.1	0.5	84.8
Other Surgical Sub-specialties	975	4.1	24,337	2.4	52	37.0	0.3	87.2
Anesthesiology	2,525	10.6	9,397	2.7	48	25.0	0.6	89.0
Other Specialties	2,206	9.3	10,756	3.2	50	32.1	0.6	85.7
DPC TOTAL	37,177	156.7	638	7.1	50	33.2	2.4	80.5
General/Family Medicine	6,258	26.4	3,792	15.6	51	34.8	6.9	71.5
Obstetrics and Gynecology**	2,274	43.7	2,291	5.8	50	35.0	1.4	79.5
General Internal Medicine	4,620	19.5	5,136	7.7	48	25.0	3.0	78.7
Pediatrics***	2,959	43.5	2,301	5.2	47	26.9	2.2	77.7
PC TOTAL	16,111	67.9	1,473	10.1	49	30.6	4.1	75.8

* HPSA = Health Professional Shortage Area

** Population used is Females ages 15-44

*** Population used is children ages 0-18

Note: All of the information above is for Active DPC Physicians and excludes military/government physicians and those primarily involved in research/administration, residents and fellows, and locum tenens.

MEDICAL SCHOOL TRENDS

KEY FINDING

Texas medical school enrollments are at historically high levels. Entry-level enrollments are on track to meet the AAMC's recommended 30 percent growth rate.

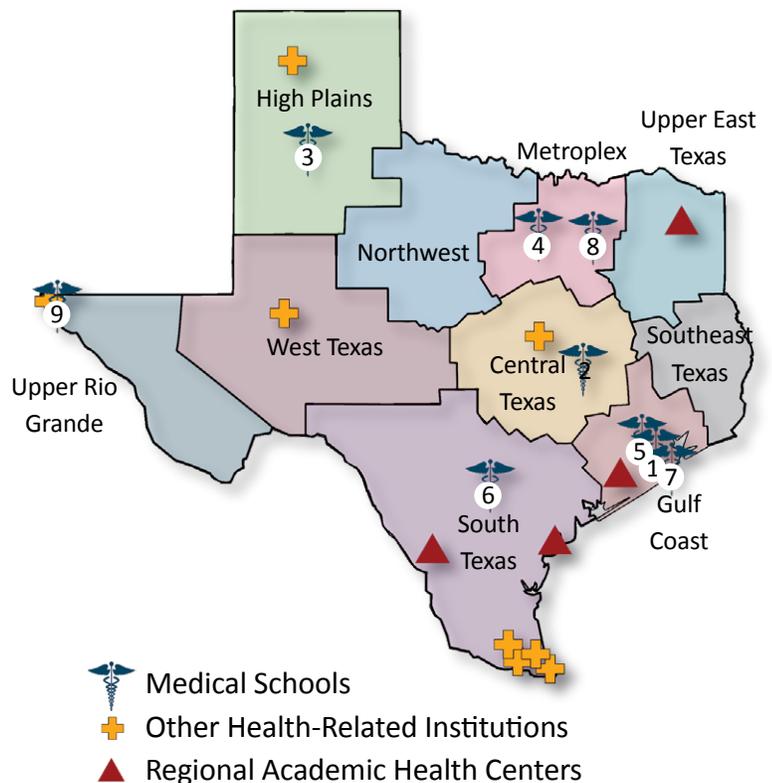
- ★ As of 2008, Texas had eight medical schools, seven public and one private, all located in major metropolitan areas. These schools are shown in Figure 9.

1. Baylor College of Medicine
2. Texas A&M University System Health Science Center (HSC)
3. Texas Tech University HSC
4. University of North Texas HSC at Fort Worth/Texas College of Osteopathic Medicine
5. The University of Texas (UT) HSC at Houston
6. The UT HSC at San Antonio
7. The UT Medical Branch at Galveston
8. The UT Southwestern Medical Center

- ★ Texas will gain an additional public medical school in August 2009 when the Texas Tech University Health Science Center Paul L. Foster School of Medicine in El Paso seats its first class (Figure 9, #9).

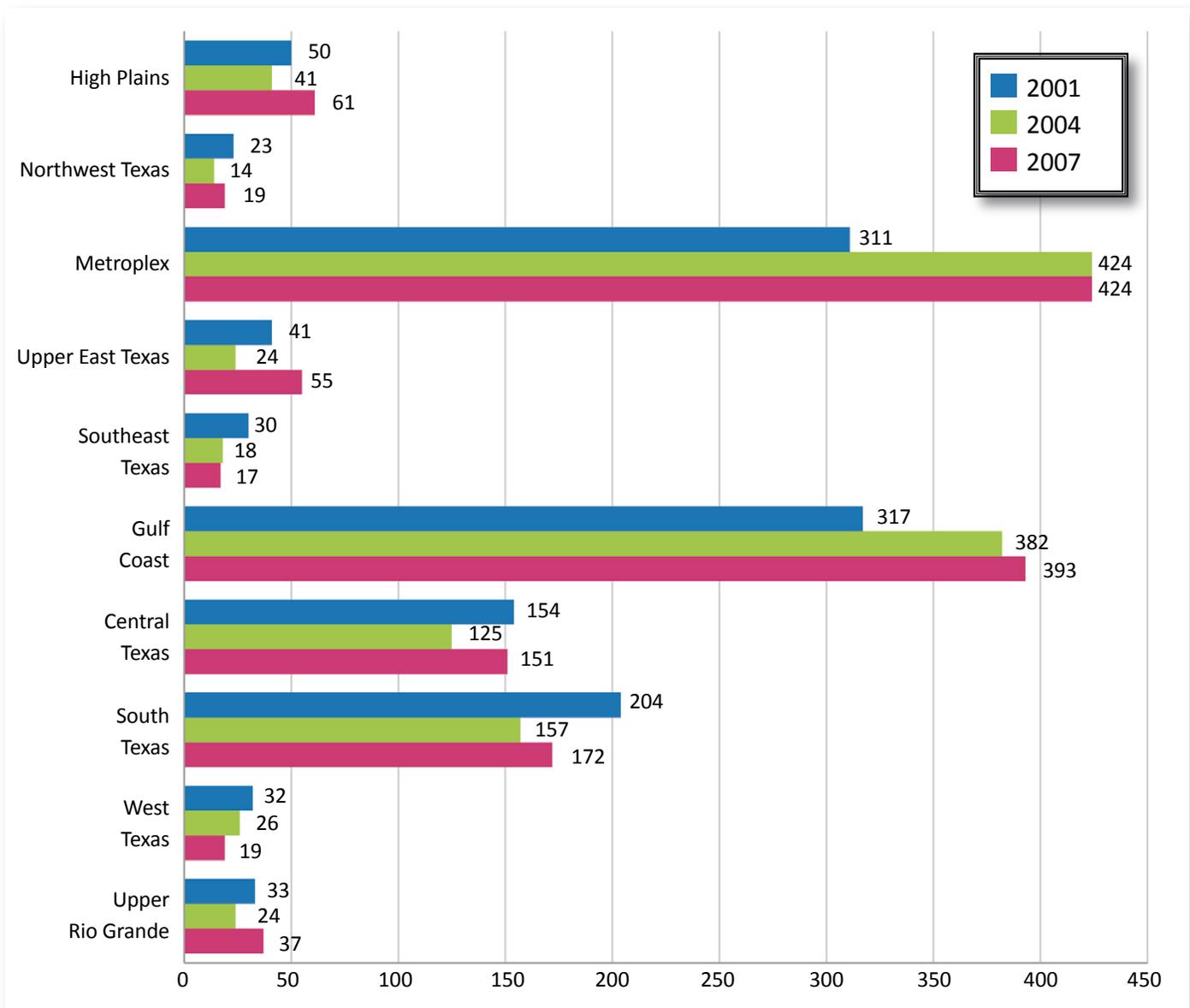
- ★ In 2007, there were 1,300 Texas medical school graduates but that number is expected to grow to 1,700 by 2012.
- ★ Texas is experiencing historically high levels of medical school enrollments.
- ★ More than 5,700 students are enrolled in Texas medical schools.
- ★ In 2007, 1,493 students entered Texas' medical schools, the state's largest first-year medical school entering class. This represents an increase of 2.8 percent from 2006. By comparison, the U.S. growth rate was 2.3 percent from 2006.
- ★ Texas medical schools' total entry-level class expanded by 150 students, an 11.3 percent increase from academic years 2004-05 to 2007-08.
- ★ From 2007 to 2010-11, Texas medical school enrollments are projected to grow by another 173 students, a 12 percent increase, and another 109 students, a 7 percent increase, by 2015. Texas is on track to meet the AAMC's 30 percent medical school enrollment growth rate recommendation by 2015.

FIGURE 9: TEXAS MEDICAL SCHOOL LOCATIONS



- ★ Of the Texas physicians in DPC, 45 percent trained in Texas medical schools; 32 percent trained in other states; and 23 percent trained in other countries.
- ★ Of the 32 percent of out-of-state trained DPC physicians, the largest number of graduates came from Oklahoma, Louisiana, Kansas, and Arkansas respectively.
- ★ A majority of physicians providing DPC in urban and non-border areas, and those providing PC statewide are graduates of U.S. medical schools (including those in Texas). The majority of physicians providing DPC in rural areas are Texas medical school graduates while a majority of physicians providing DPC in border areas are international medical school graduates.
- ★ The majority of Texas' first-year medical students are in the metropolitan regions of the Metroplex and the Gulf Coast (see Figure 10).

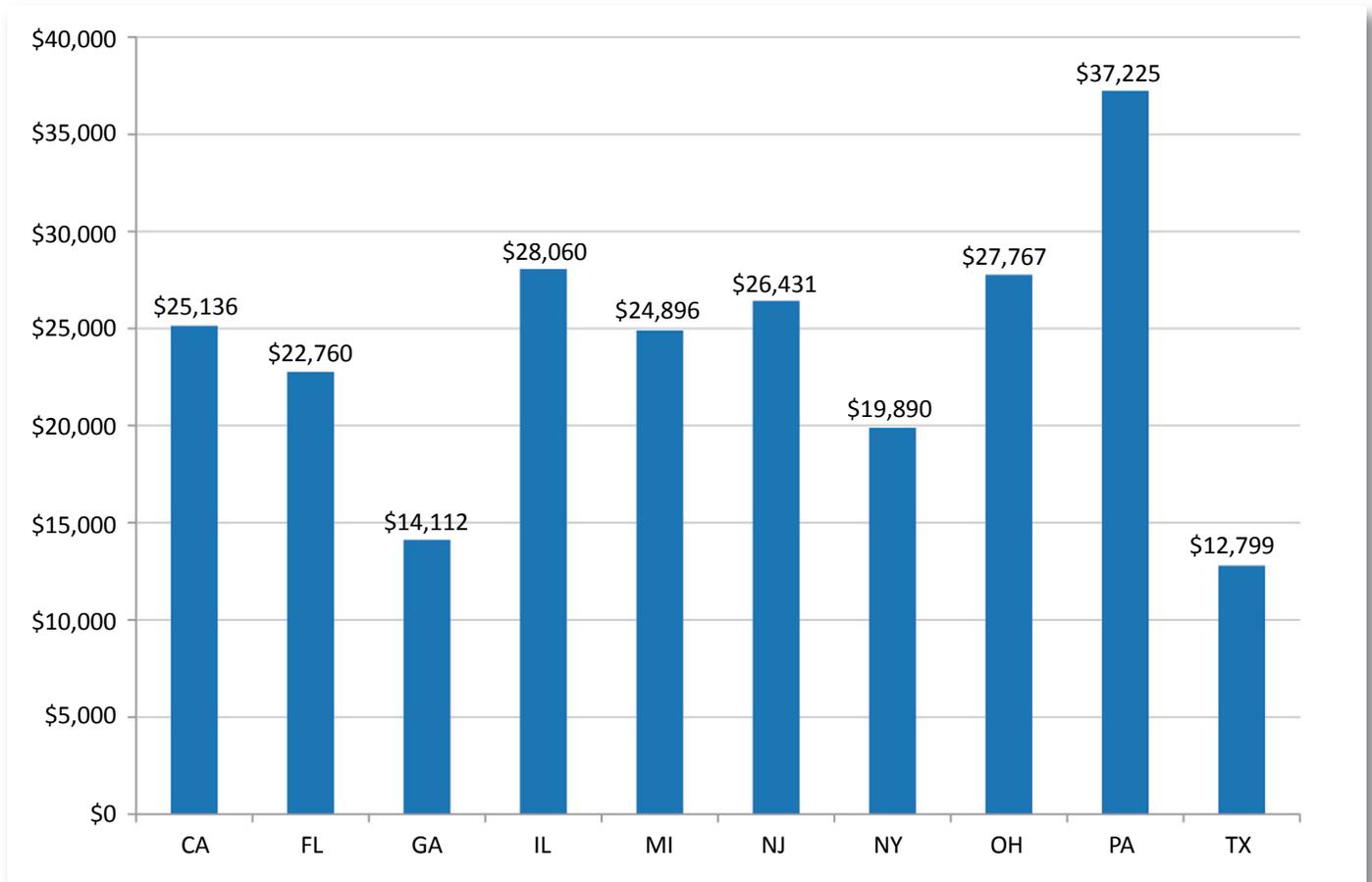
FIGURE 10: FIRST-YEAR MEDICAL STUDENTS BY TEXAS REGION OF ORIGIN



Source: The Coordinating Board

- ★ When compared to the other most populous states, Texas' medical school tuition is very affordable. (see Figure 11).

FIGURE 11: AVERAGE ANNUAL COST OF PUBLIC FIRST-YEAR MEDICAL EDUCATION



- ★ Public and private medical schools in Texas produce physicians who end up providing DPC in Texas at a similar rate (see Figure 12).

FIGURE 12: GRADUATES FROM THE 90S LICENSED DPC PHYSICIANS IN TEXAS, SEPTEMBER 2008

SCHOOL	% OF GRADUATES IN TX
Baylor College of Medicine	38
Texas A&M University System Health Science Center	53
University of North Texas Health Science Center at Ft. Worth/Texas College of Osteopathic Medicine	56
Texas Tech University Health Science Center	57
The University of Texas Health Science Center at Galveston	53
The University of Texas Health Science Center at Houston	53
The University of Texas Health Science Center at San Antonio	50
The University of Texas Southwestern Medical Center	49

Source: TMB, CHS, HPRC, and DSHS. Prepared by: Staff from the Texas Health Care Policy Council.

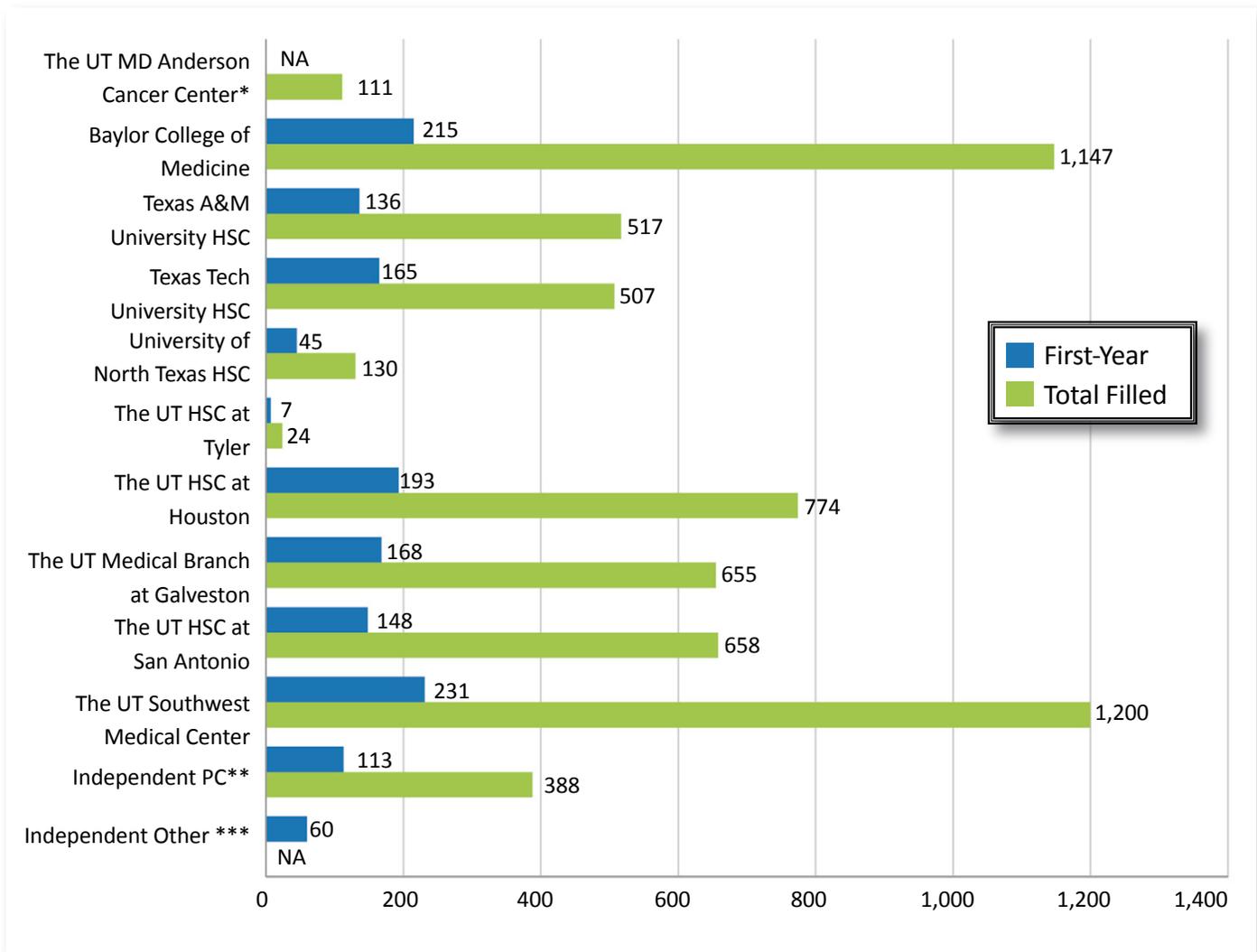
RESIDENCY TRAINING TRENDS

KEY FINDING

The number of residency positions in Texas is growing but doesn't match the growth in entry-level medical school enrollments.

- ★ Texas has more than 370 accredited residency programs; however, not all of these residency programs train first-year residents. There are 1,481 first-year residency positions, and just over 6,111 total residency positions (see Figure 13).

FIGURE 13: FIRST-YEAR VS. TOTAL FILLED RESIDENCY POSITIONS (HRI AFFILIATED AND UNAFFILIATED)



* The University of Texas MD Anderson Cancer Center does not have first-year entry positions available in GME. Due to its highly complex and specific work, it educates and trains physician residents who have completed at least a year of training in another (typically internal medicine) residency program prior to entry into its programs.

** Independent PC programs include: family medicine, internal medicine, pediatrics, and obstetrics and gynecology, and are not affiliated with a health-related institution.

*** Independent (other) programs include all other residency specialties and programs not affiliated with a health-related institution.

Source: The Coordinating Board

TEXAS GME RESIDENT RETENTION

KEY FINDING

Physicians are more likely to remain in the state in which they complete their residency training.

- ★ The AAMC'S research, based on Texans physicians in active practice in January 2007, indicates Texas ranks second in retention of physicians who complete medical school in Texas (58.6 percent), seventh in retention of physicians who complete GME in Texas (56.4 percent) and fifth in retention of physicians who complete both medical school and GME in Texas (79.5 percent).
- ★ According to a survey by The UT Southwestern Medical Center, up to 40 percent of students who leave Texas for GME training would have preferred to stay in Texas if places had been available.

GME FUNDING

KEY FINDING

Although state general revenue funding for GME in the current biennium is higher than in the previous two biennia, total funding for GME has gone down. Since 2005, the Texas Legislature has not provided state general revenue to support Medicaid GME at hospitals.

- ★ The 80th Texas Legislature provided the Texas Higher Education Coordinating Board (Coordinating Board) \$29.6 million in state general revenue (GR) funding in Fiscal Year (FY) 2008-09 to support five programs focused on training PC physicians (see Figure 16).

FIGURE 16: STATE FUNDING FOR GME PROGRAMS (FY ROUNDED IN MILLIONS)

GME-RELATED PROGRAMS	2002	2003	2004	2005	2006	2007	2008	2009
HEALTH & HUMAN SERVICES COMMISSION								
Medicaid GME (est. GR)*	\$24.0	\$24.0	\$11.3	\$20.7	\$-	\$-	\$-	\$-
Medicaid GME (est. Fed. \$ based on 40/60 split)	36.0	36.0	16.9	31.1	-	-	-	-
ART. III HEALTH-RELATED INSTITUTIONS (Not Included: Special Item appropriations for residency-related programs)								
GME Formula	-	-	-	-	12.5	12.5	31.4	31.4
COORDINATING BOARD (GR)								
Family Practice Residency Program	10.5	10.1	9.2	9.2	8.7	8.7	8.7	8.7
PC Residency Program	3.1	2.8	2.6	2.6	2.5	2.5	2.5	2.5
GME Program	8.0	7.2	1.9	1.9	1.8	1.8	0.3	0.3
Resident Physicians Compensation Program	4.0	4.0	-	-	-	-	-	-
Family Practice Pilot Projects	1.0	1.0	-	-	-	-	-	-
GME-RELATED PROGRAMS (GR)	50.6	49.1	25.0	34.4	25.5	25.5	42.9	42.9
GME-RELATED PROGRAMS (ALL FUNDS)	\$86.6	\$85.1	\$42.0	\$65.5	\$25.5	\$25.5	\$42.9	\$42.9

* Historically, states have had the option to provide Medicaid GME payments to public and private teaching hospitals. Overall funding for GME has dropped with the elimination of this funding in FY 2006. It is unknown whether states will continue to have the option to provide Medicaid GME payments in the future. In May 2007, CMS proposed a rule that would prohibit federal Medicaid funding for GME. Congress imposed a moratorium on this rule until April 1, 2009, which prevents CMS from enforcing the rule while the moratorium is in effect.

- ★ The 80th Texas Legislature provided \$62.8 million in state formula funding allocations to medical schools for FY 2008-09, a \$37.8 million increase from FY 2006-07, and a 151 percent increase between 2006 and 2009 (see Figure 17). This level of funding is the highest level of direct GME formula funding ever provided to state medical schools.

FIGURE 17: GME FORMULA FUNDING (ROUNDED IN MILLIONS)

	FY 06-07	FY 08-09	\$ CHANGE FY 06-09	% CHANGE FY 06-09
Biennium Rate	\$4.7	\$11.3	\$6.6	140.8
Yearly Rate	2.3	5.6		
INSTITUTION				
The University of Texas Southwestern Medical Center	5.3	13.2	8.0	150.8
The University of Texas Health Science Center at Galveston	2.6	6.8	4.2	161.6
The University of Texas Health Science Center at Houston	3.5	8.7	5.1	144.0
The University of Texas Health Science Center at San Antonio	3.0	7.5	4.6	152.9
The University of Texas M.D. Anderson Cancer Center	0.5	1.2	0.7	157.6
The University of Texas Health Science Center at Tyler	0.1	0.3	0.2	151.2
Texas A&M University System Health Science Center	2.0	5.4	3.4	169.1
University of North Texas Health Science Center at Ft. Worth/ Texas College of Osteopathic Medicine	0.6	1.6	1.0	176.0
Texas Tech University Health Science Center	2.2	5,3230	3.1	142.8
SUB-TOTAL PUBLIC INSTITUTIONS	\$19.7	\$49,951	\$30.2	153.2
Baylor College of Medicine	5.3	12,834	7.6	143.6
TOTAL GME FORMULA	\$25.0	\$62.8	\$37.8	151.1

Source: The Coordinating Board

SECTION THREE:

DISCUSSION OF PHYSICIAN WORKFORCE POLICY QUESTIONS

Senate Bill 10 requires Texas Health Care Policy Council (the Council) to develop a plan of action for increasing GME programs and slots in the states' MUAs, and physicians practicing specialties underrepresented in the state. In developing a workforce plan, it is important to: (1) analyze supply and demand; (2) analyze the gap between supply and demand; and (3) develop strategies or policy options to alleviate either the projected shortage or surplus. Section Two of this report provides an analysis and summary of the key findings relating to the state's demographics, education capacity, and current supply of physicians. Section Three includes a discussion of several physician workforce policy questions.

WHAT IS THE PROJECTED SUPPLY, DEMAND, AND NEED OF PHYSICIANS IN TEXAS?

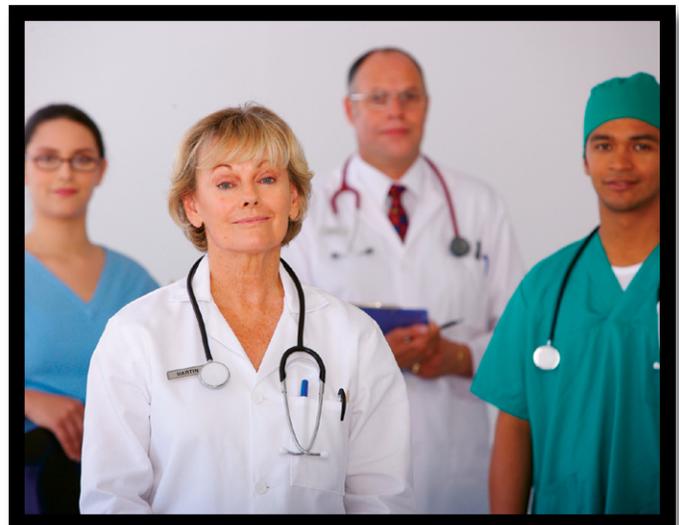
KEY FINDING

The State Demographer's middle (2000-2004) growth scenario implies a need for a 50 percent increase in specialists, and a 40 percent increase in PC physicians by 2025.

There are several reasons for the State of Texas to be concerned with the supply of physicians, nurse practitioners, and physician assistants. First, the state's population is increasing rapidly. It is plausible that by 2040, the population of Texas will exceed 50 million and it is prudent to plan for future demands. Second, the state's population and its medical professionals are aging. This is expected to increase health care demand and need while supply contracts. Third, other states are also facing the same demographic changes and demands. In the past Texas has been able to increase the supply of medical professionals by attracting doctors from other states and foreign countries. Recruitment from other states and countries to fill the supply gap will become more challenging, however, as competition for physicians increases nationwide. Finally, a significant portion of the state's population already resides in MUAs.

Despite the importance of achieving and maintaining an adequate number of health care professionals, it is difficult to define optimal workforce levels. The federal definition used to identify physician shortage areas comes from an index of demographic characteristics and the ratio of PC physicians-to-population. While this index can be useful, it is also arbitrary and does not account for many relevant local determinants of need and demand. A second method used to calculate the necessary workforce supply is to project market demand.

It is useful to project future supply and demand, given the long lead time in training medical professionals. However, this method does not necessarily imply an optimal supply or distribution of physicians. Even if optimal workforce levels could accurately be defined, new technologies and methods of care will inevitably and unpredictably affect the needed supply in the future.



The projected physician workforce need for Texas is based on demographic, population, and composition projections given three alternative migration scenarios. In general, the projections imply need for faster growth in specialties compared to PC, given the current age patterns of utilization. The middle (2000-2004) growth scenario implies a need for a 50 percent increase in specialists, and a 40 percent increase in PC physicians. The smallest increases are projected for pediatricians and Obstetricians and Gynecologists. The largest increases are projected for specialists in cardiovascular disease, urologists, and ophthalmologists (see Figure 18 below). Additional information on the State Demographer’s physician workforce projections and a more detailed table on projected physician need by 2025 are available in Appendix C.

“Physician need” in this context means the number of physicians needed to maintain the current age-adjusted physician to population ratio in the state of Texas, without implying either an optimal level for these ratios, or a future imputed economic demand for physician services in any specialty.

**FIGURE 18: PROJECTED PHYSICIAN NEED BY SPECIALTY 2007 – 2025,
BASED ON THE STATE DEMOGRAPHER’S SCENARIO 2, MIGRATION RATES FROM 2000 – 2004***

SPECIALTY	MIGRATION EQUAL TO ESTIMATED 2000-2004					% CHANGE 2007-2025
	2007	2010	2015	2020	2025	
General/Family Medicine	6,247	6,530	7,256	8,077	8,978	44
Obstetrics and Gynecology	2,274	2,379	2,584	2,820	3,077	35
General Internal Medicine	4,640	4,888	5,502	6,237	7,072	52
Pediatrics	2,959	2,890**	3,113	3,266	3,415	15
TOTAL PC	16,120	16,687	18,456	20,400	22,541	40
Anesthesiology	2,525	2,646	2,947	3,308	3,729	48
Cardiovascular Diseases	1,132	1,192	1,370	1,596	1,872	65
Emergency Medicine	1,579	1,654	1,827	2,017	2,215	40
General Surgery	1,627	1,717	1,936	2,193	2,477	52
Ophthalmology	956	999	1,138	1,314	1,526	60
Orthopedic Surgery	1,370	1,441	1,611	1,808	2,026	48
Other Internal Medicine Sub-specialties	3,199	3,361	3,793	4,308	4,897	53
Other Specialties	2,211	2,295	2,539	2,802	3,086	40
Other Surgical Specialties	975	1,028	1,149	1,289	1,441	48
Otolaryngology	543	564	626	696	773	42
Pathology	852	893	1,000	1,130	1,280	50
Psychiatry	1,536	1,610	1,770	1,946	2,131	39
Radiology	1,990	2,069	2,342	2,686	3,111	56
Urology	562	595	682	790	919	64
TOTAL SPECIALIST	21,057	22,063	24,730	27,884	31,482	50
TOTAL	37,177	38,751	43,186	48,283	54,023	45

* Using the most recent estimates and projections as a baseline, the State Demographer projected the need for physicians in 2025 based on currently observed populations-to-physician ratios. Additional information on the State Demographer’s methodology is included in Appendix C.

** The projected decrease in the anticipated need for pediatricians is an artifact of the projection method used by the State Demographer and should not be taken as an anticipation that actual need will decrease.

KEY FINDING

A projected supply of 51,876 DPC physicians in 2025 is just below the 54,023 DPC physicians for which the State Demographer projects a need under the middle (2000-2004) growth scenario.

From 2002 to 2007, the number of DPC physicians in Texas increased from 33,094 to 37,177, an average of about 817 new physicians per year. These measurements include all physicians entering and leaving practice in Texas for any reason (e.g, residents becoming licensed, physicians from out of state becoming licensed in Texas, physicians allowing their Texas licenses to expire, physicians dying.) Directly projecting this net growth rate into the future suggests that in 2025, Texas will have 51,876 DPC physicians.

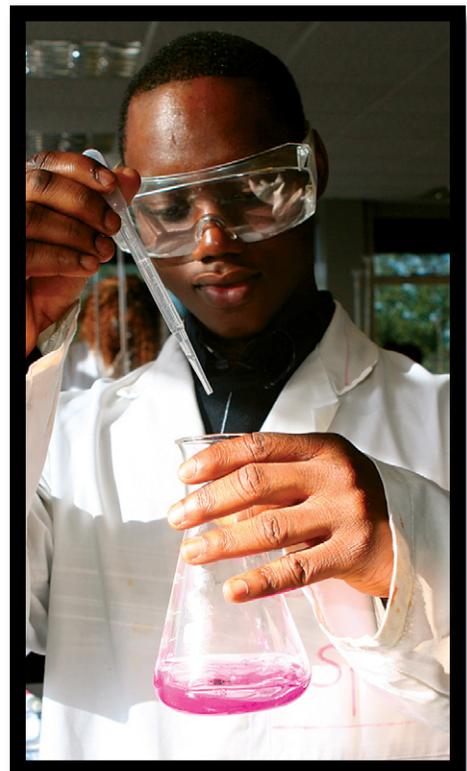
As a straightforward linear estimate of physician workforce growth, this calculation does not take into account additional factors that may bias the estimate. This calculation may create an upward bias in the net growth rate for the Texas physician workforce since it does not account for the age distribution of the current Texas physician population (skewed toward older physicians), which may lead to higher retirement rates in the future, and thus a lower net growth rate than calculated above. However, this calculation may also create a downward bias in the net growth rate for the Texas physician workforce since it does not account for the growth in the demand for physician services driven by population growth, both absolutely and relative to other states (Texas has a higher average population growth rate than other states), which may draw physicians to Texas from other states and countries or keep Texas-trained physicians in Texas at greater than the current rate, leading to a higher net growth rate for the Texas physician workforce than is represented in the above calculation.

The 51,876 DPC physician supply projection places Texas in 2025 just below the State Demographer's projected need of 54,023 physicians under the middle (2000-2004) growth scenario.

WHAT IS THE FEASIBILITY OF USING A PERCENTAGE OF PHYSICIAN LICENSING FEES TO INCREASE THE NUMBER OF MEDICAL RESIDENCY PROGRAMS AND MEDICAL RESIDENTS IN TEXAS?

The TMB was appropriated \$18.4 million (GR and GR-dedicated) in FY 2008-09. The agency is authorized by statute to collect fees on physicians and certain other health care practitioners to generate the revenue necessary to operate the agency. In FY 2008-09, the estimated revenue being collected by the agency is \$58.1 million, an excess of \$39.7 million above the agency's current biennial budget. Of the \$58.1 million in estimated revenue, at least \$53.4 million is generated through fees assessed to physicians. The primary revenue generating fees assessed to physicians are for: (1) licensure applications (current fee: \$885); and (2) registration (current fee: \$752).

There is nothing in state statute that prevents the use of funding collected by the TMB to increase the number of health care professionals trained in Texas. The TMB's budget for FY 2008-09, in fact, has a rider to support rural physician assistants through an annual transfer of funding of \$112,000 to the Office of Rural and Community Affairs (ORCA) for the Rural Physician Assistant Loan Reimbursement program.



WHAT PROGRAMS ARE IN PLACE TO ATTRACT AND RETAIN PHYSICIANS?

There are several programs in place designed to recruit and retain health practitioners to HPSAs in Texas:

TEXAS DEPARTMENT OF STATE HEALTH SERVICES (DSHS)/TEXAS PRIMARY CARE OFFICE PROGRAMS

National Health Service Corps Scholar Program and Loan Repayment Program

The National Health Service Corps is operated by the Health Resources & Services Administration. State Primary Care Offices, including the Texas Primary Care Office, support this program by: providing technical assistance to clinics and providers that want to participate; reviewing and approving applications for clinics; recruiting students and residents into the program; and helping providers find an eligible clinic. Eligible health professions include: physicians, nurse practitioners, physician assistants, nurse mid-wives, dentists, dental hygienists, clinical psychologists, social workers, marriage and family therapists, and licensed professional counselors. The Loan Repayment Program pays between \$25,000 and \$35,000 each year of service. In 2008, there were 156 National Health Service Corps participants providing services in Texas through the National Health Service Corps Scholar Program and Loan Repayment Program. Retention of the participants is tracked by National Health Service Corps and included in their report to Congress.

Conrad 30 J-1 Visa Waiver Program

International medical graduates completing their residency in the U.S. on a J-1 Visa, may be allowed to stay in the country if they agree to work in a HPSA or MUA for three years. The Conrad 30 program allows states to request up to 30 Visa Waiver recommendations each year, for physicians who are sponsored to work in a HPSA or MUA. Since its inception, there have been 191 Texas waiver recommendations, with 80 physicians serving the three-year service obligation period in 2008. During the three-year obligation, physicians and sponsors are monitored for program compliance by telephone and site visits. The first group of physicians completed their obligation in October 2006, and telephone surveys of those physicians indicated that approximately 80 percent intend to continue practicing in the waiver eligible area.

Texas HealthMatch

Texas HealthMatch is an online database, like the Texas Workforce Commissions' WorkInTexas.com, where providers and sites can register and get matched up. It is a collaborative effort, between the Texas Area Health Education Centers, DSHS, and ORCA to assist rural and underserved communities recruit and retain health care providers, health care related professionals, and health industry skilled workers. The Capitol Area and East Texas Area Health Education Centers developed and maintain the web site, and DSHS and ORCA have "backdoor" access to review the registered providers and sites. The Capital Area Health Education Center analyzes usage data to determine how many matches are made from initial HealthMatch connections.

OFFICE OF RURAL AND COMMUNITY AFFAIRS PROGRAMS

Rural Physician Relief Program

The Rural Physician Relief Program supports physicians who provide PC in rural Texas communities by facilitating the ability of those physicians to take a brief time away from their practice for vacation, medical care, or continuing medical education.

The Medically Underserved Community-State Matching Incentive Program

This program helps underserved communities attract and retain PC physicians by providing matching funds to cover costs of establishing a physician's practice site.

Texas Health Service Corps

The Texas Health Service Corps Program is a state-funded stipend program for resident physicians pursuing PC specialties and willing to practice in medically underserved communities in Texas.

TEXAS HIGHER EDUCATION COORDINATING BOARD PROGRAMS

Physician Education Loan Repayment Program

This program supports the critical need for PC physicians in certain state agencies and in rural or economically depressed areas of the state that are medically underserved. As of August 2008, there were 78 physicians in the program; 69 physicians working in HPSAs and nine working at approved state agencies. To address this issue, the Coordinating Board is implementing the following increased loan repayment amounts based on years of service in the program:

- ★ \$13,000 for first-year providers;
- ★ \$15,000 for second- and third-year providers;
- ★ \$18,000 for fourth-year providers; and
- ★ \$20,000 for fifth-year providers.

The Physician Education Loan Repayment Program was one of the first programs of its kind nationally and serves as a model for other programs nationwide. As of August 2008, 33 other states have loan repayment programs to address the problem of inadequate access to health care in certain areas and populations. Loans are paid after service is completed.

Primary Care Preceptorship Program

This program encourages Texas medical students to choose PC careers by providing direct funding for a month-long experience in one of three PC specialties: family practice, general internal medicine, or general pediatrics. The guiding premise of the preceptorship experience is that early exposure to a PC medical specialty may positively influence future career decisions and practice patterns.

Joint Admission Medical Program

The Joint Admission Medical Program provides services to support and encourage highly qualified, economically disadvantaged students pursuing a medical education. Students receive both undergraduate and medical school support through mentoring and scholarships.

Family Practice Residency Program

The Family Practice Residency Program was established to assist the state's GME programs produce more family physicians for practice in Texas' rural and underserved communities.

Primary Care Residency Program

The Primary Care Residency Program provides funds to new and not previously funded PC residency programs with the goal of increasing the number of PC physicians trained in the state.

TEXAS MEDICAL BOARD PROGRAM

Expedited Medical Licenses

Physicians agreeing to serve Medicare/Medicaid patients or to practice in HPSAs, MUAs, or rural counties are eligible to have the processing of their Texas medical license expedited. The Texas Primary Care Office and ORCA verify whether the proposed practice is in an eligible area. Under this program, which began in November 2007, 741 licensure applications have been approved through the expedited process – 450 of which agreed to serve Medicare/Medicaid patients, 96 in HPSAs, 131 in MUAs, and 64 in rural areas.

In 2008, it took the TMB an average of 62 days to license a physician. This time is considerably reduced if a physician meets one of the expediting medical license requirements. (see Figure 19)

FIGURE 19: FY 2008 NEW PHYSICIAN LICENSES ISSUED

TYPE OF FACTOR*	QUANTITY OF APPLICANTS	AVERAGE DAYS TO COMPLETE
Medicare/Medicaid	450	27
HPSA	96	34
MUA	131	32
Rural	64	50
NO. OF EXPEDITING FACTORS	3,102	68
ALL APPLICANTS REGARDLESS OF FACTORS	3,621	62

* Applicants may select more than one factor
Source: TMB

WHAT ROLE CAN NEW HEALTH CARE SERVICE DELIVERY MODELS PLAY IN ALLEVIATING A POTENTIAL PHYSICIAN SHORTAGE?

KEY FINDING

Greater use of non-physician practitioners, particularly physician assistants and nurse practitioners may alleviate the potential shortage of physicians and increase access to care.

New and different health care service delivery models such as increased use of non-physician providers, greater clinical integration, and expanded use of telemedicine have the potential to improve access, increase the availability of care, and reduce costs. Current regulation of non-physician health care professionals prevents the full benefit of these alternative delivery models from being realized. Other states are exploring or have enacted less restrictive regulatory structures for their health care delivery systems to alleviate the potential shortage of physicians and to increase access to care.

FIGURE 20: SELECTED HEALTH CARE PROFESSIONS IN 1997 AND 2007 FOR TEXAS

HEALTH CARE PROFESSION	1997	2007	% INCREASE
PC Physicians	12,160	16,120	32.6
Physician Assistants	1,463	3,862	164.0
Nurse Practitioners*	2,000	4,858	142.9

*Nurse Practitioner data were unavailable for 1997. Data from 1998 were used.

SECTION FOUR: POLICY OPTIONS

The Council believes an adequate supply of qualified health care practitioners is of critical importance to the economic viability of the health care system in Texas. Although there is no consensus on the optimal number of physicians needed, the majority of national experts are predicting a looming physician shortage. The Council believes the policy options discussed below will:

1. enhance the medical regulatory environment in Texas;
2. expand the number of GME residents training in Texas to accommodate future Texas medical school graduates and attract medical school graduates from other states and countries; and
3. begin to address the inequities in the geographic distribution of physicians in Texas by incentivizing innovations in GME training, launching a nationwide media and marketing campaign to attract new physicians to Texas, and growing existing state programs that support economically disadvantaged students and encourage practice in rural or other MUAs in Texas.

In addition to supporting funding for additional GME residency positions, the Council believes greater use of non-physician practitioners and implementation of innovative health care delivery models will help to alleviate the potential shortage of physicians and increase access to care.

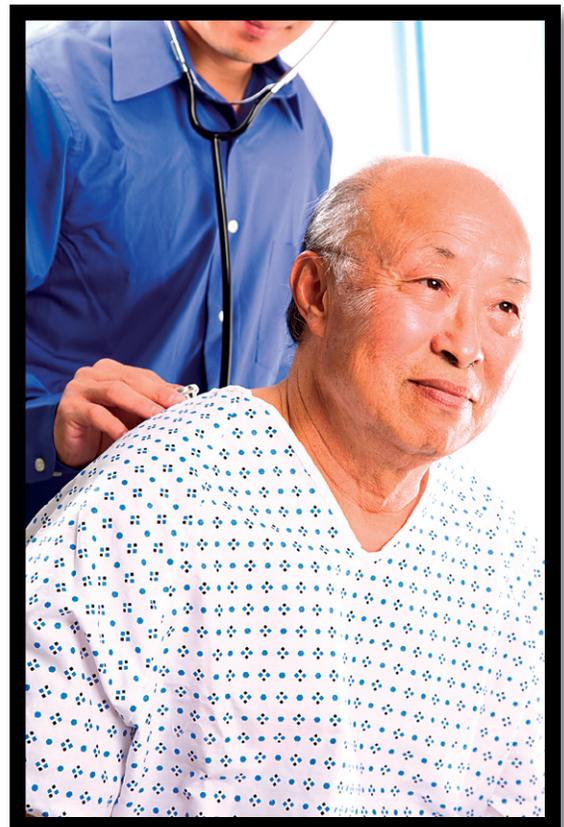
GME-RELATED RECOMMENDATIONS

Below are several recommendations the Council considered that are GME-related and are included in the scope of this report. The Council, believes implementation of these recommendations is essential to ensuring Texas has an adequate supply of physicians in the future.

Establish a New Residency Training Innovation Grant Program

Establish a new Residency Training Innovation Grant Program to promote innovation and exploration of new GME training models to address future practice needs, with a particular focus on physician preparation for practice in rural and other underserved areas, or in underrepresented specialties. COGME's 19th Report, "Enhancing Flexibility in Graduate Medical Education", suggests that non-hospital clinical venues could include private medical practices, health maintenance organizations, and community health centers among others. The expected outcome of each grant project will be to: (1) promote innovation in the production of well-trained physicians that meet the diverse community needs in Texas; and (2) demonstrate the measurable effects and sustainability of innovative training models.

The Council supports the creation of this new program with an initial appropriation of \$5.0 million in funding to the Coordinating Board for FY 2010-11.



Increase Formula Funding for GME

The number of graduates from Texas medical schools is expected to be about 1,433 by 2012 compared to the current 1,314 graduates. In comparison, there are currently 1,481 entry-level GME slots. According to the Coordinating Board's 2008 "Projecting the Need of Medical Education in Texas" report, the "...state should encourage growth of more first-year residency positions with a goal of 10 percent more first-year, entry-level residency positions than graduating medical students."

To help ensure the state can accommodate future Texas medical school graduates and to attract medical graduates from other states and countries, the Council supports adding new GME positions. The

80th Texas Legislature appropriated \$62.8 million in GME formula funding in FY 2008-09, a base value of \$5,600 per resident. For FY 2008-09, health-related institutions are required to use GME formula funding to increase the number of resident slots and to support faculty costs relating to GME.

The Council supports \$16.5 million in additional formula funding for FY 2010-11 to increase funding per resident from \$5,600 to \$7,500 per year. To achieve the Coordinating Board's goal to increase the number of first-year residency slots by 10 percent more than medical school graduates, an additional 150 first-year entry residency positions are needed by 2012. The Council encourages the health-related institutions to offer new residency positions with any additional GME funding.

Increase Funding for the Texas Family Practice Residency Program

The Family Practice Residency Program was established to increase the number of physicians selecting family practice as a specialty and improve the distribution of physicians to rural and underserved communities. Since its inception in 1977, the program has provided support to 7,100 family practice residents.

The 80th Texas Legislature appropriated \$17.5 million for this program in FY 2008-09.

The Council supports \$14.6 million in additional funding to the Coordinating Board for FY 2010-11 to expand this program. If additional funding were provided, the per-resident funding level would increase from its current level of \$12,600 to \$15,000. Additional funding would allow three residency programs not currently supported to receive funding.

Enhance GME Data Collection

The Coordinating Board should maintain and expand the collection of data related to GME so they can make recommendations relating to future funding based on outcomes as it relates to practice type, location, and retention in Texas. Residency programs that have success in training under-represented specialties, or residents that locate in rural or underserved areas should receive additional financial support through state grants or additional formula incentives.



Other Physician Workforce Recommendations

Below are several recommendations the Council considered that are not GME-related and thus fall outside the scope of this report. The Council, however, believes implementation of these recommendations is essential to ensuring Texas has an adequate supply of physicians in the future.

Enhance the Medical Regulatory Environment in Texas

The Council supports additional funding to the TMB in the amount of \$2.5 million for the purpose of further streamlining the licensure and enforcement process and thereby improving the medical regulatory environment in Texas.

Launch a Nationwide Physician Recruitment Campaign

Launch a nationwide media and communications recruitment and marketing campaign to increase the number of physicians migrating to Texas, with a particular emphasis on underrepresented specialists and physicians that establish medical practices in rural or underserved areas in Texas.

The Council supports the appropriation of \$400,000 to ORCA to support the administration of a recruitment and marketing campaign.

Increase Funding for the Physician Loan Repayment Program

The Physician Loan Repayment Program is a nationally recognized program designed to recruit physicians to serve in rural or other MUAs of the state. With 60 percent of the program's participants still practicing in health care shortage areas, 72 percent staying in the Rio Grande Valley, and almost 51 percent still practicing in rural Texas, this program is an important tool in addressing the distribution of physicians in Texas. The 2008 annual loan repayment of \$9,000 was not competitive with amounts offered by other states with similar programs. To address this issue, the Coordinating Board is implementing the following increased loan repayment amounts based on years of service in the program:

- ★ \$13,000 for first-year providers;
- ★ \$15,000 for second- and third-year providers;
- ★ \$18,000 for fourth-year providers; and
- ★ \$20,000 for fifth-year providers.

The 80th Texas Legislature appropriated \$922,047 for this program in FY 2008-09. The Council supports \$2.0 million in new funding (\$2.9 million total) to the Coordinating Board for FY 2010-11 to expand this program. This additional funding will sustain increased loan repayment amounts and increase participation in the program.

Research and Explore New Health Care Service Delivery Models

Texas' academic health centers, health professional associations, and other health care system participants should identify novel delivery models that incorporate strong principles of patient safety, oversight, and accountability. Under new and different health care delivery models not contemplated at the time the practice acts and board rules were developed, providers may be able to provide safe, high-quality care. Therefore, the health professions regulatory boards and other bodies regulating health professions and facilities should be encouraged to grant waivers, on a case-by-case basis, to providers or facilities that develop and propose novel models of care delivery that the regulatory bodies reasonably believe will meet their public safety goals. Individuals or institutions proposing such waivers would need to include a strong evaluation component and regular reports back to the regulatory body.

Increase Funding for the Joint Admission Medical Program

The Joint Admission Medical Program provides services to support and encourage highly qualified, economically disadvantaged students pursuing a medical education. Students receive both undergraduate and medical school support through mentoring and scholarships. As of fall 2008, there were 284 students participating in the program.

The 80th Texas Legislature appropriated \$5.6 million for this program in FY 2008-09. The Council supports an increase of \$10.0 million in additional funding to the Coordinating Board for FY 2010-11 to expand this program. This additional funding will support 105 new students in the program.

Fiscal Impact

The total cost of the recommendations outlined above for FY 2010-11 is \$51.0 million. The TMB collected \$39.7 million in revenue over the agency's biennial budget for FY 2008-09. It is anticipated that the TMB will collect at least this level of excess revenue in FY 2010-11. This excess revenue could be used to fund a majority of the policy options discussed above.

APPENDIX A:

STAKEHOLDER FORUM SUMMARY

PHYSICIAN WORKFORCE NEEDS FOR TEXAS AND THE ROLE OF GRADUATE MEDICAL EDUCATION
CO-HOSTED BY THE TEXAS HEALTH CARE POLICY COUNCIL AND TEXAS MEDICAL ASSOCIATION
TUESDAY, APRIL 8, 2008
AUSTIN, TEXAS

LEGISLATIVE CHARGE

SB 10, 80th Texas Legislature, directed the Texas Health Care Policy Council (the Council) to conduct a study on graduate medical education (GME) needs in preparation for the 81st legislative session. The bill directs the Council to coordinate the study with the Institute of Demographic and Socioeconomic Research at The University of Texas at San Antonio, the Regional Center for Health Workforce Studies at the Center for Health Economics and Policy of The University of Texas Health Science Center at San Antonio, as well as the Texas Medical Board.

Study results are to be reported and study data made available to the Governor, Lieutenant Governor, Speaker of the House, House Committee on Public Health, and Senate Committee on Health and Human Services by Dec. 1, 2008.

Note: The Texas Legislature established the Council in the Texas Governor's Office in 2005 to research and make recommendations on ways to improve the state's health care system. Additional information on the Council is available at: www.governor.state.tx.us/thcpc/.

HOSTS

Nancy Dickey, MD, Chair, Texas Health Care Policy Council served as primary host. Dr. Dickey is a family physician by training and both president of Texas A&M University Health Science Center and vice chancellor for health affairs, Texas A&M University System.

Clifford Moy, MD, of Austin, a psychiatrist by training and member of the Texas Medical Association (TMA) Council on Medical Education, served as co-host and as a member of the speakers' panel.

ATTENDANCE: 75

PRESENTERS

Representatives of the Council, Association of American Medical Colleges (AAMC), Texas Institute of Demographic and Socioeconomic Research, Statewide Health Coordinating Council (SHCC), Texas Higher Education Coordinating Board (Coordinating Board), and TMA

Interim study is to focus on increasing GME programs and slots and physicians practicing medical specialties and to: (1) examine feasibility of using a percentage of physician licensing fees to increase GME programs and slots; (2) put emphasis on and recommend a plan of action for increasing GME programs and slots in medically underserved areas of the state, and physicians practicing specialties underrepresented in the state; and (3) determine number of medical residents who obtain a license to practice medicine in the state on completion of a GME program.

STAKEHOLDER PARTICIPANTS

LEADERSHIP OFFICES

Governor's Office
Lieutenant Governor's Office
Speaker of the House

SENATE OFFICES

Carlos Uresti
Judith Zaffirini
Senate Finance Committee
Senate Health & Human Services Committee

HOUSE OFFICES

Dan Branch
Dianne Delisi
Vicki Truitt
House Appropriations Committee (HAC)
HAC, Subcommittee on Education
House Public Health Committee
House Select Committee on Higher & Public
Education Finance

STATE AGENCIES

Department of State Health Services (DSHS)
Health and Human Services Commission
Health Care Policy Council
Office of Rural Community Affairs
Texas Higher Education Coordinating Board
Texas Medical Board

OPENING

Dr. Dickey opened the forum with a welcome to guest speakers and participants. This was followed by a brief discussion on the origins and make-up of the Council and delineation of the Council's legislative charge.

Dr. Moy followed by introducing Ed Salsberg, a national expert on physician workforce analysis, who was invited to speak on his perspective of national physician workforce trends and needs and to offer his recommendations for Texas in addressing the Council's legislative charge.

EDUCATIONAL INSTITUTIONS

Baylor College of Medicine
Texas A&M University Health Science Center
Texas Tech University Health Sciences Center
Lubbock, Amarillo, El Paso, and Odessa
The University of Texas System
The University of Texas Health Science Center at
Houston
The University of Texas Health Science Center at San
Antonio
The University of Texas Medical Branch (UTMB) at
Galveston
The University of Texas Southwestern Medical Center
at Dallas
University of North Texas Health Science Center at
Fort Worth

STATE PROFESSIONAL ASSOCIATIONS

Children's Hospitals Association of Texas
Texas Association of Public and Non-Profit Hospitals
Texas Academy of Family Physicians
Texas Medical Association

OTHER

Brazos Area Health Education Center, Waco
Capital Area Health Education Center, Austin

PRESENTATION

PHYSICIAN WORKFORCE NEEDS: NATIONAL PERSPECTIVE

Ed Salsberg

Director, Center for Workforce Studies, AAMC, Washington, DC

Mr. Salsberg presented an in-depth evaluation of recent patterns observed in the development of the physician workforce pipeline as well as changing medical practice trends.

Mr. Salsberg presented the following findings and recommendations:

The AAMC represents 129 accredited U.S. medical schools; nearly 400 major teaching hospitals and health systems; and 94 academic and scientific societies.

- ★ The AAMC recommends a 30 percent growth in enrollments by 2015 as a preemptive measure to mitigate a predicted national physician shortage of 123,000 physicians by 2025). The shortage prediction is based on the following trends:
 - ★ 20 years of limited growth in U.S. medical school enrollments.
 - ★ Projected population growth trends and the aging of America (population over 65 years of age will double from 2000 to 2030). At current rate of physician production, U.S. population will begin to grow faster than physician supply by 2015.
 - ★ High expectations among Americans of the U.S. health care delivery system; likely to be exemplified by the baby-boomer generation as they reach retirement age over the next decade.
 - ★ As a reflection of the lack of growth in medical school enrollments in the past 20 years and the overall aging of the baby-boomer generation, the physician workforce is also experiencing an aging trend. Physicians over age 55 doubled from 1985 to 2006, and now number 253,000.
 - ★ Almost half of U.S. medical school enrollments are women. Younger physicians, particularly women, appear to work fewer hours. For example, a recent AAMC survey found 24 percent of female physicians were working part-time, compared with 2 percent of males. Further, 29 percent of female physicians reported taking at least three months leave from practice compared with 5 percent of males.
 - ★ Continued rise in health care utilization, particularly among Americans over age 45.
 - ★ Lack of evidence that new medical interventions and advancements in health care delivery will result in decreased physician demand. Conversely, recent trends indicate new procedures result in greater demand. For example, recent advances in treating and managing cancer are creating greater demands for health care among the growing numbers of cancer survivors.
- ★ Some U.S. medical schools are responding to AAMC's call to action with close to 30 new schools under development or in planning stages, for an estimated 5,500 additional enrollments by 2013.
- ★ Despite need for concomitant growth in GME slots in relation to gains in medical school enrollments, states have generally been slow to expand GME.
- ★ Increasing numbers of international medical graduates (26 percent more since 1996) are training in U.S. GME programs. Most increases occurred in specialties passed-over by U.S. medical graduates, particularly internal medicine and family medicine.
- ★ Much of recent GME growth has been in sub-specialty programs, not entry-level training positions.
- ★ Greatest shortage predicted for 2015 to 2020 with a need for preemptive action now.

Texas

- ★ Texas ranks 25th in state comparisons of medical students per capita, and 27th in number of GME slots per capita.
- ★ AAMC survey shows that among physicians who were in Texas in January 2007, 79.5 percent of those who graduated from both a Texas medical school and a Texas GME program were still practicing in Texas in 2007 (#5 in state rankings). This presents a strong argument for sufficient numbers of GME slots to retain Texas medical graduates.
- ★ There is no single correct method for measuring physician supply needs. Best to base evaluation of workforce needs on the state's demographics and drivers of health care demand.

Recommendations

- ★ Need to make improvements in efficiencies and effectiveness of medical care to maximize available physician workforce.
- ★ To impact physician geographic mal-distribution, there is a need for 1) loan repayment and other fiscal incentives to practice in underserved areas, 2) research on factors that influence a physician's choice of practice location, 3) evaluating the role of academic health centers in reaching out to underserved areas; 4) innovative practice models such as part-time or volunteer positions to better allow physicians to fill health care gaps in underserved areas; and 5) Need for interdisciplinary training of physicians and other health care professionals.
- ★ AAMC recommends expansion of National Health Service Corps awards by 1,500 a year.
- ★ While there is no single correct method for measuring physician supply needs, it is recommended that an evaluation of Texas' workforce needs be based on state demographics and the drivers of health care demand.

STATE PERSPECTIVE: SPEAKERS' PANEL

Dr. Dickey

As a follow-up to Mr. Salsberg's perspective on national trends, Dr. Dickey discussed recent trends for Texas, as follows:

- ★ More than 5,700 students are enrolled in Texas medical schools this academic year.
- ★ Total entry-level class for Texas medical schools expanded 12.3 percent (163 additional students) from academic years 2004-05 to 2007-08.
- ★ Texas medical schools projected to grow 12 percent (173 additional students) more from 2007 to 2010-11 and another 7 percent (109 additional students) by 2015.
- ★ Projected Texas medical school first-year enrollments of about 1,700 by 2012 compared with current baseline of 1,300. In comparison, there are currently 1,481 entry-level GME slots. To accommodate expected medical school enrollment growth by 2012, there is a need to add an estimated 219 entry-level slots to reach a total of 1,700, and allow for retention of Texas medical school graduates in the state for GME. There is also the need for an undefined additional number of GME slots to allow for some highly qualified non-Texas medical graduates to train in Texas.
- ★ Persistent problems with physician geographic and specialty mal-distributions. It was noted that regional variations in physician reimbursement and poor reimbursement are complicating factors.
- ★ AAMC research indicates Texas ranks 2nd in retention of physicians who complete medical school in Texas (58.6 percent); 7th in retention of physicians who complete GME in Texas (56.4 percent) and 5th in retention of physicians who complete both medical school and GME in Texas (79.5 percent), based on physicians in active practice in Texas in January 2007.

- ★ Medical schools and teachings hospitals are not adequately funded for GME; new and different sources of funding are needed.

Karl Eschbach, PhD

Institute of Demographic and Socioeconomic Research at The University of Texas at San Antonio

As the state demographer, Dr. Eschbach provided his perspective of the state's population demographics as well as characteristics and trends for the physician workforce. He presented analyses of physician migration patterns by practice type and medical school of graduation at regional and state levels.

Texas State Data Center at the Institute of Demographic and Socioeconomic Research promotes the availability and accessibility of demographic census data, serves as the state authority on population estimates and projections, and as state's liaison to U.S. Bureau of the Census.

Highlights of Dr. Eschbach's presentation include:

- ★ Gain of about 10,000 physicians from 2002 to 2007 in Texas and attrition of almost 6,000 due to retirement, departure from practice, or relocation to another state.
- ★ Decline in the number of white, non-Hispanic men in Texas medicine between 2002 and 2007 and greater numbers of women and minority physicians.
- ★ Proportionately, more male physicians left Texas between 2002 and 2007 and more younger, female, and underrepresented minority physicians entered Texas during this time period.
- ★ Increase in physician-to-population ratios for some areas of the state in recent years is more likely a result of a loss in population in some rural areas rather than an increased physician supply.
- ★ Evidence of improved physician retention in border areas than in previous years.
- ★ Texas population growing at double the U.S. rate, averaging 2 percent a year, primarily attributable to profound shifts in Hispanic population.

Ben Raimer, MD

Chair, SHCC, DSHS

- ★ Dr. Raimer, chair of the SHCC as well as pediatrician, faculty member, and senior vice president of health policy and legislative affairs at The UTMB at Galveston, described factors affecting physician workforce supply and the resulting shortages. To address the shortages, he recommended the following:
 - ★ Need for economic incentives for health care professionals to locate to underserved areas, including:
 - ★ Premiums on Medicare and Medicaid reimbursement;
 - ★ Locum tenens coverage;
 - ★ Community development and continuing medical education funding;
 - ★ Assistance with implementation of electronic medical records and other information technology advancements;
 - ★ Expanded loan repayment for health professionals;
 - ★ Consideration of a state service obligation program for Texas medical graduates;
 - ★ Incentive programs for retired physicians to volunteer at public clinics or recruitment of retired military physicians into civilian practice; and

The SHCC at DSHS is charged with conducting health planning activities to ensure health care services and facilities are available to all Texans.

- ★ Increase in Federally Qualified Health Centers to improve access to care.
- ★ Need to develop a business plan prior to creation of new medical schools that evaluates best options.
- ★ Importance of interdisciplinary training to prepare health care professionals to work as a team.
- ★ Need for emphasis on preparing a culturally diverse physician workforce and removing barriers for underrepresented minorities.
- ★ Need to increase GME slots and restore general revenue funds in support of the Medicaid draw-down of federal funds for GME.
- ★ Need to increase awareness of practice opportunities within the mental health profession.
- ★ Increased utilization of telemedicine technology to address access in underserved areas.
- ★ Consider adoption of a state model for projecting future physician supply and demand.

Stacey Silverman, PhD

Director, Medical Programs, Coordinating Board

Dr. Silverman described the structure and location of the state's 10 health-related institutions and quantified the number of GME positions by institution. She described the physician educational pipeline and provided details on GME and other state physician workforce development programs, as follows:

- ★ Length of GME training is dependent on a physician's medical specialty. For example, generalists train for three years; obstetricians/gynecologists four years; while general surgeons, neurological surgeons, and orthopedic surgeons train for five years.
- ★ Gradual growth in Texas GME slots:

2005	5,342
2006	5,572
2007	6,111
- ★ Currently, 1,481 filled entry-level GME positions.
- ★ Joint Admission Medical Program, a state program that dedicates 10 percent of Texas medical school enrollments to economically disadvantaged students, received increased funding in the current budget, rising from \$4.0 million to \$5.6 million. The Joint Admission Medical Program has 284 student participants.
- ★ Texas has had a long-term commitment to promoting primary care (PC) careers, with the first programs originating in 1977.
- ★ This year, 66 physicians received loan repayment funds from the state program administered by the Coordinating Board. Repayment recipients are required to practice in PC or mental Health Professional Shortage Areas or at certain state agencies.

The Coordinating Board was established to provide leadership and coordination for the Texas higher education system to achieve excellence for the college education of Texas students. Agency is charged with allocation of state trusteed funds for primary care GME and collects statistical information on Texas GME programs.

Clifford Moy, MD

Member, TMA Council on Medical Education

Dr. Moy, a psychiatrist by training from Austin, represented the Texas Medical Association and Council on Medical Education at the forum. He shared results of research on recent GME and physician workforce trends as well as projected physician supply and medical school enrollments, as follows:

TMA Council on Medical Education is charged with coordinating medical education activities within the association. TMA represents 43,000 Texas physicians and medical students.

- ★ Percentage of physicians in rural practice dropped from 8.1 percent to 7.1 percent from 1997 to 2007.
- ★ Despite achieving record-high growth in Texas physician supply since 2003 (licensing over 10,000 new physicians, largely as a result of tort reform measures in 2003), growth rate was about on par with population gains, resulting in no real change in the state physician-to-population ratio.
- ★ Texas physician per 100,000 population ratio is projected to decline between 2010 and 2015, as a result of the likelihood that population gains will supersede growth in physician supply.
- ★ Average processing time for Texas medical license applications averaged 55.5 days during the first quarter of FY 2008, a significant improvement.
- ★ Texas medical schools increased enrollments by 12.5 percent from 2004 to 2007 and are projected to grow a total of 31 percent by 2015 to a total of almost 7,000 enrollments. Medical graduates require 3-7 years in specialty training to qualify for practice.
- ★ The highest percentage of 2007 medical graduates who left Texas for GME, left to enter training in otolaryngology, general surgery, emergency medicine, preliminary surgery, and orthopedic surgery.
- ★ Of 40 medical specialties, Texas is comparable to U.S. rates for only two specialties, allergy /immunology and colon/rectal surgery. Texas fell below the U.S. rates for 37 specialties, with the lowest in vascular medicine and psychiatry.

Mr. Salsberg

As a national physician workforce expert, Mr. Salsberg provided a briefing on the potential role of GME in meeting physician workforce needs, as follows:

- ★ No simple methods for determining physician workforce needs. There is a lack of consensus on GME specialty programs that need to grow, however, the specialties focused on aged populations are expected to be in greater demand as the baby boomer generation reaches Medicare-eligibility age (e.g., cardiologists, cardiovascular surgeons, geriatricians, ophthalmologists, and orthopedic surgeons).
- ★ Need to align GME programs with the state's physician workforce needs.
- ★ Should not limit focus to growth in numbers, but also need to consider specialty and competency needs.
- ★ Need to consider what factors influence a resident's decision about location of practice.
- ★ There are a variety of methods for distributing GME funds, i.e., incentives for shortage specialties or for programs in underserved areas or grants through a request for proposal process;
- ★ Low reimbursement rates for PC signals to young physicians that these specialties are not as valued as specialties receiving higher levels of reimbursement.
- ★ Current Texas annual loan repayment amount of \$9,000 does not sufficiently compete with the signing bonuses of \$20,000 to \$30,000 that are generally available to young physicians.
- ★ Need for increased national support for GME.

ROUND TABLE DISCUSSION

Dr. Dickey asked forum participants to provide input in response to three policy questions:

1. Whether there is a consensus on underrepresented specialties most in need.
2. Action steps supported by stakeholders to increase number of programs and residents in priority areas.
3. Recommendations for an action plan.

While forum participants did not identify a clear consensus in response to the questions, there was broad participation from stakeholders representing a broad array of stakeholder groups. During the discussions, participants identified the following issues, concerns, and recommendations:

- ★ The state has increased GME funding for medical schools to supplement teaching costs. This level of funding, however, will not support needed growth in GME residency programs (\$5,634 per resident per year in state funding in comparison to need for \$16,000 per resident per year). Currently, no state funding is being allocated to hospitals for GME (after elimination of Medicaid GME funding in 2005 by the Texas Legislature as a cost saving measure).
- ★ Recognizing that the average GME training period is four years, a minimum of 219 additional Texas GME slots need to be added each year from 2012 to 2015, or a total of 876 additional GME slots.
- ★ Total costs to train a resident are estimated at \$80,000 to \$90,000 per year for both medical school and hospital expenses.
- ★ A survey by The University of Texas Southwestern Medical Center of 2008 graduating medical students found 30 to 40 percent of the students who plan to leave the state for GME this year would have preferred to stay in Texas had a GME slot been available; these data demonstrate a shortage of GME slots in Texas.
- ★ The national GME accreditation process is arduous and lengthy, serving as an impediment to timely GME expansions.
- ★ Medicare GME funding caps are restraining growth and low hospital margins are not conducive for independent, non-governmental funding of new GME positions. Workforce research on specialty needs could assist hospitals in justifying specific types of GME expansions.
- ★ Although teaching hospitals in Texas have limited margins of funding GME on their own, they may need to increase funding for GME to enable needed growth in the state.
- ★ Texas is below other states in number of critical pediatric sub-specialists (e.g., rheumatology, developmental, child psychiatry, radiology, orthopedics, emergency medicine) for almost seven million children, a population size equivalent to the total population of 25 other states.
- ★ Proposal under development for pediatric sub-specialist loan repayment program, with potential funding from Medicaid Frew lawsuit settlement, to fill pediatric sub-specialty shortages. (Typically, \$250,000 or more is needed for a hospital to recruit a pediatric physician sub-specialist.)
- ★ Revamping the Texas physician education loan repayment program to offer much larger loan repayment amounts (currently \$9,000 a year) in recognition of rising student debt.
- ★ Physician workforce needs have regional variations, with generally greater needs in rural and border areas.
- ★ There is an acute shortage of psychiatrists in the state.
- ★ Rural communities with small populations and high percentages of uninsured may not be able to support a physician's practice.

- ★ Proposed reductions in duty-hour caps for resident physicians could further impact hospital staffing needs.
- ★ H1-B Visas may provide a greater opportunity than J-1 Visas for Texas to recruit more international medical graduates for practice in underserved communities.
- ★ Development of a primer to explain GME funding is needed to help inform policy makers.

Following the presentations and discussions, forum participants indicated they gained a better understanding of physician workforce needs and the potential role of GME in filling those needs.

CLOSING

Dr. Dickey closed the meeting by inviting participants to attend and participate in the Council's next meeting, scheduled for July 18, 2008, in Austin, Texas where the Council's Partnership Workforce Subcommittee will continue discussion of the legislative charge to study GME needs in Texas.

APPENDIX B:

SUMMARY OF STATE PHYSICIAN WORKFORCE REPORTS¹

Federal Reserve Chairman Ben Bernanke stated at the Senate Finance Committee Health Reform Summit on June 16, 2008 that “improving the performance of our health care system is without a doubt one of the most important challenges that our nation faces.”² As a possible way to improve existing health care systems and meet projected future demands, states are increasingly examining physician shortages.

This paper is intended to summarize recent state reports concerning physician shortages with a focus on stated purposes and key findings. All of the states represented in this paper project shortages in the future but show diversity in their policy recommendations.

ALASKA

In August 2006, the Alaska Physician Supply Task Force issued a report titled “Securing an Adequate Number of Physicians for Alaska’s Needs.”³ The report was commissioned by the Department of Health and Social Services and the President of the University of Alaska to address two questions:

1. What is the current and future need for physicians in Alaska?
2. What strategies have been used and could be used in meeting the need for physicians in Alaska?

The report found that Alaska’s existing shortage is likely to worsen over the next 20 years. If the physician-to-population ratio remains constant the projected shortage will be 880 physicians. In order ensure an adequate supply of doctors, Alaska must add a net of 59 physicians a year, a 50 percent increase in current net gains.

On the basis of likely effectiveness, cost-to-benefit advantages, and achievability the report recommended several goals:

- ★ Increase the in-state production of physicians by increasing the number and viability of medical school and residency positions in Alaska for Alaskans;
- ★ Increase the recruitment of physicians to Alaska by assessing needs and coordinating recruitment efforts;
- ★ Expand and support programs that prepare Alaskans for medical careers; and
- ★ Increase retention of physicians by improving the practice environment in Alaska. This includes developing a physician practice environment index for Alaska, developing tools to promote community-based approaches to recruitment, and supporting federal tax credit legislation for physicians that meet frontier practice requirements.

ARIZONA

In 2005 Arizona State University and the University of Arizona Health Sciences Center prepared the “Arizona Physician Workforce Study.”⁴ This two-part report seeks to describe the results of a comprehensive review of the current physician workforce in Arizona and estimate the supply of physician services.

1 Information compiled by Taylor Cook, intern, Budget, Planning, and Policy, Office of the Governor.

2 Bernanke, Ben S. “Challenges for Health Care Reform.” Senate Finance Committee Health Reform Summit, Washington, D.C. 16 June 2008.

3 State of Alaska. Alaska Physician Supply Task Force. “Securing an Adequate Number of Physicians for Alaska’s Needs.” [University of Alaska](http://www.alaska.edu/health/downloads/PSTFweb.pdf). Aug. 2006. 12 Dec. 08 <<http://www.alaska.edu/health/downloads/PSTFweb.pdf>>.

4 Johnson, William G., et al. “The Arizona Workforce Study - Part I: The Numbers of Practicing Physicians 1992-2004.” [Flinn Foundation](http://www.flinn.org/docs/Workforce92_223.pdf). 2005. 12 Dec. 08 <http://www.flinn.org/docs/Workforce92_223.pdf>.

The report found that although Arizona's physician density has increased in the last decade, it remains below the national average at 207 physicians per 100,000 individuals. Urban counties fared far better than rural counties in their physician-to-population ratios with a high of 292 compared to the rural low of 50. It also noted the high percentage of practicing physicians who attended medical school in states other than Arizona (90 percent).

The Arizona report does not make policy recommendations, but does suggest that future monitoring should include the supply of all health professionals in addition to the physician workforce. Since health care professionals complement one another in providing quality services, more comprehensive monitoring is expected to provide policy makers with more complete information and enhance recruitment and retention.

CALIFORNIA

The June 2004 report "Is There a Doctor in the House?"⁵ examined California's physician workforce over the past 25 years. The study was solely funded by the Nicholas C Petris Center on Health Care Markets and Consumer Welfare at the University of California, Berkeley in order to inform the discussion on whether or not there is a physician workforce crisis in the state. It seeks to answer several questions including: 1) does the state have a sufficient number of physicians; 2) are physicians adequately distributed with respect to specialty and geographic location; and 3) are physicians meeting the needs of California's racially/ethnically diverse population. In addition to physician supply the report also examined nurse practitioners and physician assistants.

The study found that the number of physicians and the physician-to-population ratio have both been on the rise. The state has an adequate supply of generalists, but there are modest shortages in some specialties. However, physicians are aging rapidly and many are expected to retire in the next decade. The study also found that while diversity is increasing, minority physicians are under represented in the health care workforce.

The report makes several policy suggestions including:

- ★ Modestly increasing medical school and residency enrollment to prepare physicians to meet the needs of underserved populations and communities;
- ★ Continue to support programs that recruit medical students and residents for underserved areas, provide more training in these areas, and expand loan repayment programs for physicians who practice in these areas;
- ★ Expand health insurance coverage in underserved areas to increase residents' ability to pay for physician services;
- ★ Ensure that physicians educated in California have the linguistic and cultural competencies required to meet the health care needs of the state's population;
- ★ Support alternatives to traditional physician-patient visits that can improve the quantity, efficiency, and effectiveness of medical care including expanding the use of physician assistants and nurse practitioners and the use of information technology; and
- ★ Make resources available to continue monitoring changes in physician supply and demand.

5 Coffman, Janet, et al. "Is there A Doctor in the House: an Examination of the Physician Workforce in California Over the Past 25 Years." Nicholas C. Petris Center on Health Care Markets and Consumer Welfare. 2004. 12 Dec 08 <<http://www.petris.org>>.

FLORIDA

The Council for Education Policy, Research, and Improvement, an advisory council to the Florida legislature, was asked to define a model to quantify the state's physician workforce, identify shortages, and develop cost-benefit estimates of alternatives to produce the required number of physicians. The report, titled "Medical Education Needs Analysis,"⁶ focused primarily on the supply of physicians from Florida medical schools and the demand for such physicians.

The report made a number of policy recommendations including:

- ★ Expand medical residency positions in the state;
- ★ New residency positions should be targeted to areas of critical need;
- ★ To provide physicians to critically underserved areas, the legislature should fully fund the Florida Health Service Corps and the Medical Education reimbursement and Loan Repayment Program;
- ★ Increasing medical school capacity should be pursued only after policies to immediately address a physician shortage have been implemented; and
- ★ When expanded medical school capacity is pursued, the options of expanding existing medical school capacity, establishing regional partnerships, and establishing new medical schools should be prioritized based on cost-efficiency.

GEORGIA

The Georgia Board for Physician Workforce, a state agency responsible for advising the Governor and the General Assembly on physician workforce and medical education policy, authored a report in 2004 titled "Is There a Doctor in the House? A Look at Georgia's Current and Future Workforce Needs."⁷ The report covers the conditions of the current physician workforce and its ability to meet anticipated future demand.

The report found that Georgia has made substantial progress in increasing the number of practitioners in primary care (PC) specialties, increasing physician diversity, and improving physician-to-population ratios in rural areas. However, the report warns that new data is showing gradual setbacks in these areas and an overall shortage of physicians is anticipated - predictions that were confirmed in a 2006 follow up report.⁸

The follow up report concludes with several recommendations, including:

- ★ Take steps to maintain the current physician capacity, including enhancing physician efficiency through technology and partnerships;
- ★ Increase the overall number of physicians practicing in the state by maintaining an attractive marketplace for physicians;
- ★ Promote increased productivity through the use of technology and partnerships between physician groups and other providers;
- ★ Increase diversity in the workforce and account for growing linguistic barriers by developing programmatic responses that account for identified barriers to diversity;
- ★ Ensure practices in underserved areas through recruitment and incentives;
- ★ Build and maintain a medical education system that can provide for the state's needs, including expanded research capacity and focusing on PC; and
- ★ Fully fund existing medical education.

6 Council for Education Policy, Research, and Improvement. "Medical Education Needs Analysis." Tallahassee, FL. 18 Nov. 04. 12 Dec. 08 <<http://www.fha.org/ceprimedpres.pdf>>.

7 Georgia Board for Physician Workforce. "Is There a Doctor in the House: A Look at Georgia's Current and Future Physician Workforce Needs." Georgia Board for Physician Workforce. Dec. 2004. 12 Dec. 08 <<http://gbpw.georgia.gov>>. Path: Publications & Reports; GBPW Publications

8 ---. "Update on Georgia's Physician Workforce: Follow Up Report To: 'Is There a Doctor in the House?'" ---. Oct. 2006. 12 Dec. 08 <---->---

IOWA

In the summer of 2006 the University of Iowa established a task force to explore issues related to the Iowa Physician Workforce. The task force was asked to measure physician supply and demand, analyze workforce trends, and make recommendations.⁹

The task force found that from 1980 to 2005 Iowa's supply of physicians increased at a much higher rate than the population, but that rate of growth is expected to slow in coming years. In addition there is a geographic disparity in the distribution of physicians that favors urban areas.

The report made several recommendations intended to stave off a physician shortage and improve the geographic distribution:

- ★ Increase the class size in Iowa medical colleges;
- ★ Increase enrollment in Iowa residency and fellowship programs;
- ★ Identify specific reasons for physician attrition and develop strategies to stem the outflow;
- ★ Establish loan repayment programs for specific specialties;
- ★ Promote information concerning opportunities to practice in Iowa to medical graduates training in other states;
- ★ Seek state tax relief for physicians entering and remaining in practice in Iowa for a specified term.
- ★ Implement tort reform; and
- ★ Improve Medicare and Medicaid reimbursements.

KENTUCKY

Kentucky's physician shortage report, "Rural Kentucky's Physician Shortage,"¹⁰ was conducted by the University of Kentucky Center for Rural Health to make recommendations on the on-going shortage of physicians in many of Kentucky's rural counties.

The report acknowledged that there are no immediate remedies to these shortages but that there are some short and long term strategies that, if fully implemented, could show significant improvements over time. These recommendations included:

- ★ Funding rural residency programs at levels equal to or higher than urban based programs;
- ★ Waive fees for residency placements in rural counties;
- ★ Allow loan repayment matching funds for PC physicians in targeted counties;
- ★ Expand rural residency programs;
- ★ Reform medical liability;
- ★ Encourage young students from rural counties to pursue careers as health professionals; and
- ★ Continue support for J-1 Visa waivers for international medical graduates and pursue additional visa waiver incentives.

9 University of Iowa Carver College of Medicine and University of Iowa Hospitals and Clinics. "Report of the Task Force on the Iowa Physician Workforce." Univ. of Iowa Carver College of Medicine. Jan. 2007. 12 Dec. 08 <<http://www.healthcare.uiowa.edu/CCOM/Administration/IowaPhysicianWorkforce.pdf>>.

10 Casey, Barretta R. MD., et al. "Rural Kentucky's Physician Shortage." University of Kentucky Center for Rural Health. February 2004. 12Dec. 08 <<http://www.mc.uky.edu/Ruralhealth/pdf/docshortage.pdf>>.

MARYLAND

The Maryland Physician Workforce Study, issued in April 2008, was prepared by Boucher and Associates on behalf of the state's Hospital Association and MedChi, the Maryland State Medical Society.¹¹ In May, 2008 the report was presented to the Maryland Governor's Task Force on Health Care Access and Reimbursement.

The report focused on the supply of physicians providing direct clinical services to patients in the state and makes supply projections through 2015. The goals of the study were to: 1) do an in-depth analysis of both current and future physician supply and physician needs; 2) develop a consensus about what steps need to be taken to maintain the competitiveness of Maryland's physician workforce environment in light of projected national shortages; and, 3) identify ways to maintain a physician workforce sufficient to provide Maryland residents with access to the broadest array of high-quality physician services.

Currently, the state's physician supply is close to the national average and Maryland physicians work fewer hours than average. However, the report projected shortages in some regions in coming years, particularly in PC.

MASSACHUSETTS

In 2007 the Massachusetts Medical Society published its Physician Workforce Study.¹² In addition to the standard annual report, the 2007 study sought to gauge the impact that the Massachusetts mandatory health insurance law has had on physician supply.

The report found that increased demand is generally increasing the hours physicians work and decreasing their job satisfaction. The report alleges that it may become increasingly difficult for Massachusetts to retain its existing physician workforce, medical residents, and students if the environment does not change.

Among the recommendations that the report makes are:

- ★ Work with stakeholders to ensure a robust physician workforce and eliminate shortages in specialty areas as well as PC;
- ★ Medical education debt reduction for those who commit to a number of years of clinical practice in Massachusetts; and
- ★ Simplify administration.

MICHIGAN

In 2004 Michigan's Blue Ribbon Committee on Physician Workforce, composed of representatives from Michigan universities and health-related state agencies, commissioned the Center for Workforce Studies of Albany, New York, to replicate a national physician workforce study for the state of Michigan.¹³ The study was designed to compare Michigan with the United States as a whole.

The study found that at current rates, Michigan will be short 4,400 doctors by 2020. The shortages are projected despite the fact that Michigan is home to four medical schools and has a high number of general and teaching hospitals. Most of the expected loss is due to physicians leaving the state and not the aging physician population. The report stated that Michigan loses physicians after graduation and residency to warmer climates and stronger economic growth areas.

11 Maryland Hospital Association and The Maryland State Medical Society. "Maryland Physician Workforce Study." Maryland Hospital Association. 2008. 12 Dec 08 <http://www.mdhospitals.org/mha/Health_Policy_Issues/Physician_Workforce_Study/Executive_Summary.pdf>

12 Massachusetts Medical Society (2007). "Physician Workforce Study, Executive Summary." Massachusetts Medical Society. July 2007 12 Dec. 08 <<http://www.massmed.org>>. Path: News & Publications; Research Reports & Studies; MMS Physician Workforce Study - July 2007.

13 Center for Health Workforce Studies. "Physician Supply and Distribution in Michigan, 2004." Institute for Health Care Studies. March 2006. 12 Dec. 08 <http://www.ihcs.msu.edu/pdf/Michigan_Physician_Supply_Distribution_2004.pdf>.

MISSISSIPPI

In January 2004 “Mississippi’s Physician Labor Force: Current Status and Future Challenges,” was published in the Mississippi State Medical Association’s Journal.¹⁴ The paper focused on policy changes that could potentially create a more favorable environment for attracting and retaining physicians in Mississippi.

Based on a literature review of physician retention factors and physician data in Mississippi, the paper made several recommendations, including:

- ★ Improve retention of University of Mississippi Medical Center graduates for practice in-state;
- ★ Improve retention of active physicians;
- ★ Increase the recruitment of physicians from out-of-state; and
- ★ Ease difficulties associated with working part-time.

NEVADA

In 2006 the Chancellor of the Nevada System of Higher Education, convened a task force to study physician shortages and make recommendations.¹⁵ The task force hired LarsonAllen, a Minnesota-based consulting firm, to review and make recommendations concerning Nevada’s universities and medical school. LarsonAllen’s study found that Nevada, the fastest growing state in the country, will face major shortages unless the state’s public medical school and other health education programs expand their class sizes and facilities. Recommendations included:

- ★ Increase medical school class sizes from 52 to 96 by 2011;
- ★ Increase full time statewide medical faculty from 189 to 500; and
- ★ Increase the number of total post-MD resident and fellowship positions from 194 to 444, using projected state needs for specific physician providers to tailor health education training programs.

NORTH CAROLINA

The North Carolina Institute of Medicine in collaboration with the North Carolina Health Professional Data system and the Southeast Regional Center for Health Workforce Studies issued a report in June 2007 entitled “Providers in Demand: North Carolina’s Primary Care and Specialty Supply.”¹⁶

The study found that North Carolina has a physician shortage, particularly in rural and minority populations, and that this shortage is expected to worsen in coming years. It concluded with several alternative strategies that could help the state maintain its current physician population ratio over the next 25 years. These included increasing education production, increasing the production of non-physician clinicians, increasing in-migration, or increasing the capacity of the health system to manage patients and improve the overall health of North Carolinians to reduce the need for services.

14 Cossman, JS. “Mississippi’s Physician Labor Force: Current Status and Future Challenges.” *Journal of the Mississippi State Medical Association*. 45(1): 8-31. 2004. 12 Dec. 08 <<http://www.ncbi.nlm.nih.gov/pubmed/14752973?dopt=Abstract>>.

15 University of Nevada School of Medicine. “University of Nevada School of Medicine proposes new health science center concept to Board of Regents.” *University of Nevada School of Medicine Press Release*. 17 Mar. 06. 12 Dec. 08 <<http://www.medicine.nevada.edu>>. Path: News Archive; 2006 Press Releases; University of Nevada School of Medicine proposes new health sciences center concept to Board of Regents.

16 North Carolina Institute of Medicine. “Providers in Demand: North Carolina’s Primary Care and Specialty Supply.” *North Carolina Institute of Medicine*. June 2007. <http://www.nciom.org/projects/supply/provider_supply_report.pdf>.

Of the recommendations made in the report, several were given top priority, including:

- ★ Increase appropriations to study and monitor the health professional workforce;
- ★ Encourage medical institutions to experiment with models that could improve the efficiency of care;
- ★ Increase enrollment in North Carolina medical schools to Association of American Medical Colleges recommendation levels;
- ★ Increase non-physician clinician enrollments;
- ★ Explore financial incentives to encourage providers to establish practices and remain in practice in underserved areas;
- ★ Offer premium subsidies for malpractice insurance to physicians in underserved areas;
- ★ Implement strategies to increase the number of minority non-physician clinicians; and
- ★ Recruit more bilingual students and encourage students to take Spanish medical language courses.

OHIO

In 2007, the Robert Graham Center and the American Academy of Family Physicians prepared a report entitled “Physician Supply and Demand Consultation to the Ohio Board of Regents.” The report is intended to address questions concerning physician demand in the face of a growing national economy and an aging population. It also projects composition and distribution needs.

The report found that there are gaps in the distribution of the physician workforce, especially with underserved and uninsured populations. It also found significant variation between Ohio medical schools in in-state retention, PC physician production, and production of physicians for rural and underserved areas. Policy ideas include programs that increase minority and rural-born student participation in medical education, school and residency partnerships with safety net clinics, loan repayment, practice start-up cost support, and state funded support of education in medical school and residency.

UTAH

The Utah Medical Education Council issued a workforce study in 2006 entitled “Utah’s Physician Workforce: A Study on the Supply and Distribution of Physicians in Utah.” The study surveys all of Utah’s licensed physicians to understand the characteristics and shortfalls of the state’s workforce.

The study found that Utah currently has 165 physicians per 100,000 residents, 125 below the recommended range. Estimates found that the state will need to recruit 270 physicians a year to make up for the current deficit, projected attrition, and increasing population.

The report recommended several steps to alleviate Utah’s shortage:

- ★ Develop a comprehensive state health care workforce plan.
- ★ Identify and target students that are most likely to practice in Utah, including hosting job fairs and coordinating with community physicians to retain graduate medical students.
- ★ Prioritize statewide needs by specialty.
- ★ Explore ways to increase program output by increasing funding for residency positions.
- ★ Increase rural training.
- ★ Explore recruitment and retention incentives for medical school faculty.
- ★ Investigate new health care delivery models.
- ★ Improve data collection.

WISCONSIN

In 2004 the Wisconsin Hospital Association and the Wisconsin Medical Society's joint task force on Wisconsin's Future Physician Workforce published "Who Will Care for our Patients: Wisconsin Takes Action to Fight a Growing Physician Shortage."¹⁷ The charge of the workforce was to undertake a needs assessment of current and future physician supply, identify factors that are impediments to meeting those needs, and find specific strategies to help assure adequate future access to physicians in Wisconsin.

The report concluded that the current supply is not sufficient in several ways. There are shortages of PC physicians in rural and inner-city areas, specialty physicians are in demand and difficult to recruit, and general surgeons and radiologists are critically needed in rural areas. These shortages are anticipated to worsen as demand increases through 2015.

The Action Plan presented in the report focused on a number of changes including:

- ★ Enrolling students who will practice in Wisconsin in medical schools;
- ★ Developing new care delivery models;
- ★ Retaining physicians in and attracting physicians to Wisconsin;
- ★ Targeting and enhancing funding for medical education; and
- ★ Creating an infrastructure to guide medical education in Wisconsin.

ADDITIONAL READING

Association of American Medical Colleges Center for Workforce Studies (2007). "Recent Studies and Reports on Physician Shortages in the US," Washington, DC.

17 Wisconsin Hospital Association and the Wisconsin Medical Society. "Who Will Take Care of Our Patients: Wisconsin Takes Action to Fight a Growing Physician Shortage." Wisconsin Medical Journal. 2004. <<http://www.wisconsinmedicalsociety.org/files/2008PhysicianReport.pdf>>.

APPENDIX C:

PROJECTIONS OF PHYSICIAN, NURSE PRACTITIONER, AND PHYSICIAN ASSISTANT WORKFORCE REQUIREMENTS FOR TEXAS, 2007-2025

PREPARED BY THE OFFICE OF THE STATE DEMOGRAPHER, OCTOBER 2008

BACKGROUND

The Office of the State Demographer produces annual estimates and biennial projections of population for Texas counties, with demographic detail by age, sex, race, and Hispanic origin. Using the most recent estimates and projections as a baseline, the State Demographer projected the need for physicians in 2025 based on currently observed population-to-physician ratios.

Despite the importance of achieving and maintaining an adequate number of health care professionals, it is difficult to define optimal workforce levels. The federal definition used to identify physician shortage areas comes from an index of demographic characteristics and the ratio of primary care (PC) physicians-to-population. While this index can be useful, it is also arbitrary and does not account for many relevant local determinants of need and demand, such as low rate of health insurance coverage and ability to pay for health care services. A second method used to calculate the necessary workforce supply is to project market demand. It is useful to project future supply and demand, given the long lead time in training medical professionals. However, this second method does not necessarily imply an optimal supply or distribution of physicians, nurse practitioners, or physician assistants. Even if optimal workforce levels could accurately be defined, new technology and methods of care will inevitably change the calculus of needed supply in the future.

There are several reasons for the state of Texas to take an interest in the future supply of physician, nurse practitioner, and physician assistant services in the state:

1. The state's population is growing rapidly. Census Bureau estimates show that the Texas population has grown by more than three million persons between 2000 and 2007. Plausible projections of state population to 2040 suggest that the population may exceed 50 million by that year.
2. Both the population of the state and the state's physician workforce are aging. The former trend implies increasing need for physician services. The latter trend implies the need for the substantial replenishment of the physician workforce by 2025.
3. While recruitment of physicians from other states or foreign countries has been a primary mechanism for increasing physician supply in the state, other states face the same demographic profile in their physician population as Texas, increasing the competition for physician services.
4. A significant portion of the state's population resides in medically underserved areas by the federal definition. Meeting the needs of these areas is an uphill battle under any circumstances. In a period of rapid population growth and aging, need for replenishment of the physician workforce, and increasing competition for physician services, these areas may lag further behind rather than have needs addressed if supply of the physicians and other health care professionals is not increased.

KEY VARIABLES ASSOCIATED WITH PROJECTING PHYSICIAN WORKFORCE NEEDS

Patient side:

- ★ Morbidity
- ★ Ability to pay
- ★ Taste in medical care

Provider side:

- ★ Substitutions of alternative suppliers
- ★ Medical technology
- ★ Relative incentives
- ★ Physician preferences

KEY LIMITATIONS ASSOCIATED WITH PROJECTING PHYSICIAN WORKFORCE NEEDS

Projections only provide an illustration of potential future workforce “needs”, if current workforce is “correct”, and all else remains the same except population size and composition.

“Needs” may be met by substitution of other services or new technologies.

All variables will change (e.g., physician and patient behavior, financial resources, supply, morbidity, etc.).

DATA SOURCES AND METHODOLOGY FOR HEALTH CARE WORKFORCE PROJECTION

PHYSICIAN PROJECTIONS

The physician workforce projections are based on demographic projections of future population size and composition. The State Demographer used three projections of population size based on three alternative population growth scenarios. One growth scenario assumed age, sex, ethnicity specific net migration rates for the state of Texas and for counties within Texas equivalent to those observed in the inter-census period from 1990 to 2000. A second scenario assumed migration rates equal to half the migration rates observed in this period. A third scenario estimated net migration in the period from 2000 to 2004 based on population estimates for the later year.

The largest factor bearing on projected increases in need for physician services is clearly population growth. The state of Texas has been among the fastest growing of large states, increasing by 14.6 percent between 2000 and 2007. Besides population growth, a second important factor bearing on changing physician service demand is changes in population composition, especially with respect to age structure. The population of the state of Texas, like that of the United States, is soon to experience a rapid growth in the proportion of the population that is 65 years old or older, with a declining population share of children and young adults. These changes are likely to be associated with an increased relative demand for services associated with conditions that are prevalent at older ages, and decreased relative demand for services associated with pregnancy, child-bearing, and pediatric care. To some extent, the extent of these changes is reduced for Texas compared to other states by high rates of immigration and in-migration of younger adults at peak childbearing ages, but the basic trends are important to the population of this state.

For this reason, to adjust the estimates for the effects of these compositional shifts, the State Demographer adjusted the projections with respect to differences in service demands for particular specialists as a function of age and gender composition. Data from two sources was used: the National Ambulatory Medical Care Survey, which reports representative sample data about use of physician services in office-based settings for the United States as whole, and state of Texas hospital discharge data, which reports population data about use of services in inpatient settings for a large majority of Texas hospitals.

Data from the National Ambulatory Medical Care Survey, for the period 2004 to 2006, was used to generate distributions of office visits for the United States population by age and sex. Using U.S. Census Bureau estimates of the age-sex composition of the United States population for this period, the State Demographer generated ratios of age-sex-specialty specific office visits to population for the population of the United States as a whole. These U.S. ratios were applied to Census Bureau estimates of the 2007 population in Texas (by age and sex) to estimate a distribution of office visits to each specialty of physicians for each age-sex group in Texas, assuming that the national visit ratios accurately described the age and gender structure of the use of physician services in Texas.

Similarly, the State Demographer used Texas 2006 hospital discharge data to obtain number of encounters with hospital-based physicians for hospital-based specialties: pathologists, anesthesiologists, and radiologists and the ratio of encounters to the population of the state of Texas, using Census Bureau population estimates for 2006 by age and sex.

The distributions from these two sources were used to allocate the observed count of physicians in each specialty to a particular age-sex subgroup in Texas, creating subgroup specific physician-to-population ratios. Counts of active physicians in direct patient care in Texas in 2007 were totaled from the Texas Medical Board roster of licensed physicians supplied by the Texas Department of State Health Services.

Projections of future physician need by specialty were created for each specialty by carrying forward the subgroup specific physician population ratio to future years, using projected population change in the each demographic subgroup.

“Physician need” in this context means the number of physicians needed to maintain the current age-adjusted physician to population ratio in the state of Texas, without implying either an optimal level for these ratios, or a future imputed economic demand for physician services in any specialty.

NURSE PRACTITIONER PROJECTIONS

The basic procedure for the nurse practitioner projection is similar to physician projection, except that nurse practitioners were divided into two groups according to where they work. The first group included those who practiced in hospital settings, either inpatient or outpatient. The second group included those who practiced in any other setting. The State Demographer generated population-encounter ratios from hospital discharge data for the first group, and office visit-population ratios calculated from the National Ambulatory Medical Care Survey and nurse practitioner visits ratio for the second. The resulting projections were pooled.

PHYSICIAN ASSISTANT PROJECTIONS

The basic procedure for the physician assistant projection is similar to the physician projection except that physician assistants were not distinguished by specialties. Physician (excluding Obstetricians and Gynecologists) office visits patterns from the National Ambulatory Care Survey were assumed to apply for physician assistants.

METHODOLOGICAL NOTE

In contrast to other uses of the National Ambulatory Care data set or similar data sets to generate estimates of projection of number of anticipated office visits in projected future populations, which are then used to calculate a need for a specific number of physicians (with assumptions about average physician workload) to provide estimated need for ambulatory care services, the State Demographer used distributions from this data set to allocate the activities of the current physician workforce to population subgroups. By this method the State Demographer obtained physician-population ratios that are subgroup specific. In projecting future physician population ratios using demographic projections of population, the State Demographer was able to capture the effects not simply of overall population growth, but also of changing composition. The State Demographer did not attempt to predict or adjust for changing efficiencies or effectiveness of physician services, changes in demand for services, or substitution of sub-specialties. Thus the projections provide a baseline for understanding the implications of demographic changes on physician workforce needs.

RESULTS

Table 1 reports physician projections under three migration scenarios. Projection physician need for 2025 ranges from 49,637 under the slowest growth scenario to 59,506 under the most aggressive scenario. The middle scenario, based on estimated migration patterns through 2000-2004 projects a need for 54,023 physicians in 2025. More recent growth trends suggest that this scenario has continued to describe changes in state population well in the later years of this decade, and may be the most plausible short-to-medium run scenario.

Not surprisingly, the projections show faster rates of growth to be necessary in particular sub-specialties. In particular, the projections imply need for faster growth in specialties compared to PC, given current age patterns of utilization. The middle (2000-2004) growth scenario implies a need for a 50 percent increase in specialists, and a 40 percent increase in PC physicians. The smallest increases are projected for pediatricians and Obstetricians and Gynecologists. The largest increases are projected for specialists in cardiovascular diseases, urologists, and ophthalmologists.

TABLE 1: PHYSICIAN PROJECTIONS

SPECIALTY	MIGRATION EQUAL TO ½ OBSERVED 1990-2000					MIGRATION EQUAL TO OBSERVED 1990-2000					MIGRATION EQUAL TO ESTIMATED 2000-2004				
	2007	2010	2015	2020	2025	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055
General/Family Medicine	6,247	6,362	6,934	7,547	8,177	6,771	7,670	8,713	9,888	6,530	7,256	8,077	8,978		
Obstetrics and Gynecology	2,274	2,278	2,416	2,574	2,738	2,473	2,744	3,060	3,417	2,379	2,584	2,820	3,077		
General Internal Medicine	4,640	4,791	5,306	5,895	6,528	5,064	5,806	6,709	7,758	4,888	5,502	6,237	7,072		
Pediatrics	2,959	2,836	2,992	3,066	3,141	3,001	3,304	3,560	3,823	2,890	3,113	3,266	3,415		
TOTAL PRIMARY CARE	16,120	16,267	17,648	19,082	20,584	17,308	19,524	22,043	24,886	16,687	18,456	20,400	22,541		
Anesthesiology	2,525	2,578	2,824	3,113	3,433	2,747	3,120	3,575	4,112	2,646	2,947	3,308	3,729		
Cardiovascular Diseases	1,132	1,185	1,349	1,550	1,785	1,235	1,445	1,715	2,050	1,192	1,370	1,596	1,872		
Emergency Medicine	1,579	1,596	1,721	1,850	1,976	1,714	1,932	2,178	2,445	1,654	1,827	2,017	2,215		
General Surgery	1,627	1,682	1,865	2,069	2,282	1,779	2,043	2,359	2,718	1,717	1,936	2,193	2,477		
Ophthalmology	956	989	1,117	1,271	1,449	1,034	1,201	1,413	1,673	999	1,138	1,314	1,526		
Orthopedic Surgery	1,370	1,408	1,546	1,698	1,854	1,494	1,702	1,947	2,226	1,441	1,611	1,808	2,026		
Other Internal Medicine Sub-specialties	3,199	3,306	3,676	4,099	4,556	3,483	4,004	4,636	5,374	3,361	3,793	4,308	4,897		
Other Specialties	2,211	2,232	2,416	2,603	2,794	2,379	2,684	3,026	3,405	2,295	2,539	2,802	3,086		
Other Surgical Specialties	975	1,001	1,098	1,205	1,312	1,065	1,213	1,389	1,584	1,028	1,149	1,289	1,441		
Otolaryngology	543	550	600	653	708	584	662	751	852	564	626	696	773		
Pathology	852	873	963	1,068	1,185	926	1,058	1,219	1,410	893	1,000	1,130	1,280		
Psychiatry	1,536	1,559	1,677	1,797	1,909	1,670	1,872	2,100	2,349	1,610	1,770	1,946	2,131		
Radiology	1,990	2,048	2,292	2,589	2,946	2,143	2,471	2,889	3,413	2,069	2,342	2,686	3,111		
Urology	562	586	665	757	864	617	721	852	1,010	595	682	790	919		
TOTAL SPECIALIST	21,057	21,593	23,809	26,321	29,053	22,871	26,127	30,050	34,620	22,063	24,730	27,884	31,482		
TOTAL	37,177	37,860	41,457	45,403	49,637	40,179	45,651	52,092	59,506	38,751	43,186	48,283	54,023		
Projected percent increase from 2007		1.84	11.51	22.13	33.52	8.07	22.79	40.12	60.06	4.23	16.16	29.87	45.31		
Projected Population (1,000s)	23,904	24,331	26,157	28,006	29,897	26,059	29,214	32,737	36,682	25,106	27,581	30,253	33,158		
PROJECTED % INCREASE FROM 2007		1.78	9.42	17.16	25.07	9.01	22.21	36.95	53.45	5.03	15.38	26.56	38.71		

Table 2 reports projected nurse practitioner and physician assistant needs for 2010 for 2035 under the three migration scenarios. For nurse practitioners, projected need to match 2007 age-sex adjusted populations in 2025 is an increase of 45 percent under the 2000-2004 migration scenario. For Physician Assistants, projected increases in need are 44 percent.

Table 1: Projected physician count by specialty 2010-2025 to match current age-sex adjusted physician count in Texas under three migration scenarios.

Table 2: Projected nurse practitioner and physician assistant counts 2010-2025 to match 2007 age-sex adjusted counts in Texas under three migration scenarios.

TABLE 2: NURSE PRACTITIONER AND PHYSICIAN ASSISTANT PROJECTIONS

MIGRATION SCENARIO	YEAR	NURSE PRACTITIONERS		PHYSICIAN ASSISTANTS	
		Number	% Increase from 2007	Number	% Increase from 2007
	2007	4,858		3,862	
1/2 observed 1990-2000	2010	4,937	1.6	3,923	1.6
	2015	5,417	11.5	4,297	11.3
	2020	5,951	22.5	4,694	21.6
	2025	6,547	34.8	5,118	32.5
Observed 1990-2000	2010	5,223	7.5	4,153	7.5
	2015	5,939	22.2	4,719	22.2
	2020	6,789	39.7	5,373	39.1
	2025	7,790	60.4	6,121	58.5
Estimated 2000-2004	2010	5,038	3.7	4,006	3.7
	2015	5,618	15.6	4,465	15.6
	2020	6,291	29.5	4,980	29.0
	2025	7,072	45.6	5,556	43.9

APPENDIX D:

GLOSSARY

AAMC	Association of American Medical Colleges
BCM	Baylor College of Medicine
CHS	Center for Health Statistics
CMS	Centers for Medicare and Medicaid Services
COGME	Council on Graduate Medical Education
Coordinating Board	Texas Higher Education Coordinating Board
the Council	Texas Health Care Policy Council
DPC	direct patient care
DSHS	Texas Department of State Health Services
FY	fiscal year
GME	graduate medical education
GR	general revenue
HPRC	Health Professions Resource Center
HPSA	Health Professional Shortage Area
MUAs	medically underserved areas
MUPs	medically underserved populations
ORCA	Office of Rural and Community Affairs
PC	primary care
TAMUHSC	Texas A&M University System Health Science Center
TMA	Texas Medical Association
TMB	Texas Medical Board
TTUHSC	Texas Tech University Health Science Center
UTHSC	The University of Texas Health Science Center
UTMB	The University of Texas Medical Branch
UTSMC	The University of Texas Southwestern Medical Center

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Texas Academy of Physician Assistants

Texas Board of Nursing

Texas Coalition of Nurses in Advance Practice

Texas Higher Education Coordinating Board

Texas Medical Association

Texas Medical Board

Texas State Office of Rural Health, Office of Rural and Community Affairs

University of Texas Southwestern Medical Center

University of Texas Health Science Center at Houston

University of Texas Health Science Center at San Antonio



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