Texas State Health Plan

Using an Integrated Model in the Health Professions

Update 2013-2014

A Report From the
Statewide Health Coordinating Council

TEXAS STATEWIDE HEALTH COORDINATING COUNCIL
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The Honorable Rick Perry
Governor of Texas
State Capital
Austin, Texas 78711

Dear Governor Perry:

On behalf of the members of the Statewide Health Coordinating Council, I am pleased to forward the 2013 – 2014 Texas State Health Plan Update to you. The Council has chosen to study and evaluate the issues involved in using an integrated model in the health professions.

As legislators and other health policy makers are faced with rapid changes in the health care delivery system, this state health plan update attempts to identify some of the opportunities and challenges related to access to care and the health care workforce. Collaboration of council members, health care partners and staff has resulted in a plan that also makes recommendations that we hope are useful to you in the upcoming legislative session.

Sincerely,

Mike Ragain, M.D., Chair
Statewide Health Coordinating Council

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STATEWIDE HEALTH COORDINATING COUNCIL VISION STATEMENT

We envision a Texas in which all are able to achieve their maximum health potential – A Texas in which:

- Prevention and education are the primary approaches for achieving optimal health.
- All have equal access to quality health care.
- Local communities are empowered to plan and direct interventions that have the greatest impact on the health of all.
- We, and future generations, are healthy, productive and able to make informed decisions.

A HEALTHY TEXAS IS A PRODUCTIVE TEXAS

TEXAS STATEWIDE HEALTH COORDINATING COUNCIL

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EXECUTIVE SUMMARY

BACKGROUND INFORMATION

The *Texas State Health Plan* is prepared every six years and updated biennially. The plan serves as a guide to help Texas decision makers formulate appropriate health policies and programs.

The Statewide Health Coordinating Council (SHCC), a 17-member council with 13 members appointed by the governor and four members representing specified state agencies, develops the plan. Chapter 104 of the Health and Safety Code is the enabling legislation for the Statewide Health Coordinating Council. Under the authority of Chapter 104, the governor, with the consent of the senate, appoints the 13 council members to staggered six-year terms. The heads of the four state agencies serve on the council or designate an individual to serve on their behalf.

The broad purpose of the Statewide Health Coordinating Council is to ensure that health care services and facilities are available to all Texans through health planning activities. Based on these planning activities, the council makes recommendations to the governor and the legislature through the *Texas State Health Plan*. The council provides overall guidance in the development of the *Texas State Health Plan*, submission of the plan to the governor, and promoting the implementation of the plan. The plan is due to the governor for adoption by November 1 of each even-numbered year. Staff in the Center for Health Statistics, with assistance from other program areas at the Texas Department of State Health Services, supports the council's activities.

The 75th Legislature amended Chapter 104 of the Health and Safety Code and focused the council's planning activities on the health professions workforce. The council produced the *1999–2004 Texas State Health Plan: Ensuring a Quality Health Care Workforce for Texas,* which was the fundamental plan for the initial six-year planning cycle. The *2005–2010 Texas State Health Plan: Innovative Approaches to Health Workforce Planning in Texas* also focused health workforce planning and the status of the Texas health workforce.

The *2011 - 2016 Texas State Health Plan: A Roadmap to a Healthy Texas* shifted the traditional approach of looking only at healthcare workforce and access to care, to a more comprehensive model focusing on supply and demand, technology, and prevention and education. The SHCC decided to research these five characteristics that affect the health care system in Texas. The five aspects include: a demographic review of the general population in Texas, a demographic review of the Texas health professions workforce, access to health care that includes innovative delivery models based on evidence-based practices, technology enhancements that produce a more efficient delivery of healthcare and medical treatment, and a prevention and education model that speaks to a new science-based approach to promoting health and preventing disease.

METHODOLOGY

The 2013 – 2014 Texas State Health Plan Update was developed over a one-year period. A workgroup was assigned to each section with SHCC members having leadership involvement. The DRAFT 2013 -2014 Texas State Health Plan Update and DRAFT Recommendations was submitted and approved at the May 10, 2012 SHCC meeting. The Update will have an overlying theme of "Using an Integrated Model in the Health Professions". The five topical areas are listed below.

- Practice at the Top of Your License
- Access to Primary and Specialty Care
- Chronic Care in an Aging Population
- Geographic Disparities
- Patient Safety/Quality Assessment

The SHCC Project Director and CHS staff will prepare the 2013 – 2014 Texas State Health Plan Update for submittal to the Governor and the Legislature by October 31, 2012.

CONCLUSION

The 2013 – 2014 Texas State Health Plan Update: Using an Integrated Model in the Health Professions is designed to provide information regarding issues that may have an effect on the Texas health care system, its providers and its recipients. It is also intended to provide information for policy makers to assist in making informed decisions that will affect all Texans.

Every Texan has a right to good health care that is effective, accessible and affordable. However, health providers and the health care system must adjust and develop relationships to meet the needs of individuals and address cultural competencies, and health literacy. Using an integrated model in the health professions will enhance the efficiency and quality of the delivery of health care in the state. The importance of this interprofessional collaborative model will become more evident as multiple health workers from different professional backgrounds work together with patients, families, caregivers and communities to deliver the highest quality of care.

Texas State Health Plan 2013-2014 Update

Section I

Inter-Professional Education and Collaborative Practice: The New Health Care System For The 21st Century

Teamwork

Chronic Illness

Excerpt from the Graduate Medical Education Report

INTER-PROFESSIONAL EDUCATION AND COLLABORATIVE PRACTICE: THE NEW HEALTH CARE SYSTEM FOR THE 21ST CENTURY

Health professionals play a central and critical role in improving access and quality health care for the population. They provide essential services that promote health, prevent diseases and deliver health care services to individuals, families and communities based on the primary health care approach. Mechanisms for optimizing the strengths and skills of health professionals will be essential to achieving the Millennium Development Goals. (World Health Organization)

Interprofessional education (also known as inter-professional education or "IPE") refers to occasions when students from two or more professions in health and social care learn together during all or part of their professional training with the object of cultivating collaborative practice[1] for providing client- or patient-centered health care. Interprofessional learning involves students learning from students from other professions, as well as learning with students from other professions, for example in the classroom, and learning about other professions. (Wikipedia)

In a population increasingly afflicted by chronic conditions, the health care delivery system is poorly organized to provide care to those with such conditions. In a review of the literature on chronic care, Wagner et al. (1996) identified five elements required to improve patient outcomes for the chronically ill:

• *Evidence-based, planned care.* The literature is replete with evidence of the failure to provide care consistent with well-established guidelines for common chronic conditions such as hypertension (Stockwell et al., 1994), asthma(Legorreta et al., 1998; Starfield et al., 1994), and diabetes (Kenny et al., 1993). Successful chronic care programs tend to be ones that incorporate guidelines and protocols explicitly into practice.

• *Reorganization of practices to meet the needs of patients who require more time, a broad array of resources, and closer follow-up.* Such reorganization generally involves the delivery of care through a multidisciplinary team, the careful allocation of tasks among the team members, and the ongoing management of patient contact (appointments, follow-up) (Wagner et al., 1996).

• *Systematic attention to patients' need for information and behavioral change.* A review of 400 articles, randomized trials, and observational studies of self-management support interventions (Center for Advancement of Health, 1996), revealed substantial evidence that programs providing counseling, education, information feedback, and other supports to patients with common chronic conditions are associated with improved outcomes (Brown, 1990; DeBusk et al., 1994; Mullen et al., 1987).

• *Ready access to necessary clinical expertise.* Specialized clinical knowledge and expertise are important to improved outcomes. Evidence suggests that there are numerous ways to enhance access to such knowledge and expertise, including education of patients and primary care providers (Inui et al., 1976; Sawicki et al., 1993; Soumerai and Avorn, 1990), referrals to specialists, various consultation processes (e.g., teleconferencing, hot line to specialists) (Vinicor et al., 1987), collaborative care models whereby primary care providers and specialists practice together (Katon et al., 1995; McCulloch et al., 1994), and computer decision support systems (Barton and Schoenbaum, 1990; Litzelman et al., 1993; McDonald et al., 1988).

• *Supportive information systems.* Patient registries have been used effectively in many settings to issue reminders for preventive care and necessary follow-up, and to provide feedback to the provider practice on patient compliance and service use (Glanz and Scholl, 1982; Johnston et al., 1994; Macharia et al., 1992; Mugford et al., 1991; Stason et al., 1994). Mechanisms for sharing clinical and other information among all members of the care

team, ranging from patient carried medical records (Dickey and Petitti, 1992; Turner et al., 1990) to automated patient records, can also improve care.

Reference: Crossing the Quality Chasm: A New Health System for the 21st Century
http://www.nap.edu/catalog/10027.html

TEAMWORK

Any assessment of the Healthcare System in the United States finds disturbing news. Cost is rising. Quality is lagging. The health of the country is declining as more and more Americans are facing chronic diseases and America is becoming an obese nation. The country is not training enough health professionals to meet this burgeoning crisis. What shall policy makers do when approaching this Gordian knot? In this report, a part of the solution is proposed. Good, effective teamwork will be critical in any solution to these problems.

Complexity in medicine is growing with every passing year. Medical science continues to expand the bounds of our understanding of the human body and disease states. Treatment of ailments continues to require ever increasing specialization from physicians and hospital programs. This drive of ever increasing complexity has brought with it the need for high functioning teams to deliver on science's promise. Consider the range of expertise that is needed to repair a diseased coronary vascular system. Of course we recognize the need for a talented surgeon to perform the procedure but there is also the need for a highly specialized team to insure that every detail is met exactly when it should be. Delivering ever increasingly sophisticated treatments and procedures requires the excellent teams that work as a well-oiled machine.

Healthcare costs continue to rise dramatically. As of 2008 the United States led the world with spending on healthcare representing 16% of the gross domestic product. There appears no end in sight to this trend. All efforts to curb this growth have failed to date. Perhaps the use of balanced healthcare teams can also address these cost problems.

Health systems are very complex and often metaphors are useful in understanding how they work. Consider patients as water and access to the healthcare system as a series of funnels. The key to good flow through the system is to collect all the patients flowing and properly direct them to the correct locus of care. First the system needs to be a very broad and comprehensive set of funnels to catch and deliver primary care services. These commonly required services include preventive care, immunizations, and care of a range of acute and chronic conditions. These funnels also need to pass on rare or more complicated conditions to other more narrow but more specific funnels representing specialist care. If the process is done well, at each level practitioners are practicing at the top of their training. Efficiency and effectiveness will both be enhanced.

With the use of strong teams to deliver care at all levels of the system efficiencies should be had. By providing more efficient care any savings could be passed on to payers. The IHI experts have described a triple aim of improving the experience of care, improving the health of populations, and reducing per capita costs of health care. For our current health care system to deliver on the promise of the triple aim, it must develop high functioning teams. For these teams to be high functioning they must have great communication, a trusting culture, and shared accountability.

Access at each level is becoming more and more difficult with worsening physician shortages. The Texas Medical Association has reported that our state faces shortages in almost every physician specialty area. Even as output from our medical schools and training programs has increased no one expects this augmentation to make up the shortfall. Where then shall we turn? One option is to make each funnel larger by augmenting it. This can be done in health care by adding physician extenders. With the development of well functioning and structured teams the growing patient care needs of the present and the future can be better met. The key for our health system is to connect patients with the right care at the right time in the right setting.

Quality is an elusive goal in health care. The shortcomings of the system are well documented within the literature of medicine such as *Crossing the Quality Chasm* from Institute for Healthcare Improvement and many others. One route to quality healthcare is through development of high functioning teams. Teams offer opportunities for group and individual accountability. Accountability is central to any step toward higher quality. Teams can adopt better accountability through simple steps like time outs before procedures. Checklists can also be used to insure

critical devices are present and key steps are taken. The underlying principle supporting this more effective accountability in high functioning teams is good interpersonal communication and mutual respect.

Interdisciplinary teams are critical to improve patient experience, health professional satisfaction, and quality within the health delivery system. A healthcare system that supports effective teamwork can improve the quality of patient care, enhance patient safety, and reduce workload issues that cause burnout among healthcare professionals.

Development of good interdisciplinary teams is good for patients. Teamwork improves care by increasing coordination of services, especially for complex problems. This approach integrates health care for a wide range of problems and needs from the simple to the complex. It also empowers patients as active partners in their care and can serve patients of diverse cultural backgrounds. High performing teams use time more efficiently.

Teamwork increases professional satisfaction through positive interactions with other members of the team. Team members gain positive feedback through direct application of skills within their scope of practice. Team members contribute to the overall, efficient functioning of the team by allowing each provider to focus on their individual areas of expertise. With on emphasis on working together it enables the healthcare practitioner to learn or consider new skills and approaches. This approach facilitates a shift in emphasis from acute, episodic care to long-term preventive care. Health care professionals working together encourage innovation as different viewpoints are incorporated.

High performing teams are good for the Healthcare System. A system with good teamwork holds potential for more efficient delivery of care. With well-designed systems of teams the precious resources can be maximized. The burden on acute care facilities can be decreased as a result of increased delivery of preventive care. In addition, facilitates can focus on continuous quality improvement efforts through these teams to reach all segments of their systems.

This type of teamwork does not happen by accident and must be purposefully cultivated and built. Unfortunately, the medical education system does very little to prepare graduates to be effective team members. Training programs must adopt curricula to support preparation of better team members for the future healthcare system. In this report, a model for such a change in the medical education system is proposed. Innovative programs are cited that could compose the key elements of a new way to prepare future health care practitioners for a more collaborative practice in high functioning teams.

CHRONIC ILLNESS

Chronic illnesses are conditions that require ongoing healthcare management and support over a long period of time. While oftentimes preventable, these conditions may take years to become fully established and can impact the social, mental and economic aspects of a person's life. Chronic illnesses may require complex disease management, care coordination, and long term and systematic approaches to treatment. Common acute chronic illness/conditions may include diabetes, heart disease, asthma, lung cancer, chronic obstructive pulmonary disease, and some cancers. In addition, health care experts have expanded the definition to HIV/AIDS, depression and certain other mental health conditions, and long-term care physical disabilities.

Preventing chronic conditions is a key issue for most states because of the growth and health complexity of the aging population, the high cost of treating and maintaining the quality of life for those with chronic conditions, and the challenges of treating chronic conditions in health care systems focused on acute care.

Chronic diseases result in significant burden to Texas with 77 % of the deaths in Texas due to chronic diseases including cardiovascular disease, stroke, cancer, diabetes, chronic kidney disease, and Alzheimer's disease. Approximately 45% of chronic disease deaths occur in people under 70 years of age. A study in the United States in 2008 indicated that the percentage of adults with chronic conditions has grown from 28 percent in 1997 to 31 percent in 2006.

Health care systems have not historically been designed to treat complex, costly chronic conditions. Populations are now living longer with multiple chronic conditions, so that the complexity and cost of chronic disease management is straining the health care systems in many counties. Nationally, 75% of the health care expenditures are due to chronic disease.

A number of prominent chronic diseases are linked by common and preventable biological risk factors, notably high blood pressure, high blood cholesterol and overweight, and by related major behavioral risk factors: unhealthy diet, physical inactivity and tobacco use. Action to prevent these major chronic diseases in Texas can focus on controlling these and other key risk factors.

Certain states may need to address structural issues not directly related to health care before they can fundamentally reform their health care system. For example, poor diet and exercise are two of the main risk factors for four major chronic conditions. A state will have a minimal impact in addressing these risk factors if communities do not have sufficient places to exercise (such as public parks), have a safe environment to exercise (limiting crime in an area), and if food industry continues to produce and to promote unhealthy food options.

Additionally, success depends on re-engineering many aspects of healthcare delivery and finance, improved patient education and provider training and re-training, creating new team-based models of care, development of social marketing, and effective use of health care technologies and self- and home-care regimens. Some states place more emphasis than others on prevention, health promotion, and healthy lifestyles while others lay a focus on better care coordination among providers and disease management programs.

A number of communities in the United States, such as Providence St. Peter Family Clinic in Olympia, Washington, Universa Health Care (Health Maintenance Organization in New York State), Vanderbilt Medical Center, and the American Medical Association in their medical home model, have implemented the chronic care model (CCM), a comprehensive concept of care for the chronically ill. The CCM model has been successfully implemented in many settings including community health systems, multispecialty clinics, solo practitioners, health plans, integrated health systems, community-based organizations, and academic health centers. The CCM includes key elements to ensure high quality chronic disease care and is constantly reviewing additional improvements in CCM strategies. CCM elements include community participation, health system interaction, self-management support, delivery system re-design, decision supports, and use of clinical information systems.

This evidence-based model results in “productive interactions” between informed, activated patients who take part in their care and a prepared, proactive team of care providers with adequate resources and expertise to care for these individuals.

EXCERPT FROM THE GRADUATE MEDICAL EDUCATION REPORT

Published by the Texas Higher Education Coordinating Board, April 2012

INTRODUCTION

In 2011, the 82nd Texas Legislature, Regular Session passed House Bill 2908 (HB 2908), which directed the Texas Higher Education Coordinating Board (THECB) to include in the five-year strategic master plan, an assessment of the adequacy of opportunities for graduates of medical schools in the state to enter graduate medical education in the state.

This report presents the information required in the legislation. The information will also be included in the 2012 Coordinating Board Strategic Plan, 2013 through 2017. The following information is presented in the report, as described in HB 2908:

1) compare the number of first-year graduate medical education positions available annually with the number of medical school graduates;
2) include a statistical analysis of recent trends in and projections of the number of medical school graduates and first-year graduate medical education positions in this state;
3) develop methods and strategies for achieving a ratio for the number of first-year graduate medical education positions to the number of medical school graduates in this state of at least 1.1 to 1;
4) evaluate current and projected physician workforce needs of this state, by total number and by specialty in the development of additional first-year graduate medical education positions; and
5) examine whether this state should ensure that a first-year graduate medical education position is created in this state for each new medical student position established by a medical or dental unit.

The report presents the current challenges facing the Texas workforce, the educational pipeline, undergraduate medical school student data, graduate medical education data, and physician workforce information. The report also presents conclusions and recommendations. The report does not include an assessment of the entire health professions workforce. It does not include an assessment of the roles and functions of the Physician Assistant or the Nurse Practitioner.

CHALLENGES TO THE TEXAS PHYSICIAN WORKFORCE

The Texas physician workforce includes physicians educated and trained in the state, and physicians educated in other states and/or countries who come to Texas to continue their training in a residency program or join or begin a medical practice. The state's physician workforce needs evolve and change to meet the needs of the Texas population and advances in medicine.

In 2012, Texas population exceeds 25 million and is projected to continue increasing in the coming decades. The Texas State Demographer projects the Texas population will reach 30 million by 2020. Prominent increases are predicted in the elderly and in the Hispanic populations. As these population sectors increase, they will present challenges to the health care system. These challenges will emerge through different patterns of physician visits and need for medical procedures. The aging population is expected to have greater financial security, have more health insurance coverage, and access more health care services. The increasing Hispanic population is expected to be younger, have less health insurance coverage, and have an increased incidence of chronic lifelong health conditions, such as diabetes and obesity. These population sectors will exert demands on the existing and future physician workforce.

Escalating health care costs confound the delivery of health care services, and as these services grow more specialized, they become more costly. Other factors influence the health care delivery system, including declining

employer-based financial support for health insurance, and reductions in federal support for Medicare and Medicaid programs.

The Texas physician workforce faces other challenges, including the high rate of uninsured and recent passage of federal legislation to address health insurance. In Texas, 25 percent of the population is uninsured, compared to 16 percent nationally. Providing care for the uninsured is often associated with delayed or postponed treatment, which results in more complex and higher cost services.

Recent passage of the federal Patient Protection and Affordable Care Act in 2010 put in place comprehensive health financing reforms that are underway or will begin in the next couple of years. Reforms include providing access to insurance for the uninsured with pre-existing conditions, allowing young adults to remain on their parent's insurance plan until they turn 26 years old, requiring health plans to cover certain preventive services, and prohibiting insurance companies from rescinding coverage for an error or technical mistake on a customer's application. Notably, by January 1, 2014, most individuals who can afford it will be required to obtain health insurance coverage or pay a fee to offset the costs of caring for uninsured Americans. The eligibility for enrollment in Medicaid will be greatly expanded to millions of those that are uninsured. These requirements will lead to more Texans attempting to access health care services.

Expanding health insurance and government coverage may result in greater demand for health care services and an increased need for additional physicians. This is a concern, as the Texas physician workforce has faced a shortage challenge for several decades, even though Texas attracts many physicians to the state. While the number of new physician licenses issued increased steadily in the last decade, the population of Texas experienced similar increases, which made the gains to the physician workforce appear static.

From 2006 to 2011, newly licensed Texas physicians increased 37 percent. However, that rate of increase is unlikely to continue, as the Texas Medical Board reported fewer new Texas physician license applications in 2011 (4,181) than in 2010 (4,218). In addition, the ratio of practicing physicians to population in Texas, while increasing from the 2007 level of 157 per 100,000 to the 2010 level 165 per 100,000, is still well below the national average of 220 physicians per 100,000. An optimal level of physicians per 100,000 has not been established for Texas. Notably, studies have shown that the type of physicians within a community affect the cost and quality of health care. Several studies have shown that communities with greater numbers of primary care physicians per 100,000 population have demonstrated lower health care costs and report higher quality of health. (Starfield, 2011) The majority of increases to the Texas physician workforce have occurred in the specialties and subspecialties that are not defined as primary care specialties.

In 2006, in an effort to address a predicted national shortage of physicians, the Association of American Medical Colleges called on their member institutions to increase medical school enrollments by 30 percent from the 2002 enrollment levels. Texas medical schools responded to this call and increased enrollments. In the 2008 THECB report, Projecting the Need for Medical Education in Texas, it was noted, "Texas schools would need to increase first-year enrollments by a minimum of 43 new students annually to achieve the 30 percent increase target of 1,745 first-year enrollments." In fall 2011, Texas achieved this goal with a first-year enrollment of 1,762 in Texas medical schools.

CONCLUSIONS

- Texas increased its medical school enrollments 31 percent from fall 2002 to fall 2011, from 1,342 to 1,762, responding to the national call by the Association of American Medical Colleges to increase medical school enrollments by 30 percent.
- Texas currently provides instruction and operation formula funding to support its medical students at $42,000 annually, or a total of $168,000 per student.

- The fall 2011 classes that have increased medical school enrollments will begin to graduate students in 2015.
- In fall 2011, the ratio of first-year entering residency positions to graduates was close to 1 to 1, with 1,494 first-year entering residency positions for the 1,458 medical school graduates.
- In 2011, Texas had more than 550 residency programs, offering a total of 6,788 residency positions. Only 22 percent (1,494) of these positions were first-year entering residents. Residency programs require three to eight years of training; thus, each year can only be a maximum of roughly one-third of the total residency positions.
- Without increases in the number of first-year residency positions, beginning in 2014, at least 63 graduates of Texas medical schools will not have an opportunity to enter a Texas residency program.
- By 2016, at least 180 medical school graduates will have to leave the state for their first year of residency training due to a lack of residency positions. The state's investment in their education of $168,000 per graduate, or $30.2 million annually will not benefit the state. The cost of adding additional first-year entering residency positions would reduce the loss of medical school graduates to other states.
- While some of the graduates who enter residency training in other states may eventually return to Texas, others will not.
- Resident physicians provide low-cost care to needy populations and tend to remain in the state in which they complete their residency training.
- Residency programs are lengthy and expensive, with conservative estimates of $150,000 to educate a resident physician for a year.
- Texas provides minimal funding support for residency training affiliated with health-related institutions through a formula allocation of $4,400 per resident, which equates to just 3 percent of the estimated cost of residency education.
- An additional amount of $3,800 per resident is provided to family medicine residents through a trusteed fund administered by the THECB. These funds combined with the formula allocation cover approximately five percent of the estimated cost of these residency programs.
- The largest explicit funding support for residency programs is provided through the federal Centers for Medicare and Medicaid Services, which historically has paid its share of total costs. However, federal funding for residency training is capped at 1996 levels for the direct support of graduate medical education. The cap only supports a third of the costs of 4,056 of the 4,598 actual positions in Texas, leaving the residency programs to cover the cost of two-thirds of the 4,056 positions and the full cost of 542 positions. Texas is currently over its Medicare cap by 13 percent.
- The residency programs have to support the full cost of the education of the 542 federally unfunded residency positions at an estimated cost of $81.3 million ($150,000 x 542). Some of the cost is supported through increased patient care services provided by the residents, while under the direct supervision of faculty.
- Texas is a net importer of physicians; however, the growth in the Texas general population has kept the physician to 100,000 population ratio stagnant.
- Beginning in 2014, Texas will need 220 more residency positions to achieve the 1.1 to 1 ratio of first-year residency positions to medical school graduates. This is based on a projected 1,565 medical students graduating in 2014.
- If Texas were to reach the current national average of physicians per 100,000 population ratios for the 15 medical specialties that admit first-year residents, significant increases to the number of residents would be required, beginning in 2014. If an additional 1,048 residents could be trained beginning in 2014, it would take the state 10 years to reach the current national average of physicians for just these specialties. If the state were to pick up the 10 percent cost of training these additional resident physicians, over the 10 year period, the state would need an additional $15.7 million beginning in 2014. By 2017, this amount would increase to support 4,192 residents, bringing the cost up to an estimated $62.8 million annually.

TEXAS STATE HEALTH PLAN 2013-2014 UPDATE

SECTION II

DEMOGRAPHIC REVIEW OF THE TEXAS HEALTH PROFESSIONS WORKFORCE

DEMOGRAPHIC REVIEW OF THE TEXAS HEALTH PROFESSIONS WORKFORCE

INTRODUCTION

The importance of access to health care services cannot be overstated. Every person at some point in life will need access to one or more health providers. However, access to these providers could be adversely affected by factors beyond the person's control, such as provider acceptance of health plans, distance to the provider, and adequacy of the supply of providers. By reporting on demographic trends and the supply and distribution of health professionals by geographic region, researchers, legislators and state planners may better understand and influence access to health care services by Texans.

STATISTICS

The data in this chapter and the Appendix describe trends in the supply and distribution of various types of health care providers and compare these trends to national averages. The statistics are presented as narratives, tables, graphs, and maps. Most of the data are presented in the form of ratios: the number of providers in a given health profession divided by the population of the area being evaluated, multiplied by 100,000. These ratios were used to compare supply and distribution trends among various populations and areas over time. High ratios indicate there are more providers who are available to serve the population in an area; low ratios indicate there are not enough providers to serve the population. Although ratios are simplistic measures of provider supply adequacy, they are good indicators that, when observed over time, may be used to signal the need for conducting more extensive and comprehensive workforce studies.

DATA AND SOURCES

Supply data for Texas were collected from state licensing boards. All statistics for Texas in this report were based on professionals who were actively practicing in Texas for a given year. Most of the older U.S. supply data shown in the graphs were obtained from the U.S. Bureau of Health Professions and some national professional organizations. U.S. data were not available for all professions, and for many professions, the most current U.S. data available were not as recent as the current Texas data. This is partially due to the fact that the U.S. Bureau of Health Professions no longer collects these data. Some recent U.S. data can be found at the Kaiser Family Foundation (http://www.kff.org/), the Bureau of Labor Statistics, and various health professions associations (such as the American Medical Association), but due to differences in data collection methods, that information may not be directly comparable to the data from HRSA; therefore, some trend lines for the U.S. may show sharp increases or decreases in the supply ratios for recent years which might be attributed more to differences in the methods of data collection rather than increases or decreases in the actual supply. For Texas, there were also some years where supply data were not available. The years for which actual data were used in this report are indicated on the graphs by data markers. The supply ratios for providers in each county for all available years may be found online at: http://www.dshs.state.tx.us/CHS/hprc/. All maps and graphs were prepared by the Health Professions Resource Center.

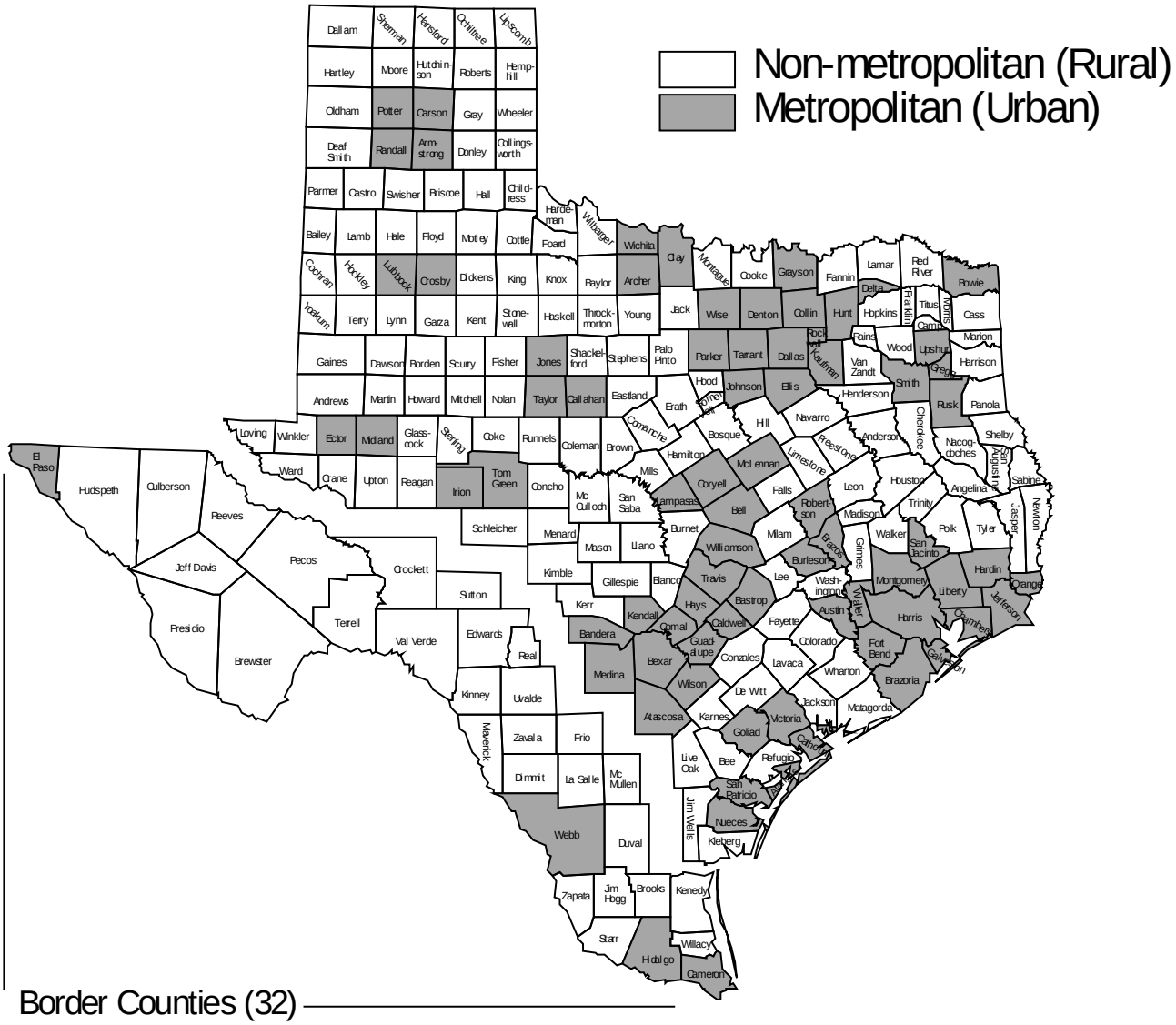
Texas population numbers used to calculate ratios were estimates and projections provided by the Texas State Data Center at The University of Texas at San Antonio (TxSDC, http://txsdc.utsa.edu/). The population numbers for a given year may not necessarily match the numbers in other reports or Web sites because they are revised periodically by the TxSDC. The population data used for national statistics were obtained from the U.S. Bureau of the Census. The classification of counties as either metropolitan (77 counties) or non-metropolitan (177 counties) was based on reports from the U.S. Office of Management and Budget. The identification of 32 Texas counties as border counties was based on Article 4 of the La Paz Agreement between the United States and Mexico (1983) (see Figure 1). Previous State Health Plans used the 43-county area for the border counties; therefore, the supply ratios for the border counties cannot be directly compared to those of previous reports. For many of the analyses presented in this chapter, the 254 counties were aggregated as border metropolitan, non-border metropolitan, border non-metropolitan, and non-border non-metropolitan counties. In 2009, 87.4 percent of the Texas population lived in metropolitan counties and 12.6 percent in non-metropolitan counties. Also, 78.6 percent of the state population lived in non-border metropolitan counties, 8.8 percent in border metropolitan counties, 1.5

percent in border non-metropolitan counties, and 11.0 percent in non-border non-metropolitan counties. Overall, 10.4 percent of the Texas population lived in the 32-county border area.

HEALTH PROFESSIONAL SHORTAGE AREAS (HPSAS)

The designation of a county as a Health Professional Shortage Area for primary medical care, dental care, or mental health care indicates that the county has an inadequate number of specific health providers to serve the population in the county. There are several categories of HPSA designations: whole county, sub-county, facility, or special population. The Texas Primary Care Office administers the federal HPSA program for Texas in collaboration with the Shortage Designation Branch, Health Resources and Services Administration, Bureau of Health Professions, U.S. Department of Health and Human Services. Lists of designated areas can be found at http://www.dshs.state.tx.us/CHS/hprc/hpsa.shtm. Detailed information about HPSA designations is presented for primary care physicians, dentists, and psychiatrists in this chapter.

Figure 1. Border and Metropolitan Counties in Texas, 2009.



2009 Population Statistics:

222 Non-Border Counties — 89.6 percent of total Texas Population
78.6 percent in metropolitan non-border counties
11.0 percent in non-metropolitan non-border counties

32 Border Counties — 10.4 percent of total Texas Population
8.8 percent in metropolitan border counties
1.5 percent in non-metropolitan border counties

Prepared by: Health Professions Resource Center, Center for Health Statistics,
Texas Department of State Health Services, October 20, 2009

MEDICAL PROFESSIONS

- Physicians
  - Direct patient care (DPC)
  - Primary care (PC)
  - Internal medicine
  - Pediatrics
  - Family practice/medicine
  - Obstetrics and Gynecology (Ob/Gyn)
  - Psychiatry — included in the section on Mental Health Professions
- Physician Assistants
- Chiropractors
- Podiatrists

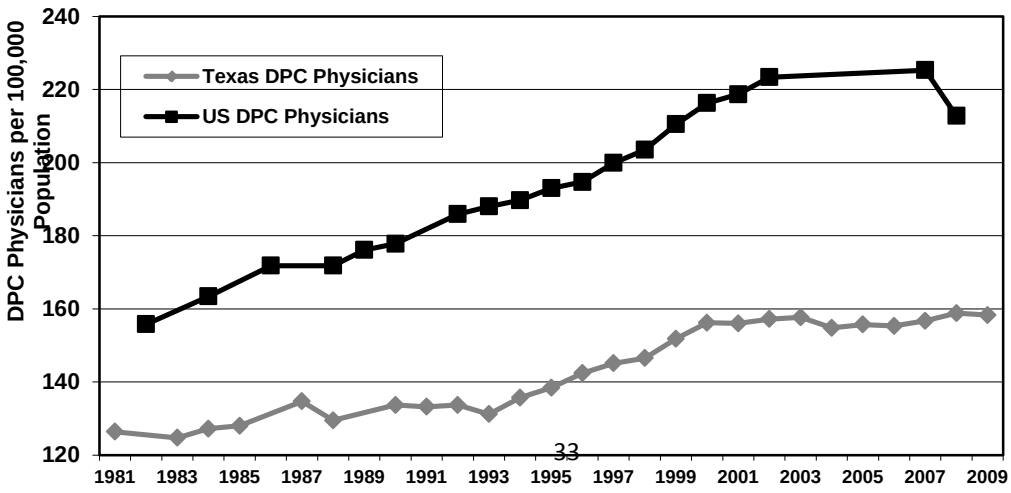
DPC PHYSICIANS

The term *DPC physician* includes both allopathic and osteopathic physicians who are licensed by the Texas Medical Board (TMB), but excludes physicians with a practice type of medical teaching, administration, research, or "not-in-practice." Other physicians who are excluded from the supply of DPC physicians in this report are those physicians who are affiliated with the federal government — including the armed forces, the Department of Veterans Affairs, or the U.S. Public Health Service — and fellows or residents in training.

The supply of DPC physicians increased between 2000 and 2009 by an average of 845 per year. In August 2009, there were 39,374 DPC physicians actively practicing in Texas. However, over the years, Texas has consistently lagged behind the U.S. average in the ratio of DPC physician supply per 100,000 population, and the gap between the two appears to be increasing (Figure 2). The DPC physician supply ratios in Texas were fairly constant between 1981 and 1996. In 1997, the ratios for both metropolitan and non-metropolitan counties began to increase; however, they began to stabilize and decrease slightly after 2003 (Figure 3). Non-metropolitan counties in Texas have had much smaller supply ratios than metropolitan counties throughout these two decades. Since 2006 the non-metropolitan ratios have been increasing, while the metropolitan ratios have stayed relatively flat.

In 2009, there were 25 counties with no DPC physicians; and, there were three counties that did not have a DPC physician in 2000, but had at least one in 2009. DPC ratios decreased in 135 counties between 2000 and 2009. In general, the counties with the highest ratios were those in Central or East Texas. The counties with lower ratios were generally located in West Texas, South Texas, and the Panhandle. Almost all of the counties with no DPC physicians were in these areas. The median age of DPC physicians was 49 years in 2009, compared with 48 years in 2000.

Figure 2. DPC Physicians per 100,000 Population: U.S. and Texas, 1981 to 2009.



Note: Texas Figures include all licensed, active, in-state, non-federal, non-resident in training DPC physicians. Older US data may include federal workers, or other workers that the Texas data do not include. The 2008 data for the US is based on the same parameters as the Texas data. Therefore, the decrease in the US supply ratio may be due to a difference in the method of data collection rather than an actual decrease, and the 2008 data is more directly comparable to the Texas data than are the older data. But this new data confirms that the Texas supply ratios are below the US average.

Figure 3. DPC Physicians per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1981–2009

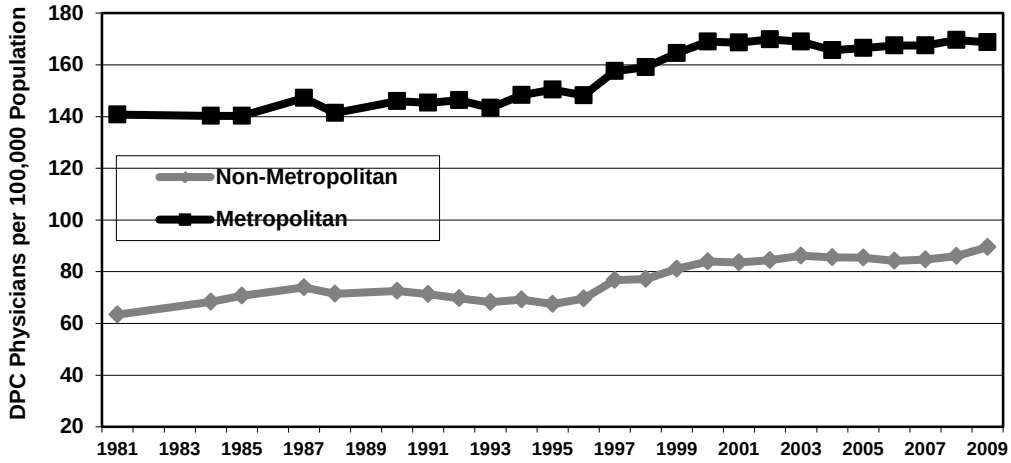


Table 1: 2009 Texas Direct Patient Care Physician Facts:

White	64.2%	Male	73.7%	Median Age Male	52
Black	4.6%	Female	26.3%	Median Age Female	44
Hispanic	11.6%				
Other	2.8%				
Unknown	16.8%				

	Providers/100,000 Population
Border Metropolitan	106.8
Non-Border Metropolitan	175.6
Border Non-Metropolitan	50.6
Non-Border Non-Metropolitan	90.8

Trends:

Year	Number	Providers/100,000 Population
1990	22,711	133.7
1995	25,683	137.2
2000	31,769	156.2
2005	35,811	155.7
2009	39,374	158.3

DPC SPECIALISTS

In the past, this report has included information for Direct Patient Care Physicians and a subset of those, Primary Care Physicians. The remainder of the Direct Patient Care Physician workforce – specialists – has not received the same attention in most analyses as Primary Care Physicians, but they also play an important role in healthcare in Texas. Table x shows the numbers and supply ratios for specialists in Texas in 2009. Until the last few years, the Texas Medical Board (TMB) has used 79 specific categories for physician specialties; recently however, it appears that TMB has been accepting any specialty that a physician enters when renewing a license. Therefore, the number of distinct specialty categories has increased to 265 in 2009. This has complicated the data analyses performed by HPRC, as some of the entries are combinations of different specialties (i.e. Sports Medicine – Family Practice), making it difficult in some cases to determine if a physician should be considered to be a Primary Care physician. To demonstrate the proliferation of specialty categories, there were nine different categories for Sports Medicine, covering a total of 40 Sports Medicine specialists. For Table X, HPRC aggregated the professions into a smaller set.

Table 2: Direct Patient Care Specialists, Texas, 2009

Specialty	Number	Ratio per 100,000 Population
Other Internal Medicine Subspecialties	2,935	11.8
Anesthesiology	2,641	10.6
Radiology	2,082	8.4
Emergency Medicine	1,782	7.2
Psychiatry/Psychoanalysis	1,654	6.6
General Surgery	1,604	6.4
Orthopedic Surgery	1,399	5.6
Cardiovascular Diseases	1,214	4.9
Ophthalmology	977	3.9
Pathology	902	3.6
Neurology	651	2.6
Otolaryngology	561	2.3
Urology	542	2.2
Geriatric Medicine	10	0.0
Other Specialties	1,872	7.5
Other Surgical Specialties	1,723	6.9
TOTAL SPECIALISTS	22,549	90.7

PC PHYSICIANS

The term *PC physician* includes physicians who are trained in one of six specialties of the more than 70+ specialties included under the umbrella of DPC — family practice/family medicine, general practice, internal medicine, obstetrics and/or gynecology, general pediatrics, and geriatrics. Geriatrics was included as a primary care specialty starting in 2004, at the request of the Bureau of Shortage Designation's HPSA program. Of the 39,374 DPC physicians in Texas in 2009, 16,830 were PC physicians, an increase of 18 percent over the number practicing in Texas in 2000. In 2009, 12.6 percent of the almost 25 million Texans were located in the 177 non-metropolitan counties and 87.4 percent in the 77 metropolitan counties. By comparison, only 9.7 percent of the PC physicians were practicing in non-metropolitan counties and 90.3 percent in metropolitan counties. Twenty-six of the state's 254 counties had no PC physicians in 2009 and 21 counties had only one PC physician.

SOURCES OF PC PHYSICIANS

In 2009, less than one-half (46.8 percent) of the PC physicians practicing in Texas were trained in Texas schools. Supplementing this pool of Texas medical graduates were PC physicians who received their training in other states (25.7 percent) or other countries (27.5 percent). Due to the size of this in-migrating PC physician supply, this external source of physicians is very important to the health care delivery system in Texas.

SUPPLY TRENDS

The PC physician supply increased by an average of 285 physicians per year between 2000 and 2009. Although the state's population also increased during this time, the PC physician ratios remained in the range of 67 to 71. Compared to a national benchmark ratio of 60 to 80, Texas remained in the lower range of the national benchmark; in 1996, Texas was even below the federal benchmark with a ratio of 59. The supply of PC physicians could be even more marginal since some of the physicians listed in the 2009 database practice only part-time. The total number of PC physicians available to some population groups could also be lower than the supply totals would suggest because some PC physicians limit their practices to paying or insured patients and others do not accept Medicaid patients. Thus, in some areas of the state, the "effective" physician supply is probably less than simple supply ratios would seem to indicate.

The PC physician average supply ratios in the U.S. (79.0 in 2000) have consistently exceeded the supply ratios in Texas (69.7 in 2000) for the past 20 years (Figure 4). Several years ago, the gap between the U.S. and Texas ratios began to widen, apparently due to stabilization in the Texas supply ratios.

The ratios in metropolitan and non-metropolitan counties were fairly constant between 1983 and 1996, with the non-metropolitan ratios being considerably smaller than the metropolitan ratios (Figure 5). Beginning in 1997, the ratios in both areas began to increase; however, the ratios in both the metropolitan counties and non-metropolitan counties appeared to stabilize about eight years ago. In 2009, 27 counties had no PC physicians. Eight counties that did not have a PC physician in 2000 had at least one in 2009. In general, the lowest supply ratios were associated with the 32 border counties, West Texas, and the Panhandle. Almost all of the counties with no PC physicians were in these areas, especially the Panhandle. The highest ratios were in Central or East Texas.

Figure 4. PC Physicians per 100,000 Population: U.S. and Texas, 1981–2009

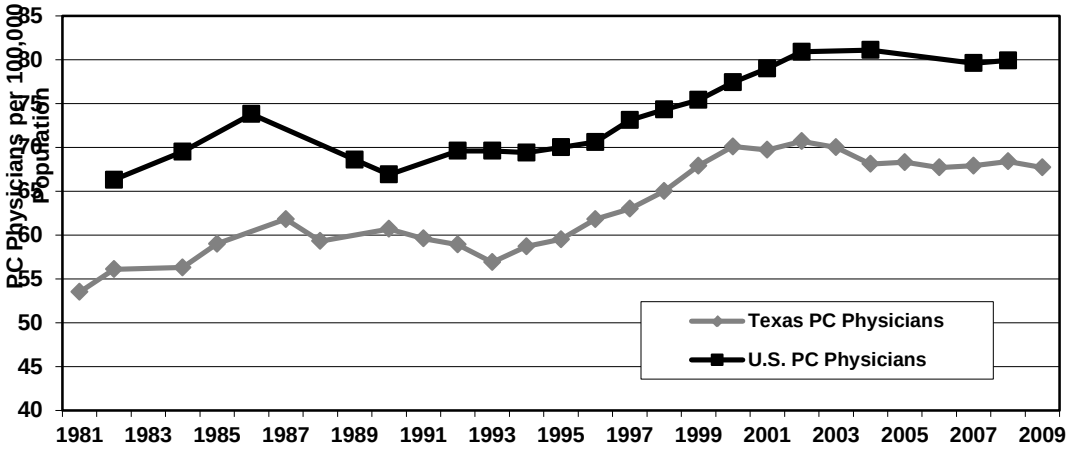


Figure 5. PC Physicians per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1981–2009

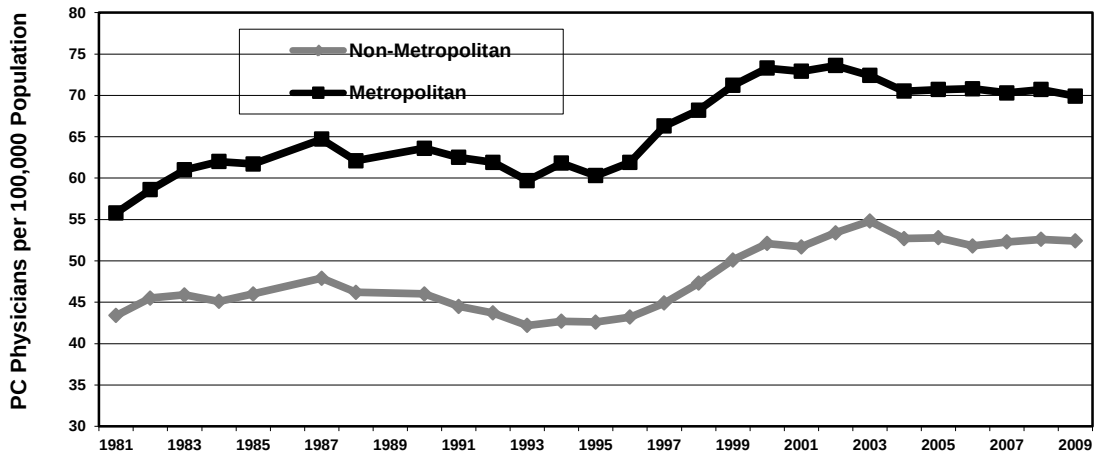


Table 2: 2009 Texas Primary Care Physician Facts:

	Providers/100,000 Population
Border Metropolitan	51.4
Non-Border Metropolitan	71.9
Border Non-Metropolitan	35.5
Non-Border Non-Metropolitan	54.7

Trends:

Year	Number	Providers/100,000 Population
1990	10,308	60.7
1995	10,763	57.5
2000	14,268	70.1
2005	15,718	68.3
2009	16,830	67.7

LOCATION

In 2009, there were fewer PC physicians per 100,000 people in non-metropolitan counties than in metropolitan counties. The ratio of 52.4 PC physicians per 100,000 population in non-metropolitan locations was well below the national benchmark of 60 to 80; however, the ratio in metropolitan areas (69.9) was in the mid-range of the national benchmark. This difference between metropolitan and non-metropolitan locations has been observed for years in Texas. The supply ratio also varied between border (49.0) and non-border areas (69.8), and very low PC physician supply ratios were observed in non-metropolitan non-border (54.7) and non-metropolitan border (35.5) locations (See Table 2).

Practice Settings

In 2009, 25.5 percent of the PC physicians were employed in solo practices, 32.8 percent in partnership or group practices, 9.8 percent in hospitals, and 0.5 percent in Health Maintenance Organizations (HMOs). A small number of PC physicians (4.6 percent) did not report their practice settings. Additional categories were added to the Practice Setting and Practice Type fields by the Texas Medical Board in 2007. A physician can now choose a Practice Type of Direct Patient Care and a Practice Setting of Direct Medical Care. Almost 25% of the physicians chose those categories, which may be why the percentages for solo practices, partnership/group practices, hospitals and HMOs decreased from two years ago. In addition, a physician can now choose a combination of Direct Patient/Medical Care and research or faculty; in the past, if a physician chose research or faculty they were not considered Direct Patient Care and not included in HPRC's data. Less than 2% of physicians fell into this category. Almost 1% selected "Other" for Practice Setting.

Primary Care Specialties

In 1991, 45 percent of the Direct Care Physicians were primary care physicians, and 55 percent were non-primary care specialists. In 2009, the ratio was 42.7 percent primary care to 57.3 percent specialists. Three-fourths of the PC physicians in non-metropolitan counties were either family practice/medicine physicians (53.2 percent) or internal medicine physicians (21.5 percent). However, in metropolitan counties, two-thirds of the PC physicians were trained in family practice/medicine (33.0 percent) or internal medicine (29.7 percent). See Table 3 for more information.

Table 3. PC Physicians by Primary Specialty and Practice Location, Texas, 2009

PC Physicians by Specialty	2009 PC Physicians Total	% Metropolitan	% Non-Metropolitan
Family Practice/Medicine	5,880	85.2	14.8
General Practice	703	82.1	17.9
Internal Medicine	4,866	92.8	7.2
General Pediatrics	3,028	95.1	4.9
Obstetrics and Gynecology	2,314	94.2	5.8
Geriatrics	39	92.3	7.7
Total Primary Care	16,830	90.3	9.7

Age

The median age of PC physicians in 2009 was 49 years; in 2000 it was 46. Female physicians tend to be younger, with a median age of 43, than male physicians, with a median age of 52. The ages of PC physicians also differed based on whether the physicians were practicing in non-metropolitan or metropolitan counties. The median age for PC physicians in metropolitan counties was 48 years, and in non-metropolitan counties, 52 years. The median age for PC physicians in the border counties was 49 years, and non-border counties, 48 years.

Gender

In 1997, 77.7 percent of the PC physicians were male; however, that percentage has steadily decreased to 66.1 percent in 2007. In 2009, 37.7 percent of the PC physicians in metropolitan counties and 36.9 percent in the non-border counties were female. However, only 20.2 percent of the PC physicians in non-metropolitan counties and 25.8 percent in border counties were female.

Male and female PC physicians also vary in their choice of a medical specialty. For example, a greater percentage of female PC physicians report pediatrics as their primary specialty (27.6 percent) than do male PC physicians (12.5 percent) (Table 4). The two most prevalent specialties in non-metropolitan counties, family practice and internal

medicine (Table 3), are not as well represented among female PC physicians (64.7 percent of females are practicing in these two specialties) as among male PC physicians (77.3 percent).

Table 4. PC Physicians by Primary Specialty and Gender, Texas, 2009

Physicians by Specialty	2009 PC Physician Total	% Male	% Female
Family Practice/Medicine	5,879	38.0	29.5
General Practice	703	5.4	1.9
Internal Medicine	4,862	31.4	24.5
General Pediatrics	3,026	12.5	27.6
Obstetrics and Gynecology	2,313	12.4	16.1
Geriatrics	39	0.2	0.4
Total	16,822	100.0	100.0

Note: Excludes those records that did not report Gender (8 records)

RACE-ETHNICITY

In 2009, the licensing boards started collecting data in the new Minimum Data Set format. There was a change in the racial/ethnic categories. During this first year of implementation, complete data have not yet been collected for all licensees under the Minimum Data Set; therefore, the number of "Unknowns" was significantly higher than in previous years, which may slightly skew the racial and ethnic data for 2009. It is likely that most of the Unknown values are for Asian and Pacific Islanders and should fall in the Other category. In 2009, the majority (58.2 percent) of the state's PC physicians were white, down from 65.2 percent in 2000 (Table 5). Although over a decade ago Hispanics made up the largest minority population of PC physicians, Asian–Pacific Islanders were the largest by 1997, and the gap between the two has continued to grow. Blacks and Hispanics have historically been under-represented in the PC physician workforce, compared to the general population.

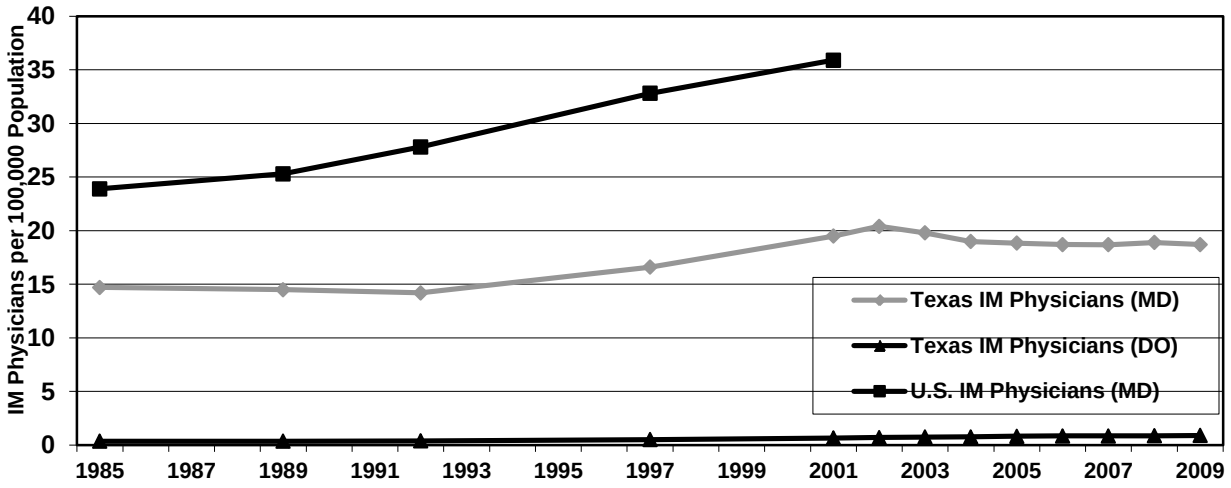
Table 5. Race and Ethnicity Trends for PC Physicians, Texas, 1999 and 2009

Race/Ethnicity	2000		2009	
	PC Physicians (%)	Population (%)	PC Physicians (%)	Population (%)
White	65.2	53.1	58.2	45.9
Black	4.5	11.6	6.1	11.6
Hispanic	12.6	32.0	14.4	38.1
Other	15.9	3.3	3.0	4.4
Unknown	1.8	-	18.4	-

INTERNAL MEDICINE (IM)

In Figure 6, the supply of IM physicians in Texas is separated into Doctor of Osteopathy (DO) and Medical Doctor (MD) trend lines because national data were not available for Dos. As shown in the graph, the IM supply ratios for MDs in Texas have been lower than the U.S. average ratios for the past two decades. The ratios for Dos have remained stationary. The median age for IM physicians was 47 years in 2009, compared with 45 in 2000.

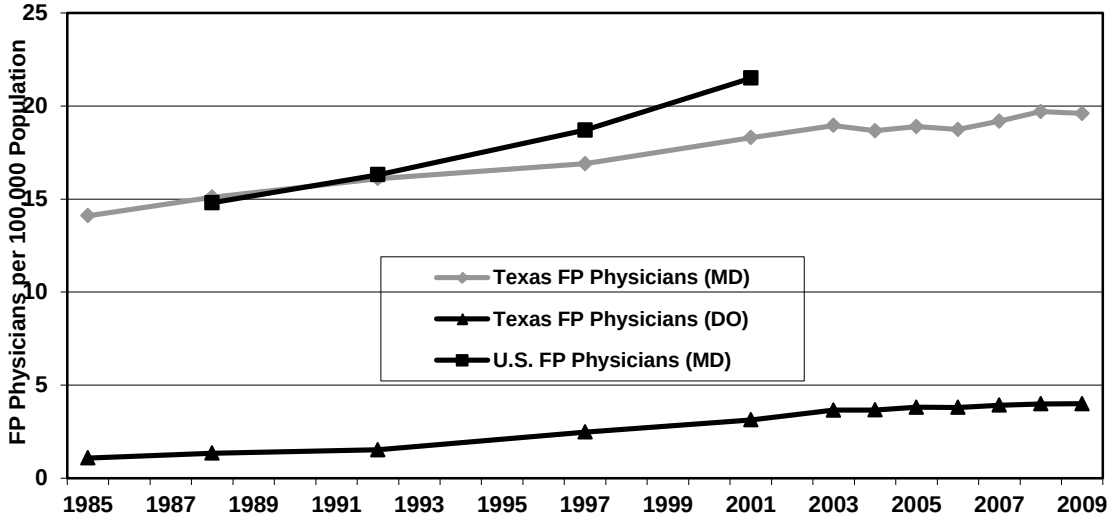
Figure 6. Internal Medicine Physicians per 100,000 Population, U.S. and Texas, 1985–2009



FAMILY PRACTICE/MEDICINE (FP)

The Texas Medical Association reports that in Texas, physicians are beginning to use the term "family medicine" rather than "family practice." As both terms are currently in use, these data reflect those physicians who indicated either as their primary specialty. In Figure 7, the supply of FP physicians in Texas is separated into DO and MD trend lines because national data were not available for Dos. Prior to 1992, the FP ratios in the United States and Texas were about the same; however, after 1992, the gap between the U.S. average ratios and the Texas ratios for FP physicians widened, with the Texas ratios consistently falling behind the U.S. ratios in magnitude. The FP ratios for MDs have increased about the same as the ratios for Dos. The median age for FP physicians was 49 years in 2009, compared with 46 years in 2000.

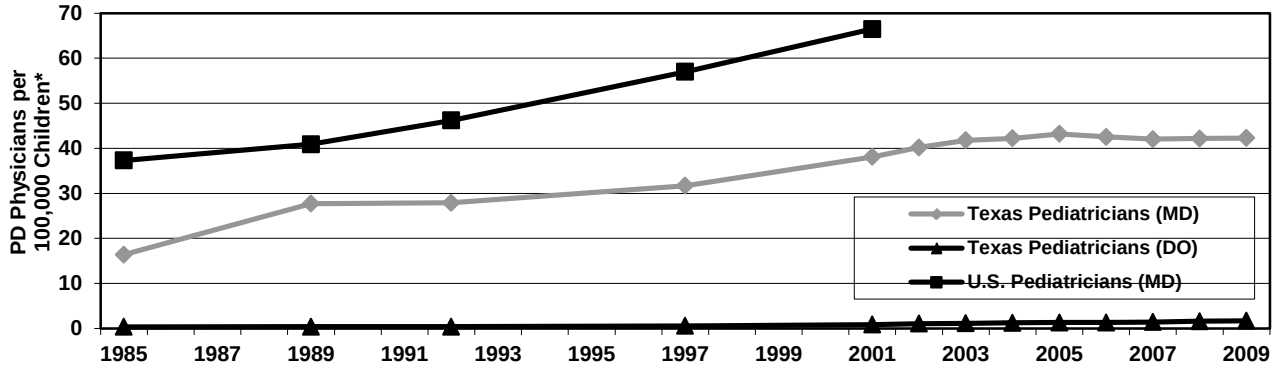
Figure 7. Family Practice Physicians per 100,000 Population, U.S. and Texas, 1985–2009



PEDIATRICS (PD)

In Figure 8, the supply of PD physicians in Texas is separated into DO and MD trend lines because national data were not available for Dos. The PD supply ratios for MDs in Texas per 100,000 children have been lower than the U.S. average ratios for the past two decades, but have been increasing since the mid-'90s. The PD supply ratios for Dos have remained fairly constant. The median age for PD physicians was 47 in 2009, compared with 45 in 2000.

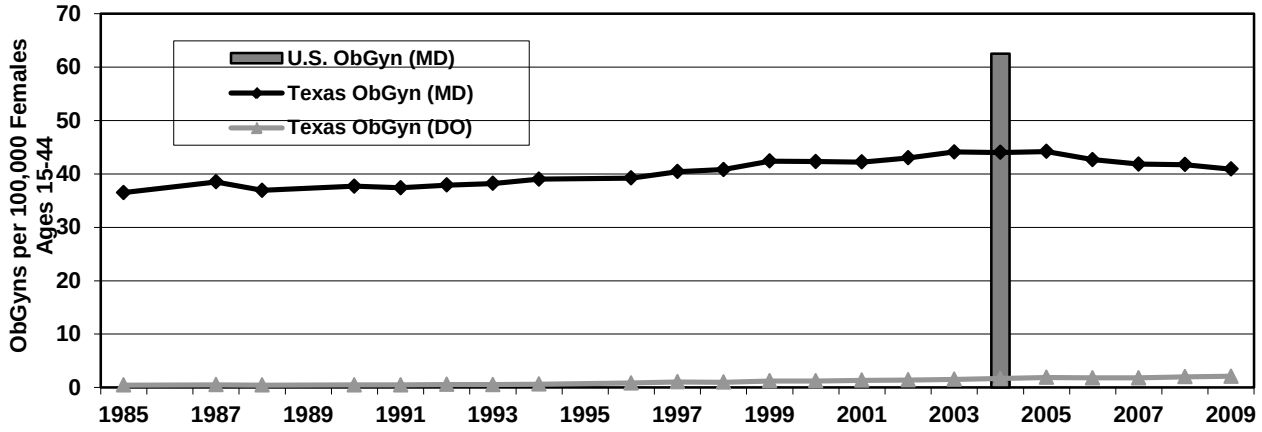
Figure 8. PD Physicians per 100,000 Children (0–18 years), U.S. and Texas, 1985–2009



OBSTETRICS AND GYNECOLOGY (OB/GYN)

Physicians may have a specialty of Gynecology only, Obstetrics only, or Obstetrics and Gynecology. The data in this report reflect the total of those three specialties. In Figure 7, the supply of Ob/Gyns in Texas is separated into DO and MD trend lines to be consistent with previous graphs for FP, IM, and PD physicians. However, national Ob/Gyn supply ratio trends were not available for this graph, although the national ratio in 2004 was 62.5. Ob/Gyn supply ratios for MDs have decreased slightly recently after increasing for the past two decades, but the ratios for Dos have remained fairly constant. The median age for Ob/Gyns was 50 years in 2009, compared with 48 in 2000.

Figure 9. Ob/Gyn Physicians per 100,000 Females Ages 15–44, Texas, 1985–2009



PHYSICIANS FOR TEXAS

With few exceptions, prior State Health Plans have consistently called attention to a shortfall in physician supply and a geographic mal-distribution in the state. While statistical indicators doggedly point to a continuation of these trends, there are several areas of improvement that are equally noteworthy.

Part of the good news is that for the past five years, Texas has been adding the largest number of new physicians to its workforce than any time in recent history. Almost 18,000 new physicians, an average of 3,000 a year, were added over the past six years. This six-year average is 25 percent higher than the 2,300 new physicians added each year, on average, during the previous six years. The *other* good news is that the robust gains in new physicians allowed the state's ratio of physicians to population to remain stable despite the fact that Texas led the country in population growth.

The historically high gains in physician supply, however, did not change the status of Texas as a state with a relatively low ratio of physicians to population in comparison to other states, ranking Texas 42nd in the country. Had the state not seen such large population increases, the recent physician gains would have lifted Texas to a higher state ranking. Texas ranks below U.S. averages for physician to population ratios for 38 out of 40 specialty groups. The only specialties above the national averages are aerospace medicine (due to the strong presence of NASA and airline hubs in the state), and colon/rectal surgery (for reasons that are not obvious).

Texas legislators and medical schools have responded to the growing physician demand by rapidly expanding enrollments at levels projected to reach the nationally-recommended 30 percent growth by 2015. The expansion of residency training positions, however, has lagged behind and there are growing concerns whether graduate medical education (GME) can be expanded quickly enough to accommodate the extra graduates now in the pipeline. Without parallel increases in GME, these graduates will likely be lost to other states, given the well – established pattern of physicians typically entering practice within 100 miles of where they train.

The challenge of meeting the physician supply needs of Texans living in the vast rural and border regions of the state was a priority for Texas legislators in 2009. Bold steps were taken to broadly expand the state's Physician Education Repayment Program by nearly quadrupling the maximum repayment amount to $160,000, and increasing potential program participants by more than 200 percent. Texas legislators also provided funds for loan repayment to physicians with defined numbers of Medicaid patients.

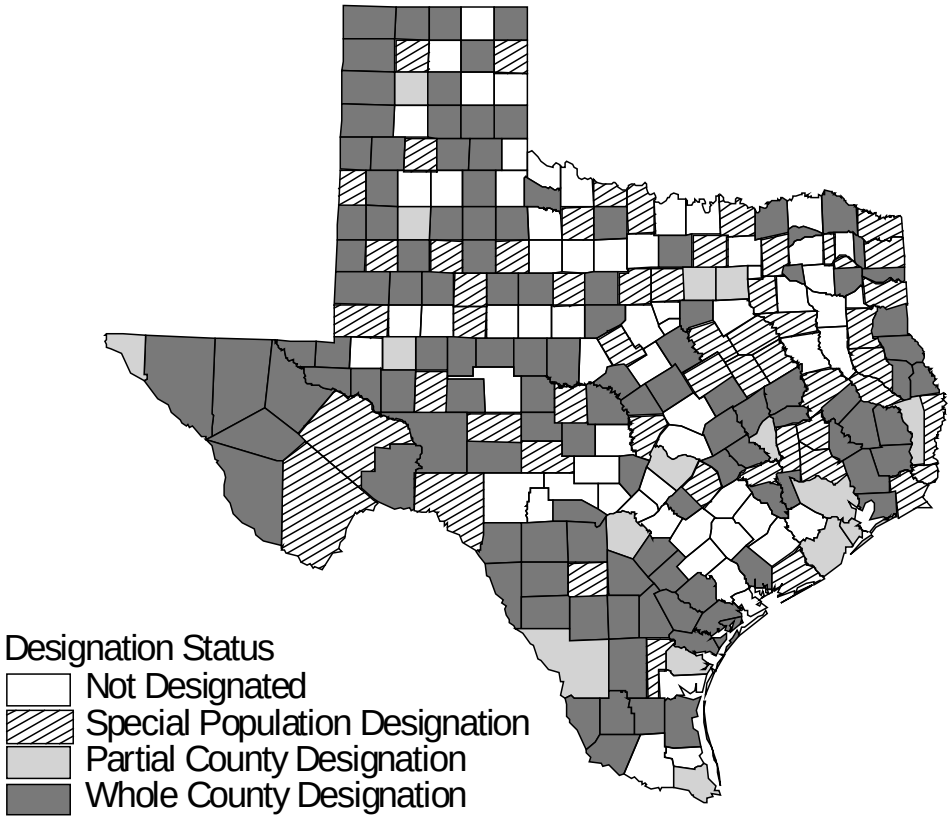
Several Texas medical schools have expanded their rural physician training tracks and rural preceptor programs to prepare more physicians for rural practice. Medical schools are also evaluating the potential for shortening the training period for family physicians in order to better meet the state's primary care needs.

While this iteration of the State Health Plan continues to sound a cautionary tone on the adequacy of the state's physician workforce, positive overtones are also evident and bear further monitoring in the educating, training, recruitment, and retention of physicians for Texas.

HPSAS

PC physician ratios are the primary indicators used by the U.S. Department of Health and Human Services to determine if geographic areas or population groups are experiencing shortages of PC physicians and if they qualify as federal shortage areas. In October 2009, 74.4 percent of the counties in Texas had either whole (118) or partial-county/special population (71) HPSA designations (Figure 10). Fifty-one percent of the non-metropolitan counties had "whole county" HPSA designations, and 65.6 percent of the border counties had whole county designations. Seventy-six percent of the 118 "whole county" HPSAs were non-metropolitan counties, and 17.8 percent were border counties. Most of the partial-county HPSA designations were located in metropolitan counties. In addition to these designations, the HPSA designation program also provides for the designation of facilities under certain circumstances. It should be noted that many of these federally designated PC physician shortage areas are also experiencing shortages of other health professionals, such as nurses, allied health professionals, and mental health providers.

Figure 10. Federally Designated Primary Care Health Professional Shortage Areas in Texas, October 2009



Prepared by:
Health Professions Resource Center
Center for Health Statistics
Texas Department of State Health Services
Data Source:
Shortage Designation Branch
United States Department of Health and Human Services
October 2009

PHYSICIAN ASSISTANTS (PAS)

According to the 2009 TMB licensure data, there were 4,563 Pas licensed to practice in Texas; 90.6 percent of them practiced in metropolitan counties; 8.7 percent practiced in border counties. The supply ratios of Pas per 100,000 population for the United States have been consistently higher than the ratios for Texas (for example, 14.1 vs. 10.4 respectively, in 2000). Both the U.S. and Texas ratios have been rising at a comparable rate (Figure 11). The ratios for the non-metropolitan areas were higher than those for the metropolitan areas from 1994 to 2002 (Figure 12); however, the metropolitan areas have sustained a steady increase since that time while the ratios for the non-metropolitan areas have fluctuated. In 2003, the ratios for the metropolitan areas surpassed those of the non-metropolitan areas.

Twenty-five counties that did not have a PA in 2000 had one or more in 2009. In 2009, there were 63 counties with no Pas. The counties with the highest supply ratios were in West Texas and the Panhandle, as were most of the counties that had no Pas. Over the past decade, most of the counties with the greatest percent of increase in supply ratios have been in West Texas, Central Texas, and the Panhandle. Eighty-seven counties experienced a

decrease in their supply ratios during that time, and 21 counties that had at least one PA in 2000 did not have any in 2009. In contrast with physicians, the average ratios in the border and non-border counties were similar to each other (Table 6).

Figure 11. Physician Assistants per 100,000 Population, U.S. and Texas, 1989–2009

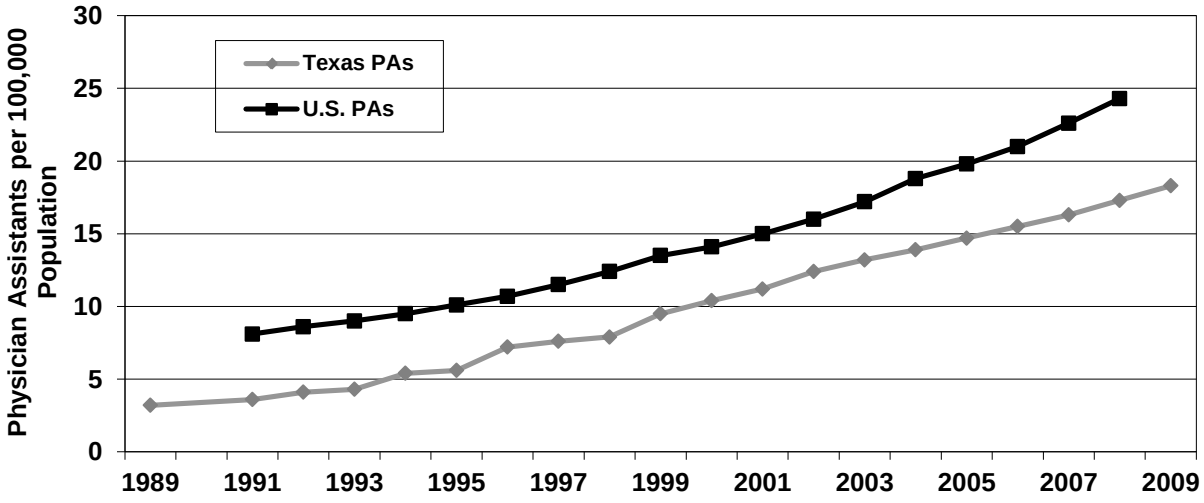
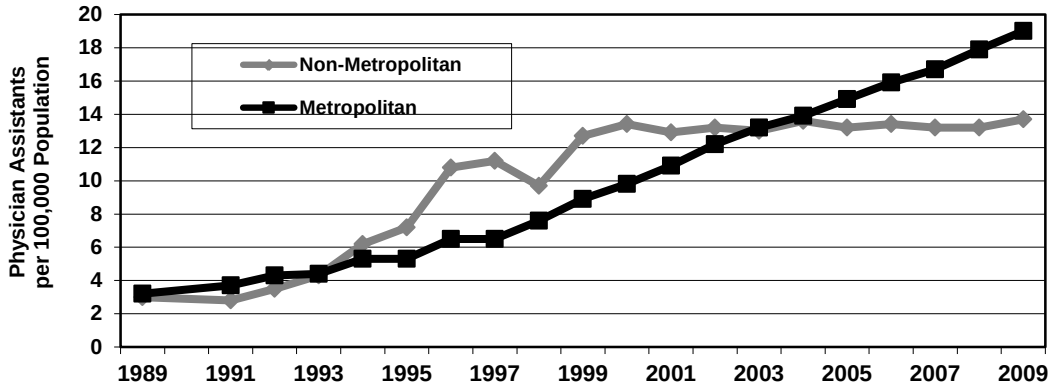


Figure 12. Physician Assistants per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1989–2009



AGE, GENDER, AND RACE-ETHNICITY

In 2009, 70.5 percent of the PAs were white, followed by Hispanic Pas at 14.9 percent of the total (Table 6). There were substantially more female Pas than male Pas in 2009, a reversal from 2000, when males slightly outnumbered females, 50.4 percent to 49.6 percent, respectively. The median age of Pas in the state in 2009 was 39 years, down from 41 years in 2000. The median age of Pas in non-metropolitan counties was several years greater than the median age of Pas in metropolitan counties (47 years versus 39 years, respectively). The median age of Pas in border counties was 38 years, 2 years less than that of Pas in non-border counties. A disparity in age and gender exists among Pas based on their practice location: 61.1 percent of the Pas in metropolitan counties

were female, but only 45.9 percent in non-metropolitan counties were female. In the border counties, 50.3 percent of the Pas were female, compared to 60.6 percent in the non-border counties.

Educational Preparation

The number one professional issue that was discussed and voted upon at the Physician Assistant national meeting in Portland, Oregon (November 4-8, 2009) is the clinical degree to offer. The Physician Assistant Educational Association (PAEA) voted in Portland to designate the master's degree as the entry-level and terminal degree for the PA profession. The PAEA are opposed to the PA Clinical Doctorate for physician assistants. The current national stance by the PA educators is total opposition to any clinical doctorate degree with PA in the name.

Faculty Shortages

The second national and local Texas issue is the difficulty in finding and recruiting the needed PA faculty to run the PA Programs effectively. Because of the competition of the higher clinical PA graduate salaries it is very difficult to recruit the needed PA faculty. Almost every PA Program in the State of Texas is in the need of one or more faculty. There is difficulty in finding and hiring faculty candidates who hold the Master's and Doctoral degrees needed to teach as well as those who have had previous teaching experience.

State Funding

The third issue facing the national and Texas PA Programs is the needed formula funding to support graduate education. The Nurse Practitioner profession gets one and a half times more support for formula funding in Texas without any clear rationale for the difference. It is a difficult issue, but it appears that because of the nursing shortage there are increased grants and state funding to support Nurse Practitioner graduate education endeavors. The PA programs are located in the Schools of Health Professions that receive the floor of the formula funding for the health professions.

Table 6: 2009 Texas Physician Assistant Facts:

White	70.5%	Male	40.3%	Median Age Male	46
Black	6.1%	Female	59.7%	Median Age Female	36
Hispanic	14.9%				
Other	3.8%				
Unknown	4.8%				

	Providers/100,000 Population
Border Metropolitan	15.4
Non-Border Metropolitan	19.4
Border Non-Metropolitan	15.9
Non-Border Non-Metropolitan	13.4

Trends:

Year	Number	Providers/100,000 Population
1991	622	3.6
1995	1,052	5.6
2000	2,106	10.4
2005	3,375	14.7
2009	4,563	18.3

CHIROPRACTORS

There were 4,592 chiropractors in Texas in 2009. The supply ratio of chiropractors per 100,000 population in the US has consistently exceeded the supply ratios in Texas (Figure 13). And, prior to the late 1980s, the ratio was higher in non-metropolitan counties than in metropolitan counties (Figure 14). Since that time, the ratios for chiropractors in metropolitan counties have greatly increased and have exceeded the rates for non-metropolitan counties. In 2009, there were 70 counties in the state that did not have a chiropractor. Fifteen counties that did not have a chiropractor in 2000 had at least one in 2009. However, ten counties that had chiropractors in 2000 had no chiropractors in 2009. The highest supply ratios were concentrated in the central part of the state, and also around Dallas and Houston, although a few counties in West Texas also had high ratios. The ratios in the non-metropolitan areas have held fairly steady for more than the last two decades, while the ratios in the metropolitan areas rose steadily until about 2003; they have remained relatively flat since then. Data on race/ethnicity were not available.

Figure 13. Chiropractors per 100,000 Population, U.S. and Texas, 1980–2009

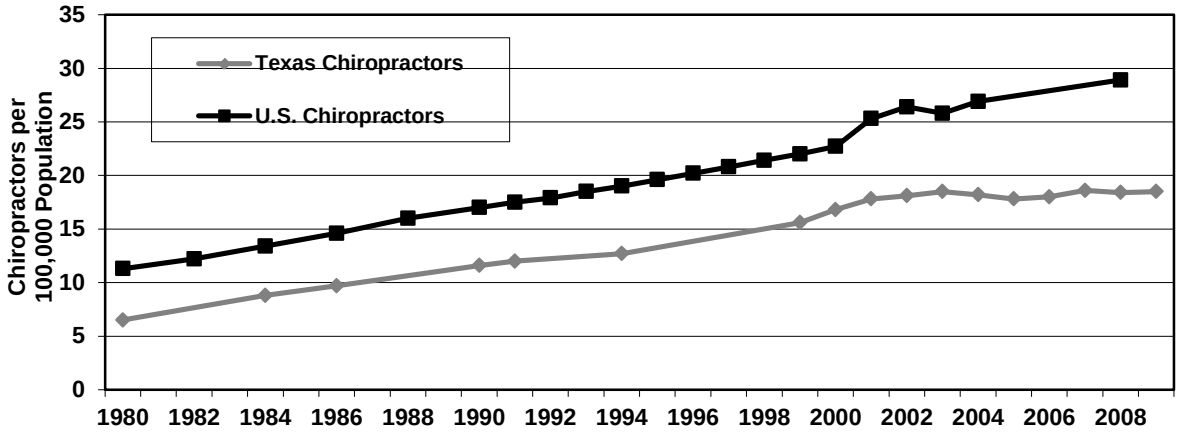


Figure 14. Chiropractors per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1980–2009

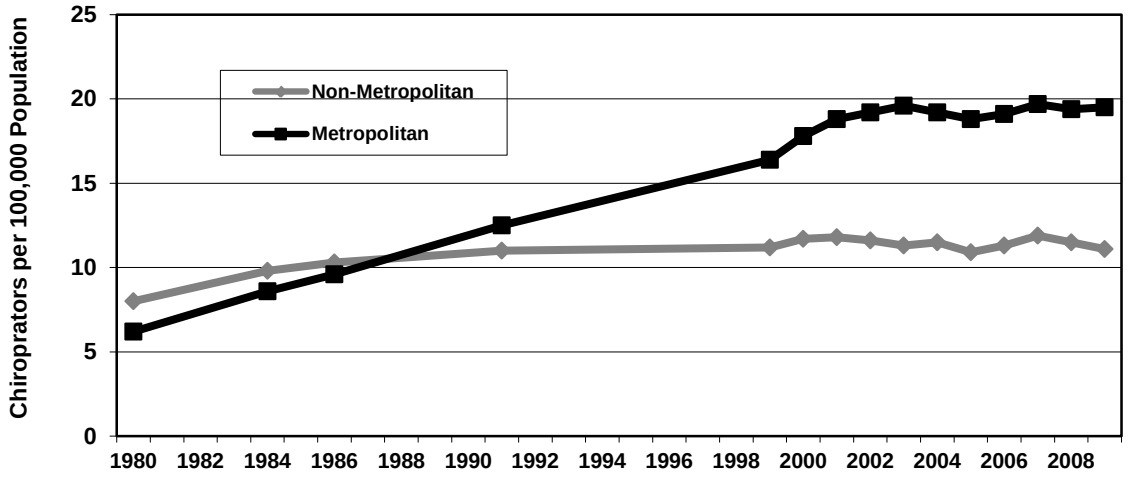


Table 7: 2009 Texas Chiropractor Facts

Male	76.1%	Median Age Male	43
Female	23.9%	Median Age Female	40

	Providers/100,000 Population
Border Metropolitan	8.1
Non-Border Metropolitan	20.8
Border Non-Metropolitan	4.4
Non-Border Non-Metropolitan	12.0

Trends:

Year	Number	Providers/100,000 Population
1990	1,972	11.6
1994	2,325	12.7
2000	3,426	16.8
2005	4,091	17.8
2009	4,592	18.5

PODIATRISTS

There were 897 podiatrists in Texas in 2009. There are no schools of podiatry in Texas and only eight accredited schools nationally. That may partially explain why Texas supply ratios are slightly less than those of the United States. The Texas ratios have held fairly steady over the last decade (Figure 15). The ratios are greater in metropolitan areas than in non-metropolitan areas (Figure 16). The highest concentration of podiatrists is in the Central Texas area, with smaller ones in the North Texas and Harris County areas. These areas also experienced the most growth from 2000 to 2009. There are very few podiatrists in West Texas, South Texas, and the Panhandle, and, from 2000 to 2009, the few counties in these areas that had podiatrists experienced a decline in ratios, or lost all of their podiatrists. The non-metropolitan border counties have higher average ratios than the non-metropolitan non-border counties. Twenty counties that did not have a podiatrist in 2000 had one in 2009, while nine counties lost all of their podiatrists over that time. In 2009, Texas had 167 counties without a podiatrist. The median age for podiatrists was 45 years in 2009, compared to 44 years in 2000. Limited race information is available but isn't reported here because race was unknown for 42% of the Podiatrists, and the board collected race only and not ethnicity so no information is available for Hispanics.

Figure 15. Podiatrists per 100,000 Population, U.S. and Texas, 1981–2009

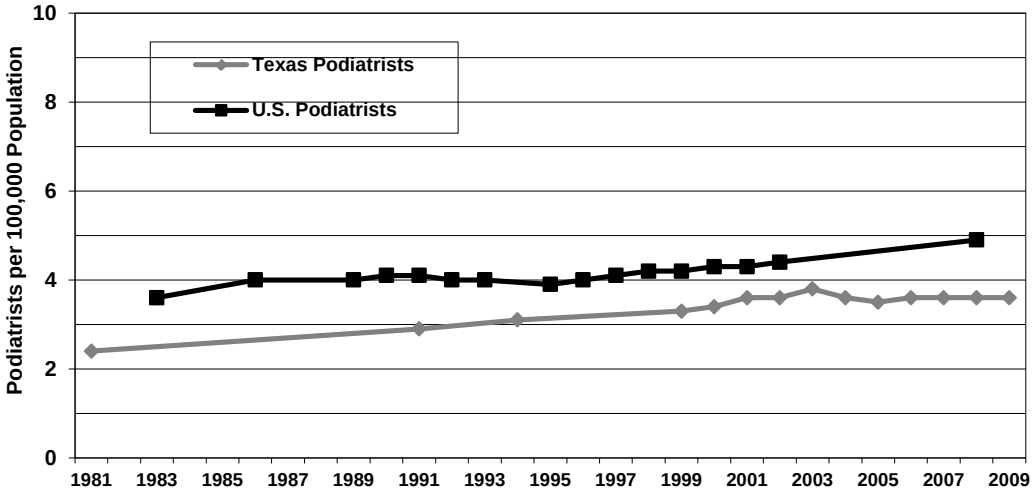


Figure 16. Podiatrists per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1981–2009

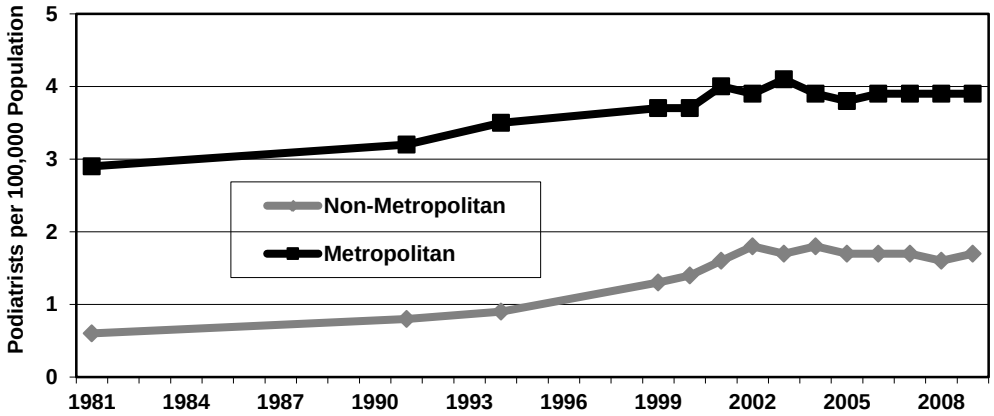


Table 8: 2009 Texas Podiatrists Facts:

Male	78.7%	Median Age Male	47
Female	21.3%	Median Age Female	39

	Providers/100,000 Population
Border Metropolitan	2.6
Non-Border Metropolitan	4.0
Border Non-Metropolitan	1.6
Non-Border Non-Metropolitan	1.8

Trends:

Year	Number	Providers/100,000 Population
1991	496	2.9
1994	567	3.1
2000	682	3.4
2004	807	3.6
2009	897	3.6

NURSING PROFESSIONS

- Registered Nurses
- Advanced Practice Nurses
- Nurse practitioners
- Certified nurse midwives
- Certified Registered nurse anesthetists
- Clinical nurse specialists
- Licensed Vocational Nurses

REGISTERED NURSES (RNS)

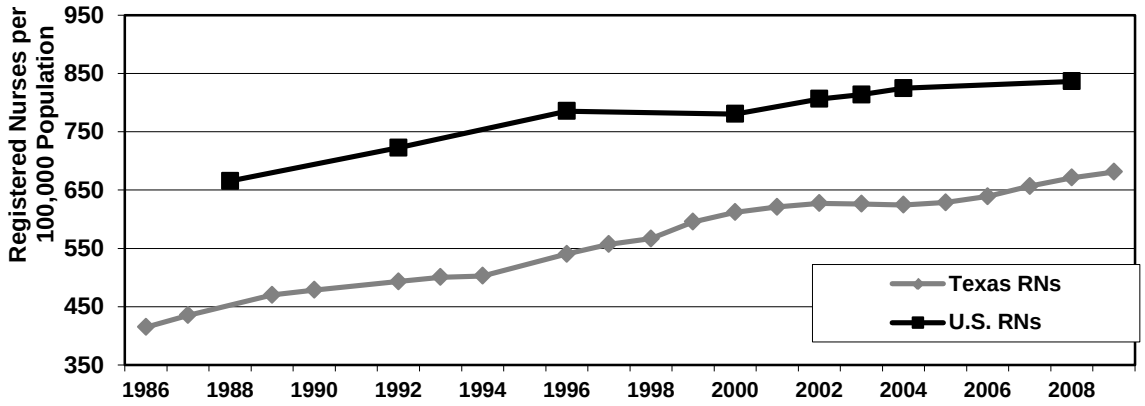
All of the RNs included in the statistics for this chapter and the Appendix held active licenses and were employed either part-time or full-time in nursing. Although some RNs were employed as teachers or administrators and may not provide direct patient care, they were included in the overall supply totals for Texas RNs.

SUPPLY

According to the Board of Nursing (BON) licensure file for 2009, there were 169,446 active RNs practicing in Texas — 86.8 percent were employed full-time and 13.2 percent were employed part-time in nursing. The 169,446 RNs give Texas a supply ratio of 681.2 RNs per 100,000 population. The Texas supply ratios have been below the U.S. supply ratios for years. The National Sample Survey of Nurses reported a ratio of 824.6 for the U.S. in 2004, compared to a ratio of 624.5 for Texas that year. The gap between U.S. and Texas ratios has been slightly increasing in recent years (Figure 17).

Metropolitan counties have consistently had a much higher ratio of nurses than the non-metropolitan counties (Figure 18). There were only four counties that did not have an RN in 2009, but those four counties had a combined population of only 2,007 people. Two of those counties were the only two counties to not have an RN in 2000. Since 2000, 150 of Texas' 254 counties have seen an increase in the supply ratio of RNs. Although the border counties continue to have much lower supply ratios than the rest of Texas, the ratios in those counties are increasing at a rate comparable to the rest of the state.

Figure 17. Registered Nurses per 100,000 Population, U.S. and Texas, 1986–2009



GENDER

In 2009, the RN workforce in Texas was predominantly female; only 10.7 percent of the nurses were male. This represents only a slight increase in the male representation in the RN workforce from 2000, when 8.4 percent of the RNs were male.

Figure 18. Registered Nurses per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1986–2009

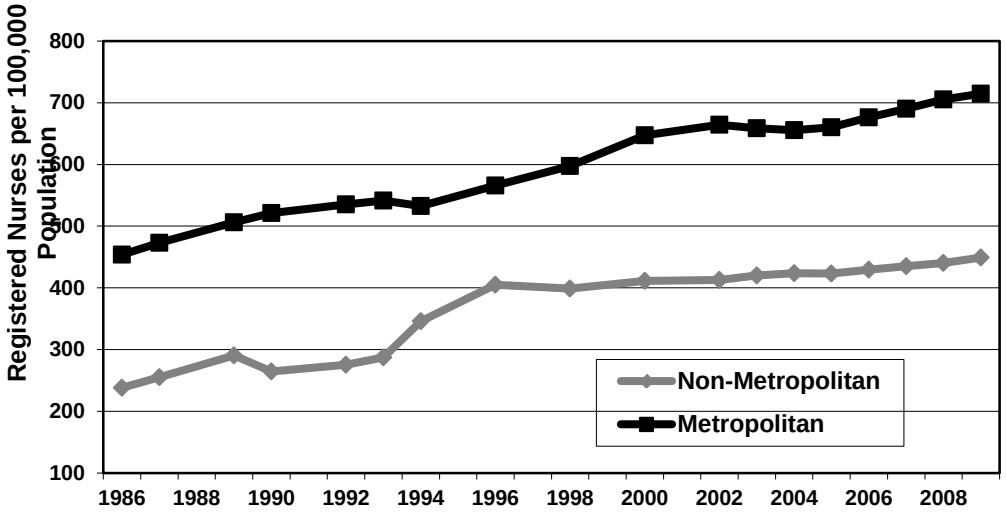


Table 9: 2009 Texas Registered Nurse Facts:

White	68.0%
Black	9.7%
Hispanic	11.3%
Other	11.0%

	Providers/100,000 Population
Border Metropolitan	504.0
Non-Border Metropolitan	738.2
Border Non-Metropolitan	239.2
Non-Border Non-Metropolitan	478.4

Trends:

Year	Number	Providers/100,000 Population
1990	81,320	478.7
1996	103,358	540.3
2000	124,495	611.9
2005	144,602	628.6
2009	169,446	681.2

Position Type and Employment Field

A majority (63.7 percent) of the RNs who were actively employed as nurses in Texas were working in hospitals — the others being primarily employed in home health (6.6 percent), physicians' or dentists' offices and clinics (4.2 percent), school or college health clinics (3.9 percent), nursing homes or extended care facilities (2.8 percent), business or industry (2.4 percent), freestanding clinics (2.1 percent), community and public health (1.8 percent), , schools of nursing (1.6 percent), self-employed or in private practice (1.0 percent), military installations (0.8 percent), temporary agencies (0.6 percent), rural health clinics (0.3 percent) or in other employment fields (6.5 percent). Also, the employment field was unknown for 1.9 percent of the RNs.

Since the majority of RNs worked in hospitals in 2009, most were employed in hospital-related positions, such as head nurse, staff nurse, or general duty nurse (Table 10). Advanced practice nurses accounted for 5.7 percent of all nursing positions for active nurses in Texas.

Table 10. Distribution of actively employed RNs in Texas by position type, 2009.

Position Type	Number	%
Head Nurse, Staff Nurse, General Duty Nurse, or Assistant	108,389	64.0
Administrator/ Supervisory/ Assistant	16,905	10.0
School / Office Nurse	9,651	5.7
Nurse Practitioner	5,745	3.4
Faculty/Educator	3,956	2.3
Consultant	2,416	1.4

Nurse Anesthetist	2,183	1.3
Clinical Nurse Specialist	1,409	0.8
Researcher	1,194	0.7
In-service / Staff Development	982	0.6
Certified Nurse Midwife	276	0.2
Other	12,968	7.7
Unknown	3,372	2.0

EDUCATION — BASIC AND HIGHEST DEGREES

In 2009, more than one-third (37.3 percent) of the active RNs listed as their *basic degree* the baccalaureate degree in nursing (BSN), 46.9 percent listed associate degree in nursing (I), and 14.8 percent listed diploma in nursing. Other RN degree types (masters in nursing, enroute to masters, RN undergraduate, and VN/PN program) accounted for 1.0 percent of the RNs, and a small number of nurses did not give their basic degree. More than one-third listed I as their *highest degree* (41.4 percent) followed by the BSN degree (38.9 percent), and the diploma in nursing (9.4 percent). Only 7.9 percent had a master of science in nursing (MSN) and 0.4 percent had a doctorate in nursing. Some RNs had their highest degree in a field other than nursing (2.1 percent). However, beginning in March 2008, the data collection for "highest degree earned" was changed to highest *nursing* degree earned for online renewal applications; therefore, 2009 data may not be comparable to data from previous years.

Of those nurses with a basic diploma degree, 17.4 percent had progressed to a BSN, 6.1 percent to an MSN, and 0.5 percent to a doctorate in nursing. Of those nurses with I as their basic degree, 9.6 percent progressed to a BSN, 3.5 percent to a MSN, and 0.12 percent to a doctorate in nursing. By comparison, of those nurses with a BSN as their basic degree, 12.5 percent advanced to MSN and 0.6 percent advanced to a doctorate in nursing.

WORK AREA

The most common work areas for active RNs in Texas were medical/surgical (14.3 percent), intensive care/critical care (11.2 percent), operating/recovery care (7.5 percent), and obstetrics and gynecology (7.3 percent) (Table 11).

Table 11. Distribution of active RNs in Texas by their work area, 2009.

Work Area	Number	%
Medical / Surgical	24,298	14.3
Intensive Care / Critical Care	19,029	11.2
Operating / Recovery Care	12,772	7.5
Obstetrics and Gynecology	12,326	7.3
Emergency Care	10,246	6.1
Pediatrics	10,194	6.0
Home Health	9,538	5.6
General Practice	7,341	4.3
Neonatology	6,914	4.1
Geriatrics	5,635	3.3
Oncology	5,096	3.0
Psychiatric / Mental Health / Substance Abuse	4,860	2.9
Community / Public Health	4,694	2.8
Rehabilitation	2,675	1.6
Anesthesia	2,264	1.3
Occupational/Environmental	1,120	0.7
Other	26,327	15.5
Unknown	4,117	2.4

JOB SATISFACTION, RETENTION, AND RE-ENTRY INTO NURSING

The Regional Center for Health Workforce Studies at the Center for Health Economics and Policy (CHEP) conducted a research study in 2006 on Registered Nurses (RNs) in Texas. The following reflects the results of the 2006 CHEP study of 454 RNs on factors that affect retention and re-entry of nurses in the nursing workforce:

- While 84 percent of the RNs reported general satisfaction with their work, 65.3 percent reported serious exhaustion and 45 percent reported frustration.
- Almost 36 percent of the RNs reported that, on most days, they often have more work than they can safely handle.
- A major issue affecting retention and re-entry of nurses in the workforce has to do with the nursing workload involved in caring for an increasingly aged, severely ill, and obese patient population along with increasing paperwork and physical and interpersonal stressors.
- The most frequently reported work environment problems in Texas include:
- The burden of paperwork is increasing (reported by 79 percent of the responding RNs).
- Increase in the number of patients assigned (72 percent of the responding RNs). Since 2004, patient workload increased 22 percent.
- Severity of patient illness (63 percents of responding RNs).
- Increase in RN turnover (58 percent of responding RNs).
- Ergonomics, lifting and availability of equipment within the work place continue to be key issues as it affects comfort, safety, efficiency and productivity. Only 33 percent of the RNs perceived that they have adequate help with physical demands in the workplace.

Respondents in this study indicated that they needed more help from administrators in managing workload effectively, minimizing perceived harassment (RNs reported more harassment from patients than from physicians), improving support for patient care, and providing training for new technologies.[1]

AGING OF THE REGISTERED NURSE WORKFORCE

The aging of the RN workforce will have an impact on future nursing workforce trends. RNs from the "baby boomer" generation entered nursing in large numbers in the 1960s and 1970s and currently represent the largest cohort of RNs today. (reference?)

The overall RN workforce in Texas continues to age. In 2009 the median age of RNs was 47 years, compared to 44 years in 2000. The median age of non-metropolitan RNs was older on average (49 years) than metropolitan RNs (46 years). The median age of RNs in non-border counties were older (47 years) than nurses in border counties (43 years). In addition, the RN population age 55 and older jumped from 15.1% in 2000 to 26.4% in 2009.

Of the 169,446 RNs actively working in nursing in 2009, 12.8 percent of these nurses can start retiring now and an additional 29.4 percent will be retiring in the next three to twelve years. There will be a loss of at least 42.2 percent of the current RN workforce by 2020 due to a large cohort of nurses retiring. According to the Bureau of Health Professions (2005), "three factors contribute to this aging of the RN workforce: (1) the decline in the number of nursing school graduates, (2) the higher average age of recently graduating students, and (3) the aging of the existing pool of licensed nurses."[3?]

In the 2006 CHEP study, the RNs who were surveyed indicated the following work plans:

- The percent of RNs working at more than one job increased from 9 percent in 2004 to 13 percent in 2006.
- Fifty-five (55) percent of all RNs are primary wage earners; on the Border, 50 percent of the RNs are primary wage earners.
- RNs age 56 and above intend to retire at age 66.
- The percentage of border RNs intending to decrease work hours for the next year increased from 16 percent in 2004 to 17 percent in 2006.[4]

In the 2009 BON master file, there were 3,956 RNs who held active licenses, were employed full- or part-time in nursing, and indicated "faculty or educator" as the position they held at the time of license renewal. Out of the 3,956 RN faculty or educators, there were 2,174 who worked in schools of nursing. The median age of faculty or educators who worked in schools of nursing was 55 years of age.

In a study done in 2008 on schools of nursing in Texas for the 2008 academic year, the following age-related trends among faculty have an impact on the capacity of schools of nursing to produce more graduates over the next 20 years (Texas Center for Nursing Workforce Studies, 2008):[5]

- Trends show an additional increase in the median age of nurse faculty, from 51 in 1999 to 54 in 2008.
- The nurse faculty workforce in Texas continues to have a higher median age than the RN workforce as a whole.
- The median age of 54 for Texas nurse faculty in 2008 was higher than the national median age of 51.5 for RN faculty as reported in 2007 by the American Association of Colleges of Nursing.[6]
- In 2008, only 22 percent of 2,257 faculty members in Texas were under the age of 45. The trends over a ten-year period show that there has been no significant increase in recruitment of younger faculty members.
- Sixty-four (64) percent of faculty members were 50 and older in age and eligible to retire within the next 12 years.

According to an article published in the March/April 2002 issue of *Nursing Outlook,* the average age of nurse faculty at retirement was 62.5 years.[6] The National League for Nursing reports that almost two-thirds of all full-time nurse faculty members are likely to retire in the next five to 15 years.[7] The loss of these experienced faculty members would cripple the educational system if there are not enough nurse educators to replace faculty as they retire. This is consistent with the study done by Rains and Tshirch in 2000 and the Texas Center for Nursing Workforce Studies in 2004 and 2006 where the cohort of nursing faculty continues to get older without a large increase in recruiting younger nurses into nursing education.

ADVANCED PRACTICE NURSES (APNS)

The term APN includes all nurses recognized by the BON as nurse practitioners, nurse midwives, nurse anesthetists, and clinical nurse specialists. The APN specialties are based on the types of practice or target populations of the practice, such as pediatrics, family, school health, women's health, oncology, and psychiatry–mental health.

NURSE PRACTITIONERS (NPS)

NPs have been granted authorization by the Board of Nursing to practice based on their advanced education and experience. NPs practice both under the authority of their nursing license and in collaboration with physicians. Some functions, such as prescribing medication, can be performed only in collaboration with a physician under written protocols.

The data for NPs were obtained from the 2009 RN master licensing file. The "position type" on the file has variables for administrator, school nurse, researcher, nurse practitioner, clinical nurse specialist, nurse anesthetist, and nurse midwife, among others. For this report, an RN record was selected as an NP record based on the position type of "nurse practitioner." An Advanced Practice Nurse (APN) may be certified in multiple position types, but can only choose one position type when completing renewal forms. In 2009, there were 5,745 active NPs practicing in Texas. The importance of NPs in the delivery of health care is indicated by their increasing supply; the ratios increased by 86.3 percent between 2000 and 2009.

The supply ratios of NPs per 100,000 population in Texas have lagged behind the U.S. average supply ratios for decades (Figure 19). The National Sample Survey reported a ratio of 27.7 in 2004, compared with a Texas ratio of 17.1 that year. In contrast with the trends for many health professions in Texas, the highest NP supply ratios were in certain counties in the Panhandle and in areas west of Central Texas. However, most of the 59 counties that did not have an NP in 2009 were also in these areas, along with South Texas. Overall, the average ratios of NPs in metropolitan counties were higher than in non-metropolitan counties, and the gap has been increasing (Figure 20). Thirty-seven counties that did not have an NP in 2000 had at least one in 2009. In 2009, the median age for NPs was 48 years, compared with 46 in 2000.

Figure 19. Nurse Practitioners per 100,000 Population, U.S. and Texas, 1990–2009

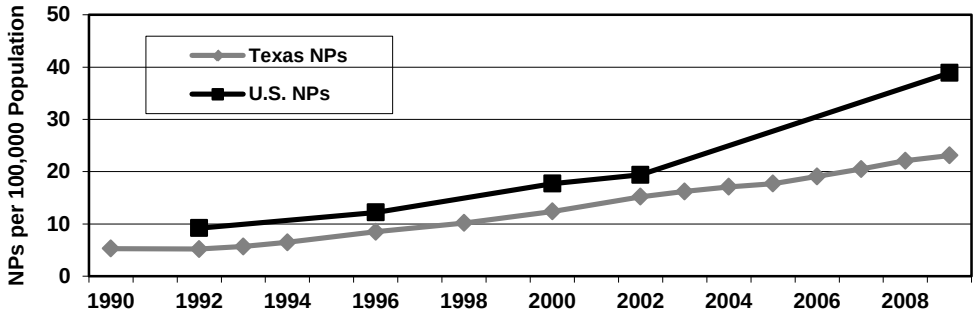


Figure 20. Nurse Practitioners per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1990–2009

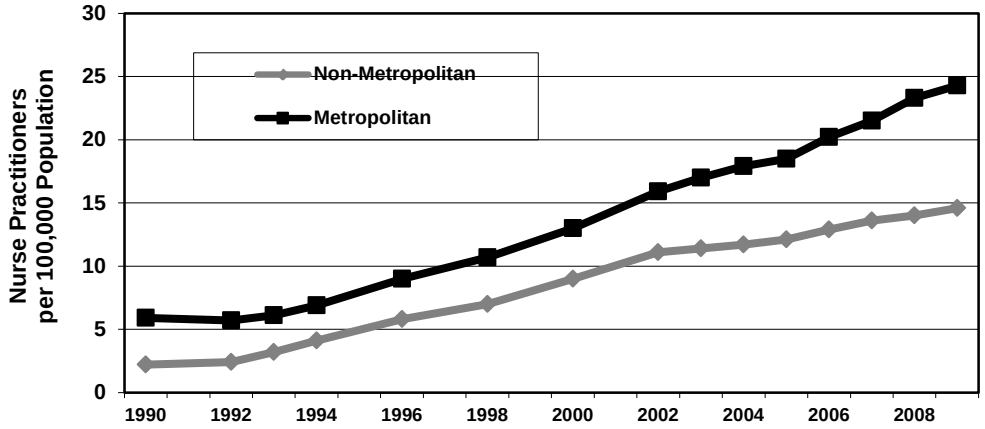


Table 12: 2009 Texas Nurse Practitioner Facts:

White	77.5%	Male	9.8%	Median Age Male	45
Black	7.0%	Female	90.2%	Median Age Female	49
Hispanic	9.8%				
Other	5.8%				

	Providers/100,000 Population
Border Metropolitan	17.0
Non-Border Metropolitan	25.1
Border Non-Metropolitan	8.3
Non-Border Non-Metropolitan	15.5

Trends:

Year	Number	Providers/100,000 Population
1991	964	5.6
1996	1,633	8.6
2000	2,517	12.4
2005	4,066	17.7
2009	5,745	23.1

CERTIFIED NURSE-MIDWIVES (CNMS)

CNMs have been granted authorization by the Board of Nursing to practice based on advanced education and experience. CNMs provide obstetrical and gynecological care for women during pregnancy, childbirth, and the

postpartum period. In Texas, there are two types of midwives: Direct-entry Midwives and CNMs. Direct-entry Midwives are non-RNs who successfully complete a course on midwifery and successfully pass the state-approved comprehensive written exam as required by the Texas Midwifery Board. Certified Nurse Midwives' educational preparation requires an RN background. They are regulated by the Texas Board of Nursing.

In Texas, in 2009, there were 276 CNMs. The data for CNMs were obtained from the 2009 RN master licensing file (for position types, see "Nurse Practitioners," page 21). An RN record was selected as a CNM record based on the position type of "nurse midwife." An APN may be certified in multiple position types, but can only choose one position type when completing renewal forms. The Texas supply ratio of CNMs per 100,000 female population of childbearing age (ages 15 through 44) has lagged behind the U.S. supply ratio since 1992 when national statistics first became available (Figure 21). CNMs were primarily located in the metropolitan areas of Texas (see Figure 21a). In 2009, the median age of CNMs was 51 years, compared with 46 in 2000.

Figure 21. Certified Nurse Midwives per 100,000 Females Ages 15–44, U.S. and Texas, 1990

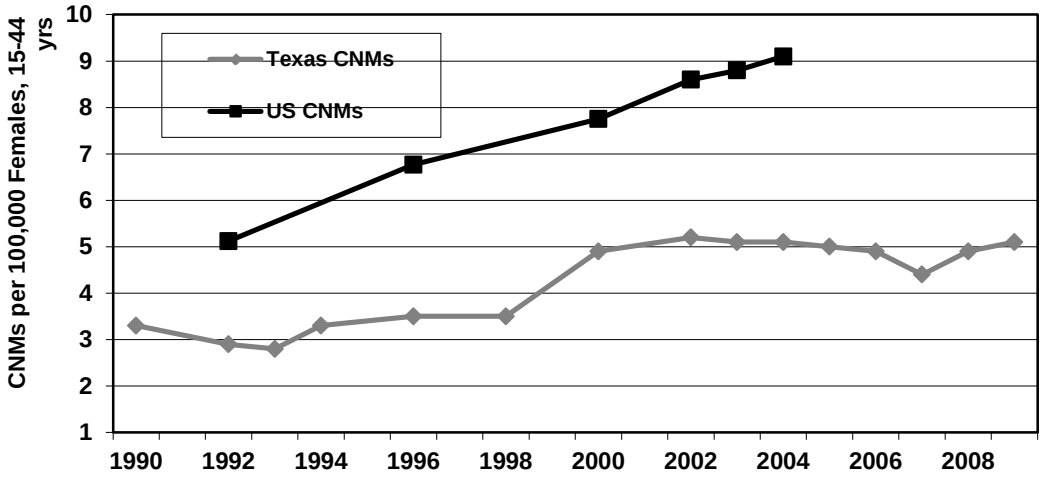


Figure 21a. Certified Nurse Midwives per 100,000 Females ages 15–44, Metropolitan and Non-Metropolitan Counties, Texas, 1990–2009

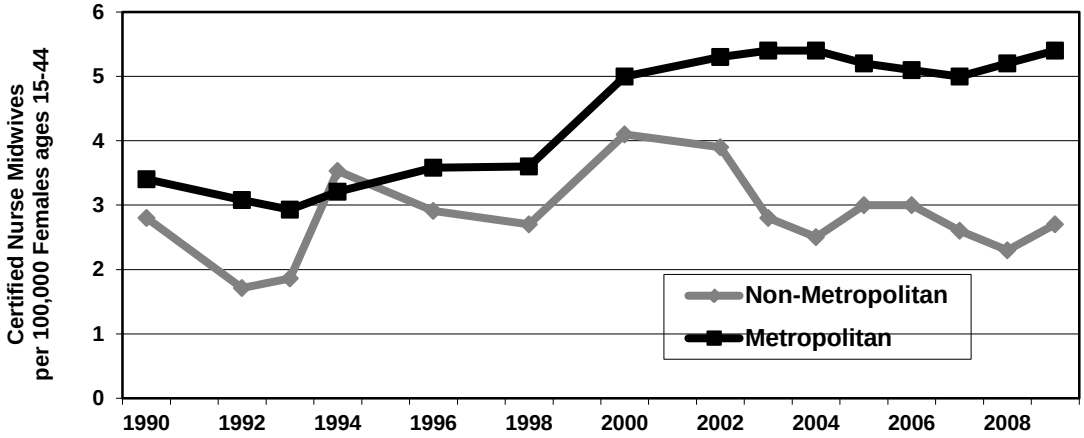


Table 13: 2009 Texas Certified Nurse Midwife Facts:

White	83.2%	Male	1.5%	Median Age Male	37.0
Black	8.1%	Female	98.6%	Median Age Female	51.5
Hispanic	5.9%				
Other	2.9%				

	Providers/100,000 Females Ages 15–44
Border Metropolitan	7.0
Non-Border Metropolitan	4.8
Border Non-Metropolitan	3.9
Non-Border Non-Metropolitan	2.4

Trends:

Year	Number	Providers/100,000 Females Ages 15–44
1990	135	3.3
1996	155	3.5
2000	231	4.9
2005	244	5.0
2009	276	5.1

CERTIFIED REGISTERED NURSE ANESTHETISTS (CRNAS)

In 2009, there were 2,183 Certified Registered Nurse Anesthetists (CRNAs) practicing in Texas. The data for CRNAs were obtained from the 2009 RN master licensing file. The "position type" on the file has variables for administrator, school nurse, researcher, nurse practitioner, clinical nurse specialist, nurse anesthetists, nurse midwife, and others. An RN record was identified as a CRNA record based on the position type of "nurse anesthetist." An APN may be certified in multiple position types, but can only choose one position type when completing renewal forms. CRNAs were primarily located in the metropolitan areas of Texas. Their ratios increased by 39.7 percent between 2000 and 2009 (see Figure 22). U.S. statistics for CRNAs were available only for the year 2000. The Texas ratio in 2000, 6.3 per 100,000 population, was below the national average of 8.1 per 100,000 population. In 2009, there were 123 counties that did not have a CRNA. The median age of CRNAs was 49 years in 2009, compared with 48 in 2000.

Figure 22. Certified Registered Nurse Anesthetists per 100,000 Population, Texas, 1990–2009
Note: National statistics not available, except for 2000

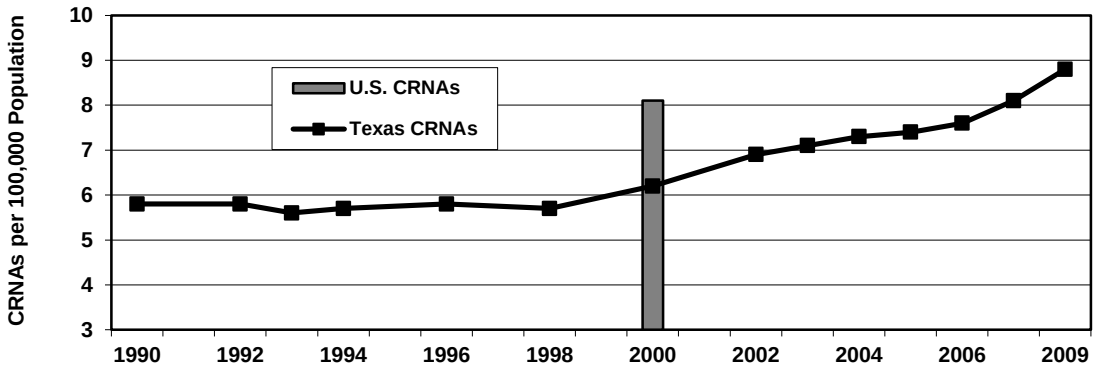


Figure 23. Certified Registered Nurse Anesthetists per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1990–2009

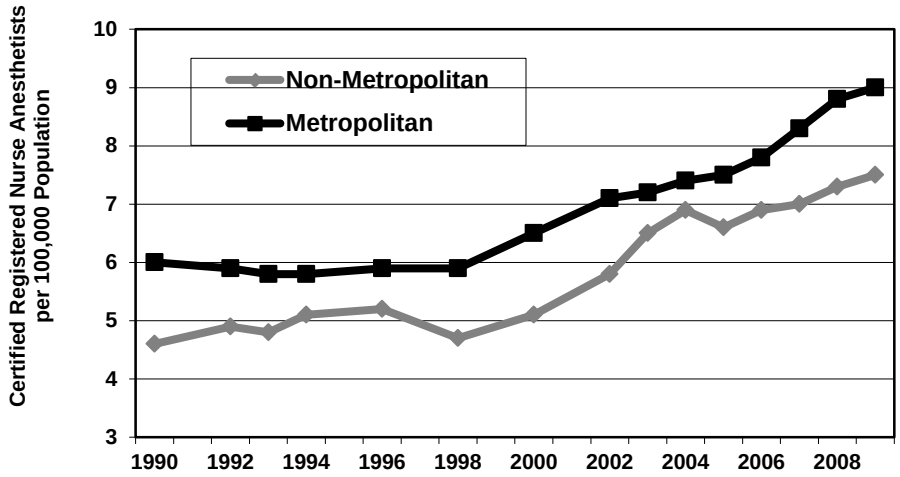


Table 14: 2009 Texas Certified Registered Nurse Anesthetist Facts:

White	85.1%	Male	49.0%	Median Age Male	51
Black	4.8%	Female	51.0%	Median Age Female	49
Hispanic	5.0%				
Other	5.2%				

	Providers/100,000 Population
Border Metropolitan	7.4
Non-Border Metropolitan	9.1
Border Non-Metropolitan	4.4
Non-Border Non-Metropolitan	7.9

Trends:

Year	Number	Providers/100,000 Population
1990	983	5.8
1996	1,108	5.8
2000	1,274	6.2
2005	1,701	7.4
2009	2,183	8.8

CLINICAL NURSE SPECIALISTS (CNS)

There were 1,409 Clinical Nurse Specialists (CNSs) practicing in Texas in 2009. The data for CNSs were obtained from the 2009 RN master licensing file. The "position type" on the file has variables for administrator, school nurse, researcher, nurse practitioner, clinical nurse specialist, nurse anesthetists, nurse midwife, and others. An RN record was identified as a CNS record based on the position type of "clinical nurse specialist." An APN may be certified in multiple position types, but can only choose one position type when completing renewal forms.

The supply ratios of CNS per 100,000 population in Texas increased by 58.3 percent between 2000 and 2009 and has steadily increased since 2006 (Figure 24). CNSs were primarily located in the metropolitan areas of Texas. U.S. statistics were not available except for the year 2000; however, the Texas and U.S. supply ratios for that year were similar in magnitude. In 2009, there were 166 counties in Texas that did not have a CNS, but 37 counties that did not have a CNS in 2000 gained at least one in 2009. In 2009, the median age for CNSs was 51 years, compared with 49 in 2000.

Figure 24. Clinical Nurse Specialists per 100,000 Population, Texas, 1990 through 2009 (national statistics not available, except for 2000)

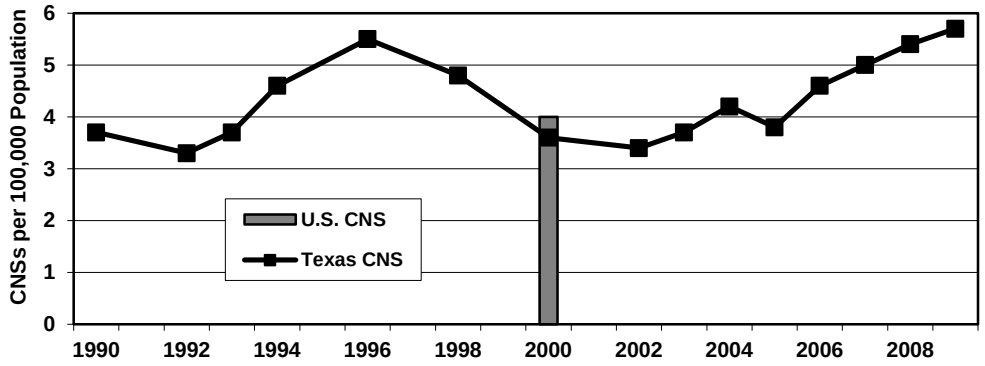


Figure 25. Clinical Nurse Specialists per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1990–2009

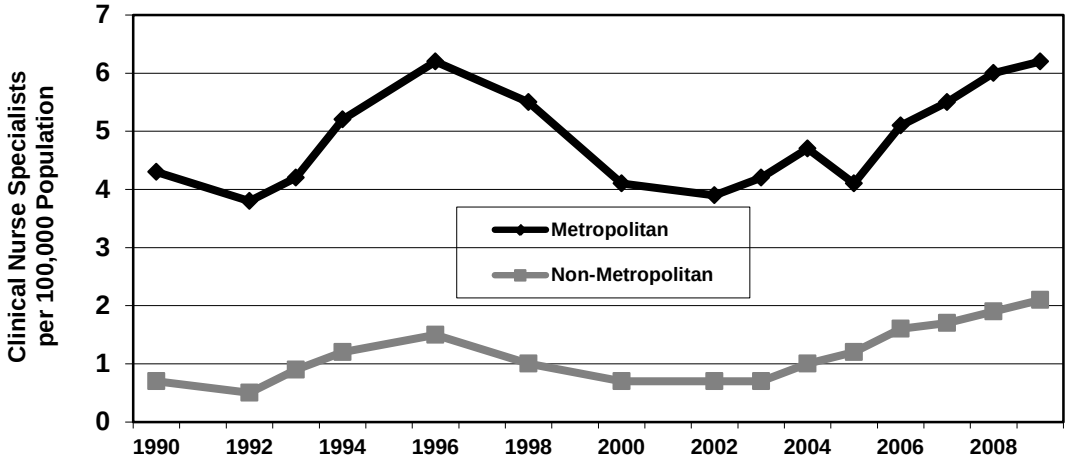


Table 15: 2009 Texas Clinical Nurse Specialist Facts:

White	73.3%	Male	11.6%	Median Age Male	49
Black	9.8%	Female	88.4%	Median Age Female	51
Hispanic	10.2%				
Other	6.8%				

	Providers/100,000 Population
Border Metropolitan	2.0
Non-Border Metropolitan	6.6
Border Non-Metropolitan	0.8
Non-Border Non-Metropolitan	2.3

Trends:

Year	Number	Providers/100,000 Population
1990	631	3.7
1996	1,055	5.5
2000	724	3.6
2005	864	3.8
2009	1,409	5.7

LICENSED VOCATIONAL NURSES (LVNS)

Licensed Vocational Nurses (LVNs) provide nursing care under the direction of a registered nurse, a physician, or another authorized health care provider. According to the Texas Board of Nursing (BON) licensure file, there were 69,152 active LVNs practicing in Texas in 2009, a supply ratio of 278.0 LVNs per 100,000 population. The LVN profession is among the few health professions in Texas where the supply ratios (277.9 in 2003) exceed the U.S. average ratios (180.8 in 2003) (Figure 26). The ratios of LVNs in Texas have steadily increased since 2006 after declining between 1998 and 2005 while the US ratios increased in the early 2000s. Current U.S. data were not available.

In contrast with most other professions, the ratios for LVNs are higher in non-metropolitan counties than metropolitan counties (Figure 27). The trend has been toward the increased use of LVNs in non-metropolitan counties relative to the use of RNs. The supply ratios for LVNs are lower in both the metropolitan border and metropolitan non-border counties than in the rest of the state. In 2009, there were four counties that did not have an LVN. One of the three counties that did not have an LVN in 2000 had two in 2009, and in that time, 107 counties have experienced growth in the supply of LVNs relative to the population; however, 145 counties experienced a decrease in the supply ratios. In 2009, the median age of LVNs was 45 years, compared with 44 in 2000.

Figure 26. Licensed Vocational Nurses per 100,000 Population, U.S. and Texas, 1981–2009

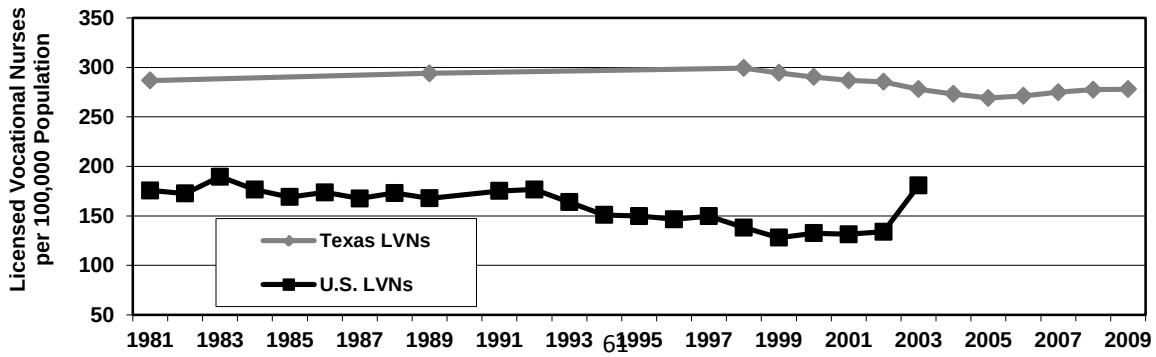


Fig 27. Licensed Vocational Nurses per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1981–2009

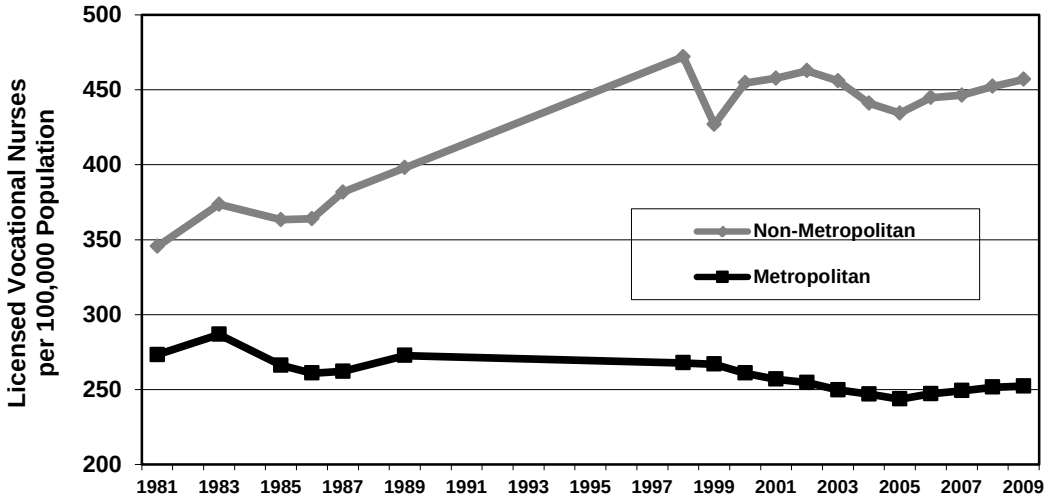


Table 16: 2009 Texas Licensed Vocational Nurse Facts:

White	56.2%	Male	10.0%	Median Age Male	42
Black	20.2%	Female	90.0%	Median Age Female	45
Hispanic	20.9%				
Other	2.8%				

	Providers/100,000 Population
Border Metropolitan	211.7
Non-Border Metropolitan	256.9
Border Non-Metropolitan	312.9
Non-Border Non-Metropolitan	477.0

Trends:

Year	Number	Providers/100,000 Population
1989	49,389	293.9
1998	58,795	299.2
2000	59,034	290.2
2005	61,886	269.0
2009	69,152	278.0

DENTAL PROFESSIONS

- Dentists
- Dental Hygienists

DENTISTS

Most dentists (9,401 out of 10,977) are general dentists, which would, using the physician analogy, be the equivalent to PC physicians. For the purpose of this report, the term *general dentists* will include dentists within the specialties of public health, pediatric, and general dentistry. Also, in this chapter, statistics are reported only for active general dentists who are non-federal, non-administrative, and who are not residents-in-training.

In 2009, there were 9,401 dentists in private practice in Texas. The supply ratios of dentists per 100,000 population have remained fairly constant over the last two decades and have lagged behind the U.S. average ratios (Figure 28). In 2005, the American Dental Association reported a ratio of 45.5 for the U.S., while Texas had a ratio of 35.7.

In 2009, the supply ratio for dentists in Texas was 37.8 per 100,000 population (Table 17). There were more dentists employed in metropolitan counties (ratio of 39.8) than in non-metropolitan counties (ratio of 23.9). The average supply ratio of dentists in border counties fell far short of the ratio in non-border metropolitan counties, and the gap between metropolitan and non-metropolitan counties has been widening over the last decade. In 2009, there were 44 counties with no dentists. Between 2000 and 2009, 129 counties experienced a decline in their ratios, while only 14 counties experienced an increase in ratios of 50 percent or greater. Only five counties that did not have a dentist in 2000 had gained one in 2009, while seven counties lost all of their dentists.

AGE AND GENDER

In 2009, three-quarters (72.1 percent) of the dentists were males and 52.5 percent of the dentists statewide were below the age of 50 years. In 2009, the median age was 48 years, compared with 46 years in 2000. In 2009, the median age of male dentists in Texas was 52 years, and of female dentists, 38 years. In non-metropolitan counties, 13.3 percent of the dentists were females, compared to 29.2 percent in metropolitan counties**.** In the border counties, 23.5 percent of the dentists were female, while 28.1 percent in the non-border counties were female.

Figure 28. Dentists per 100,000 Population: U.S. and Texas, 1981–2009

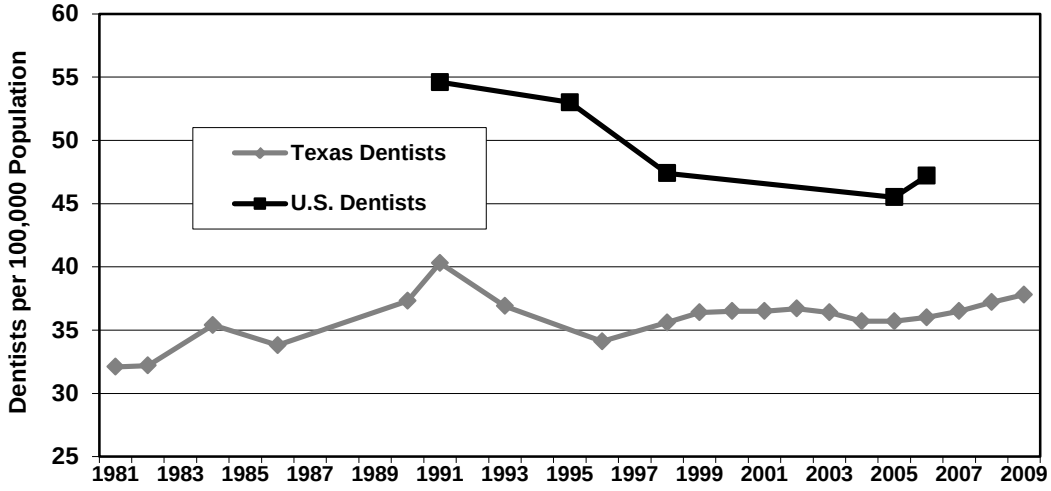


Figure 29. Dentists per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1981–2009

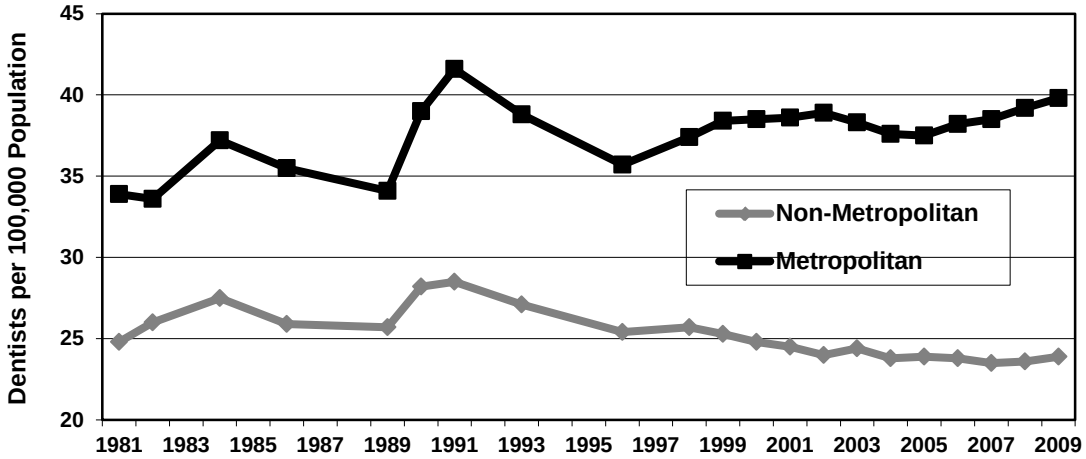


Table 17: 2009 Texas Dentist Facts:

	Providers/100,000 Population
Border Metropolitan	18.1
Non-Border Metropolitan	42.2
Border Non-Metropolitan	12.0
Non-Border Non-Metropolitan	25.5

Trends:

Year	Number	Providers/100,000 Population
1990	6,320	37.2
1996	6,518	34.1
2000	7,417	36.5
2005	8,213	35.7
2009	9,401	37.8

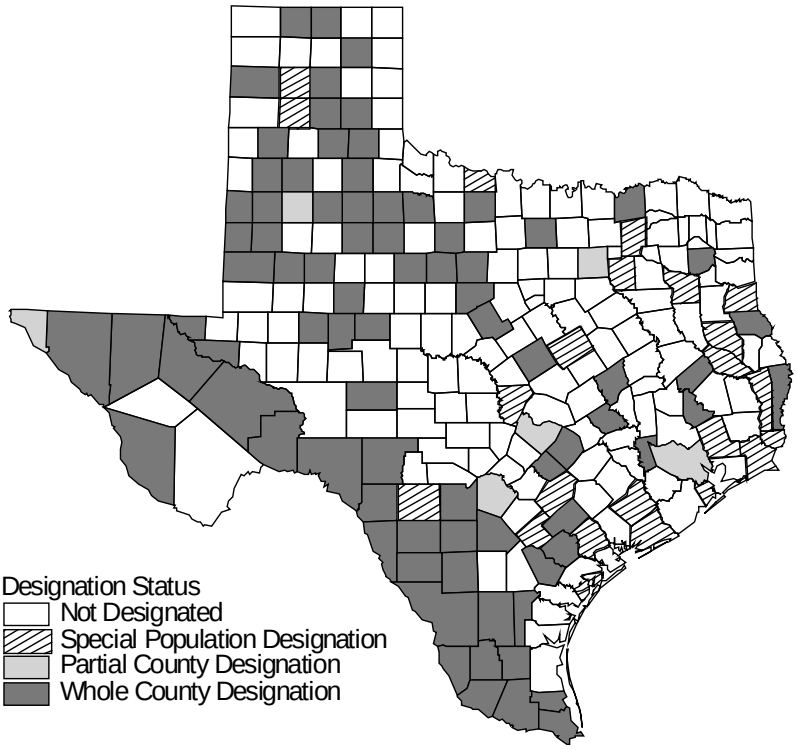
DENTAL HPSA

FEDERAL DENTAL HEALTH PROFESSIONAL SHORTAGE AREAS (HPSAS)

The U.S. Department of Health and Human Services HPSA designation program uses population–to–general dentist ratios to identify counties with a shortage of dentists. In addition to geographic area designations, the HPSA designation program also provides for the designation of special population groups within geographic areas and for the designation of facilities under certain circumstances.

In October 2009, 111 counties in Texas had some type of designation by the U.S. Department of Health and Human Services as experiencing a shortage of dentists. Eighty-two of these designations were for whole counties.

FIGURE 30. FEDERALLY DESIGNATED DENTAL HEALTH PROFESSIONAL SHORTAGE AREAS IN TEXAS, OCTOBER 2009



Prepared by:
Health Professions Resource Center
Center for Health Statistics
Texas Department of State Health Services
Data Source:
Shortage Designation Branch
United States Department of Health and Human Services
October 2009

DENTAL HYGIENISTS

"These health professionals perform services and procedures in the dental office of his/her supervising dentist or dentists who are legally engaged in the practice of dentistry in this state or under the supervision of a supervising dentist in an alternate setting" (Texas Occupations Code, Chapter 262). They are eligible for licensure after graduating from a community college (two-year program) or from a three or four-year university program. The supply ratios of dental hygienists per 100,000 population have steadily increased in Texas since 1981 (Figure 31). The supply ratios for Texas have lagged behind the U.S. average ratios for most of the past two decades.

There were 9,820 dental hygienists practicing in Texas in 2009. Because dental hygienists often practice in combination with dentists in Texas, their geographic distribution is often linked to that of dentists. Thus, the ratios for dental hygienists were much higher in metropolitan than in non-metropolitan counties in 2009 (Table 18). Most of the counties in South Texas, West Texas, and the Panhandle have very low supply ratios. In 2009, there were 53 counties with no dental hygienists, and 44 counties with no dentists. Between 2000 and 2009, 70 counties experienced a decline in their ratios, while the ratios for 30 counties more than doubled; this includes fifteen counties that did not have a dental hygienist in 2000 but that had one in 2009. Between 2000 and 2009, five

counties lost all of their dental hygienists, and seven counties lost all of their dentists. The median age of dental hygienists in 2009 was 42 years, compared to 40 in 2000. Race/ethnicity data were not available.

Figure 31. Dental Hygienists per 100,000 Population, U.S. and Texas, 1981–2009

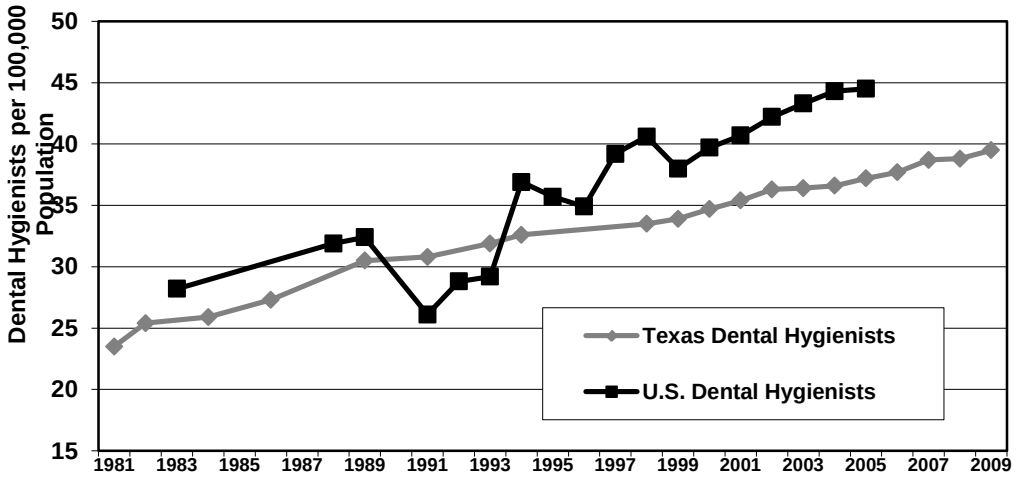


Figure 32. Dental Hygienists per 100,000 Population, Metropolitan and Non-Metropolitan

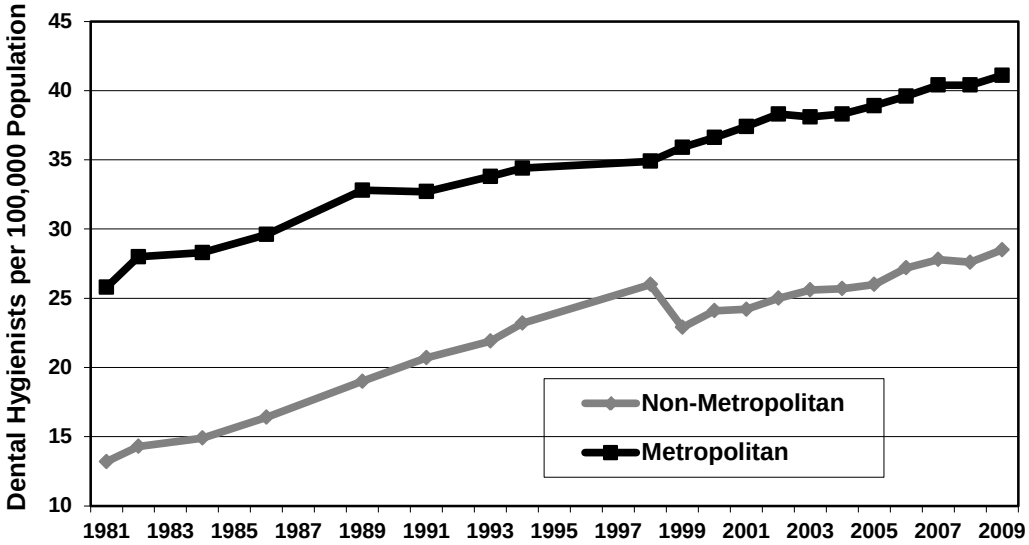


Table 18: 2009 Texas Dental Hygienist Facts:

Male	1.8%	Median Age Male	38
Female	98.2%	Median Age Female	42

	Providers/100,000 Population
Border Metropolitan	19.3
Non-Border Metropolitan	43.5
Border Non-Metropolitan	10.4
Non-Border Non-Metropolitan	31.0

Trends:

Year	Number	Providers/100,000 Population
1991	5,338	30.8
1994	5,987	32.6
2000	7,057	34.7
2005	8,548	37.2
2009	9,820	39.5

HEALTH PROFESSIONS

- Medical Radiologic Technologists
- Occupational Therapists
- Optometrists
- Pharmacists
- Physical Therapists
- Respiratory Care Practitioners
- Speech Language Pathologists
- Clinical Laboratory Specialists/Medical Technologists

MEDICAL RADIOLOGIC TECHNOLOGIST (MRT)

MRTs are certified by the Professional Licensing and Certification Unit at the Texas Department of State Health Services. They administer radiation to persons for medical purposes under the direction of a practitioner. The definition includes diagnostic radiography, nuclear medicine, and radiation therapy. There were 20,559 MRTs practicing in Texas in 2009. During the 1990s, the supply ratios of MRTs per 100,000 population in Texas lagged behind the U.S. average supply ratios; however, the Texas ratios have followed an unusual curve, increasing, sometimes sharply, from 1994-2005, then dropping significantly in 2006, then rising slowly again until the present. In 2002, the Texas ratios surpassed those of the United States (Figure 33). Non-metropolitan counties had lower supply ratios than did metropolitan counties and, in general, the border counties had lower ratios (57.3 overall) than did the rest of the state (Table 19). In 2009, there were 31 counties with no MRTs; most of these were in West Texas, South Texas, and the Panhandle. Since 2000, ratios have grown in counties distributed throughout the state, including some in the border counties, although several of the border counties had no MRTs or a decrease in ratios. Sixty-one counties experienced a decline in ratios from 2000 to 2009. Fifteen counties that did not have an MRT in 2000 had at least one in 2009. However, seven counties that had MRTs in 2000 did not have any in 2009. As it was in 2000, the median age of MRTs in 2009 was 41 years. Race-ethnicity and gender data not available.

Figure 33. Medical Radiological Technologists per 100,000 Population: U.S. and Texas, 1994–2009

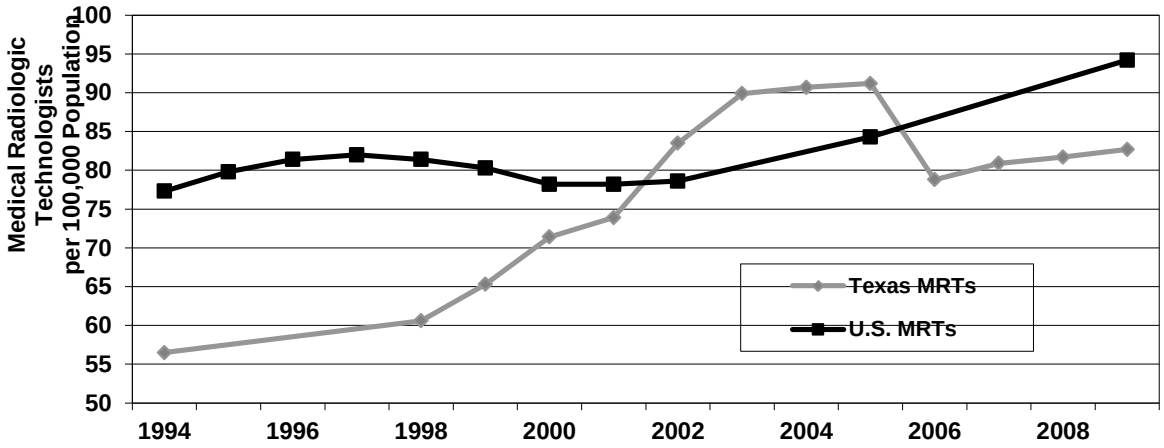


Figure 34. Medical Radiologic Technologists per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1994–2009

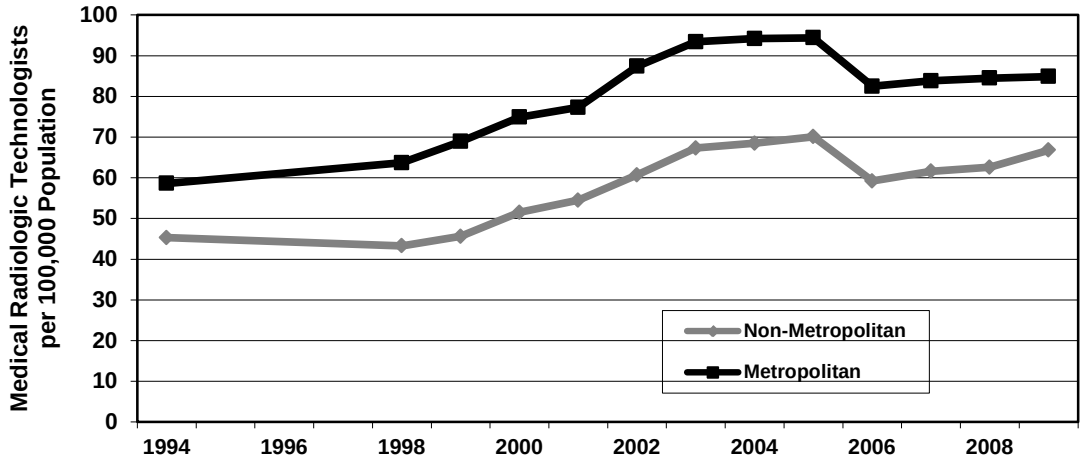


Table 19: 2009 Texas Medical Radiologic Technologists Facts:

	Providers/100,000 Population
Border Metropolitan	60.9
Non-Border Metropolitan	87.6
Border Non-Metropolitan	36.5
Non-Border Non-Metropolitan	71.0

Trends:

Year	Number	Providers/100,000 Population
1994	10,385	56.5
1998	11,907	60.6
2000	14,517	71.4
2005	20,972	91.2
2009	20,559	82.7

EMPLOYMENT

There are low employment rates for graduates in the field. This is attributed to uncertainty about appropriate staffing levels needed by many facilities to provide the services, and a possible mal-distribution of the workforce between rural and urban areas. Both issues may be driven by rapid increases in technology, and the lack of clarity about staffing needs with new technologies.

PATIENT CARE ISSUES

Other important issues for the field are in the area of patient care. There is a possible trend for technologists to be asked to perform outside of their scope of practice. This creates ambiguity about the proper role of these individuals. Another related issue is that the technologists do not have access to appropriate patient information in order to provide continuity of patient care. This may stem from poor understanding of the educational preparation and abilities in the field by physicians and other health care providers. In addition, there are increasing medical errors in this field despite electronic medical records and technological safeguards. Finally, due to technological advances, there is a rise in reimbursement costs for increasingly high tech tests even if a lower cost option is available.

OCCUPATIONAL THERAPISTS (OTS)

The supply ratios of OTs per 100,000 population in Texas have risen steadily over the last decade. And, in the late 1990s, the state ratios were higher than the U.S. average ratios, but US data from HRSA wasn't available after 2000 (Figure 35).

There were 6,136 OTs practicing in Texas in 2009. The ratios for OTs were higher in the metropolitan areas than in the non-metropolitan areas, but the ratios were generally lower for the border counties than in the rest of the state (Table 20). Since 2000, 91 counties have experienced an increase in their OT ratios; however, in 2009, there were 91 counties that did not have an OT, and 86 counties experienced a decline in ratios. Twenty-four counties that did not have an OT in 2000 had at least one in 2009. The median age for OTs in 2009 was 40 years, compared with 37 in 2002.

Figure 35. Occupational Therapists per 100,000 Population, U.S. and Texas, 1990–2009

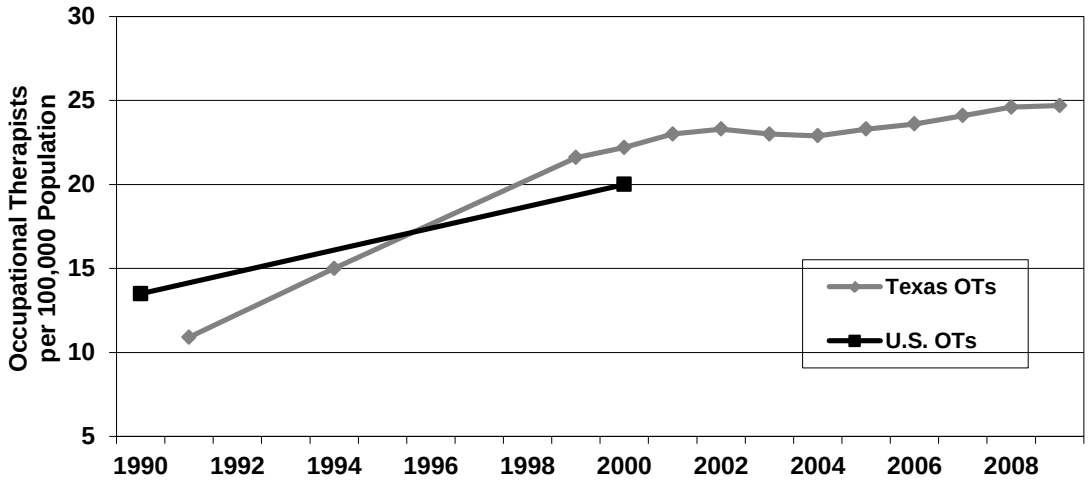
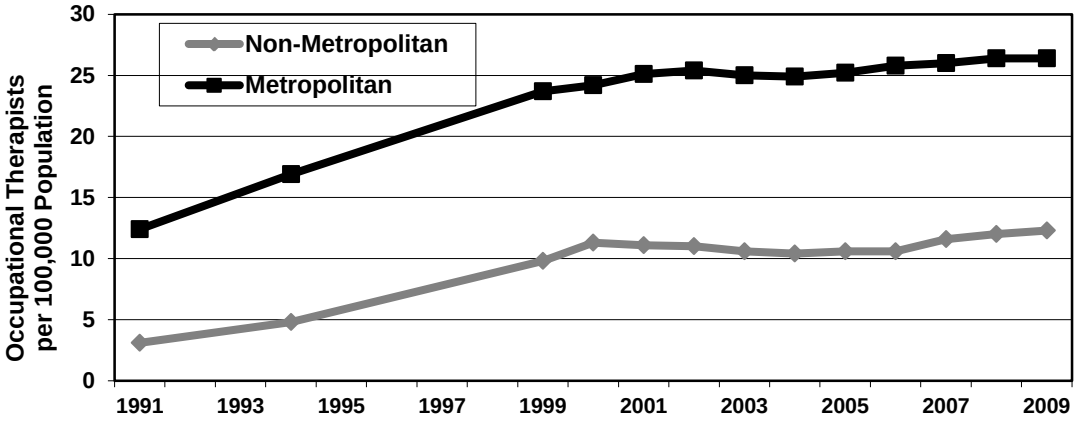


Fig 36. Occupational Therapists per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1991–2009



WORKFORCE DISTRIBUTION, SHORTAGES, AND DIVERSITY

According to 1991-2003 health workforce data published by the Statewide Health Coordinating Council, 97 counties in Texas have no occupational therapists. These same data project an ever widening discrepancy between OT staffing in metropolitan versus non-metropolitan counties. Lack of services is especially great in border non-metropolitan areas. This problem may not change without intervention as occupational therapists licensed in the state of Texas are not drawn from all regions of the state and do not adequately represent the population of Texas (77.7% white, 3.9% Black and 10.9% Hispanic, 7.5% Other.) A steadily growing aging population creates the

demand for occupational therapists who enable people to remain in their homes as they age and who provide rehabilitation services in hospitals as well as short and long term care facilities.

SERVICE NEEDS

The Health Resources and Services Administration (HRSA) has identified three health professional shortage areas by discipline. One of these areas is mental health. Census data specific to the state of Texas reveals that counties along the eastern border of Texas represent areas in which shortage of health professionals is the greatest. This area includes both urban and rural counties. Occupational therapists as an important provider of mental health services need to be developed further in the area of mental health services.

Table 20: 2009 Texas Occupational Therapist Facts:

White	70.6%	Male	12.0%	Median Age Male	41
Black	4.9%	Female	88.0%	Median Age Female	40
Hispanic	12.9%				
Other	10.6%				

	Providers/100,000 Population
Border Metropolitan	20.5
Non-Border Metropolitan	27.1
Border Non-Metropolitan	6.5
Non-Border Non-Metropolitan	13.1

Trends:

Year	Number	Providers/100,000 Population
1991	1,894	10.9
1994	2,756	15.0
2000	4,526	22.2
2005	5,354	23.3
2009	6,136	24.7

OPTOMETRISTS

The University of Houston College of Optometry is the only accredited school of optometry in Texas. The ratios of optometrists per 100,000 population in Texas have lagged behind the U.S. supply ratios for over two decades, although the gap appears to be narrowing (Figure 37).

In 2009, there were 2,987 optometrists practicing in Texas. Optometrists are more likely to practice in metropolitan counties than non-metropolitan counties, but this hasn't always been the case (Figure 38). Prior to 1984, the ratios for non-metropolitan counties were higher than those for metropolitan counties. However, since that time, the metropolitan county ratios have surpassed those of the non-metropolitan counties and the gap between the two has been steadily widening. In 2009, there were 108 counties that did not have an optometrist. Eight counties that did not have an optometrist in 2000 had a least one in 2009; however, eight other counties that had optometrists in 2000 did not have any in 2009; the ratios decreased in 71 counties. In several areas of Texas, notably the lower Panhandle area and portions of West Texas, a patient would have to travel through several counties to reach an optometrist. The border counties have very low supply ratios and several counties have no optometrists. The median age in 2009 was 42 years, the same as in 2000.

Figure 37. Optometrists per 100,000 Population, U.S. and Texas, 1977–2009

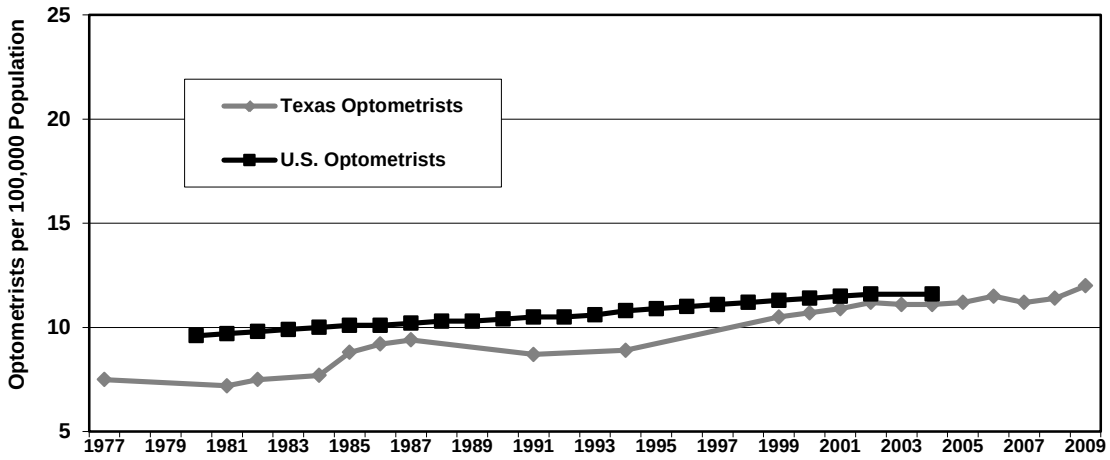


Figure 38. Optometrists per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1977–2009

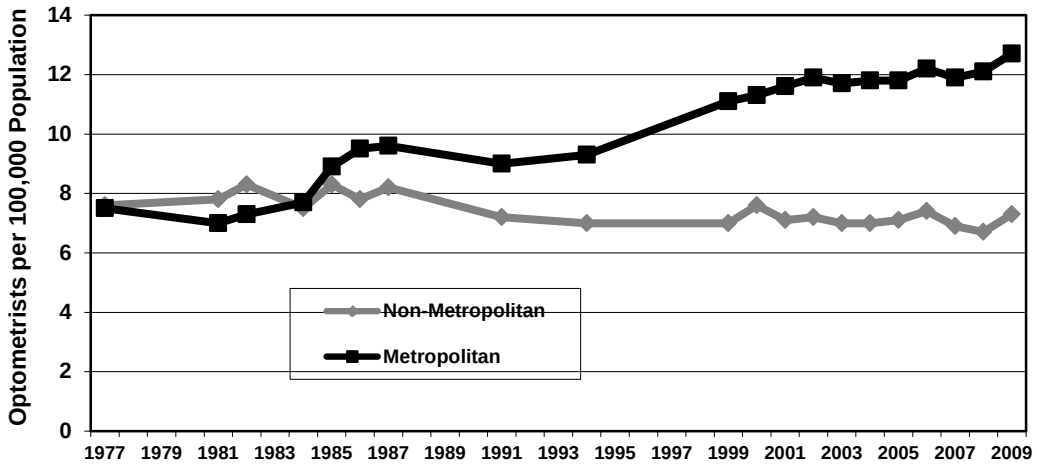


Table 21: 2009 Texas Optometrist Facts:

White	62.1%	Male	57.9%	Median Age Male	49.5
Black	3.1%	Female	42.1%	Median Age Female	37.0
Hispanic	9.1%				
Other	22.3%				
Unknown	3.4%				

	Providers/100,000 Population
Border Metropolitan	6.1
Non-Border Metropolitan	13.4
Border Non-Metropolitan	4.7
Non-Border Non-Metropolitan	7.7

Trends:

Year	Number	Providers/100,000 Population
1991	1,513	8.7
1994	1,644	8.9
2000	2,177	10.7
2005	2,577	11.2
2009	2,987	12.0

PHARMACISTS

Texas has six schools of pharmacy: The University of Texas at Austin, University of Houston, Texas Southern University, Texas Tech University Health Sciences Center-Amarillo, Texas A&M University Health Science Center at Kingsville, and the University of the Incarnate Word. In addition, there are satellite programs offered by The University of Texas at Austin in Edinburg, San Antonio, and El Paso. Texas Tech University Health Sciences Center has satellite campuses in Abilene, Lubbock, and Dallas. Texas has more pharmacy schools than the majority of the ten most populous states, with the exception of California, which has seven pharmacy schools. Pharmacy education is in high-demand. From 1998 to 2008, applications to Texas pharmacy schools increased 173 percent, which reflects a trend at the national level. During the same timeframe, the number of graduates also increased by 49 percent. Upon graduation, students received the Doctor of Pharmacy (Pharm.D.) degree, which is generally a six-year degree program that requires at least two years of college study prior to admittance. This degree replaced the five-year bachelor's degree, which ceased to be awarded in 2005. After receiving their degree, graduates must pass the national licensure examination and the Texas Pharmacy Jurisprudence exam, and then apply for licensure with the Texas State Board of Pharmacy before they can practice as a pharmacist.

The state ratio of pharmacists per 100,000 population exceeded the U.S. average supply ratio from 1982-2002, the last year HRSA data was available. Since the mid-1990s, the supply ratios for Texas have been fairly static (Figure 39). However, a 2009 report from the Texas Higher Education Coordinating Board "Projecting the Need for Pharmacy Education in Texas" reveals that Texas has fewer pharmacists per 100,000 population (78) than the average of the 10 most populous states (84).

The ratios for pharmacists are higher in the metropolitan counties than in the non-metropolitan counties (Figure 40). However, the ratios are the lowest for the border counties. In 2009, there were 29 counties that did not have a pharmacist. Between 2000 and 2009, 137 counties in Texas have experienced a decline in the ratios. However, two counties that did not have a pharmacist in 2000 had at least one in 2009, although seven counties lost all of their pharmacists during that time. The median age in 2009 was 46 years, compared with 44 in 2000.

The pharmacist profession in Texas is also undergoing a phenomenon known as "feminization" of the workforce; that is, a profession that has traditionally been comprised of mostly males is seeing an increase in the number of female workers. In 2008 in Texas, more than 50% of the pharmacists were female for the first time since HPRC began collecting pharmacist data. In 2000, 43.4% of the pharmacists were female.

Figure 39. Pharmacists per 100,000 Population, U.S. and Texas, 1978–2009

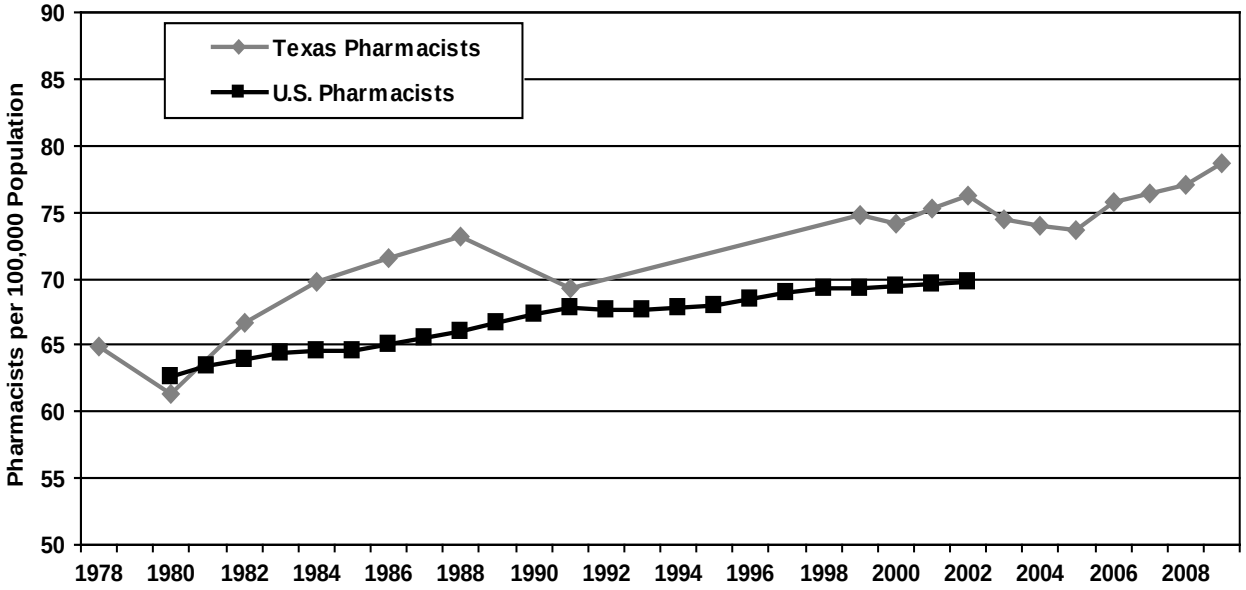


Figure 40. Pharmacists per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1978–2009

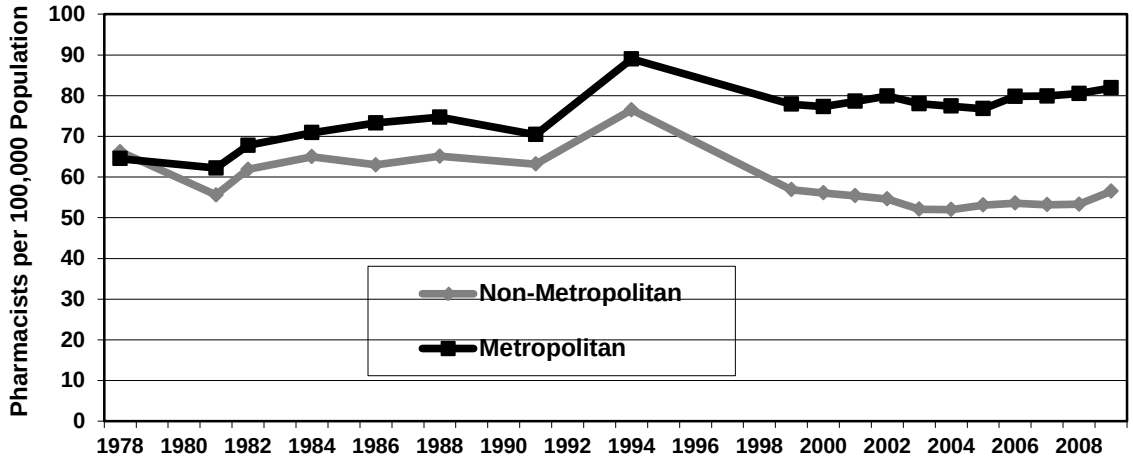


Table 22: 2009 Texas Pharmacist Facts:

White	57.9%	Male	48.5%	Median Age Male	53
Black	13.8%	Female	51.5%	Median Age Female	40
Hispanic	8.9%				
Other	19.5%				

	Providers/100,000 Population
Border Metropolitan	44.8
Non-Border Metropolitan	86.9
Border Non-Metropolitan	33.9
Non-Border Non-Metropolitan	59.6

Trends:

Year	Number	Providers/100,000 Population
1991	12,020	69.2
1999	14,931	74.7
2000	15,071	74.1
2005	16,944	73.7
2009	19,579	78.7

PHYSICAL THERAPISTS (PTS)

Texas has eleven physical therapy programs; all but one lead to the Doctor of Physical Therapy (DPT) degree. Programs are offered at the following institutions: Angelo State University, Hardin-Simmons University, Texas State University-San Marcos, Texas Tech University Health Sciences Center, Texas Woman's University at Dallas Presbyterian Campus, Texas Woman's University at Houston Campus, The University of Texas at El Paso, The University of Texas Health Science Center at San Antonio, The University of Texas Medical Branch at Galveston, The University of Texas Southwestern Medical Center at Dallas, and the US Army-Baylor University. In June 2000, the American Physical Therapy Association (APTA) House of Delegates adopted the Vision Statement 2020, establishing that by 2020 physical therapy will be provided by doctorally-prepared physical therapists. It is projected nationally that schools that do not offer the DPT program will not be able to attract students. Students are currently choosing DPT over Master of Science in Physical Therapy (MSPT) programs. Graduates of DPT programs must pass a national exam administered by the Executive Council of Physical Therapy and Occupational Therapy Examiners.

There are no bachelor's degree programs for PTs in the U.S.; the only entry level PT degree is a master's degree. The state requires that PTs hold a bachelor's degree in any major, and at least a master's degree from an accredited PT program; they must also pass a national exam administered by the Executive Council of Physical Therapy and Occupational Therapy Examiners.

The supply ratios for PTs per 100,000 population in Texas have increased over the past 30 years; however, the Texas supply ratios have consistently lagged behind the U.S. average; and, the rate of increase in Texas has decreased over the last few years, with the ratio showing only small increases since 1999 (Figure 41). The American Physical Therapy Association (APTA) reported that in 2008, Texas ranked the fifth lowest in supply ratios among the fifty states and Washington, D.C. (PT to Population Ratios for 2008, Alexandria, VA: June 24, 2009).

There were 10,016 physical therapists practicing in Texas in 2009. The supply ratios are generally higher in metropolitan counties, with the exception of the border counties, which generally have much lower ratios (Table 23). In 2009, 49 counties did not have a PT. Between 2000 and 2009, the ratios increased in 124 counties, scattered across the state; 65 percent of these were non-metropolitan. The ratios declined in 87 counties; 66

percent of these were non-metropolitan. Seventeen counties that did not have a PT in 2000 had at least one in 2009. The median age in 2009 was 41 years, compared with 37 in 2001.

Figure 41. Physical Therapists per 100,000 Population, U.S. and Texas, 1977–2009

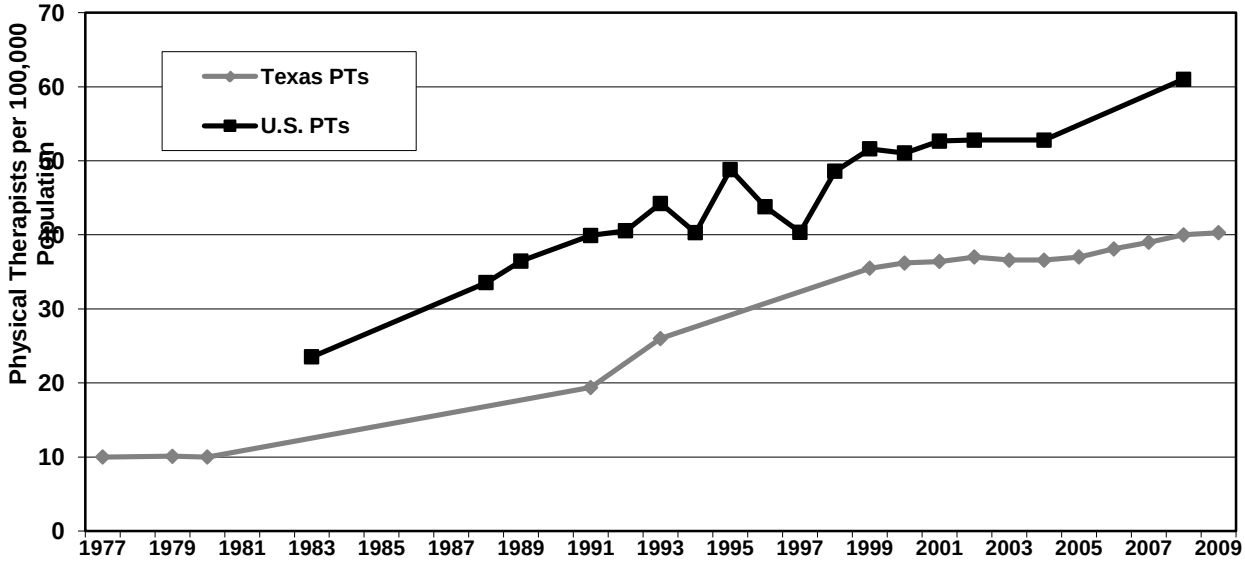
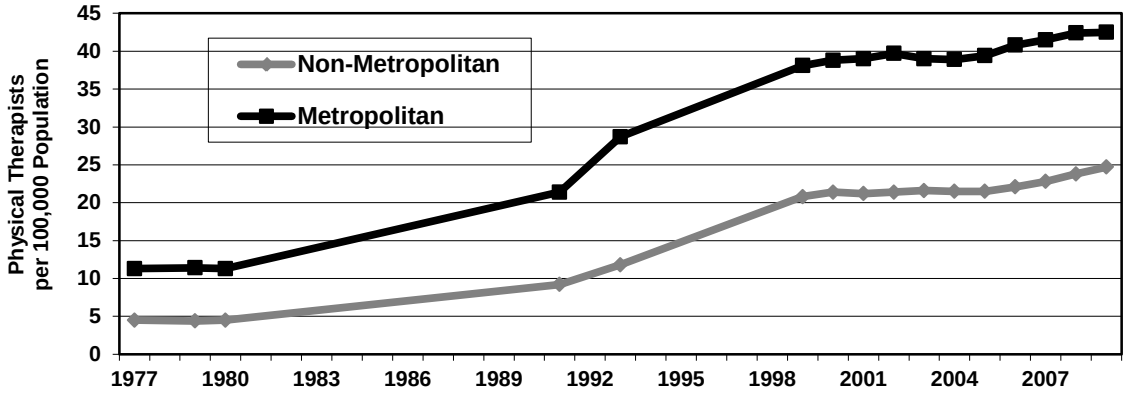


Figure 42. Physical Therapists per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1977–2009



ACCESS TO CARE

According to the Texas Health Work Force Data Appendix C, 131 whole counties and 46 partial counties are designated as Health Professional Shortage Areas (HPSA). This designation is determined based on population-to-PC physician ratios indicating shortages in primary care physicians. One possibility in assisting with improving this shortage is to consider alternative means for an individual to access primary care. For example, the military model for patient management allows for a physical therapist to assess individuals with injuries/disorders as an entry

point into the health care system for their troops. The military PT can evaluate, assess, request special imaging tests and develop a plan of care without a direct referral from a physician. If the management of the patient requires medical attention, the PT refers or consults with a physician to provide the best care for the patient. The military PT is responsible for the care of the individual unless medical intervention is deemed necessary.

In a similar model, a physical therapist with direct access could be that point of entry for individuals seeking health care especially in areas where primary care physicians are in shortage. Currently, the majority of PT programs in Texas offer only Doctor of Physical Therapy (DPT) degrees with the remaining programs transitioning to the DPT. The new curricula provide advanced skills and knowledge in imaging, pharmacology, differential diagnosis, and evidence based practice. This added content provides PTs with the tools to address the health care needs as an entry-point to health care, as consultants and as a referral source to MDs when the intervention is beyond the scope of practice for the PT. With a change in the PT Practice Act and this advanced education, PTs have the potential of addressing the shortages of Health Care Professionals in these counties designated as HPSA.

Faculty Shortages

Faculty shortages limit the ability of the profession to expand educational programs to meet workforce shortages. These shortages have been made more acute because most programs offer a professional doctorate. The appropriate credential for a faculty appointment would be a doctoral degree and licensure as a physical therapist. A very small number of physical therapists possess a terminal doctoral degree.

Table 23: 2009 Texas Physical Therapist Facts:

White	75.9%	Male	28.8%	Median Age Male	41
Black	3.2%	Female	71.2%	Median Age Female	41
Hispanic	7.2%				
Other	13.6%				

	Providers/100,000 Population
Border Metropolitan	24.7
Non-Border Metropolitan	44.5
Border Non-Metropolitan	13.3
Non-Border Non-Metropolitan	26.3

Trends:

Year	Number	Providers/100,000 Population
1991	3,373	19.4
1993	4,681	26.0
2000	7,358	36.2
2005	8,511	37.0
2009	10,016	40.3

Respiratory Care Practitioners

The Professional Licensing and Certification Unit at the Texas Department of State Health Services issues licenses to respiratory care practitioners in Texas. The ratios of respiratory care practitioners per 100,000 population have risen overall since 1991, but the trend line has fluctuated in recent years (Figure 43). The non-metropolitan counties had much lower ratios than the metropolitan counties, and the gap is increasing (Figure 44). Data on gender and race-ethnicity were not available.

In 2009, there were 11,872 respiratory care practitioners in Texas. While some areas of Texas have an adequate number of respiratory care practitioners, there were 57 counties with no respiratory care practitioners (compared to 67 in 2001); most of these were in West Texas, South Texas, and the Panhandle. However, thirteen counties that had respiratory care practitioners in 2001 did not have any in 2009, while 23 counties that did not have a respiratory care practitioner in 2001 had at least one in 2009. In 2009, the median age was 43 years, compared with 40 years in 2001. National supply ratios for respiratory care practitioners were not available.

Figure 43. Respiratory Care Practitioners per 100,000 Population, U.S. and Texas, 1991–2009

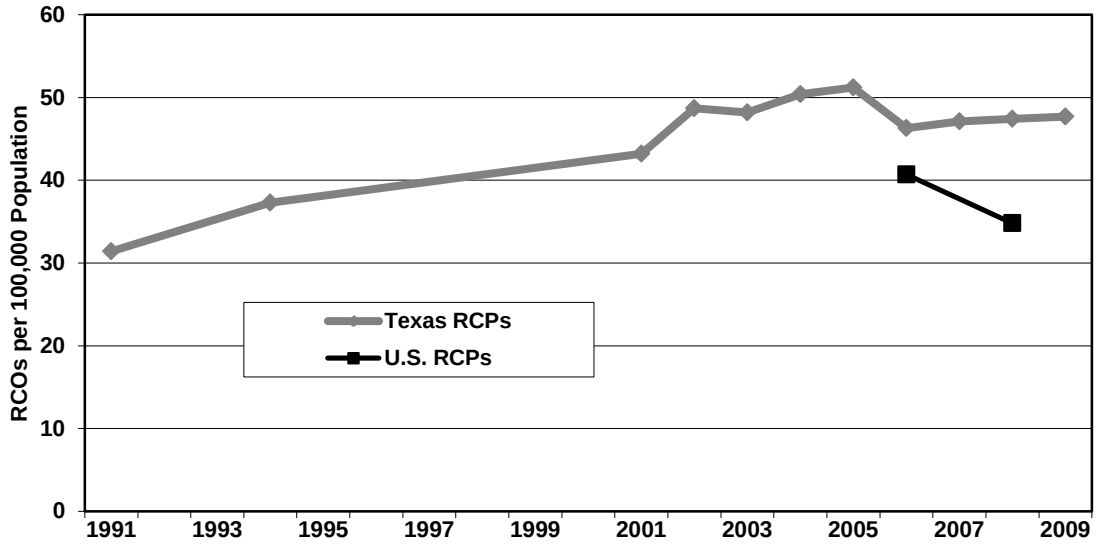
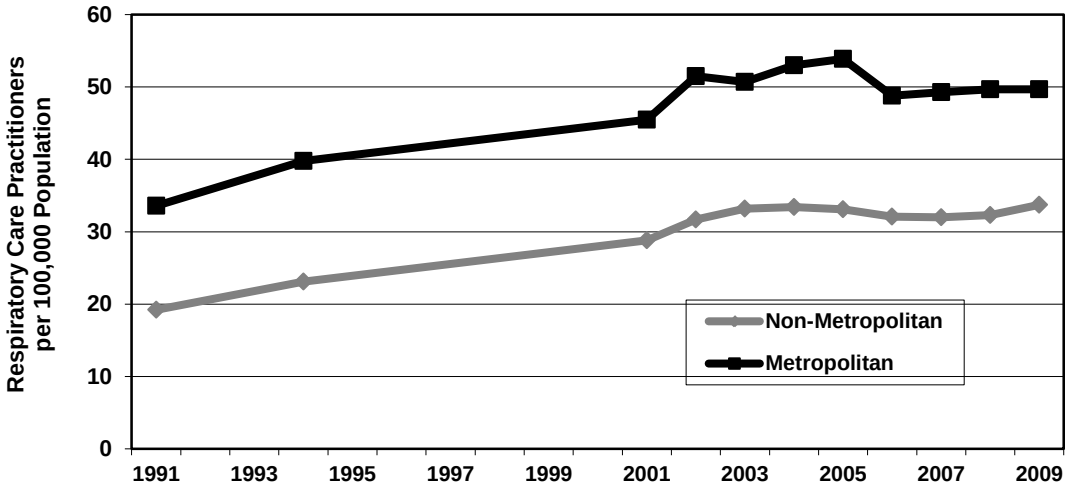


Figure 44. Respiratory Care Practitioners per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1981–2009



Educational Preparation

Advances in technology, respiratory therapeutics and drug delivery methods have resulted in an expansion in the scope of practice and the training requirements for respiratory therapists. The profession is planning for an increase in the educational requirements for entry into the profession. Currently the minimum is the associates degree, but the profession and the sponsoring organizations have been developing the list of professional competencies needed for future practice and anticipate a change to the bachelors or masters degree by 2015.

Scope of Practice

As a result of the demographic changes associated with the aging population, and the constant threat of respiratory transmitted disease such as the avian and swine flu, the demand for respiratory services is increasing. In order to meet this growing need, therapists of the future will need to expand their role from treatment delivery to disease management.

In order to provide better patient care congress is now considering payment for respiratory care services under Medicare Part-B. Reimbursement for therapists working as physician extenders and seeing patients on their own would be forthcoming. The federal government, has stipulated, however, that Part-B reimbursement would only include therapists with a minimum of a bachelors degree (Ref: Sept-Oct-2009 Issue of Focus S McCleaster; "The Bachelor's degree for RT'S: has its time finally arrived).

Table 24: 2009 Texas Respiratory Care Practitioner Facts:

	Providers/100,000 Population
Border Metropolitan	39.9
Non-Border Metropolitan	50.9
Border Non-Metropolitan	12.3
Non-Border Non-Metropolitan	36.6

Trends:

Year	Number	Providers/100,000 Population
1991	5,446	31.4
1994	6,854	37.3
2001	8,941	43.2
2005	11,768	51.2
2009	11,872	47.7

Speech Language Pathologists (SLPs)

The Professional Licensing and Certification Unit at the Texas Department of State Health Services issues licenses to speech language pathologists in Texas. The ratios of speech language pathologists per 100,000 population have risen overall since 1991, but the trend line has fluctuated in recent years, partially due to changes in data collection methods (Fig. 45). Interns were included in the data for most years and they account for about five percent of the totals. The non-metropolitan counties had much lower ratios than the metropolitan counties, and the gap is increasing (Figure 46). Data on gender and race-ethnicity were not available.

There were 9,216 speech language pathologists practicing in Texas in 2009. The supply ratios are generally higher in metropolitan counties, with the exception of the border counties, which generally have much lower ratios (Table 25). In 2009, 52 counties did not have an SLP. Between 2001 and 2009, the ratios increased in 119 counties. Eleven counties that did not have an SLP in 2001 had at least one in 2009. The median age in 2009 was 38 years, however, almost 6% of the records had an invalid age, and that percentage was even higher in previous years, in some cases approaching almost 50%.

Figure 45. Speech Language Pathologists per 100,000 Population, U.S. and Texas, 2001–2009

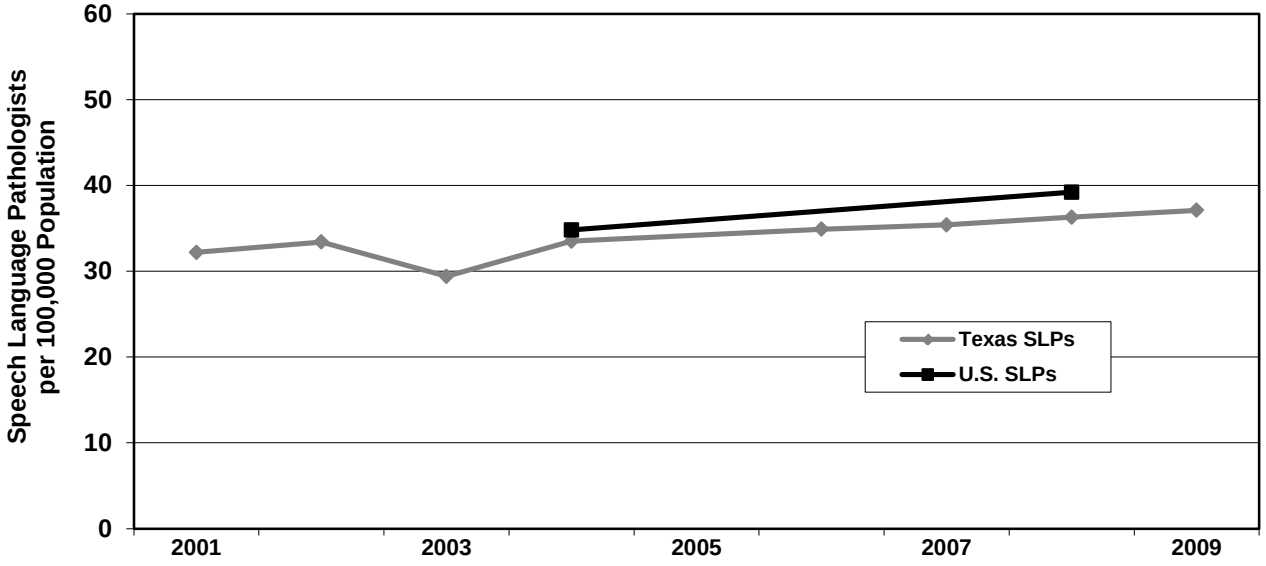


Figure 46. Speech Language Pathologists per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 2001–2009

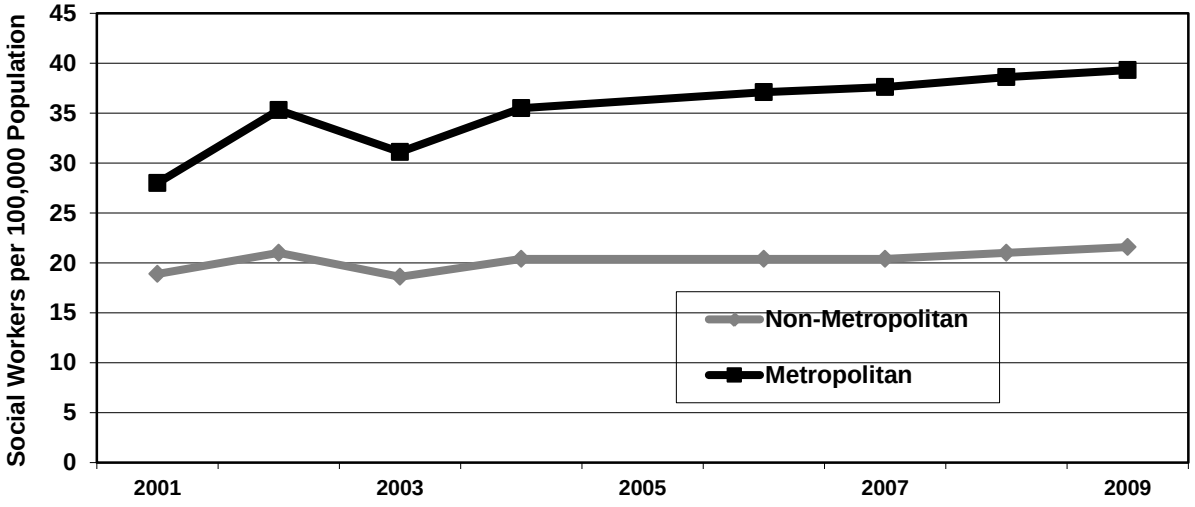


Table 25: 2009 Texas Speech Language Pathologist Facts:

	Providers/100,000 Population
Border Metropolitan	36.3
Non-Border Metropolitan	39.6
Border Non-Metropolitan	15.7
Non-Border Non-Metropolitan	22.4

Trends:

Year	Number	Providers/100,000 Population
1998	4,059	20.7
2001	6,675	32.2
2004	7,554	33.5
2009	9,216	37.1

CLINICAL LABORATORY SCIENCES

WORKFORCE SHORTAGES

Nationally, there are approximately 2600 CLS and 2300 CLT students graduating, creating a total of 4900 new personnel to fill over 9,100 job openings, creating a 46% vacancy rate. In Texas, there are approximately 225 CLS graduates and 200 CLT graduates to fill 985 jobs, leaving 57% of the jobs unfilled.

LICENSURE

Clinical Laboratory Sciences is one of the few health professions that is not licensed in Texas. Although national certification is available, in nonlicensure states, there is no requirement for employers to hire certified personnel. As noted in the numbers above, a personnel shortage is evident in Texas, as in the rest of the nation. In states such as Texas, federal regulation by the Clinical Laboratory Improvement Amendment of 1988 permit laboratories to hire high school graduates to perform moderate complexity tests. A very lax standard indeed, considering the critical role of laboratory testing in diagnosis and treatment of patients. When there is a shortage of personnel, it is more likely that lower level, uneducated individuals will be hired if there is no provision for requiring a specific level/standard to be met through licensure. Many states are now licensing laboratorians (or considering it) to ensure quality laboratory work. The American Society of Clinical Pathology and the College of American Pathologists have both come forward in the support of licensure.

In recent years, state legislation and appropriations to improve recruitment and retention of health professions students has targeted nursing and *licensed health professions.* Students of clinical laboratory science cannot benefit from these programs, as they prepare for an unlicensed profession.

An additional benefit of licensure is that it would increase recognition of the CLS profession, both for existing professionals and prospective students. Finally, because of the absence of licensure, the state has never been able to accurately determine the numbers of laboratory personnel, therefore is unable to even plan on addressing any personnel shortages.

MENTAL HEALTH PROFESSIONS

- Psychiatrists
- Psychologists
- Social Workers
- Licensed Professional Counselors

- Advanced Practice Nurses

Mental health professionals provide services that cover a broad range of needs, including mental, behavioral, emotional, and psychosocial needs. The mental health workforce is comprised of professional and paraprofessional service providers whose educational and training backgrounds vary and whose skill sets span both overlapping and specialized domains.

Mental Health Workforce Shortage

A cardinal issue affecting mental health professions is the ever-increasing need and demand for mental health services. Overall healthcare needs are growing, the demographics of the state are changing, and funding is perpetually scarce for mental health services. The demand is rising at a much faster rate than the supply of an adequately trained mental health workforce.

Historical approaches to the education, regulation, and management of mental health care workers should be re-examined to move away from supply models to a demand model that identifies a person's needs and uses rational planning to determine the number and qualifications of professionals to meet those needs.

Also, while the demand for services continues to grow, the need for culturally competent services will become more apparent. Policies and rules are needed to require continuing education across all types of providers to ensure that this training does not continue to be optional. Mental health professions have not adequately recruited individuals from diverse ethnic and cultural backgrounds.

Mental Health Care Costs

Another important issue affecting mental health professions is the rising costs of mental health care. Costs are already unsustainable, as are overall health care costs, and as the demand for services increases, costs can be expected to grow as well.

Research indicates that the integration of mental health and health systems of care would benefit service recipients, families, employers, insurers, and care providers. A growing body of research has shown that behavioral or mental health symptoms are often related to physical conditions and vice versa. Care management and interdisciplinary team approaches would likely improve quality of care and decrease costs.

Inadequate Mental Health Infrastructure

Another issue affecting all mental health providers is the inadequate mental health infrastructure and lack of interface with the rest of the medical infrastructure. An integrated healthcare workforce with sufficient levels would help address this issue, but considerable gaps would still remain. For example:

A comprehensive Health Information Technology system that can be accessed by outpatient and inpatient clinical and non-clinical resource providers is needed. This is an integral component to achieving truly integrated health care that addresses the physical and the mental health aspects of humanity; as well as a cost saving measure if properly implemented. Imagine if each current system could use the same data base with appropriate access levels in place. The need for multiple forms and interactions that ask the same data over and over could be eliminated.

The inadequate number of outpatient resources located in our rural and urban communities that are able to address the social determinants of health: housing, employment, transportation, addiction, social support, etc.

Another separate, but related issue that affects the entire health care model is the lack of attention given to preventative medicine and its related corollaries. A paradigm shift is needed to the public health approach model. We need to become more proactive and less reactive.

The establishment of peer support certification in Texas will have a significant impact on the state of the mental health profession. The Hogg Foundation for Mental Health is working collaboratively with the Department of State Health Services to fund the creation of a process through which to certify peer specialists to serve as billable mental health professionals. The entrance of these professionals into the mental health arena will drastically change the face of mental health in the shifted focus toward recovery, wellness, and personal responsibility as opposed to the current medical model of disease management. The project is being directed by Mental Health America of Texas and the National Alliance on Mental Illness.

Additionally, Graduate students training to become mental health providers may encounter problems in completing the final stages of their training. Among psychologists-in-training, there is a shortage of internship sites. In 2009, almost one in four psychology graduate students seeking an internship failed to match to an available position during the initial matching phase (American Psychological Association, June 2009, Statement of the APA Board of Directors on the Internship Imbalance Problem). For licensed professional counselor interns, who must complete 3000 hours of postdoctoral training, many struggle to find paid internships. Therefore, they juggle other employment while piecing together a series of internship experiences to fulfill their hours, which lengthens the process considerably. LPC supervisors are sometimes difficult to find and students often must pay for their supervision.

Funding for graduate students across all mental health professions, including social work, psychology, and counseling, continues to be scarce and as institutions of higher education face financial challenges, this is unlikely to improve utilizing just the departments' and institutions' resources alone.

Based on the predictions of the state demographer, graduate training across all the mental health professions in Texas should likely begin to include some level of language proficiency in Spanish over the next decade. There is a shortage of fully bilingual (Spanish/English) therapists and individuals who can conduct bilingual assessments in Texas. It is not sufficient to try to recruit native speakers into the profession; we must also begin to build these language skills in non-native speakers.

The Substance Abuse and Mental Health Services Administration recently released a Request For Proposals (RFP) for five 5-year subcontracts to be awarded to national mental health professional organizations to develop and implement training curricula that promote greater awareness, acceptance, and adoption of mental health recovery principles and practices among mental health providers. The RFP was designed for national membership organizations that consist of, serve, educate, and represent one of the five categories of mental health professionals:

- Psychiatrists
- Psychologists
- Social Workers
- Psychiatric Nurses
- Other Mental Health Providers, for example:
    - Marriage and Family Therapists
    - Licensed Professional Counselors
    - Peer Support Specialists
    - Psychiatric Rehabilitation Providers
    - Pastoral Counselors
    - Occupational Therapists

If professional boards could be encouraged to expand the amount of data they track for their professionals, it may be beneficial to track the following data (aside from race/ethnicity, gender, age, rural vs. urban):

- Languages spoken by the provider
- Geographic location of current practice
- Years of practice
- Specialties/type of practice
- Types of insurance accepted
- Providers who serve LGBT (lesbian, gay, bisexual, and transgendered clients)

PSYCHIATRISTS

There were 1,634 psychiatrists practicing in Texas in 2009. In addition to physicians practicing in the specialty of psychiatry, physicians with a specialty of child or pediatric psychiatry (182 of the 1,634) were included in this report on "psychiatrists" to comply with the HPSA definition of "general" psychiatry. The ratio of psychiatrists per 100,000 population began to increase around 1986, stabilized for several years, then, in about 1992, began to decline. From 1996 to 2003, the ratios stabilized again, but in 2004 the ratios again began to decline; there has been a net decline since 1991 (Figure 47). National supply ratios for psychiatrists were not available.

Two-thirds (63.9 percent) of Texas' psychiatrists were male in 2009; and, 62 percent of the psychiatrists were over 50 years of age; the median age was 54 years, compared with 52 in 2000. The supply ratios for psychiatrists per 100,000 population were the largest in metropolitan counties. Metropolitan border counties had lower supply ratios than did metropolitan non-border counties, but the non-metropolitan border counties had higher ratios than did the non-metropolitan non-border counties. (Table 26).

Figure 47. Psychiatrists per 100,000 Population, Texas, 1987–2009

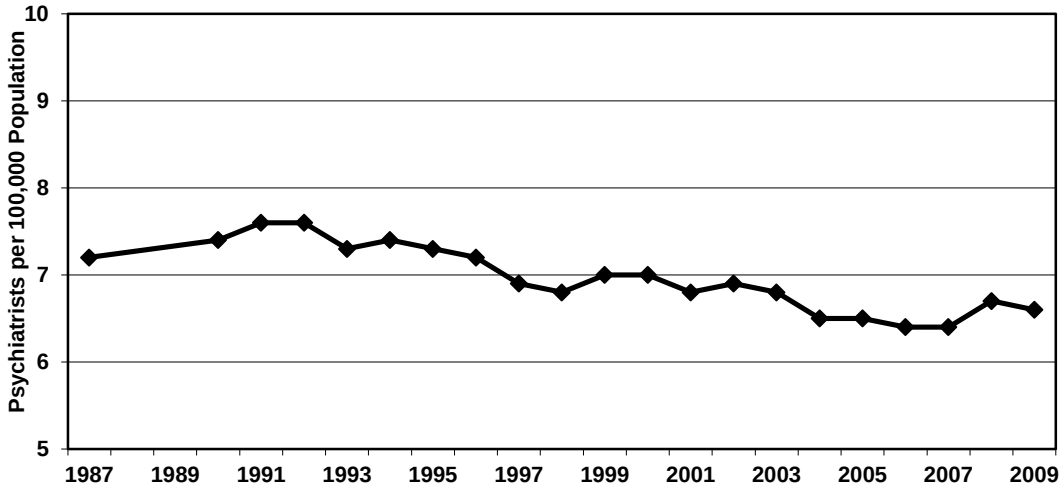


Figure 48. Psychiatrists per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1999–2009

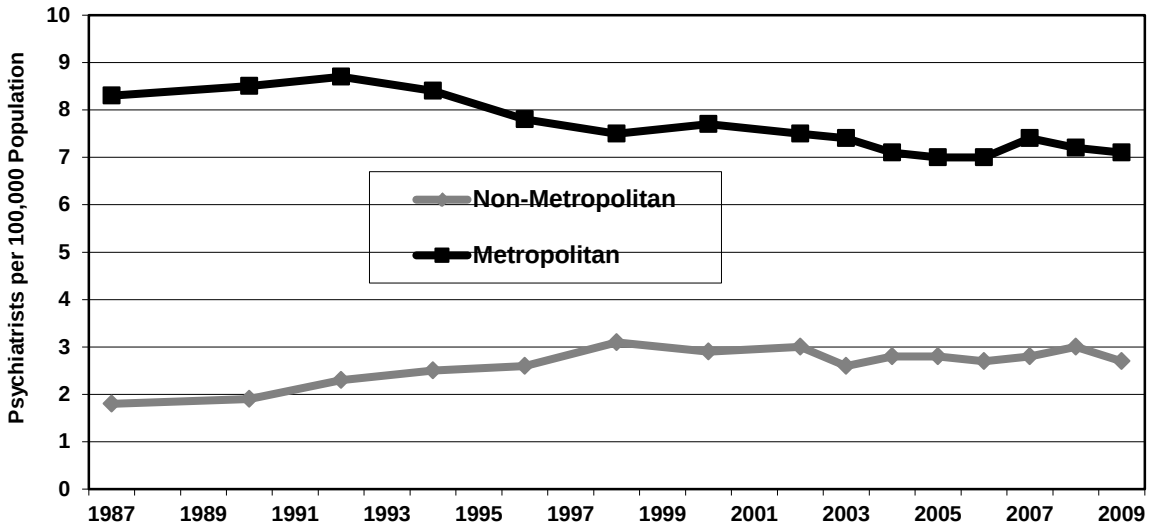


Table 26: 2009 Texas Psychiatrists Facts:

White	64.0%	Male	63.9%	Median Age Male	57
Black	3.5%	Female	36.1%	Median Age Female	50
Hispanic	12.4%				
Other	3.7%				
Unknown	16.3%				

Number of counties with no psychiatrists – 176

	Providers/100,000 Population
Border Metropolitan	2.8
Non-Border Metropolitan	7.6
Border Non-Metropolitan	0.8
Non-Border Non-Metropolitan	3.0

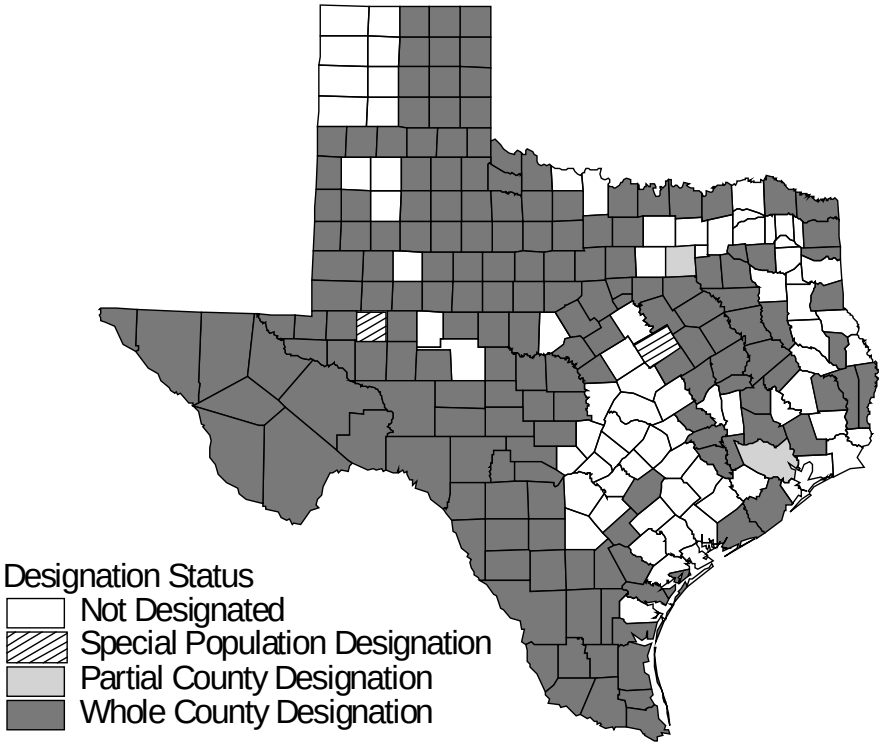
Trends:

Year	Number	Providers/100,000 Population
1990	1,264	7.4
1996	1,336	7.0
2000	1,422	7.0
2005	1,488	6.5
2009	1,634	6.6

MENTAL HEALTH PROFESSIONAL SHORTAGE AREAS (HPSAS)

The U.S. Department of Health and Human Services Health Professional Shortage Area designation program uses population-to-psychiatrist ratios to identify counties with a shortage of psychiatrists. In addition to geographic area designations, the HPSA designation program also provides for the designation of special population groups within geographic areas and for the designation of facilities under certain circumstances. In October 2009, there were 173 counties designated by the U.S. Department of Health and Human Services as whole-county mental-health HPSAs in Texas, two counties designated as partial-county mental-health HPSAs, and two counties designated in whole or part as HPSAs for the low-income population.

Figure 49. Federally Designated Mental Health Professional Shortage Areas in Texas, October 2009



Prepared by:
Health Professions Resource Center
Center for Health Statistics
Texas Department of State Health Services
Data Source:
Shortage Designation Branch
United States Department of Health and Human Services
October 2009

PSYCHOLOGISTS

In Texas, there are four categories of licensees recognized by the Texas State Board of Examiners of Psychologists (TSBEP): Licensed Psychologist (LP), Provisionally Licensed Psychologist (PLP), Licensed Specialist in School Psychology (LSSP), and Licensed Psychological Associate (LPA). A psychologist may hold more than one of these license types. The statistics in this report represent an unduplicated count of these four license types; therefore, there were 6,316 psychologists practicing in Texas in 2009. Of the four categories, licensed psychologists were in greatest supply in 2009. In 1999, the available data indicates that the psychologist supply ratios were higher for the United States than for Texas, and it is expected that trend will continue (Figure 50).

The psychologist supply ratios have been holding fairly steady since 1999, running between 24.2 and 25.9. The supply ratios have been greater in Texas metropolitan counties than in non-metropolitan counties over the past seven years (Figure 51). In 2009, the largest concentration of counties with high ratios was in Central Texas. The border counties, Panhandle counties, and West Texas counties had very low ratios; most of these counties did not even have a psychologist. Also, very few of the counties in those areas had an increase in supply ratios between 2000 and 2009, and several had a decline**.** The largest cluster of growth was in North Texas, in the area south of Dallas County; and in Central Texas, south of Travis County. Since 2000, 77 counties had a decrease in the supply ratios, while 88 counties had an increase. In 2009, 102 counties did not have a psychologist. Twenty-eight counties that had no psychologists in 2000 had at least one in 2009, but fourteen counties that had a psychologist in 2000 had none in 2009. Data on race-ethnicity, gender, and age were not available.

Figure 50. Psychologists per 100,000 Population, U.S. and Texas, 1999–2009

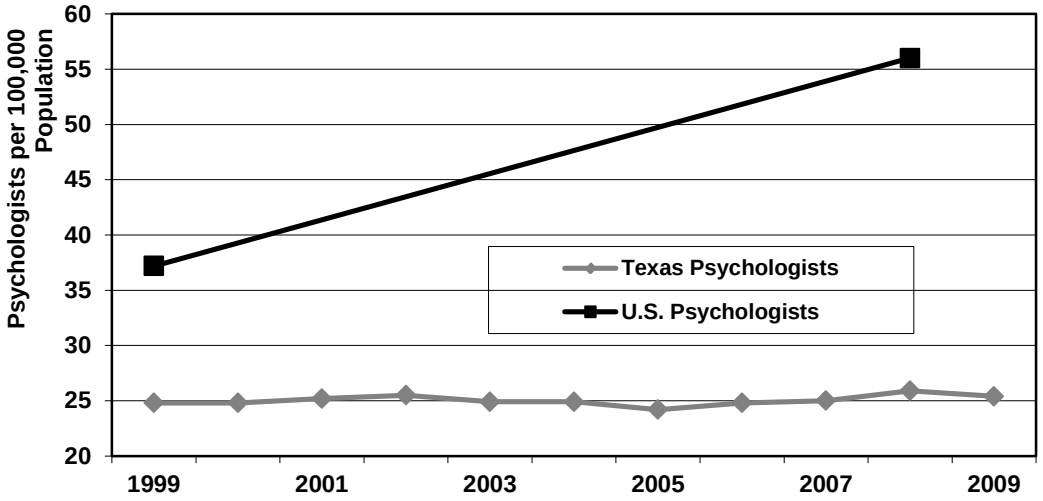


Figure 51. Psychologists per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1999–2009

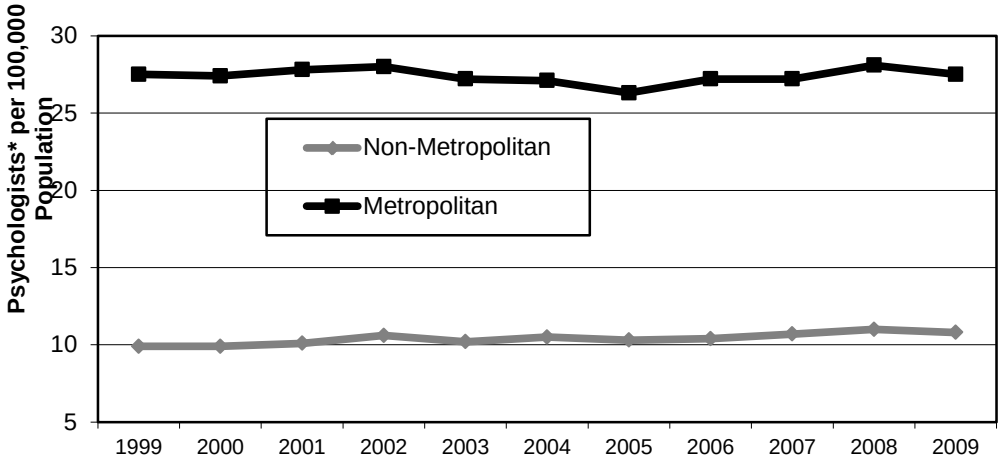


Table 27: 2009 Texas Licensed Psychologist Facts:

	Providers/100,000 Population
Border Metropolitan	8.7
Non-Border Metropolitan	29.6
Border Non-Metropolitan	5.0
Non-Border Non-Metropolitan	11.6

Trends:

Year	Number	Providers/100,000 Population
1999	4,955	24.8
2001	5,229	25.2
2003	5,432	24.9
2005	5,567	24.2
2009	6,316	25.4

SOCIAL WORKERS

Social workers are often the unseen force that makes a difference in people's lives and helps them to become productive citizens. They help people find work, ease the transition from hospital to home, keep a delinquent child in school, help a family stay together, find stability for a homeless person, protect children from abuse and neglect, and advocate for community resources. Social workers are a key component of a health delivery team and as such, supply about 60% of all mental health services. With changes resulting from the mental health parity legislature, there will likely be a greater demand for their services in the next 5 years and beyond.

The Professional Licensing and Certification Unit at the Texas Department of State Health Services issues licenses to social workers in Texas. The ratios of social workers per 100,000 population over the last nine years have been fairly constant; however, the overall trend appears to be favoring a slight decline in the magnitude of the ratio (Figure 52). The non-metropolitan counties had much lower ratios than the metropolitan counties (Figure 53). Most of the social workers, 69.5%, were female, while 13.5% indicated they were male and 17% didn't answer the question. Data on race-ethnicity were not available.

In 2009, there were 16,574 social workers in Texas. While some areas of Texas have an adequate number of social workers, areas such as West Texas, South Texas, and the Panhandle had lower supply ratios. Most of the counties with no social workers were in these areas; only four counties with no social workers were located east of I-35. In 2009, there were 40 counties with no social workers, compared to 36 in 2000. However, sixteen counties that had social workers in 2000 did not have any in 2009, while twelve counties that did not have social workers in 2000 had at least one in 2009. In 2009, the median age was 48 years, compared with 45 years in 2001. National supply ratios for social workers were not available.

Figure 52. Social Workers per 100,000 Population, Texas, 1993–2009

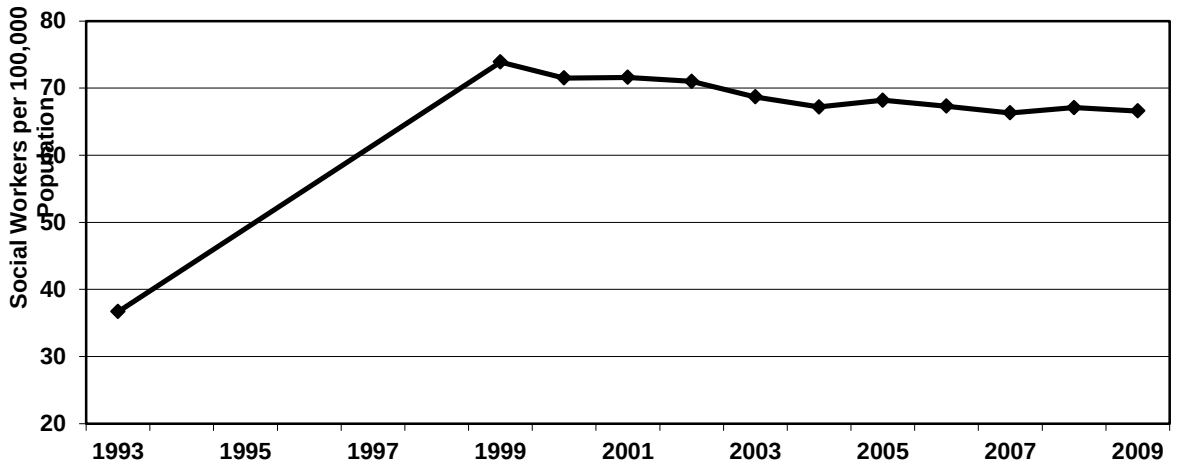
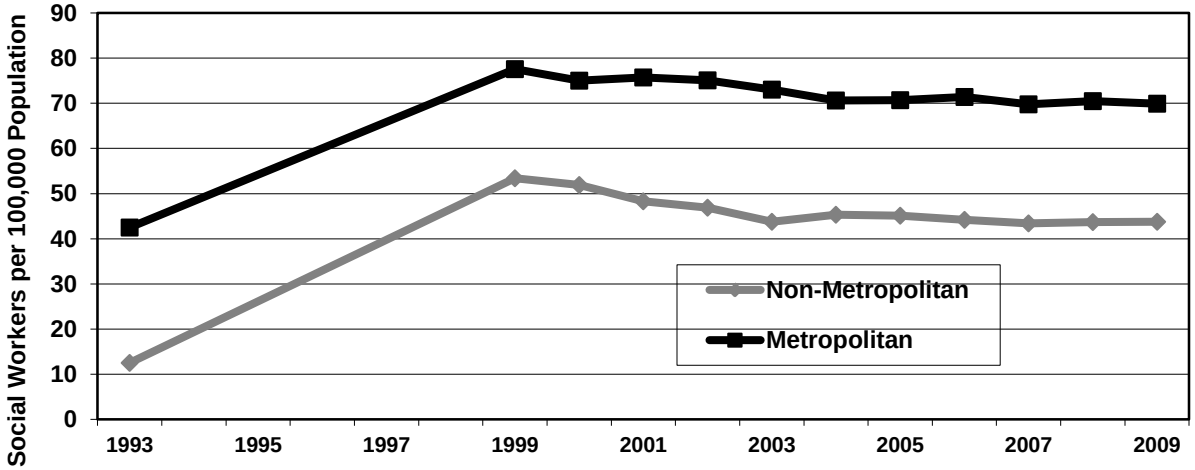


Figure 53. Social Workers per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 1993–2009



The gradual decline in the supply ratio of Texas social workers is a symptom of some of the current challenges facing the profession nationally. The National Association of Social Workers NASW) conducted extensive research in 2006 and found that the profession is experiencing the following conditions:

- De-professionalization, or the practice of allowing people without social work licenses or degrees to function in social work positions;
- encroachment on positions from other disciplines in certain areas that traditionally had been held by social workers (examples: case management and child welfare);
- an unclear image by the public on what social workers really do and the significance of their contributions;
- flat salaries over the last decade;

- issues around supervision, such as being supervised by non-social work managers;
- cutbacks in social and health services funding;
- difficulties filling social work faculty positions;
- new social workers leaving the field; and
- retirement of older workers who are not being fully replenished by new workers.

In 2009, in conjunction with a nationwide effort by the NASW, the Texas Chapter created a 5-year strategic plan to reverse these trends in this state by reinvesting in the profession. Goals of this plan are to recruit highly qualified applicants to Texas Schools of Social Work, increase entry-level salaries for new social workers, create a loan forgiveness program for social workers, stress the importance of licensure for employers, and generate more funding for social work research. Social workers have the proper training to address many of the state's problems, so it is essential to recruit and retain them in the profession.

Table 28: 2009 Texas Social Worker Facts:

Male	13.5%	Median Age Male	54
Female	69.5%	Median Age Female	47
Unknown	17.0%		

	Providers/100,000 Population
Border Metropolitan	45.5
Non-Border Metropolitan	72.6
Border Non-Metropolitan	20.4
Non-Border Non-Metropolitan	47.1

Trends:

Year	Number	Providers/100,000 Population
1993	6,783	37.6
2000	14,549	71.5
2003	15,003	68.7
2005	15,687	68.2
2009	16,574	66.6

LICENSED PROFESSIONAL COUNSELORS

The Professional Licensing and Certification Unit at the Texas Department of State Health Services issues licenses to professional counselors in Texas. The ratios appeared to increase significantly in 2006, but this was due to a new methodology in which interns are now included in the numbers (Figure 54). The non-metropolitan counties had much lower ratios than the metropolitan counties (Figure 55).

In 2009, there were 14,876 Licensed Professional Counselors practicing in Texas. In 2009, there were 48 counties with no Licensed Professional Counselors, compared to 78 in 2000. Between 2000 and 2009, the supply ratios for 25 counties declined and nine of them lost all of their licensed professional counselors. Thirty-eight counties that did not have a counselor in 2000 had at least one in 2009. The median age in 2009 was 50 years, compared to 54 in 2000. However, a significant factor in the decrease is the addition of the interns to the database; the median age for the non-intern Licensed Professional Counselors was 53 in 2009. Data on race-ethnicity and gender were not available.

Figure 54. Licensed Professional Counselors per 100,000 Population, Texas, 2001–2009

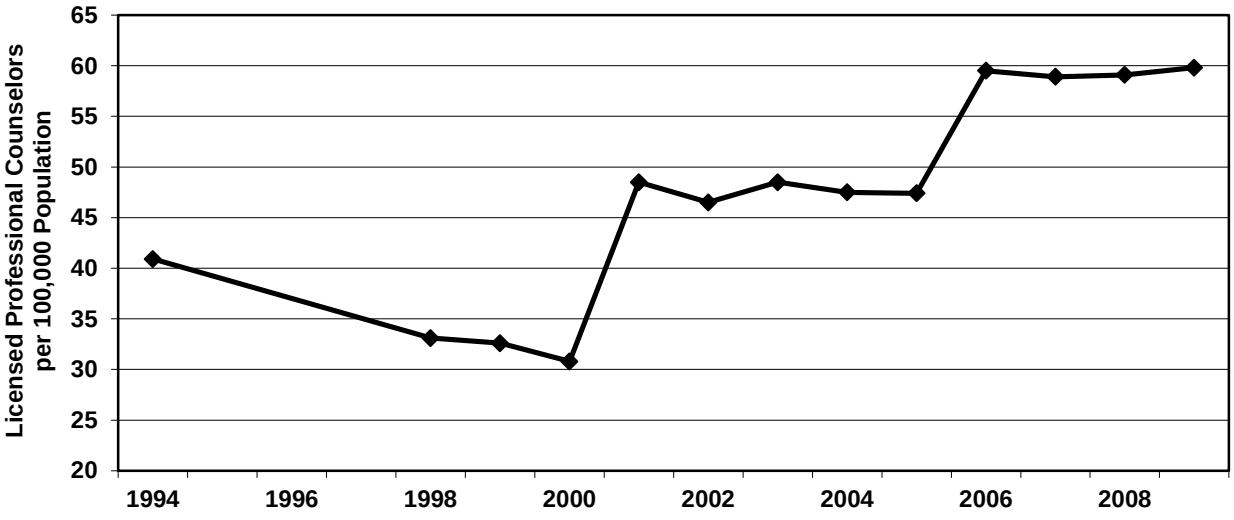


Figure 55. Licensed Professional Counselors per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 2001–2009

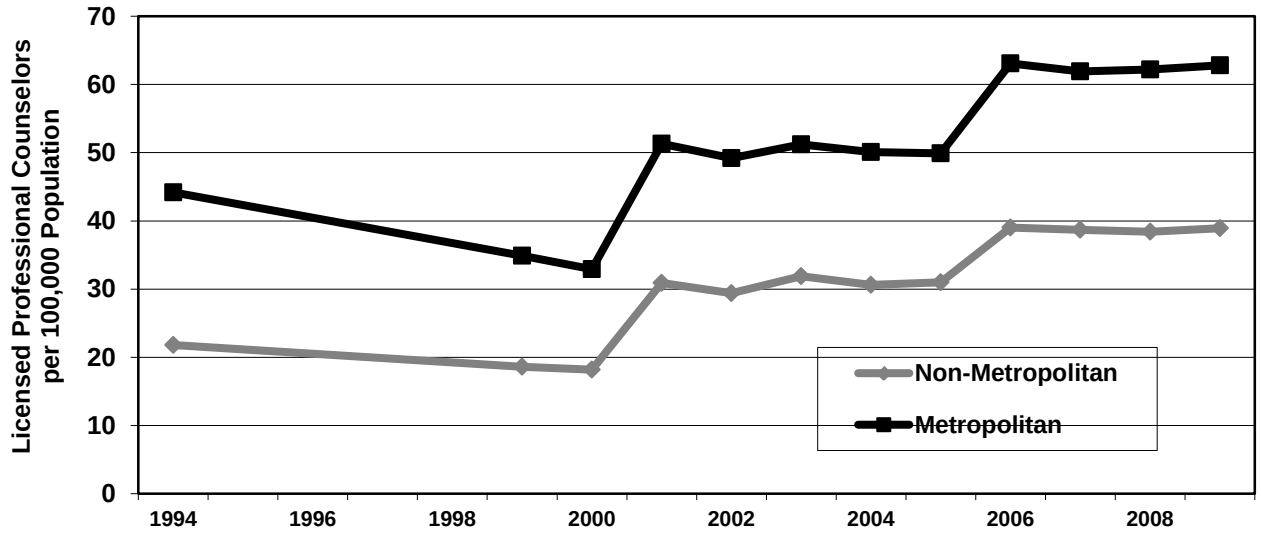


Table 29: 2009 Texas Licensed Professional Counselor Facts:

	Providers/100,000 Population
Border Metropolitan	30.2
Non-Border Metropolitan	66.5
Border Non-Metropolitan	23.5
Non-Border Non-Metropolitan	41.1

Trends:

Year Number	Providers/100,000 Population
2001 10,036	48.5
2003 10,596	48.5
2005 10,896	47.4
2009 14,876	59.8

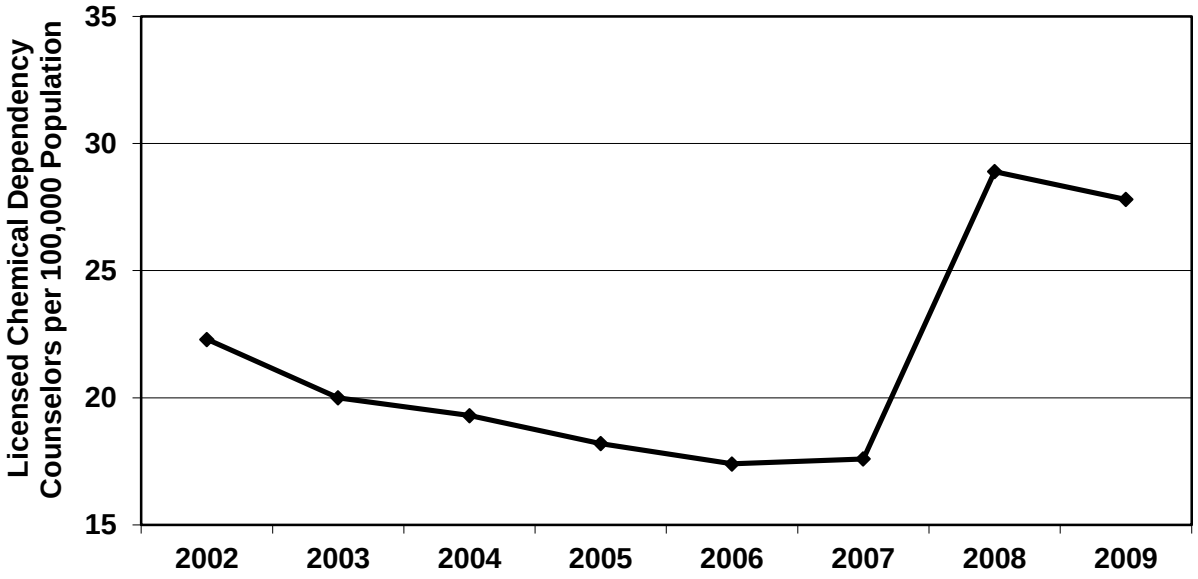
LICENSED CHEMICAL DEPENDENCY COUNSELORS

A licensed chemical dependency counselor (LCDC) is licensed to provide chemical dependency counseling services involving the application of the principles, methods, and procedures of the chemical dependency profession as defined by the profession's ethical standards and the Knowledge, Skills, and Abilities (KSAs) as defined by rule in 25 TAC ch. 441 (relating to General Provisions). The license does not qualify an individual to provide services outside this scope of practice.

The Professional Licensing and Certification Unit at the Texas Department of State Health Services issues licenses to chemical dependency counselors in Texas. The ratios appeared to increase significantly in 2008, but this was due to a new methodology in which interns are now included in the numbers (Figure xx). Unlike most professions, the metropolitan and non-metropolitan counties had similar ratios, with the metropolitan counties having slightly higher ratios most of the time (Figure yy).

In 2009, there were 6,918 licensed chemical dependency counselors practicing in Texas. In 2009, there were 69 counties with no licensed chemical dependency counselors, compared to 73 in 2002. Between 2002 and 2007 (a change in the methodology of data collection in 2008 skews comparisons between earlier years and 2009), the supply ratios for 138 counties declined and 18 of them lost all of their licensed chemical dependency counselors. Eleven counties that did not have a counselor in 2002 had at least one in 2007. The median age in 2009 was 51 years, compared to 50 in 2002. However, a significant factor in the decrease is the addition of the interns to the database; the median age for the non-intern Licensed Chemical Dependency Counselors was 55 in 2009. Data on race-ethnicity were not available.

Figure 56. Licensed Chemical Dependency Counselors per 100,000 Population, Texas, 2002–2009



Note: Starting in 2008, Licensed Chemical Dependency Counselor Interns were included. This explains the increase in ratios from 2007-2008.

Figure 57. Licensed Professional Counselors per 100,000 Population, Metropolitan and Non-Metropolitan Counties, Texas, 2002–2009

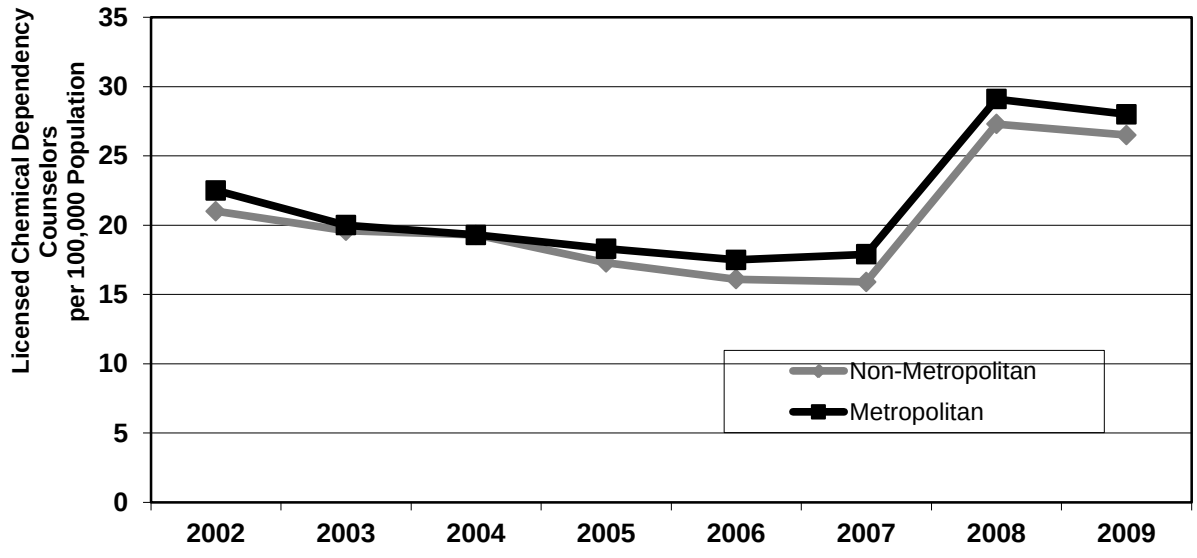


Table Q: 2009 Texas Licensed Chemical Dependency Counselor Facts:

Male	36.6%	Median Age Male	53
Female	63.4%	Median Age Female	50

	Providers/100,000 Population
Border Metropolitan	25.2
Non-Border Metropolitan	28.3
Border Non-Metropolitan	21.4
Non-Border Non-Metropolitan	27.2

Trends:

Year	Number	Providers/100,000 Population
2002	4,699	22.3
2005	4,186	18.2
2007	4,179	17.6
2009	6,918	27.8

Note: Starting in 2008, Licensed Chemical Dependency Counselor Interns were included. This explains the increase in ratios from 2007-2009. In 2009, there were 4,336 Licensed Chemical Dependency Counselors; the rest were Interns.

ADVANCED PRACTICE NURSES (APNS)

The Texas Board of Nursing recognizes APNs in various clinical practice areas. Nurse Practitioners (NPs) may be recognized in one of 12 clinical areas. In 2009, there were 181 NPs with Psychiatric / Mental Health / Substance Abuse recognitions, an increase from 2000, when there were 49 NPs with P/MH/SA recognitions. The median age of these nurses in 2009 was 52 years, compared with 48 years in 2000. Clinical Nurse Specialists may be recognized in one of 14 clinical areas. In 2009, there were 143 CNSs with P/MH/SA recognitions, a decrease from 2000, when there were 186 CNSs with P/MH recognitions. In 2009, the median age of these nurses was 59 years, compared with 52 years in 2000.

THE PUBLIC HEALTH WORKFORCE IN TEXAS

In 2007, the Health Professions Resource Center (HPRC), at the Texas Department of State Health Services (DSHS), began a project to study the public health workforce in Texas. HPRC often receives inquiries about the public health workforce, but this information isn't available from the databases HPRC receives from the licensing boards. Furthermore, few studies of these workers have been recently published by any organization, leaving a void of knowledge about this important area of the healthcare workforce. To fill this void, HPRC conducted surveys of various agencies and facilities that provide public health services, to determine how many workers they employed and how many additional workers were needed, in terms of vacant positions that needed to be filled, and the number of additional workers that need to be hired but cannot because of budget or other constraints.

HPRC reviewed numerous public health reports and studies from other institutions. The definition of public health is not clear in the literature, and there are more professions considered to be public health professions than could be researched by this project. This required HPRC to limit the project to those professions for which HPRC routinely collects demographic data. The types of organizations and facilities that can be considered as providers of public health services are also not clear in the literature, which led HPRC to choose only certain types of organizations and facilities, and to report on each as a separate entity so that the reader may choose only those

that the reader considers as having public health functions. The reports and results of the surveys of these organizations are located on the HPRC website at http://www.dshs.state.tx.us/chs/hprc/pubhealth/phealth.shtm.

To learn more about the public health workforce, HPRC surveyed the 63 Local Health Departments (LHDs) that contract with DSHS to provide public health services, the 79 LHDs that do not contract with DSHS, and the five Texas Health and Human Services agencies. In 2009, HPRC continued this project with a survey of the 60 Federally Qualified Health Centers/Community Health Centers that oversee a total of 319 health care delivery sites. The resulting information still does not paint a complete picture of the public health workforce in Texas because there are so many workers and organizations that contribute to public health but are either ill-defined as having a public health role, or are not easily counted or surveyed. The results of this study provide useful information on major aspects of this portion of the public health workforce.

The following summary table shows the total numbers of health professionals currently employed by these organizations, the number of vacant positions for each type of professional, and other important workforce information.

STAFFING TYPES	Currently Staffed Full-Time Positions	Currently Staffed Part-Time Positions	Total Currently Staffed FTEs	Current Vacant Positions	Vacancies In FTEs	Vacancy Rate (FTE, %)	Additional FTEs Desired*
HEADQUARTERS							
Local Health Authorities	37	24	48.5	5	3.0	5.8	5
Public Health Planners/Policy Analysts	31	0	31.0	1	1.0	3.1	8
Health Educators	86	1	86.5	9	9.0	9.4	24
Information Officers	24	2	25.0	0	0.0	0.0	5
MEDICAL							
Physicians	139	58	170.5	35	32.0	15.8	30
Physician Assistants	6	4	8.0	4	4.0	33.3	8
NURSING							
Registered Nurses, APN & Non-APN	2,040	109	2,096.0	674	660.5	24.0	52
Licensed Vocational Nurses	1,385	29	1,399.5	166	157.5	10.1	31
AIDES/ASSISTANTS							
Home Health Aides	76	1	76.5	0	0.0	0.0	0
Certified Nurse Aides	30	3	31.5	0	0.0	0.0	12
Medical Aides**	88	2	89.0	0	0.0	0.0	0
Patient Care Assistants	74	3	75.5	8	8.0	9.6	0
Promotora(as)/Community Health Workers	68	0	68.0	4	4.0	5.6	28
NUTRITION							
Registered Dietitians and Nutritionists*	293	13	300.5	51	48.0	16.0	25
Dietetic Technicians**	18	0	18.0	1	1.0	5.3	0
DENTAL							
Dentists	35	14	42.0	5	5.0	10.6	9
Dental Hygienists	23	3	24.5	2	2.0	7.5	10
Dental Assistants**	20	1	20.5	1	0.5	2.4	0
MENTAL HEALTH							
Psychiatrists	108	24	120.0	34	30.0	20.0	3
Social Workers, Licensed/Unlicensed	253	3	254.5	20	19.0	7.5	14
Registered Therapists and Assistants**	207	14	214.0	63	60.5	22.0	0
Psychologists and Psychological Associates	244	3	245.5	44	44.0	15.2	6
Other Mental Health Workers	2,754	68	2,788.0	285	275.5	9.0	2
ENVIRONMENTAL/ VETERINARIAN							
Veterinarians	31	3	32.5	1	1.0	3.0	9
Environmental Health Workers/Engineers/Specialists	644	13	650.5	58	57.0	8.1	52
Animal Control Officers	340	12	346.0	14	9.0	2.5	55
LAB AND RESEARCH							
Medical Technicians/Technologists	134	3	135.0	14	14.0	10.4	8
Laboratory Technicians**	53	1	53.5	6	5.5	9.3	0
Microbiologists	181	1	181.5	22	22.0	10.8	4
Biochemists/Chemists	77	2	78.0	0	0.0	0.0	1
Toxicologists	1	0	1.0	1	0.0	0.0	1
Public Health Technicians	602	1	602.5	169	170.0	22.0	24
Epidemiologists	186	2	187.0	16	16.0	7.9	19

Medical Research Specialists**	2	0	2.0	1	1.0	33.3	0
PHARMACY							
Pharmacists	80	16	88.0	15	15.0	14.6	4
Pharmacy Technicians**	77	0	77.0	0	0.0	0.0	0
OTHER							
Health Physicists**	58	0	58.0	4	4.0	6.5	0
Orthopedic Equipment Technicians**	42	0	42.0	1	1.0	2.3	0
Respiratory Care Practitioners**	10	0	10.0	3	3.0	23.1	0
TOTAL	10,557	433	10,777.5	1,737	1,683.0	13.5	449

*This question was not asked of the Health and Human Services Agencies
**These professions were not counted at the Local Health Departments but only at the Health and Human Services Agencies

OVERVIEW

- In 2002, public health workers were estimated by one publication to be 5% of the Texas health workforce.
- Non-Participating LHDs that were surveyed were focused more on code enforcement rather than on direct patient care.
- The nursing profession was the public health profession with the largest number of workers, but it also had the most vacancies of any profession and one of the highest vacancy rates.
- In the LHDs, animal control officers and sanitarians are the largest professions, along with nurses.
- In the FQHCs, the largest professions were certified nurse aides / certified medical assistants / patient care assistants.
- The five HHS agencies employed the largest numbers of "other" mental health workers such as psychiatric nursing aides, psychiatric nursing assistants, and psychological assistants. *(Psychiatrists, psychologists, and social workers counted separately)*
- In the five HHS agencies, mental health workers comprised a larger percentage of the public health workforce than was the case for the other organizations.
- The vacancy rate for public health workers at the State agencies (15.8%) was higher than that for the FQHCs (12.3%), and more than double the rate of the LHDs.
- FQHCs had more dentists and dental hygienists then the LHDs and HHS agencies combined.
- At the LHDs, the combined nursing professions were the largest group represented, while they were in second overall in the HHS agencies, after "other" mental health workers.
- As with the LHDs, the profession with the most vacancies in the HHS agencies was Registered Nurses.

CHALLENGES AND ISSUES

- According to national publications, the U.S. lost 50,000 public health workers from 1980-2000, and the U.S. Schools of Public Health need to triple the number of graduates by 2020 to replenish the workforce. The supply of public health workers is chronically short in some settings and professions.

- Many professions had high turnover rates.
- There was a chronic mal-distribution of health workers in rural and border areas but it varies among the different organizations – 78.6% of the public health workers were in the urban counties and 87.4% were in the non-border counties.
- National publications also indicate the following about public health workers:
- Minorities are disproportionately represented in the workforce.
- Technological innovations are increasing the demand for more public health workers.
- They are often underpaid and this creates problems with hiring new workers.
- There are few career ladders for entry-level public health workers that would help retain them as they become more experienced.
- There is a lack of standardized public health training for some public health professions.

- There is competition with non-public health facilities for workers highly trained in analytical and epidemiological skills.
- And, the largest single group of public health professionals – nurses – tends to be women with families and this limits geographic mobility and this affects their recruitment into the workforce.

CONCLUSION

Although this study accomplished a lot toward documenting the shortage of certain types of public health workers in Texas, more study is necessary to determine the full nature of the supply of and demand for these workers in the state. What was learned from this project was that there are a significant number of positions that are currently vacant, and insufficient budgets and other constraints are contributing to this shortage. The public health organizations and facilities surveyed in this study would be better equipped to handle the needs of the public if more funding were available for filling current vacancies; and, if public health worker salaries were more competitive with the salaries of healthcare workers in other workplace setting in the state. The study also illustrated the difference in the composition of the Health and Human Services public health workforce from that of the public health workers in the LHDs and FQHCs. The Health and Human Services public health workforce has more professions represented, more people employed in those professions, and is more geographically diverse than are the public health workforces of the other organizations.

NOTES

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TEXAS STATE HEALTH PLAN 2013-2014 UPDATE

SECTION III

RECOMMENDATIONS

Texas must take the necessary steps to achieve education and training in the health professions that will ensure that an appropriately skilled, sufficient, and experienced workforce becomes a reality for the state. This will be achieved through effective and innovative models of education and practice that provide work-ready graduates, improve the participation of minorities in the health professions, and retain trained health professionals in the workforce. Additionally, new supply and demand models must be considered in order to provide the necessary data for critical health policy implementation.

The Statewide Health Coordinating Council believes that the following recommendations are essential to fulfill these workforce goals and thereby ensure a quality health workforce for Texas.

General Workforce Recommendations

1. Change current statute and fund as necessary to require all health professions licensing boards to collect the Minimum Data Set as outlined in SB 29, [80 (R), eff. March 1, 2008] to support the supply and demand research in the Health Professions Research Center.

2. Support initiatives that result in the creation of a representative and culturally competent health workforce for Texas. This could include items such as:

- College for all Texans and GenTx Campaign
- programs that interest minority students in health careers,
- curricula for preparing practitioners to recognize health disparities and to implement appropriate interventions,
- new models for education in the health professions,
- strategies for Increasing the retention and growth of a culturally competent workforce, and
- increase a multilingual and technological competent workforce

3. Change current statute to allow the regulatory boards for the health professions the flexibility to facilitate the increase in outcome-oriented demonstration projects to increase the efficiency and effectiveness of health outcomes.

4. Maintain funding of the Area Health Education Centers to guarantee that vital health career development efforts and recruitment and retention strategies are available in areas not provided through other means or agency efforts.

5. Encourage the collaborative effort of regional public and private partnerships to improve workforce availability and allocation, trim numerous costs, and avoid service duplication.

Primary Care Recommendations

1. Support public health prevention and education programs designed to decrease the incidence and severity of chronic disease and decrease health disparities in the population by enabling individuals to take personal responsibility for their health.

2. Sustain and increase general revenue funding for the Family Practice Residency Program through the trustee funds to the Texas Higher Education Coordinating Board to the 2002-03 biennial levels.

3. Maintain funding to support enrollment at the state's pharmacy schools to help relieve the current shortage of pharmacists in the state.

4. Support the growth in the numbers of Federally Qualified Health Centers and community primary care clinics in Texas.

5. Support legislation, regulation, and reimbursement methodologies that will support the training and use of state certified Community Health Workforce providers to assist in the cost-effective management of heath care.

NURSING WORKFORCE RECOMMENDATIONS

1. Continue the Nursing Innovation Grant Program funded by tobacco earnings from the Permanent Fund for Higher Education Nursing, Allied Health, and other Health-Related Programs and administered by the Texas Higher Education Coordinating Board.

2. Support innovative programs to combat the state's nursing shortage while increasing diversity in the health care workforce. Project partners should work with diverse middle and high school students in the state, in order to foster interest in nursing careers, and provide students with a nurse mentor, intensive tutoring, experiential learning opportunities and a structured curriculum to prepare them for a nursing program in a college or university.

3. Enhance resources for recruitment, hiring and retention of faculty for nursing programs.

4. Encourage and prioritize the expansion of Advanced Practice Nursing programs, including nurse-midwifery, to meet the expectations of a reformed health care system and the demand for more qualified and educated nurses.

5. Continue to maintain nursing shortage reduction funding levels to nursing programs throughout the state to support continued growth in the number of new graduates from Texas schools of nursing.

6. Support implementation of the following strategies in the recruitment and retention of a qualified and well prepared nursing workforce in public health, long-term care settings, and public psychiatric/mental health settings:

- Funding of a career ladder for public health nurses in order to address recruitment and retention concerns.
- Extension of student loan forgiveness programs for RNs entering public health nursing in Texas, especially those willing to practice in medically underserved, rural and border areas and those who would promote cultural diversity within the Texas public health nursing workforce.
- Creation of training stipends for students in Texas professional nursing programs as well as psychiatric/mental health and primary care advanced practice nursing programs to encourage interest in public health nursing and promote public health nursing practice competencies.
- Creation of partnerships with higher education institutions to develop innovative approaches to recruit minority students to the field of public health nursing, including targeting paraprofessional nursing staff members with a demonstrated interest in public health nursing.
- Development of increased part-time and flexible schedules to retain experienced older nurses in the public health workforce in order to meet ratios and to train and mentor younger nurses.
- Creation of more opportunities for public health nurses to have meaningful roles in statewide, agency, and municipal public health services operational management; strategic planning; and health policy planning, deployment and evaluations.

7. Develop best practices and effective capabilities for nurses and nursing students using the Nursing Informatics Competencies Model from the TIGER Informatics Competencies Collaborative (TICC) initiatives which consist of three parts: Basic computer Competencies, Information Literacy, Information Management (including use of an electronic health record) and information minimum set of competencies.
Sources: http://tigersummit.com/Competencies_New_B949.html

8. Improve and expand existing Texas Nursing/Clinical/Health informatics education programs by collaborating with industry, service, and academic partners to support and enhance the use of technology and informatics in practices.

HEALTH PROFESSIONS RECOMMENDATIONS

1. Enhance funding for health professions schools in order to expand enrollments and provide for graduate programs for developing faculty in the health professions.

2. Establish and support a mechanism and staff to create an office for health professions workforce issues in the Health Professions Resource Center.

3. Explore means to expand access to health care through innovative programs and initiatives to better utilize health professionals in medically underserved, rural, and border areas.

4. Increase faculty, expand student loan repayment, and provide tuition assistance to health professions faculty to pursue an advanced degree.

5. Continue to extend student loan repayment programs for health professionals serving in medically underserved, rural, and border areas.

6. Support the establishment of state licensure for key health professionals such as clinical laboratory sciences.

7. Encourage partnerships among high schools, community colleges, universities, and academic health centers to promote the health professions (e.g. dual credit courses, pre-professional training.)

ACCESS TO CARE RECOMMENDATIONS

1. Medical Homes and Integrated Health Models
   - Develop, promote, implement and adopt medical home and integrated health care models.
   - Encourage practices through incentives to embrace the concept of medical homes utilizing care managers, cross disciplinary team-based care, and patient-centered practices.
   - Ensure that substance abuse, behavioral health and mental health services are included in the medical home model

2. Addressing Health Workforce Maldistribution Through Incentives to Improve Health Workforce shortage Areas in Texas. Examples include:
   - Develop, provide and expand incentives to boost the number of international medical graduates in Texas, through the Conrad 30 J1 Visa Waiver Program waiving the H-1 physicians two year return home in exchange for 3 years of service in a designated workforce shortage area.
   - Expand and enhance incentives for Physician Assistants (PA), Nurse Practitioners (NP) and Health Professionals (HP). Provide strong incentives designed to channel a greater number of PA, NP and HP graduates into primary care and group practices that are located in medically underserved communities.
   - Provide incentives to community colleges, non profits, and health care facilities to facilitate training opportunities to increase the number of Community Health Workers and paraprofessionals

TECHNOLOGY RECOMMENDATIONS

1. Support a resolution to encourage insurers to expand the definition of telehealth coverage for services to include but not limited to interactive audio, video and/or other media for diagnosis, consultation and/or treatment for reimbursement.

2. Standardize HIT core competencies into training for all clinicians and model curriculum after the American Health Information Management Association (AHIMA) and the American Medical Informatics Association (AMIA).

3. Secure federal funding for EMR/HIT workforce development and projects in Texas.

4. Assure Health Information Technology training for Texas health professionals' workforce.

PREVENTION AND EDUCATION RECOMMENDATIONS

1. Support and ensure priority is given to prevention and education programs that intervene early in the life cycle.

2. Maximize the efficiency in matching federal dollars earmarked for early childhood programs.

3. Ensure efficient distribution of federal and state dollars to the grassroots communities.

4. Fund parenting education in English and Spanish. Parenting education should include child development and nutrition.

5. Continue funding the Supplemental Food Program for "Women, Infants, and Children" (WIC) and other prenatal programs that address perinatal health.

6. Support through legislation and funding availability and accessibility of quality services for children and their families. Services should include:
    - Home visiting programs
    - Intervention programs which address mental health issues such as depression and substance abuse problems

7. Continue efforts to improve immunization rates in Texas through legislation and funding programs which require the collaboration of public schools and local health care providers to improve immunization rates.

8. Support through legislation and funding access to basic medical care for pregnant women and help prevent threats to healthy development, as well as provide early detection and intervention for problems that may emerge.

9. Support local initiatives to prevent tobacco use in public places through legislation.

10. Implement the strategies and associated measurements that communities and local governments can use to plan and monitor environmental and policy-level changes for obesity prevention through legislation. The strategies recommended for communities to implement fall into categories as follows:
    - Continue efforts to improve healthy eating and reward the implementation of best practices in nutrition education in schools and early childhood environments.
    - Increase and improve the availability of affordable healthy food and beverages in public service venues and underserved areas. Additionally, communities should provide incentives for the production, distribution, and procurement of foods from local farms.
    - Support healthy food and beverage choices by restricting availability of less healthy foods and beverages in public service venues.

- Increase support for breastfeeding through public awareness campaigns.
- Fund physical activity programs in schools; increase opportunities for extracurricular physical activity, and support schools that promote physical education.
- Support legislation and funding to require physical activity programming in early childhood environments and all grade levels.
- Support legislation and funding which create safe communities that support physical activity by improving access to outdoor recreational facilities, enhancing traffic safety areas where persons could be physically active and improving access to public transportation.

11. Support through funding and legislation partnerships with institutions of post-secondary education, the health sector, and state government to address obesity.

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