

Chapter 1

**THE CASE  
FOR HEALTH WORKFORCE  
PLANNING IN TEXAS**





## INTRODUCTION

The purpose of the *2005–2010 Texas State Health Plan (State Health Plan)* is threefold. First of all, the *State Health Plan* provides a status report on health workforce issues addressed as priorities in the *2003–2004 Texas State Health Plan Update*. Second, the *State Health Plan* outlines the SHCC’s work plan for the next six-year planning cycle. Third, the *State Health Plan* identifies one of the most critical health workforce issues, the nursing workforce shortage, and presents a plan of action for the future. Many of the recommendations proposed in the *State Health Plan* focus on steps to alleviate the current nursing shortage and the anticipated future nursing shortage. These include recommendations that address the recruitment, education, and retention of the nursing workforce as well as recommendations for other related areas of the health workforce continuum.

Additionally, the *State Health Plan* begins to address the recommendations that will be necessary to support a redesigned health care delivery system for the future. These include changes in the way health professionals are educated, changes in the way funding is allocated for health professionals’ education, changes in the practice models used in the delivery of primary care, as well as changes to other health workforce-related systems. A complete set of SHCC recommendations is presented at the end of the chapter.

In an effort to provide Texas leaders with the information they need to prepare for ensuring a quality health workforce, the SHCC created a biennial process, the Statewide Health Workforce Symposium. The Symposium is used to gather accurate and objective information to enable legislators, policy makers, community leaders, and professionals in the private sector to set clear and effective health workforce policies for Texas. The Symposium provides an opportunity for experts in the health workforce field to openly discuss the issues and consider potential policy directions.

As part of the Symposium, the SHCC issued a call for white papers on two related subjects: “Short and Long-Term Solutions to the Critical Nursing Shortage” and “Innovative Primary Care Models to Improve Access and Outcomes.” Copies of those submissions are included as Appendix A and Appendix B, respectively.

To provide a platform for the Symposium, and ultimately for development of the *State Health Plan*, a review of recent literature is conducted on the state of the health workforce. This information, as well as contributions from other health workforce experts in Texas, is incorporated into this *State Health Plan*.

## **I. STATUS OF PRIORITY ISSUES INCLUDED IN THE 2003–2004 TEXAS STATE HEALTH PLAN UPDATE**

Many of the recommendations proposed in the *2003-2004 Texas State Health Plan Update* focused on strengthening four interdependent workforce areas:

- Telemedicine and telehealth;
- General recruitment and retention;
- Ensuring a quality workforce for the aging Texas population; and
- Ensuring a quality public health workforce.

The following paragraphs provide a brief status update on each of these four workforce areas.

### ***Telemedicine and Telehealth***

The lack and distribution of available qualified health professionals continue to be major barriers to accessing health care in rural Texas and in many urban areas. Telemedicine technologies, including teledentistry, hold promise for providing greater access to medical care, ensuring quality of care, and containing costs through early diagnosis and intervention.

Telehealth technologies provide an avenue to maximize scarce resources such as faculty and building infrastructure in the education of our future health workforce. Additionally, telehealth extends our capacity to provide educational programs to potential students located in geographic areas that historically have lacked access to health education and training. Other new technologies, such as patient simulation laboratories, can also provide opportunities to increase the number of educated health professionals.

The SHCC continues to view telemedicine and telehealth as a critical strategy to address the numbers and maldistribution of health professionals and to increase access to health care and health education through technology. Although numerous telemedicine and telehealth projects and networks are now functioning throughout the state, there continues to be no designated agency or body to serve as the authority and coordinator for these projects within the state. The Texas Telecommunication Infrastructure Fund Board, which had provided infrastructure funding to many projects related to telehealth and telemedicine within the state, was eliminated by a line-item veto of the General Appropriations Bill in the 78th Regular Legislative Session.

During the 78th Regular Legislative Session, S.B. 691 charged the Texas Health and Human Services Commission (HHSC) with implementing telemedicine in ways that are cost-effective and clinically effective and that parallel Medicare where appropriate. HHSC administers Medicaid

and the Children's Health Insurance Program and has reached the following milestones in complying with S.B. 691:

- met with the Telemedicine Advisory Committee on January 5, 2004;
- submitted a communication and work plan to the Telemedicine Advisory Committee in May of 2004;
- submitted a telemedicine article for publication in the July–August *Texas Medicaid Bulletin*;
- organized a Mental Health and Mental Retardation Telemedicine Sub-Workgroup responsible for implementing initiatives specifically geared toward mental health and mental retardation; and
- drafted a letter to medical associations to step up provider education on the use of telemedicine technology and Medicaid billing guidelines.

### ***General Recruitment and Retention***

The importance of recruitment and retention activities to ensuring a quality health workforce cannot be overstated. An adequate supply of quality health care providers is critical to the stability of medical services throughout the state and especially in rural and underserved urban areas, where ensuring an adequate supply has always been a challenge. During the last two years, the state's fragmented programs have made attempts to coordinate their efforts. However, many of these programs that were already underfunded face additional reduction of resources available to accomplish the task. The unfortunate result of this fragmentation and the cuts is that Texas has fallen behind the national averages in the supply of many health professionals. This issue is discussed and detailed at length in Chapter 2 and in Appendix C.

Ensuring an adequate supply of health professionals is the product of three interrelated processes. Recruitment of the workforce is the first step. Strategies are currently being developed and acted upon by educational and professional organizations in order to expand the number of people who enter the health workforce. Numerous public and private agencies and organizations have made strides in the last decade to develop and expand the pool of young people who are ready to enter the health workforce. Unfortunately, in the nursing workforce within the last year, the number of qualified applicants has far exceeded the educational system's ability to admit and graduate the students. The greatest reason is the lack of qualified nursing faculty. This is expected to worsen, as the average age of nursing faculty is even higher than the average age of the nursing workforce.

The second step to ensuring an adequate supply of health professionals is to guarantee that systems are in place to support those students who have chosen to enter a health profession. In order to accomplish this, it is necessary to address the shortage of faculty and educational infrastructure to support these students, as mentioned above. It is equally important to address and attempt to fulfill the financial, personal, and cultural needs of these persons. The Texas health workforce does not currently reflect the ethnicity of the state. All health professions fall short of having the optimal numbers of minority-group members represented in their ranks. Chapter 2 and Appendix C provide racial-ethnic data on various health professions where that information is available. Several health professions still do not collect and report racial/ethnic data. However, it is imperative that these data be collected in the future to allow policy leaders and educators the information that is necessary to plan for a culturally representative and culturally competent workforce for Texas.

The third and final step to ensuring a quality health workforce is to guarantee that systems are in place to retain health professionals to practice in Texas. To be effective in this three-step process, the state must accomplish the following: strengthen the systems for collecting and coordinating health workforce supply and demand data, faculty and enrollment data, migration study data, and retention data; improve the coordination efforts in health workforce development and in recruitment and retention; improve systems to increase minority recruitment and systems to guarantee success; and support community-level recruitment and retention efforts throughout the state.

The state's three Area Health Education Center (AHEC) programs continue to serve a vital role in the recruitment and retention of health professionals within the state. The AHECs cover mutually exclusive geographic service areas through 16 fully operational regional centers. Three additional centers are in development in West Texas.

This community-based network conducts extensive programming on health careers promotion and recruitment; community-based education for health professions students; practice entry and support for community health professionals; health literacy for residents of communities; and assessment and refinement of community health delivery systems.

Funding for graduate medical education (GME) was severely cut during the 78th Regular Legislative Session, negatively impacting the state's ability to attract physicians. The cuts resulted in stress to existing GME providers and negatively impacted their ability to provide residency programs to medical graduates. Several of the current residency programs are at risk of closing due to these cuts. Many of our state's medical graduates are leaving Texas for their residency training, and many of them are choosing to remain in other states to practice, resulting in a huge financial burden and a huge loss of intellectual capital for our state's medical and educational system.

Research indicates that the location of the training program for residents and fellows is a major determining factor for where they ultimately establish a medical practice. According to a recent Texas Medical Association Committee on Physician Distribution and Health Care Access, those who graduated from a Texas medical school and completed residency or fellowship training in the state were close to three times as likely to remain in the state as medical school graduates from other states or countries.<sup>1</sup>

### ***Workforce for the Aging Texas Population***

The issues impacting our state's ability to provide an economically feasible health workforce to provide quality care to the aging Texas population are compounding. A growing population of elderly combined with an increase in the incidence of obesity, and the related increases in chronic disease associated with obesity, paint a very challenging picture for Texas and the nation as well. Recent program funding cuts have further reduced our state's ability to meet the future health workforce needs of our aging population.

All involved in Texas health workforce planning must consider alternative health care delivery systems that will concentrate on the prevention of chronic disease and the efficient management of chronic disease through evidence-based health care and proven treatment guidelines. Empowering individuals to accept responsibility for their own wellness through prevention and education programs is also critical. Determining the optimal type, mix, and number of health care providers, the optimal number of health care providers, and the competencies desirable for those providers to possess are the critical challenges that Texas must meet.

### ***Ensuring a Quality Public Health Workforce***

To ensure the health of all Texans, we must have a strong public health infrastructure, and a competent public health workforce is an essential component in meeting this challenge. As a result of the urgency surrounding bioterrorism preparedness, Texas continues to receive additional resources to build and improve the public health workforce capacity. The Texas public health infrastructure as a whole is stronger and more capable of meeting all public health challenges and emergencies as a result of this influx of funding related to bioterrorism preparedness.

Also, consideration must be given to the impact terrorism will have on the health professions workforce. First of all, the threat of terrorism will dictate the numbers and types of health professionals needed and the type of education and training they should receive. The demand for physicians and registered nurses in the acute care setting will be further exacerbated in the face of a large-scale disaster that results from an act of terrorism. The health professions workforce should

be a part of regional planning efforts to prepare for an act of terrorism, so that they can prepare to fulfill their identified future role in managing an event.

The public health workforce will also continue to be an important partner in the effort to prevent and manage chronic disease in the population. Education and prevention efforts, which have long been the tools of the public health workforce, provide an avenue that can produce huge savings in the delivery of health care by teaching “wellness” to individuals in the community.

## II. IDENTIFICATION AND PRIORITIZATION OF CURRENT TEXAS HEALTH WORKFORCE ISSUES

As described in the Introduction to this *State Health Plan*, the SHCC envisions using the current six-year planning period to identify, study, and evaluate innovative primary care delivery models that are outcome oriented and rely on evidence-based health care. This decision is based on an extended assessment that included an extensive literature review; solicitation of local, state, and national stakeholder evaluations of health workforce issues; and a review of current health policy issues impacting the health workforce. Throughout this six-year process, the SHCC will continue to build upon a health workforce plan that will ensure that the correct numbers and types of health providers are recruited, educated, and trained and that they possess the required competencies and skills to ensure quality health outcomes at the lowest cost for all Texans.

Although the SHCC has outlined this overriding process for the next six years, it has also realized the need to devote a portion of the *State Health Plan* to a current critical health workforce issue in Texas: the current and anticipated future nursing workforce shortage. The *State Health Plan* will discuss and propose possible solutions to the shortage in the context of a greater need for system change in the delivery of health care.

### ***Current Status of the Nursing Workforce***

The 2.8 million licensed nurses and 2.3 million nursing assistants providing patient care in this country represent approximately 54 percent of all health care workers and provide patient care in virtually all locations in which health care is delivered.<sup>2</sup>

The 201,194 licensed nurses and 93,342 certified nurse aides providing patient care in Texas represent 53.5 percent of the total health workforce. Licensed vocational nurses represent 10.9 percent of the total and registered nurses represent 25.6 percent.<sup>3</sup> Although numbers vary from study to study, most concur that the nursing shortage is the most severe health workforce shortage existing in the nation and the state. It is anticipated that this shortage will only worsen

due to the changing demographics of the state and the increased role of nurses in the health care delivery system. To meet the demand for nurses, the state will initially need to develop short-term solutions. However, long-term solutions will also be required to sustain the supply of nurses.

A survey conducted by the Texas Hospital Association in February 2003 confirmed vacancy rates for registered nurses in several areas, including vacancy rates of 14.6 percent in critical care areas, 14.0 percent in medical-surgical areas, 11.8 percent in psychiatric areas, 10.1 percent in emergency departments, 7.4 percent in home health, and 5.8 percent in neonatal ICUs. The total average vacancy rate was 11.0 percent for all areas. This represented 2,843 vacant registered nurse positions.<sup>4</sup>

Demand for registered nurses in the acute care setting has increased recently and is likely to continue in the longer term. The demand for registered nurses created by a terrorist event, especially a biological event, would be significant. Population growth in general, the aging of the population, especially people over age sixty-five, economic growth, and advances in technology are expected to greatly accelerate the future demand for hospital-related services and thus for registered nurses. Recent predictions estimate the demand for registered nurses will increase 40 percent over the next two decades, with most of this employment growth occurring in hospitals.<sup>5</sup>

According to a July 2002 report by the Health Resources and Services Administration, 30 states were estimated to have shortages of registered nurses in the year 2000. This shortage is projected to intensify over the next two decades, with at least 44 states expected to have registered nurse shortages by the year 2020.<sup>6</sup> According to the latest projections from the U.S. Bureau of Labor Statistics, more than one million new and replacement nurses will be needed by 2010.<sup>7</sup>

Ability to meet the demand for registered nurses is negatively impacted by the current shortage of nursing school faculty. Additionally, fewer new nurses are entering the profession, thus causing an increase in the average age of the registered nurses.

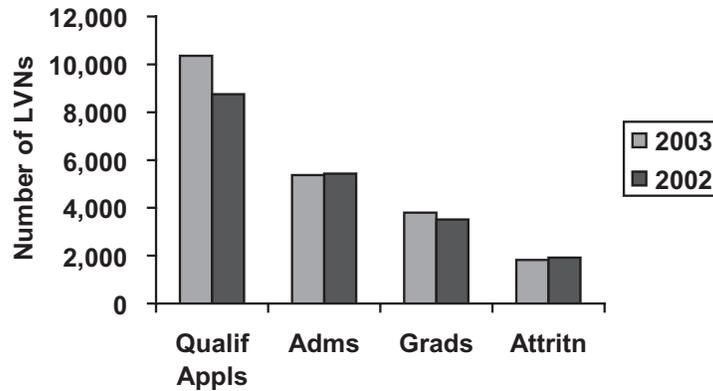
## ***Nursing Education Programs in Texas***

### **Vocational Nursing Programs**

There are 109 sites throughout Texas where vocational nursing (VN) programs are offered. The majority of VN programs are in community colleges. Figure 1.1 depicts the number of qualified applicants for the VN programs as well as the admission, graduation, and attrition rates from September 1, 2002 to August 31, 2003, as compared to 2001–2002. The primary reason for withdrawal from VN programs was academic failure (1,825 students in 2003 and 1,916 students in 2002).

Figure 1.1

**Vocational Nursing Programs in Texas:  
Trends in Qualified Applicants, Admissions, Graduates & Attrition, 2003 and 2002**



Data source: Texas Board of Vocational Nurse Examiners  
Prepared by: Nursing Workforce Data Section, Center for Health Statistics, Texas Department of Health, May 30, 2004

**Professional Nursing Programs**

As of September 2003, there were 82 professional undergraduate nursing programs in Texas:

- Two diploma programs are based in hospitals and are three years in length.
- 50 associate degree in nursing programs (ADN) are based in community colleges and are two years in length.
  - 44 ADN programs offer ADN degrees either to unlicensed students or to both unlicensed students and LVNs.
  - Six ADN programs are LVN-to-ADN track programs that only enroll LVNs.
- 25 Bachelor of Science in Nursing (BSN) programs are based in universities and are four years in length. BSN programs offer baccalaureate degrees to either unlicensed students or unlicensed students and RNs.
- One alternate-entry basic master's degree in nursing program offers a Master of Science in Nursing (MSN) degree to unlicensed students.
- Four baccalaureate-degree nursing programs for RNs only enroll RNs.

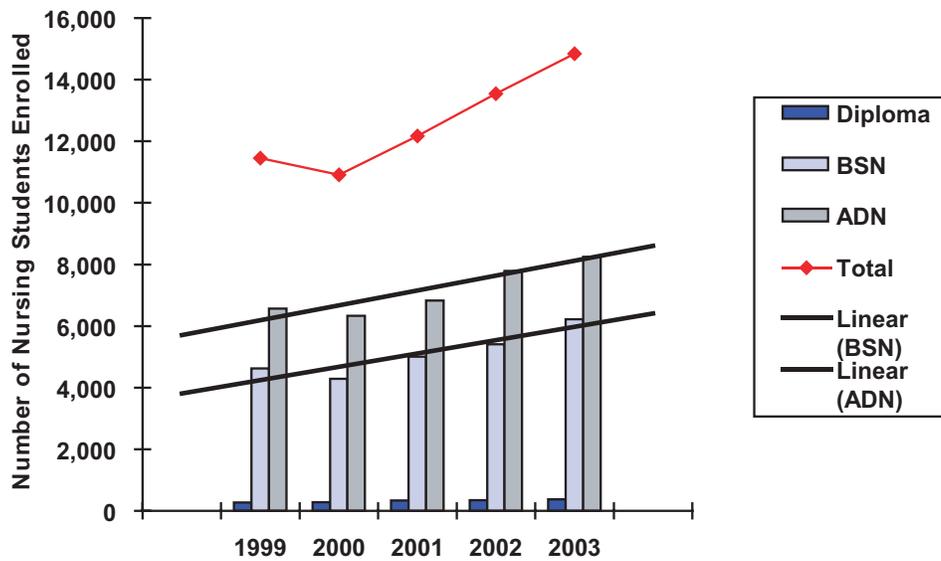
In addition to these undergraduate nursing programs, there are 18 schools of nursing that offer master's-level degree programs in nursing. Some of the areas of study in the master's programs include nursing–health care systems administration, nurse practitioner, clinical nurse specialist, midwifery, public health, and nursing education. Ten schools of nursing now offer a special track in nursing education.

There are currently six educational institutions that offer doctoral programs in nursing including Texas Woman’s University, the University of Texas at Austin, the University of Texas Medical Branch at Galveston, the University of Texas Health Science Center at Houston, the University of Texas Health Science Center at San Antonio, and the University of Texas at Arlington. The Texas Tech University Health Science Center provides access to the doctoral nursing program through a cooperative agreement with Texas Woman’s University.

**Enrollment and Graduation Trends in Professional Nursing Programs**

Figure 1.2 reflects the five-year enrollment trend in professional nursing programs in Texas. This trend shows a parallel rate of enrollment increase between the ADN and BSN programs with the greatest increase in enrollment occurring from 2001 to 2003.

Figure 1.2  
 Five-Year Enrollment Trend in Texas RN Programs, 1999–2003



Data Source: Texas Board of Nurse Examiners  
 Prepared by: Nursing Workforce Data Section, Center for Health Statistics, Texas Department of Health, April 27, 2004

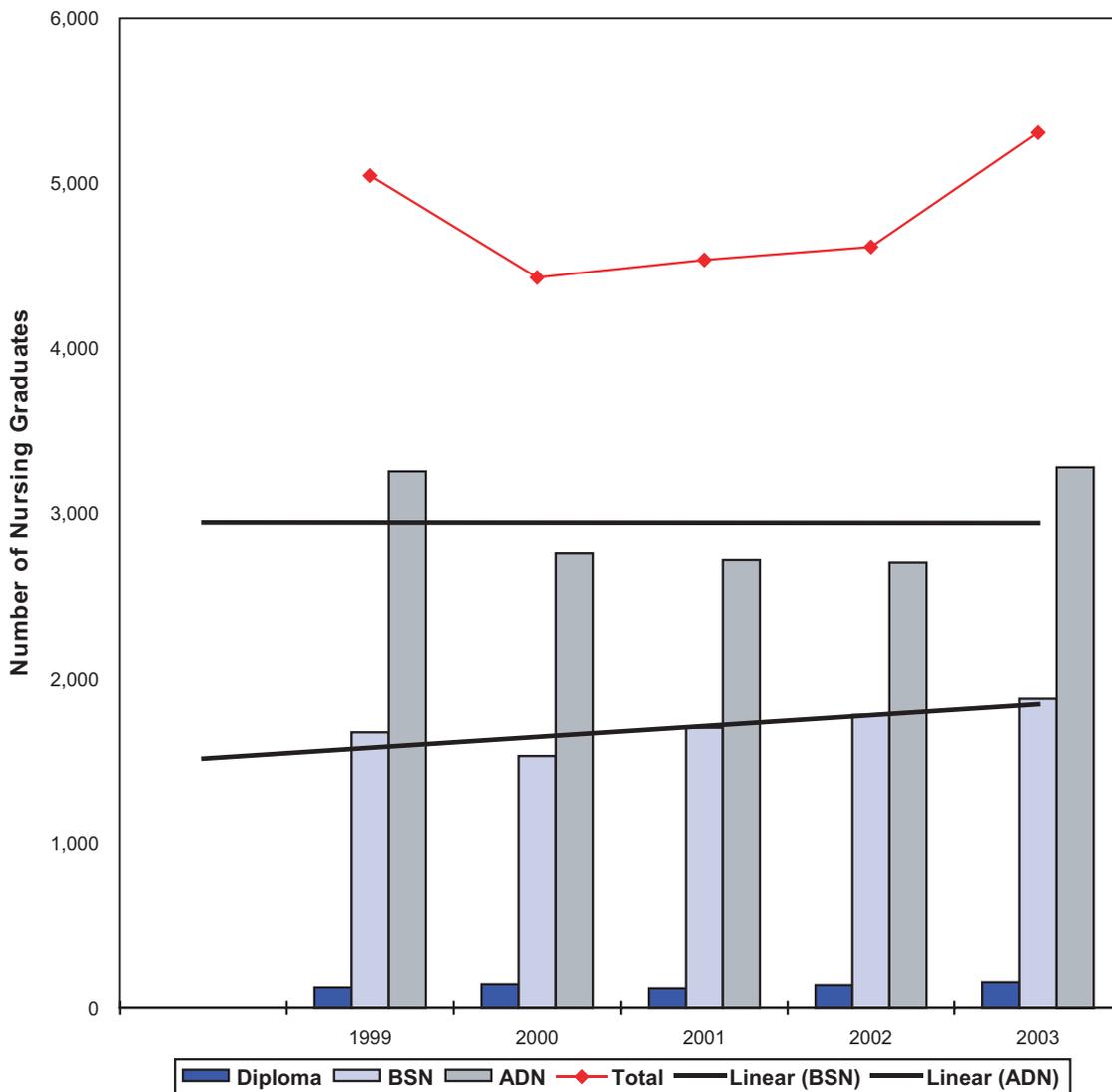
The Texas Higher Education Coordinating Board reported that there were 2,278 declared nursing majors in master’s degree programs in public universities and health science centers in Texas in the fall of 2003. The largest number of graduate nursing students (1,251) were in the track for family practice nurse practitioners. The enrollments of graduate nursing students in other specialty areas are as follows: master’s programs where specialty not specified (462), nurse anesthetist (184), nursing administration (176), clinical nurse specialist (115), nursing education (41), adult health nursing (20), nurse midwifery (16), public health nursing (10), maternal and child health nursing (2), and nursing science (1). In 2003, the Coordinating Board reported 302 declared nursing majors in doctoral programs in public universities and health science centers in Texas.

Figure 1.3 reflects a five-year graduation trend in professional undergraduate nursing programs in Texas. The ADN programs showed the greatest increase in graduation in 2003, a 17.6 percent (576) increase from 2002. The BSN programs showed the greatest increase in graduation from 2000 to 2001, a 10 percent (172) increase.

In 2002–03, there were a total of 463 graduates who received master’s degrees in nursing from Texas public universities and health science centers. Of these graduates, 313 were prepared as nurse practitioners in family practice. The graduation of master’s nursing students in other specialty areas are as follows: clinical nurse specialist (52), nurse anesthetist (50), nursing administration (27), nursing education (10), nursing midwifery (8), and public health nursing (3). In the same academic year, 24 graduates received doctorates in nursing from Texas public universities and health science centers.

Figure 1.3

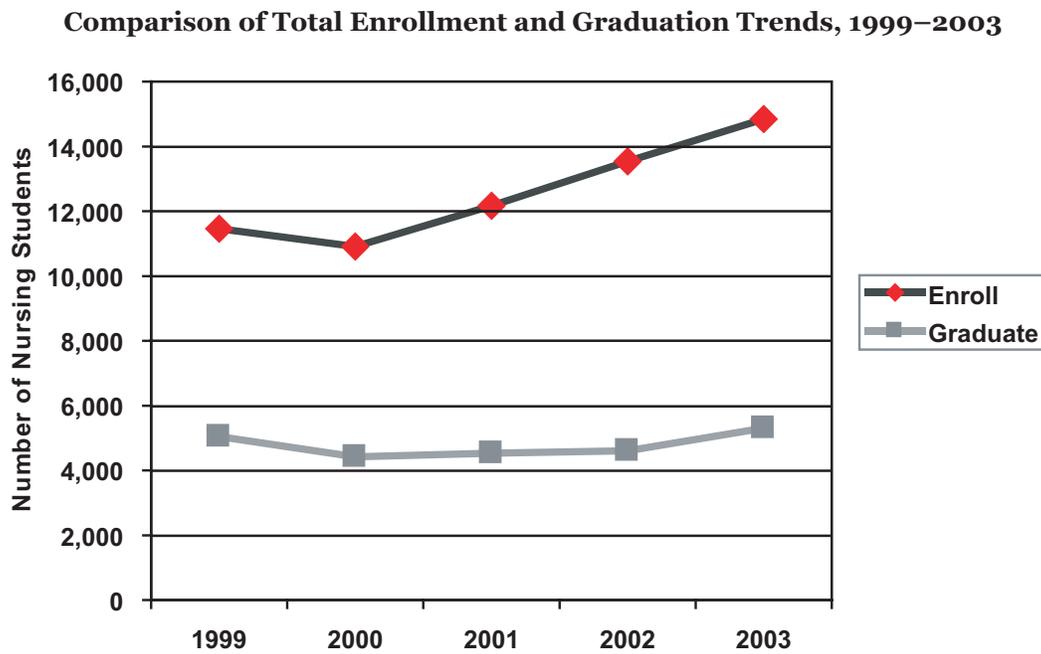
Five-Year Graduation Trend in Texas RN Programs, 1999–2003



Data Source: Texas Board of Nurse Examiners  
 Prepared by: Nursing Workforce Data Section, Center for Health Statistics, Texas Department of Health, April 27, 2004

Figure 1.4 shows a comparison of the total enrollment and graduation trends over a five year period in professional undergraduate nursing programs. This comparison shows that, although the enrollment has increased in such programs, that does not indicate a corresponding increase in nursing graduates. Many educators would say that the major reason for attrition of students from professional nursing programs is academic failure. Other factors causing attrition include personal and financial problems. Currently, the Board of Nurse Examiners does not collect data on attrition in nursing programs. However, the School of Nursing Capacity Study that the Nursing Workforce Data Section is currently conducting will include some data on attrition, including the amount occurring in an academic year as well as the reasons for it.

Figure 1.4.

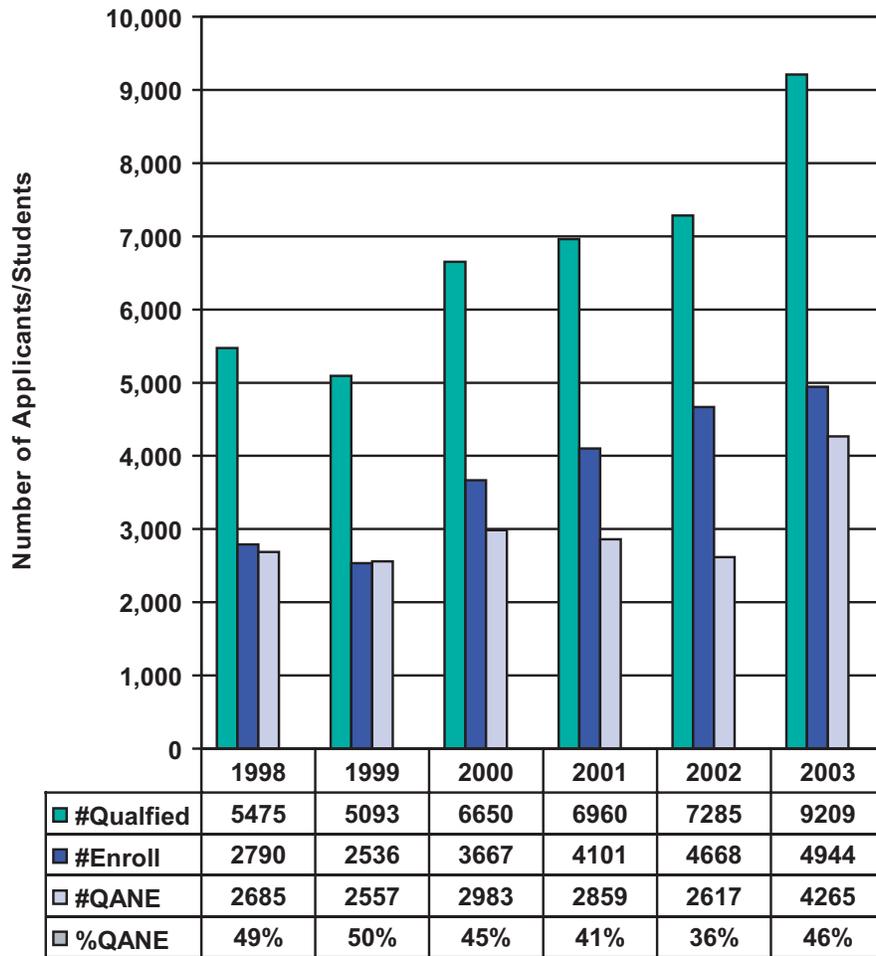


Data source: Texas Board of Nurse Examiners  
Prepared by: Nursing Workforce Data Section, Center for Health Statistics, Texas Department of Health, April 27, 2004

Figure 1.5 depicts the trends from 1998 through 2003 for ADN programs, and Figure 1.6 shows the trends from 1998 through 2003 for BSN programs regarding the number of qualified applicants, the number of applicants who enroll in the nursing programs, and the number of qualified applicants not enrolled. It should be noted that candidates for admission may apply to and be accepted by more than one nursing program, so these data may represent some duplicated counts of individuals.

Figure 1.5

Associate Degree Nursing Programs in Texas

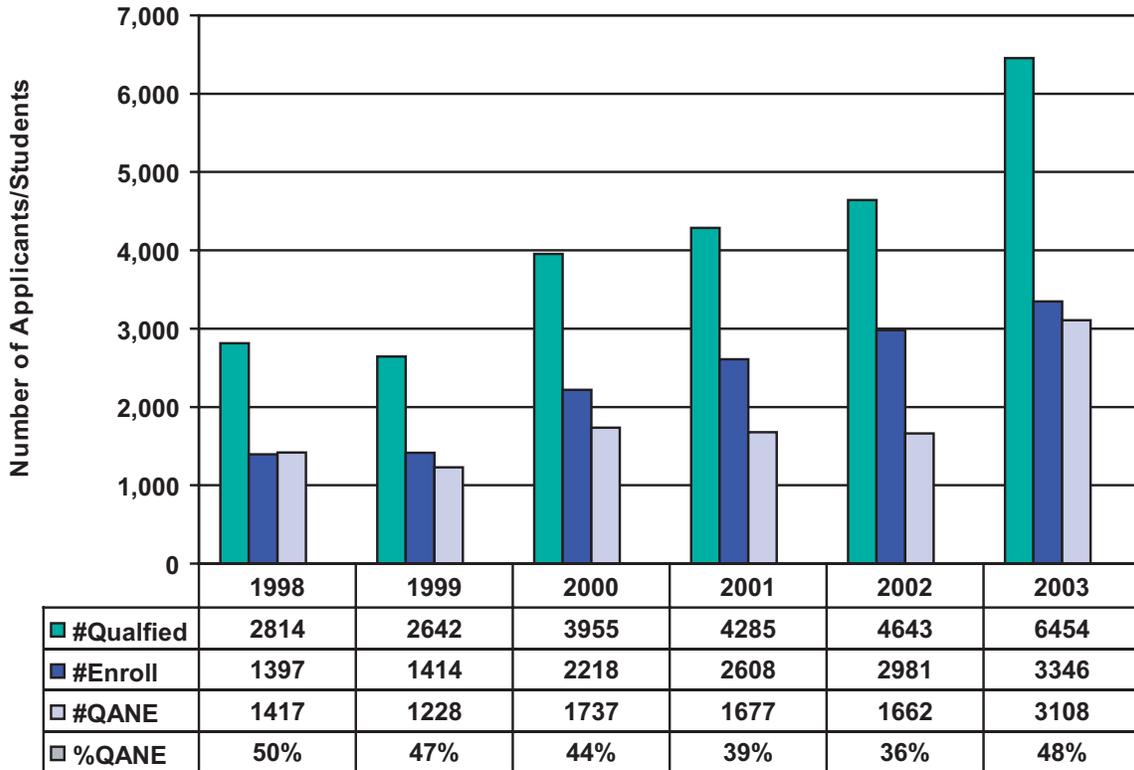


QANE = Qualified Applicant Not Enrolled

Data Source: Texas Board of Nurse Examiners  
 Prepared by: Nursing Workforce Data Section, Center for Health Statistics, Texas Department of Health, April 27, 2004

Figure 1.6.

**Baccalaureate Nursing Programs in Texas**



**QANE = Qualified Applicant Not Enrolled**

Data Source: Texas Board of Nurse Examiners  
 Prepared by: Nursing Workforce Data Section, Center for Health Statistics, Texas Department of Health, April 27, 2004

In the Board of Nurse Examiners' 2003 report on professional nursing education programs, the nursing programs reported that the most frequent reason for not admitting qualified applicants was a lack of budgeted faculty positions.<sup>8</sup> The other most common reasons were a lack of qualified faculty applicants, limited classroom space, and a lack of clinical spaces.<sup>9</sup> The School of Nursing Capacity Study will also obtain data as to what additional human, physical, and financial resources are needed in order for nursing programs to be able to increase enrollment by 20 percent.

**Field Of Study Curriculum**

The Coordinating Board approved the Field Of Study Curriculum (FOSC) for Nursing in July 2002. This allows students who complete a set of courses at any Texas public college, university, or health science center to be able to transfer these courses to another Texas public college, university, or health science center. Students who have not finished their ADN would have a seamless transfer of credit where they would not have to repeat course work they have already completed. For students who graduated with an ADN, they would be able to complete a one-semester bridge course for the

ADN-to-BSN transition. For transfer students in BSN programs, completion of the FOSC will save them up to two years of repetitive course work. The Coordinating Board will be evaluating the FOSC in nursing programs for effectiveness in providing a smooth articulation and transfer from one public educational institution to another and in improving graduation rates and the length of time it takes to graduate.<sup>10</sup>

### **Articulation and Mobility Options in Professional Nursing Programs**

In the Board of Nurse Examiners' 2003 Annual Report on nursing education, a total of 73 (90 percent) of 81 nursing programs (this does not include the alternate entry master's program) reported using some type of articulation option, which is a planned process between two or more educational systems to assist students in making a smooth transition from one level of education to another without duplication in learning.<sup>11</sup> In 2003, the two diploma programs and 46 ADN programs reported having some type of mobility option for LVNs to progress through the nursing program in a shorter period of time. There were nine ADN programs that also offered a mobility option for paramedics. In addition to the four RN-to-BSN programs, 22 BSN programs offered a mobility plan for RNs to obtain a BSN degree. All of the nursing programs, except for two ADN programs, have some type of mechanism in place to grant advanced placement. It is interesting to note that there was a decrease between 2002 and 2003 of two ADN programs (39 vs. 37) and one RN-to-BSN program (4 vs. 3) that do not grant credit by direct transfer — the first decrease in five years. The number of programs granting advanced placement with a transition course (53 vs. 47) or with completion of a designated course (40 vs. 35) also decreased compared to the previous year's data.<sup>12</sup>

### **Innovations in Nursing Programs**

As of October 2003, 22 nursing programs offered courses at 44 locations other than their institution's main campus. The Board of Nurse Examiners approves these locations as distance education initiatives (DEIs), where a single course, multiple courses, or an entire identical curriculum could be offered. Ten of the ADN programs operated 13 DEIs, 11 BSN programs operated 30 DEIs, and one RN-to-BSN program operated one DEI. In 2003, there were 610 unlicensed students enrolled (4 percent of total enrollment) in DEIs and 177 (3 percent of total graduates) unlicensed students (3 percent of total graduates) involved in DEIs who graduated.

In 2003, there was an increase in the number of nursing programs that offered online courses to students. Sixteen (32 percent) of the ADN programs and 13 (52 percent) of the BSN programs reported to the Board of Nurse Examiners that they offered one or more courses through the Internet. This reflects an increase from 2002, when 12 (24 percent) ADN programs and 9

(36 percent) BSN programs offered Internet courses.

The Nursing Innovation Grant Program (NIGP), which is administered by the Texas Higher Education Coordinating Board, provided \$3.04 million in the 2002–03 biennium and \$3.9 million in the 2004–05 biennium to support nursing programs that offer innovative solutions for increasing nursing enrollments, retaining nursing students (including minority students), and recruiting and retaining nursing faculty.<sup>13</sup> For 2004–05, 42 grants were awarded. Additional grants in the fall of 2004 will fund large pilot projects through 2007.

The University of Texas Medical Branch (UTMB) in Galveston is one of the health science centers that serve as beta sites for the development and testing of a nurse residency program. UTMB's Nurse Residency Program includes a series of learning and work experiences designed to support BSN graduate nurses as they transition into their first professional position, and is designed for direct care roles in acute care health science centers. The program is provided through a collaboration with the health science center and a baccalaureate school of nursing. The program is one year in length and includes a curriculum with units on leadership, patient outcomes, and the professional role. Throughout the residency, there is a strong focus on critical thinking skills, using actual case scenarios with the guidance of resident facilitators. The resident facilitators are clinical nurse specialists, educators, senior clinical nurses, managers, and clinical faculty from schools of nursing. The objectives of the UTMB Nurse Residency Program are to:

- Transition from advanced beginner nurse to competent professional nurse in the clinical environment.
- Develop effective decision-making skills related to clinical judgment and performance.
- Provide clinical nursing leadership at the point of care.
- Strengthen commitment to nursing as a professional career choice.
- Formulate an individual development plan.
- Incorporate research-based evidence linked to outcomes in clinical nursing practice.
- Decrease new graduate turnover rates.<sup>14</sup>

### ***Nursing Workforce Impact on Patient Safety***

It has been well documented through research that a strong correlation exists between adequate levels of registered nurse staffing and safe patient care. According to a study published in May 2002, a higher proportion of nursing care provided by registered nurses and a greater number of hours of care by them per day is associated with better outcomes for hospitalized patients.<sup>15</sup>

In an August 2002 report released by the Joint Commission on Accreditation of Healthcare

Organizations (JCAHO) entitled *Health Care at the Crossroads: Strategies for Addressing the Evolving Nursing Crisis*, its authors found that a shortage of nurses in America's hospitals is putting patient lives in danger. The JCAHO examined 1609 hospital reports of patient deaths and injuries since 1996 and found that low levels of nursing staff were a contributing factor in 24 percent of the cases.<sup>16</sup>

More recently, the Institute of Medicine (IOM) released a report in 2004 entitled *Keeping Patients Safe: Transforming the Work Environment of Nurses* that built upon the recommendations and findings in two prior IOM reports, *To Err Is Human: Building a Safer Health System* (2002) and *Crossing the Quality Chasm: A New Health System for the 21st Century* (2001). Numerous recommendations are included in this latest report that, if implemented, IOM believes will create the necessary patient safeguards in the work environment of nurses.<sup>17</sup>

In summary, the SHCC's intent is to discuss and propose possible solutions to the critical nursing shortage in the context of a greater need for system change in the delivery of health care. Numerous projects are being conducted within the state and nation to address nursing issues such as implementation of recruitment and retention strategies, identification of new sources of nurses, and proposing improvements in the nursing faculty infrastructure. The SHCC acknowledges that these are critical issues that must be addressed and fully supports these efforts. However, the intent of the recommendations contained in this document is to speculate as to how nurses can best address patient needs in a new model of health delivery that will be required to both produce better outcomes and cost less.

Nurses will continue to serve a critical role in delivering care in the acute care setting due to their level of critical thinking skills and their training and education. Future models will likely place a huge value on nurses in the management and prevention of chronic disease. Public health nurses and school nurses could play a significant role in the prevention of chronic disease. Future health care models should emphasize having the right health professional in the right place, at the right time, with the right skills, competencies, and training. For maximum results, interdisciplinary health professional teams could be used to manage chronic disease at the community level. Health professionals, lay providers, and volunteers could enhance patient education and care reinforcement at levels throughout the continuum. The level of intervention and the training of the person providing the intervention would be determined by the acuity level or the stage of the patient's disease. Technology could be used in many ways to monitor patient compliance, assess the patient's condition, and improve access to care. Technology could also be used to educate consumers and to improve the health literacy of the population.

A new division of labor in health care delivery could be considered that would strategically place the right health professionals, trained with the appropriate competencies, within the health care

delivery continuum, where they could make the largest contribution to patient outcomes at the least cost. All would agree that mechanisms must be in place to guarantee patient safety. These could come in the form of treatment guidelines that are developed from evidence-based medicine and taught to health professionals throughout their training and educational programs. Medical and continuing education programs could reinforce the use of these guidelines and introduce new guidelines as well as providing a system for health professionals to demonstrate continued mastery of the designated competencies for their profession.

Guidelines should be reviewed and adopted by an interdisciplinary team of appropriate medical specialists for each disease category and related diagnoses. Methods and processes for the ongoing collection of outcome data should be implemented from the beginning to provide continuous quality assurance. This scientific approach could set the stage for exploring successful delegation within the existing scopes of practice. It could also open dialogue for possible areas in which a change in the scope of practice might prove desirable and feasible. These considerations would interrelate with numerous other issues such as reimbursement, liability, and definition of the individual patient's responsibility in the continuum.

In future models, establishing the initial diagnosis, developing the treatment plan, and prescribing medications would probably occur similarly to current models, except these activities will occur much more frequently using technologies such as telehealth. Acute episodes of illness and skilled services would also be managed similarly to current models. However, new models could differ from existing models in the coordination of care from the point of diagnosis and in the long-term management of chronic disease. Models that successfully manage chronic disease in the community, while simultaneously involving the patient in the management of his/her disease, will have the maximum potential to produce savings for the health care system. Prevention of chronic disease will be a second arena that will maximize returns on investment, while having the value-added aspect of improving patients' quality of life.

### ***Current Status of Primary Care Delivery in the United States and Texas***

The delivery of primary care and the design of primary care are strategically situated within the larger health care delivery system. Changes to the primary care delivery system have the potential to have the greatest positive effect on the overall health status of the population and on the cost of providing care to any population. The obvious reason is that the primary care provider is the first point of contact and the ongoing medical home for most patients. Numerous studies suggest that patients with a primary care home benefit with improved outcomes and decreased cost to the health care system as a whole. The primary care environment is the most effective and/or efficient point for managing chronic disease, which represents the highest ongoing cost of health care delivery.

Documented research in chronic disease management substantiates the need to incorporate evidence-based practice guidelines in the treatment of chronic disease. Models can support adherence to evidence-based medical practice guidelines by providing medical treatment guidelines to physicians and other providers, by reporting the patient's progress in compliance with guidelines, and by providing support services to assist the physician in monitoring the patient. Additionally, services to enhance patient self-management and adherence should be built into health services. Consideration should be given to cost-effective technology to improve health outcomes. Ultimately, the collection and analysis of measures of process and outcomes must be incorporated from the beginning and continue over time.

Although family physicians, nurse practitioners, and physician's assistants function interdependently within the primary care delivery system, very little has been accomplished in terms of coordinated growth of the primary care workforce. The quality of state and national data varies from profession to profession and from state to state. Consequently, very little factual information is available about the primary care workforce. Although we do know that tremendous growth has taken place in the production of these health professionals in the last ten years, such growth has taken place in an environment without any obvious attention to coordination.

The American Academy of Family Physicians, in a one-pager brief published in 2001, substantiates the lack of coordinated planning. In this article, the Academy stresses that family physicians, nurse practitioners, and physician's assistants are distinctly different in their clinical training, yet they function interdependently. Together, they represent a significant proportion of the primary care workforce. Although the training capacity for these three professions has increased rapidly over the past decade, almost no collaborative workforce planning has occurred.<sup>18</sup>

In Texas, the supply of family practice physicians increased from 2,951 in 1990 to 4,932 in 2003, representing an increase of 67.1 percent. Nurse practitioners increased from 964 in 1991 to 4,185 in 2002, for an increase of 438.9 percent. Likewise, the number of physician assistants increased from 622 in 1991 to 2,880 in 2003, for an increase of 363 percent.<sup>19</sup> As at the national level, no apparent collaborative workforce planning occurred. It should be noted that if Texas moves toward integrated models as a way to improve quality and decrease cost, it is imperative for these professions to consider looking collaboratively at workforce planning.

### **Policy in Texas: Projects Affecting Primary Care Delivery**

Several major projects that relate directly or indirectly to primary care delivery are being conducted within the state. The Texas Medicaid and CHIP Medicaid Reform Workgroup is currently studying possible proposals to increase the efficiency of and create cost savings in the Medicaid program. Numerous other cost control strategies resulted from the 77th and 78th Legislative

Sessions, including attempts to employ disease management programs to improve patient outcomes and decrease cost to the program.

Also, Texas is working to implement the recommendations included in the President's New Freedom Commission on Mental Health's final report, *Achieving the Promise: Transforming Mental Health Care in America*, issued in July 2003. A New Freedom Commission summit was held in Austin on October 20–21, 2003 to discuss methods that Texas can use to ensure that the recommendations contained in the report are successfully implemented. Under Goal 5: Excellent Mental Health Care Is Delivered and Research Is Accelerated, Recommendation 5.3 emphasizes that states should work to improve and expand the workforce, providing evidence-based mental health services and supports.

In 2002, the Texas Department of Health first convened partners in Texas' public health system to identify shared priorities and actions for improving the health of Texans. The Texas State Strategic Health Partnership is comprised of public and private organizations that have come together to share responsibility and accountability for creating a healthier Texas. Highlights of partnership activities include:

- identifying 12 priority public health improvement goals;
- issuing the *Texas Declaration for Health*, committing partnership agencies; and
- establishing work groups to identify strategies to reduce health risks for Texans.

The Texas State Strategic Health Partnership focuses on enhancing the essential public health services to benefit all Texans and on making prevention of diseases and illnesses a priority.

Recognizing the need to develop a shared vision of health and health care delivery for the state of Texas, the Texas Institute for Health Policy Research launched the Shared Vision Project. To create this vision, the Institute is establishing a forum for dialogue among the leaders of Texas' health care providers, payers, and consumers for informed decision making. This collaborative effort is an important statewide effort that brings stakeholders together to provide leadership in developing innovative products and ideas to improve the state's access to health care and the quality and cost effectiveness of that care.

The project is producing Texas' first Shared Vision for Health Care and is grounded on two premises. First, there is no model of delivery of health care services or vision for what a model should be in Texas. Second, all stakeholders are dissatisfied, to varying degrees, with the current "system" of health care delivery.

Finally, the Federally Qualified Health Center (FQHC) Incubator Program, administratively located within the Texas Department of State Health Services, was funded during the 78th Regular

Legislative Session. The program seeks to increase new access point funding as well as funding for service expansion and expanded medical capacity. The strategy of the program is to increase local capacity in a sustainable manner. Therefore, the Incubator Program stresses securing FQHC look-alike status in the process of pursuing full FQHC funding.

## Conclusion

Primary care is in crisis and the crisis will likely continue due to the dramatic changes occurring in the population and in the increased incidence of disease associated with that change. Leaders in primary care urge a concerted, national effort to reconstruct primary care in order to care for our increasingly older, chronically ill, and diverse population. Without a major reconstruction in the way primary care is provided, a very costly medical, financial, and human crisis is inevitable.<sup>20</sup>

Health care must become patient centered and must serve the needs of the patient. The goal of primary care systems should be the delivery of the highest quality care as documented by measurable outcomes. Quality outcomes in primary care should be based on evidence-based medicine and enhanced by the use of practice guidelines and clinical guidelines.

Information technology should be used not only to increase provider reimbursement but also to better manage patient care over time and to improve access and decrease disparities in the delivery of health care. However, careful studies will be required to implement the use of electronic technology in a manner that enhances practice workflow and division of labor.<sup>21</sup>

As the delivery system for primary care is redesigned, it is imperative that special attention be paid to health workforce planning. Careful consideration should be given to the numbers and types of health professionals and also to the competencies that each type of health professional should acquire during education and training. Emphasis should also be given to ongoing mastery of the competencies throughout the health professional's career. Additional consideration must be given to revitalizing primary care education and training to include patient-centered, outcome-oriented, interdisciplinary team-based care. In an effort to reduce racial-ethnic disparities in primary care, attention should be paid both to policies aimed at improving potential access and to providing linguistically appropriate services.<sup>22</sup> The Institute of Medicine report, *In the Nation's Compelling Interest: Ensuring Diversity in the Health Care Workforce*, released on February 5, 2004, recommends that health education institutions and state governments take immediate steps to increase and enhance diversity in the health professions.<sup>23</sup>

Coordinated health workforce planning should emphasize having the right health professional with the right competencies strategically placed within the health care continuum. This will ensure that a health care delivery system is in place that will provide the most cost-effective, highest quality health care to all.

### 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.

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. The Legislature should require all health professions licensing boards to standardize the collection of critical data by implementing the Minimum Data Set developed by the Statewide Health Coordinating Council. (See Appendix E.)
2. The Legislature and regulatory boards should allocate funds to support the collection of health workforce supply and demand data and to support needed research based on these data. (It would be desirable if other health professions could replicate the Nursing Workforce Data Section concept.)
3. The Legislature should realign health workforce licensure and regulatory agencies in a structure that is better able to collaborate and coordinate health workforce planning and data collection to enable Texas to be more responsive to potential funding opportunities.
4. The Legislature should pass legislation to require health professional licensees and applicants to disclose ethnicity information and should instruct regulatory boards and educational institutions to collect, compile and report it, using the U.S. Census ethnicity categories as the basis for collection.
5. The Legislature and the Texas Higher Education Coordinating Board should develop and implement positive financial incentives for schools that create innovative models in education for the health professions that will move toward shared or combined curricula, interdisciplinary classes across health programs, and the use of multidisciplinary faculty or interdisciplinary teams among the health programs.
6. The Legislature should continue to support the College for Texans Campaign administered by the Texas Higher Education Coordinating Board to ensure diversity and minority participation in higher education. (For information on the program, visit <<http://www.collegefortexans.com>> or <<http://www.theccb.state.tx.us/SAMC/overview/>>.)

7. The Legislature should instruct the Texas Higher Education Coordinating Board to develop and implement field of study curricula for additional health profession programs and require adoption of these curricula by public educational institutions to encourage and promote a seamless transition and career mobility within the professions.
8. The Legislature should support initiatives that result in the creation of a representative and culturally competent health workforce for Texas. This could include items such as
  - 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 reducing the loss of intellectual capital across countries and regions, and
  - the addition of multilingual and technological competencies.
9. The Legislature should direct the regulatory boards for the health professions to permit exceptions to their regulations to facilitate the increase in innovative, outcome-oriented demonstration projects.
10. The Legislature should support initiatives that will promote the application of technology in all areas of health education and all areas of clinical care throughout the health care continuum. This should include applications for initial professional and continuing education, recruitment and retention efforts, health care practice, and community health education.
11. The Legislature should support 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.

***Nursing Workforce Recommendations***

1. The Legislature should increase funding levels to nursing programs throughout the state to increase capacity to admit and graduate nursing students.
2. The Legislature should continue to support 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.

3. The Legislature should instruct health professions and other regulatory agencies and boards to support strategies that would incorporate the use of technology to reduce paperwork and streamline the process required by regulatory agencies to that which is truly necessary for quality patient care.
4. The Legislature should provide institutions with Special Item funding to support enrollment increases in nursing programs and stimulate graduate programs that prepare nursing faculty, and establish procedures that would confirm that these special allocations for nursing programs are spent for these purposes.
5. The Legislature and the Texas Higher Education Coordinating Board should create positive incentives for schools that develop and implement innovative solutions between schools that will result in an increase in the number of entry-level nursing students. This could include the sharing of faculty and classes among nursing degree programs.
6. The Legislature and the Texas Higher Education Coordinating Board should reinforce the implementation of the Field of Study Curriculum for nursing programs to facilitate a seamless, student-oriented articulation from ADN to BSN programs.
7. The Texas Higher Education Coordinating Board and the Texas Board of Nurse Examiners should encourage educational institutions to add appropriate accelerated degree programs at all levels of nursing.
8. The Texas Higher Education Coordinating Board and the Texas Board of Nurse Examiners should encourage institutions to use technology, preceptors, simulation, etc., to maximize the use of existing and new faculty, while ensuring quality outcomes and increasing student enrollments.
9. The Texas Higher Education Coordinating Board should encourage the development of regional “nursing centers of educational excellence” to consolidate redundant tasks performed by educators at individual institutions.
10. The Legislature should support initiatives that promote healthy workplace environments for nursing personnel.
11. The Legislature and the Texas Higher Education Coordinating Board should study avenues to expand nurse-midwifery educational programs.

***Primary Care Recommendations***

1. The Legislature should support initiatives that will support public health prevention and education programs in an effort to decrease the incidence and severity of chronic disease in the population by enabling individuals to take personal responsibility for their health.
2. The Legislature should reinstate general revenue funds in support of the Medicaid draw-down of federal funds for graduate medical education to 2002–03 biennial levels as a way of maintaining physician supply.
3. The governor and the Legislature should work with others to actively and urgently seek relief from the Centers for Medicare and Medicaid Services to eliminate the current outdated caps on funding graduate medical education training slots and to increase and distribute the funds according to geographically equitable calculations.
4. The Legislature should restore general revenue funding for graduate medical education and the Family Practice Residency Program through the trustee funds to the Texas Higher Education Coordinating Board to the 2002–03 biennial levels.
5. The Legislature should provide the Texas Higher Education Coordinating Board new state funding to support 300 new resident positions, to be funded at \$50,000 per position and phased in over a four-year period, and should contain fifth-year continuation funding.
6. The Legislature should increase funding levels for the Physician Education Loan Repayment Program by mandating that all Texas medical schools that receive state funds participate in the “two percent set aside.”
7. The Legislature should provide Special Item funding to support enrollment increases at the state’s pharmacy schools to help relieve the current shortage of pharmacists in the state.
8. The Legislature should continue to support the increase in the numbers of Federally Qualified Health Centers in Texas.
9. The Legislature should support methodologies for the development of innovative models for the delivery of primary care that would include physical, mental, and oral health.
10. The Legislature should support demonstration projects that use interdisciplinary teams of health professionals for prevention and management of chronic disease and that utilize a new, correct mix of caregivers and responsibilities.

11. The Legislature should support changes in Medicaid, Children’s Health Insurance Program, and Texas Vendor Drug Program rules and policies to trace outcomes and increase accountability by
  - identifying the practitioner that prescribed the drug instead of the delegating physician,
  - requiring all providers to bill services under their own names, and
  - increasing Medicaid and Children’s Health Insurance Program reimbursement for advanced practice nurses to 92 percent of the physician’s rate.
12. The Legislature should take steps to ensure cost savings by including Advanced Practice Nurses in state health care networks such as Employees Retirement System of Texas, Teacher Retirement System of Texas, and the Texas Workers’ Compensation Commission.
13. The Legislature should direct its Office of State and Federal Relations to encourage federal legislation that allows Nurse Practitioners, Clinical Nurse Specialists, and Physician Assistants to order home health care services, and then change state regulations accordingly.
14. The Legislature should support legislation, regulation, and reimbursement methodologies that will support the training and use of state certified community-level health providers to assist in the cost-effective management of health care.
15. The Legislature should provide positive financial incentives for providers who implement the use of evidence-based health care and the use of outcome-based practice guidelines that have been approved by an agreed upon nationally recognized health association.

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