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## ABSTRACT

Staff members of the Tennessee Board of Regents (TBR) and the Tennessee Higher Education Commission worked jointly to establish a task force to investigate and develop recommendations for addressing the workforce shortages in nursing and allied health in Tennessee. The investigation established that Tennessee already has a workforce shortage of health care professionals, especially registered nurses, and that the shortage will become critical over the next 10 to 15 years. The task force recommended that TBR institutions apply for the federal grants available through the Nursing Reinvestment Act. The following are among the eight recommendations addressed to TBR institutions with academic programs in nursing and allied health: (1) direct marketing efforts to include partnering with local school systems, advocating for legislative support for nursing education, launching aggressive marketing campaigns, and seeking out new ways to expand diversity in nursing programs; (2) present programs in ways that connect with the new generation through technology and increase retention efforts; (3) remove barriers to acquiring skills by improving articulation; (4) consider development of collaborative programs, particularly at the graduate level, to address the need for advance practice nurses and the urgent need for nursing faculty; and (5) continue to support the retraining of displaced workers in the Tennessee Technology Centers' licensed practical nurse programs. (MN)

## NURSING AND ALLIED HEALTH SHORTAGES: TBR RESPONDS

### Introduction

In June 2002, the Tennessee Board of Regents (TBR) directed staff to form a task force to assist with an investigation of workforce shortages in nursing and allied health in Tennessee, and to make recommendations as to how TBR institutions should respond. The Tennessee Higher Education Commission (THEC) is working on a white paper to address this issue and will be available in Spring 2003. TBR staff collaborated with THEC staff to establish a task force, investigate the problems, and to make recommendations. This report will document the severity of the problem, identify initiatives and organizations that are addressing the problem, and summarize recommendations and future responses for TBR institutions to consider.

### Significance of Workforce Shortages

Dr. Linda Aiken, Director of the Center for Health Outcomes and Policy Research at the University of Pennsylvania School of Nursing, conducted a study of 168 hospitals in Pennsylvania and included 10,000 registered nurses (RNs) and 232,000 surgical patients with common surgeries. The research, published in October 2002 in the *Journal of the American Medical Association*, concluded that high patient-to-nurse ratios result in higher risk-adjusted 30-day mortality and failure-to-rescue rates, and nurses are more likely to experience burnout and job dissatisfaction. Dr. Aiken found that for each additional patient over four in a registered nurse's workload, the risk of death increases by 7% for surgical patients. Patients in hospitals with the lowest nurse staffing levels (eight patients per nurse) have a 31% greater risk of dying than those in hospitals with four patients per nurse. On a national scale, staffing differences of this magnitude could result in as many as 20,000 unnecessary deaths annually. Another finding indicates that each additional patient per nurse is related to a 23% increased risk of nurse burnout, a 15% increased risk of job dissatisfaction and results in high turnover or nurses leaving the profession. The cost of replacing a hospital specialty nurse has been estimated to be \$64,000. Thus satisfactory staffing levels for RNs can save money, save lives, and help retain staff. But, staffing levels cannot be maintained with a critical workforce shortage.

It has become disturbingly clear that the United States faces an uncertain future about the adequacy of its nursing workforce and in some areas of allied health. The current shortage does not appear to be a cyclical event as were previous shortages. Reports from numerous sources document the reality of an approaching crisis, not only for the United States, but worldwide. According to a report from the Department of Health and Human Services, "Projected Supply, Demand, and Shortages of Registered Nurses: 2000-2020", the nation's nursing shortage is projected to worsen significantly over the next two decades. The HHS report is available at <http://bhpr.hrsa.gov/healthworkforce/rnproject>. It shows that the national shortage of 6% in 2000 will double by 2010, and will be at 20% by 2015 and 29% by 2020.

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## The Workforce Shortage in Tennessee

Data extracted from the HHS report shows that Tennessee is projected to have the most critical shortage of all states comprised by the Southern Regional Education Board (SREB) by the year 2020. Projections for the supply versus demand of FTE Registered Nurses in Tennessee, as compared with the SREB average and the national average are provided in Table 1.

Table 1. 2000-2020 Projections for Shortages of RNs in Tennessee, the SREB, and the U.S.

State		2000	2005	2010	2015	2020
Tennessee	Shortage in #s	-6798	-12,455	-19,050	-27,110	-36,205
	Percent Shortage	-13%	-22%	-31%	-40%	-48.5%
SREB (average)	Shortage in #s	-26,409	-49,662	-93,768	-176,335	-288,085
	Percent Shortage	-4%	-7%	-13%	-23%	-38.7%
United States (average)	Shortage in #s	-110,707	-149,387	-275,215	-507,063	-808,416
	Percent Shortage	-6%	-7%	-12%	-20%	-28.8%

Tennessee is also experiencing shortages in several areas of allied health that are projected to worsen over the next decade. In addition to shortages of RNs, data collected by the Tennessee Hospital Association (THA) demonstrates existing workforce shortages for other healthcare professionals. In particular, there are critical shortages in some counties in Tennessee for LPNs, Radiologic Technologists, Surgical Technologists, and Pharmacists. According to Occupational Employment Projections from the U.S. Bureau of Labor Statistics, more than half of the 30 fastest growing jobs in the nation during this decade will be in allied health. RNs are projected to be the fastest growing and LPNs are ranked fifth among health occupations. While shortages exist across the state, in East Tennessee the greatest need for RNs is in the Chattanooga area. The area surrounding Nashville is experiencing similar shortages. Based on data provided by THA, the greatest shortages are in West Tennessee, and in particular the counties of Shelby and Weakley. In Memphis, the nurse to patient ratio is as high as 1:12.

THA data is self-reported through hospitals' Joint Annual Report. It does not reflect vacancies among other healthcare providers, such as home health or long term care. Rural settings often have no hospital or a small one where the needs are low for acute care. However, rural areas of Tennessee have unique challenges even if they report low vacancies. Because the applicant pool is usually small in rural areas, it may take longer to fill one vacancy in a rural area than many vacancies in an urban area. Also, if a hospital only employs four medical technicians and has two vacancies, it will have a much greater impact than two vacancies in a hospital with more technicians who can "cover" for the vacancy. Hospitals in rural areas find it difficult to compete with the salaries and incentives offered by the hospitals in urban areas. Therefore, the projected need in the rural areas of Tennessee is greater than is reflected by reported vacancies.

## Reasons for the Shortage

The reasons for the shortage are varied. Contributing factors cited in a report for the Robert Wood Johnson Foundation, "Health Care's Human Crisis: The American Nursing Shortage" include:

- Aging Population - As the Baby Boomers move into their mid-50s, their need for medical services increases.
- Aging Workforce - The average age of practicing RNs is now 45. Many nurses are considering alternatives to their high-stress jobs.
- Fewer Workers - The workforce coming along behind the baby boom is smaller, meaning fewer replacement nurses are available.
- Mismatch on Diversity - The racial and ethnic makeup of the current nursing workforce does not reflect the increasing diversity of the U.S.
- Declining Enrollments - Generation X, the prime source of young workers, perceives nursing as unappealing; therefore, fewer are choosing the field. Also, faculty shortages, lack of clinical sites for training, and lack of adequate facilities are often cited as reasons for turning students away. Many applicants are not academically prepared and require developmental education. Passage rates on the NCLEX-RN exam are also declining.
- Increased Career Options - Women, who make up 94% of the nursing workforce, have many more career options than in the past, both before and after entry into the profession.
- Increased Medical Services - The sheer number of medical and health care services available has increased drastically due to knowledge and technology, requiring more nursing services and a higher degree of training.
- Increased patient acuity - Because managed care has kept people who are not acutely ill from occupying patient beds, patients who are hospitalized are sicker and require more nursing services and time with the patient.
- Consumer Activism - Growing consumer empowerment, increasing awareness of medical errors and the backlash against managed care have led health care consumers to insist on vigilant participation in their care.
- Job Dissatisfaction - Fewer resources and greater demands have resulted in dissatisfaction. Reasons cited by those who leave include the number of hours they are asked to work, the lack of flexibility in the 24/7/365 schedules, the stress of caring for several acutely ill patients at any given time, increased paperwork, increased training and skill requirements without commensurate compensation, and other non-nursing duties assigned to or expected of them.

## TBR Task Force Recommendations

On October 1, 2002 TBR and THEC hosted an *Open Forum: Nursing and Allied Health Professions in Tennessee-Faculty and Workforce Shortages*. Task force members representing experts from higher education, from healthcare administration, and practitioners served as a panel (Appendix A). Each member gave a presentation on the

shortages and provided recommendations to address the problems. Those invited to attend the open forum included presidents of community colleges and universities from the TBR and UT system, and a representative from private universities. Chief academic officers, representatives from the TTCs, deans and directors of nursing and allied health programs, Board members, Commissioners, and representatives from the legislature were also invited. Approximately, 60 people attended and participated in a discussion after presentations. The purpose of the open forum was to:

1. Inform decision makers of the seriousness of workforce shortages in the region and state,
2. Increase awareness of organizations already addressing these issues and the role of higher education,
3. Identify ways higher education institutions can participate in existing initiatives, and
4. Promote collaboration among stakeholders in order to form public/private partnerships to optimize use of limited resources.

Fifty-three (53) recommendations were compiled from the discussions at the open forum. A survey was prepared for the purpose of prioritizing the recommendations. The survey was sent to the Deans and Directors of Nursing and Allied Health Programs in both public and private institutions of higher education, and to members of the Tennessee Center for Nursing Executive Board. This included representatives from the Tennessee Hospital Association, Blue Cross/Blue Shield of Chattanooga, Tennessee Association for Rural Health, representatives from several related associations, and health care providers. Twenty-three (23) responses were received, for a 48% rate of return. The top 10 recommendations, based on priority rank and the need to implement immediately are as follows:

1. Improve the work environment. (While healthcare providers bear direct responsibility for the work environment, it is also the role of education to prepare nurses and healthcare administrators to be effective leaders and to develop appropriate management skills.)
2. Support the work of the Tennessee Center for Nursing.
3. Increase faculty salaries to be competitive with fair market value.
4. Encourage faculty to mentor new nursing faculty and students.
5. Develop creative strategies to retain faculty and use the talents of retired faculty.
6. Remove barriers in General Education, especially related to students pursuing second degrees.

7. Promote initiatives to address the faculty shortage, such as establishing loan forgiveness programs for graduate students, creating industry/education partnerships so that clinical practitioners can be provided release time to serve as faculty, and make graduate nursing education more accessible.
8. Identify and encourage the use of federal grant programs.
9. Revise the funding formula to weigh high cost programs similar to graduate programs in order secure adequate funding.
10. Encourage on-going dialogue among members of the TBR Task Force. Continue to keep the issues at the forefront for stakeholders and communicate new initiatives and partnering opportunities that address the issues.

A detailed analysis of the survey is provided in Appendix B. The survey provides numerous recommendations that will serve to guide the development of new initiatives.

#### **Other Initiatives Identified by Task Force Members**

Earlier this year the Tennessee Hospital Association (THA) and Tennessee Hospital Education and Research Foundation created the Center for Health Workforce Development in Tennessee, through a \$774,000 grant from the U.S. Department of Health and Human Services. The Center will work with hospitals and other organizations, including higher education institutions, to develop strategies and solutions to the healthcare workforce shortages. Several TBR institutions are represented on the Advisory Board of the Center.

TBR staff and Deans and Directors and faculty of nursing programs from TBR universities, community colleges, and technology centers are represented on the Executive Board and various committees of the Tennessee Center for Nursing (TCN). Specifically, TCN's Statewide Education Committee recently completed the RN-BSN grid to promote better articulation between associate's degree and bachelor's degree programs in nursing. The committee is now working to establish pathways to promote easier movement from LPN to RN programs. The Tennessee Center for Nursing, Inc. (TCN), established in 1996, is a statewide non-profit organization composed of nursing educators, providers, insurers, business representatives, policy makers, consumers, and representatives of professional nursing organizations. The TCN established a statewide consortium to guide the ongoing development of an appropriate nursing work force, to conduct nursing work force analyses, to propose recommendations for nursing education and practice reform, to disseminate the findings and recommendations, and to develop an ongoing system to address the nursing workforce needs of Tennessee.

Numerous partnerships with the healthcare industry are providing models to increase enrollments and promote collaborative efforts between education institutions at all levels, the community, and the healthcare providers. Health Corporation of America (HCA) is providing \$500,000 to fund more than 100 forgivable loan/scholarships for students enrolled

in nursing and allied health programs in Middle Tennessee. HCA offers mentoring programs as well as financial support for those who are already in the field and want to specialize. HCA is working with local workforce investment boards and colleges and universities to expand capacity. Scholarship recipients agree to work for an HCA hospital after graduation for a time equal to the length of their training.

West Tennessee Healthcare, a system of six hospitals in Jackson, Tennessee, recently committed \$550,000 over three years to the nursing program at Jackson State Community College (JSCC). These funds will be used to provide five additional faculty members and equipment. A 68% increase in enrollment over the next two years is now proposed at JSCC.

Numerous examples of such partnerships exist in Tennessee. Hospitals are increasingly providing release time for qualified practitioners so that they can teach in nursing programs. This support provides needed faculty, at no cost to the college or university. Nursing programs also depend on hospitals, clinics, and other healthcare providers to provide clinical training sites and preceptors for students during their clinical experiences.

In July of this year, the U.S. Congress passed the Nurse Reinvestment Act (HR 3487/S 1864) to address the nursing shortage. This action creates new programs to provide a comprehensive solution to the shortage. It establishes nurse scholarships, nurse retention grants, a faculty loan cancellation program, and provides funding for many other higher education initiatives.

### **Impact of TBR and Other Institutions**

TBR institutions graduated at all levels (A.A.S., B.S.N. Advanced Nursing Practices, and M.S.N.), an average of 1146 registered nurses per year over the past three years. Nursing programs are offered at all TBR universities and at nine of the community colleges. Walters State Community College has an agreement with Northeast State Technical Community College that provides access to a nursing degree through WSCC. TBR institutions have already developed many initiatives that will increase the number of nurses and allied health professionals in Tennessee.

In 2001, TBR staff conducted a survey at the request of the Tennessee Hospital Association to seek information about program capacity and to identify problems that hinder the ability to increase capacity. Responses were received from eighteen of the TTCs, six community colleges, three TBR universities, four universities in the UT system, and eight private universities. Most of the nursing and allied health programs were operating at or near capacity. A wide variation in completion rates was reported. Nursing was identified as the program with the greatest need to expand, but universities also included several areas of allied health. When asked to identify obstacles that hinder expanding enrollment, almost all responded that funding was the primary limitation. Beyond that, the lack of faculty, facilities, and clinical sites were identified most frequently. The primary reason for a shortage of faculty was reported to be low salaries that cannot compete with those being paid to clinicians. Several mentioned the need for training in Medical Informatics where

computer technology is emphasized. The need to offer classes at nights and on weekends was often suggested, and the limiting factor was faculty, not space.

### **Faculty Shortages**

The shortage of nurses with advanced degrees is considered to be more severe than that of entry-level nurses. Tennessee is one of six states in the region expected to have a critical shortage of nursing faculty. Based on a recent survey conducted by the SREB Council for Nursing Education, Tennessee is expected to have fifty nursing faculty retirements in 2003 and there appears to be less than 50 qualified replacements available. Some of the TBR nursing programs expect 50% of their faculty to retire within the next 5 years. Those same institutions have had unfilled vacancies for more than a year.

After a six-year decline in nursing enrollments, last year there was an increase in enrollments. However, without faculty, programs cannot increase capacity. Due to the shortage, the industry is heavily recruiting graduates and even faculty for clinical practice. Schools have been outbid for the candidates the schools wish to attract into teaching and the TBR system has lost both faculty and nursing program administrators to clinical practice over the past year. Salaries for master degreed nurse practitioners are approximately \$25,000 a year higher than the nursing faculty averages, according to the American Association of Colleges of Nursing.

Like the clinical shortage, the nursing faculty shortage is nationwide. According to the American Association of Nursing Colleges, 5,823 qualified applicants were turned away from nursing schools across the country last year because of a lack of faculty, clinical sites, and classroom space. More than one-third of the responding institutions cited faculty shortages as the reason.

Nationwide, the nursing faculty average age of 51 means that a flood of retirements is anticipated over the next several years, worsening the situation at a time when more nursing instructors are needed. In the 16 states of the SREB, there are 491 nursing schools and 1,666 nursing schools nationally. In 2000, there were 444 doctoral graduates in nursing or nursing related fields. The average age of these doctoral graduates was 46. And, within the SREB there are 971 faculty that are teaching without adequate credentials. The lack of adequate credentials for nursing faculty is a problem in Tennessee even now.

During the next legislative session for Tennessee, a bill will be introduced to establish a forgivable loan/scholarship program for graduate nursing students. Preference will be given to persons who can enter faculty or administrative positions in Tennessee immediately upon completion of their master's or post-master's degree program. This year the U.S. Department of Health and Human Services provided \$60 million aimed almost entirely at furthering nurses' options for advanced degrees. The Nurse Reinvestment Act, when funded, will target funding for this purpose.



Possible solutions that have been suggested to address the faculty shortage include:

- Create consortiums
- Expand use of the SREB Electronic Campus
- Establish faculty development programs
- Share faculty across schools, colleges, and even systems
- Increase use of educational technology through web-based courses
- Increase use of clinical and part-time faculty
- Develop joint clinical and faculty appointments
- Establish pipeline programs (i.e., BSN Honors Program, BSN to PhD option, directed student recruitment programs, nursing education specialty in graduate programs, post-master's teaching certificate program)
- Establish clinical partnerships to expand student capacity by sharing expert clinicians as faculty, using clinicians "on loan," and providing funding from clinical agencies to hire more faculty or provide salary stipends to encourage evening and weekend classes
- Target the top 10% of the junior and senior class to be recruited into teaching
- Consider using non-nurse faculty to teach clinical specialty courses or courses in research and statistics
- Enhance teaching capabilities of current faculty
- Encourage part-time and phased retirements
- Shorten the time between undergraduate and graduate study.

Perhaps these suggestions can be used to develop initiatives in TBR system to address this critical area of need.

### **Recommendations and Next Steps**

The Tennessee Board of Regents raised the question, "How should TBR institutions respond to the current and predicted workforce shortages in nursing and allied health fields?" The federal government, through the Nursing Reinvestment Act, approved \$250 million dollars to be used to promote nursing education and address the shortage. Stakeholders have been encouraged to write letters in support of its funding during the next legislative session. If funded, these funds will provide educational scholarships and grants to address the workforce shortage. *TBR institutions should apply for these grants, and many other grants being made available through healthcare corporations and the Division of Nursing with the U.S. Department of Health and Human Services.*

Several states, i.e., Utah, Nevada, Texas and Florida, have passed legislation, changing public policy, to increase capacity in nursing programs. Board members, THEC Commissioners, and TBR administration and staff should *continue to inform Tennessee's legislators of the role of higher education in addressing these shortages, the impact the shortage has on Tennesseans, and the importance of funding higher education programs and initiatives to address workforce shortages, especially the need for graduate programs to prepare nursing faculty and advanced practice nurses. Faculty salaries should be*

*competitive with the market level. Capital funding for facilities should also receive a high priority. More space is needed for classrooms and labs in order to increase enrollments.*

It is important that TBR administrators understand the severity of the projected workforce shortages in Tennessee and recognize that according to reports from many different sources, this shortage is real and not cyclical, like those experienced in the past. There is a need for more nurses prepared at all levels. *Deans and Directors of Nursing and Allied Health and the faculty should be encouraged to develop initiatives to address the shortage. Providing adequate support for these initiatives should receive a high priority.* TBR institutions with academic programs in nursing and allied should:

1. Direct marketing efforts to include partnering with local school systems, advocating for legislative support for nursing education, launching aggressive marketing campaigns, and seeking out new ways to expand diversity in nursing programs. Quality recruitment materials are available at minimal or no cost. The development of recruitment materials for nursing faculty is needed. A statewide recruitment campaign might be coordinated through the TBR system or through state organizations such as the Tennessee Center for Nursing.
2. Present programs in ways that connect with the new generation through technology and increase retention efforts.
3. Continue to build partnerships with healthcare providers that will increase scholarships, provide additional faculty, allow students to train with the latest technology and equipment, increase the number of clinical training sites, and insure *that programs are designed to meet the greatest need.*
4. Continue to support the work of the Tennessee Center for Nursing (TCN) by serving on committees to insure collaboration and coordination of program development and other initiatives throughout the state, for all levels of education. TBR faculty, staff and administrators must recognize and continue to be involved with the strategic planning and analysis of workforce data by the TCN, the Council for Deans and Directors of Nursing and for Allied Health, and the THA Center for Health Workforce Development.
5. Remove barriers to acquiring needed skills by improving articulation. Optimize the use of web-based courses, and create partnerships to test new models of teaching and learning. Create accelerated second-degree BSN programs, establish LPN to BSN bridge programs, and emphasize nursing education in graduate programs.
6. Consider development of collaborative programs, particularly at the graduate level, to address the need for Advanced Practice Nurses and the urgent need for nursing faculty. Higher education institutions must collaborate rather than “steal” each other’s faculty. Other states have developed models that

share courses and faculty statewide, i.e., Delaware. Similar models may well serve Tennessee. The SREB recommended the establishment of a regional consortium of graduate programs.

7. Identify ways of increasing enrollment within existing associate's and baccalaureate degree programs. The healthcare industry may provide release time of qualified practitioners to serve as faculty or provide funds to support stipends for current faculty to teach evening and weekend classes.
8. Continue to support the retraining of displaced workers as is being done in the Tennessee Technology Centers' LPN programs.

Finally, through the THEC and TBR program approval process, the Board will have the opportunity to carefully consider new program proposals and *insure that new programs are justified based on need, are appropriate to meet the needs of Tennessee, and will maximize the use of available resources through collaborative efforts to avoid unnecessary duplication. In addition, TBR institutions must actively and persistently seek to find additional support through industry partnerships, the community, and through grants and gifts.*

### **Summary and Conclusions**

Tennessee already has a workforce shortage of healthcare professionals, especially registered nurses. Projections show that the shortage will become a crisis over the next 10 to 15 years. Higher education institutions in Tennessee graduate approximately 1500 licensed nurses each year. Approximately 1100 of these students graduate from TBR institutions. The Tennessee Board of Nursing endorses more nurses out of the state than into the state each year. Almost half of the current nursing faculty will reach retirement age within the next 5 years. The TBR system has numerous unfilled vacancies and nursing faculty who are teaching with a bachelor's degree instead of the required master's degree. There is no doubt a serious problem in Tennessee.

Numerous task forces and organizations are already working to develop strategies for improving the healthcare workforce in Tennessee. Everyone recognizes that the problem cannot be resolved quickly, but will require long-term, persistent collaborative efforts from higher education, the healthcare industry, the community, and through public policy. The members of the Tennessee Council of Deans and Directors of Nursing have been working together over the past three years to establish initiatives to increase enrollment, retention, and graduation rates and improve articulation. TBR is well represented and actively contributing to the work of the Tennessee Center for Nursing, the THA Center for Health Workforce Development, the Tennessee Education Council for Health Science Professionals, and TBR representatives also serve on numerous local and regional task forces established through hospitals or Chambers of Commerce. TBR faculty and administrators must continue to work closely with these centers and professional organizations to support tracking of workforce data so that appropriate programs can be developed that target the areas of greatest need and maximize the use of resources.

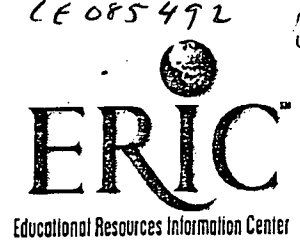
TBR institutions will continue to develop initiatives and programs that address the shortage of nurses and other allied health professionals, as well as the faculty shortage. Numerous partnerships with healthcare providers already exist. These will serve as models for many more partnerships that will provide faculty, clinical training sites, equipment, and scholarships in order to increase the number of students entering the profession, progressing through a more efficient and effective pipeline, and being retained in the field.

THEC is preparing a white paper on the nursing shortage in Tennessee that will be available on the THEC website by Spring 2003. Policy revisions to the program approval process, recently approved by THEC and TBR, require an even greater focus on need and the efficient use of available resources. Both TBR and THEC encourage the development of collaborative partnerships between healthcare and education institutions. The revised policies will insure that new programs address the state's needs and avoid unnecessary duplication. Industry partnerships must be developed to provide faculty and to provide student access to the latest technology, as well as scholarships and support for funding new programs. In return, higher education must recruit, retain, and graduate greater numbers of qualified professionals to care for Tennessee's aging population and future generations.

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