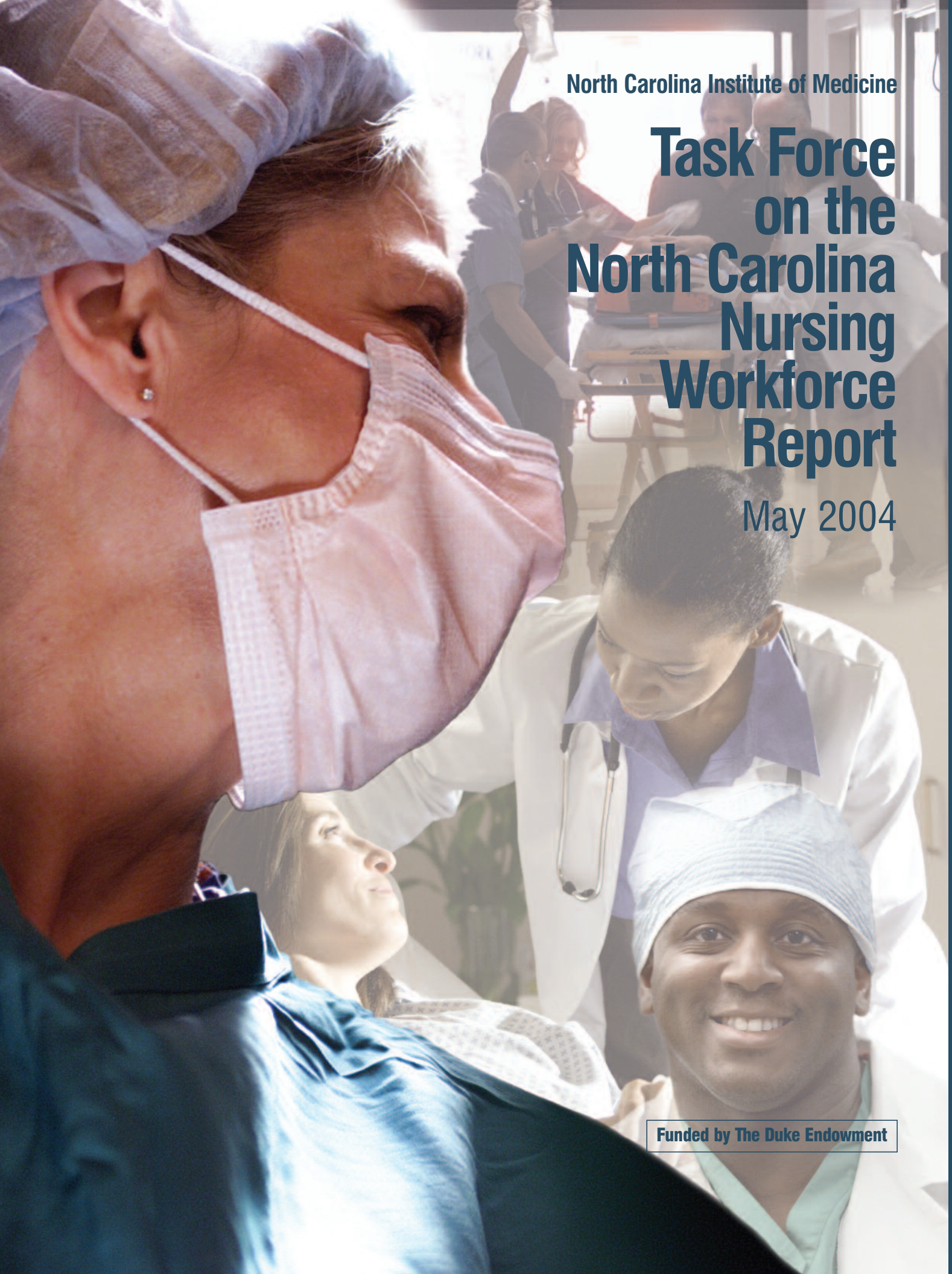

North Carolina Institute of Medicine

Task Force on the North Carolina Nursing Workforce Report

May 2004

Funded by The Duke Endowment

North Carolina Institute of Medicine

The North Carolina Institute of Medicine serves as a non-political source of analysis and advice on issues of relevance to the health and healthcare of North Carolina's population. The Institute is a convenor of persons and organizations with health-relevant expertise, a provider of carefully conducted studies of complex and often controversial health and health-care issues, and a source of advice regarding available options and approaches for problem solution.

The full text of this report is available online at: **www.nciom.org**

One complimentary copy of this report will be made available to requesting agencies and programs in North Carolina while supplies last. All requests must be submitted on official letterhead. There will be a $20 charge for each additional copy.

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North Carolina Institute of Medicine

Task Force on the North Carolina Nursing Workforce Report

May 2004

Prepared in Collaboration With:

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The North Carolina Center for Nursing

The North Carolina Board of Nursing

The North Carolina Hospital Association

The North Carolina Area Health Education Centers Program

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The work of the Task Force on the North Carolina Nursing Workforce would not have been possible without the generous financial support of The Duke Endowment.

The primary staff direction for the work of the Task Force was the responsibility of Gordon H. DeFriese, PhD, President and CEO, and Pam C. Silberman, JD, DrPH, Vice President of the NC Institute of Medicine. Instrumental in the development and completion of this report were several partnering organizations. The NC Center for Nursing, the NC Board of Nursing, the NC Nurses Association, the NC Area Health Education Centers Program, and the NC Hospital Association. These agencies were also primarily responsible for the preparation and dissemination of this report.

We extend our sincere thanks to the following people for their dedication in steering the work of the Task Force. Linda Lacey, MA, BBA, Director of Research for the NC Center for Nursing and Barbara Knopp, RN, MSN, Education Consultant for the NC Board of Nursing, deserve special thanks for helping to provide and verify the data in sections of the Task Force report. Key staff support was provided by Kristie Weisner, MA, Assistant Vice President, Adrienne Parker, Director of Administrative Operations, and Thalia Fuller, Administrative Assistant, with the NC Institute of Medicine.

The Task Force was supported by a multi-disciplinary steering committee composed of key professional staff from several agencies of North Carolina state government, the University of North Carolina at Chapel Hill, the NC Board of Nursing, the NC Nurses Association, the NC Center for Nursing, the NC Area Health Education Centers Program, the NC Community College System, the University of North Carolina System, the NC Hospital Association, the NC Healthcare Facilities Association, and the Division of Facilities Services of the NC Department of Health and Human Services. The steering committee met between Task Force meetings and helped plan these meetings, arrange speakers and the presentations, and organize the workgroups through which Task Force members could examine issues in greater detail.

We would like to extend special thanks to the students of Dr. Pam Silberman's Spring 2003 Health Policy Practicum, a class at the UNC School of Public Health, whose background research contributed greatly to this report. The students who examined the nursing workforce shortages as part of a policy practicum include Cammie D'Alpe, Katie Delgado, MD, Michael Gates, RN, BSN, Duane Kilgus, Kristen Kovach, Gwen Metz, RN, Patti Pozella, Kimberly Scott, and Suzan Slazas.

The Task Force benefited from the deliberations of The National Conference on the Nursing Workforce hosted by The Duke Endowment, December 4-6, 2002 in Charlotte, North Carolina, which clarified the issues needing attention as we would begin the process of examining the problems associated with the nursing workforce in this state. Four national leaders in nursing were particularly influential in the formulation of our vision for what this effort should include: Peter Buerhaus, PhD, RN, FAAN of Vanderbilt University; Margaret McClure, RN, EdD, FAAN, President of the American Academy of Nursing; Gail A. Wolf, DNS, MSN, RN, FAAN of the University of Pittsburgh Medical Center; and Angela Barron McBride, RN, PhD, FAAN of Indiana University.

Finally, but most importantly, appreciation is due the 55 members of the Task Force who gave up a full day each month throughout this process to consider the future of nursing and its implications for the health and healthcare available to all North Carolinians.

Preface

Recently, a family member was in a local hospital for an extended period. The experience reminded me once again that, in the midst of all of the wonderful miracles and technology at our disposal in today's modern hospitals, nurses are still of critical importance in the process of caring for patients. My family's inevitable questions (What is happening? What should we expect? Where is something located? What hours is a service available?) were all directed to the nurse of the hour. And the nurse invariably could calm the anxious patient and the family with professionalism and expertise. Such is the expectation that our society places on the nursing profession.

Yet, those of us who work in healthcare recognize the challenges that are before the profession today. These challenges are enumerated in detail in the report of the Task Force on the NC Nursing Workforce. This important and timely report includes some suggestions and recommendations for improvements and modifications in the way nurses are recruited to the profession, trained, and practice in NC. Some of the subjects discussed have been with us for decades; others are ever-changing and call for new and clear thinking about the possibilities for the future.

The Duke Endowment, as one foundation, has long supported projects to address some of these challenges. However, at a meeting of our Board of Trustees in May 2002, there was a lively conversation about how we might best support a statewide discussion of the issues that could lead to a consensus for new actions. The North Carolina Institute of Medicine gave wonderful leadership by developing the format of such a process, and provided the all-important neutral voice in the discussions needed to arrive at the printed recommendations that appear in this report. The members of the Task Force were indispensable. They came to the meetings with enthusiasm, interest, and high ideals for the future of nursing in North Carolina. The final product would not have been nearly as valuable without their participation and contributions.

We believe the groundwork for the future is being laid by this report. Already, work has begun to assist foundations like the Endowment as we strive to understand where we can maximize our investments to address nursing work force issues. We encourage your thoughtful consideration of the information and recommendations contained in these pages. And we encourage lively and constructive discussions of the actions that will lead North Carolina toward a more healthy future.

In hospitals, in nursing facilities, in home visitation, in public health, in school health centers, in rural health centers, in nursing education classrooms, and in many other locations, nursing is vital to the care that we all wish to receive-for ourselves and for our communities. It is our collective responsibility to do what we can to ensure that we have an excellent nursing workforce in 2004, and for many years to come.

Please join with us in moving these dreams to reality.

Eugene W. Cochrane, Jr.
Executive Vice President and President-Elect
The Duke Endowment
April 5, 2004

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IT'S A BOY

Executive Summary
Background and Purpose of the Task Force

By 2002, several states were reporting severe nursing shortages. At the same time, some North Carolina employers were reporting difficulties filling nursing positions. Whether there is currently a nursing workforce "shortage" or "crisis" in North Carolina is open to debate. Yet, there is little question that, without some intervention, North Carolina is likely to experience a severe nursing shortage in the coming decade due to the combination of an aging population and an aging nursing workforce. Long-range forecasts of registered nurse (RN) supply and demand in North Carolina predict a shortage of anywhere from 9,000 nurses in 2015 to almost 18,000 by 2020.

Rather than wait until North Carolina is in the midst of a full-blown nursing crisis, the North Carolina Institute of Medicine (NC IOM), in partnership with and at the request of the NC Nurses Association, the NC Center for Nursing, the NC Area Health Education Centers Program, the NC Board of Nursing, and the North Carolina Hospital Association, decided to act proactively to prevent a future nursing shortage. In the fall of 2002 the NC IOM created the Task Force on the North Carolina Nursing Workforce to undertake a major study of issues surrounding the present and future supply of and demand for nursing personnel in this state. Co-Chairs of the Task Force were Cynthia M. Freund, RN, PhD, FAAN, Dean Emerita of the School of Nursing at the University of North Carolina at Chapel Hill, and Joseph D. Crocker, Senior Vice President, Wachovia and Manager of Community Affairs of The Carolinas Bank in Winston-Salem.[1] The 55-member Task Force included representatives of all levels of licensed nursing personnel, the NC Board of Nursing, NC Division of Facility Services (charged with registration of nursing aides), professional nursing associations, the NC Center for Nursing, the University of North Carolina System, the NC Community College System, the NC Independent Colleges and Universities, the NC Hospital Association, the NC Healthcare Facilities Association, home health and assisted living services providers, the NC Area Health Education Centers Program, school health nurses, and mental health nurses. The work of the Task Force was supported by a grant from The Duke Endowment.

The Task Force examined the current and projected demand for nursing professionals and paraprofessionals in all segments of the North Carolina healthcare industry. The Task Force also studied the degree to which current and developing educational and in-service educational programs are meeting, and are likely to meet, these demands. In addition, the Task Force examined school-to-work transitions, as well as the work environment for nursing personnel and methods to recruit and retain nurses. The Task Force tried to examine these issues for the full range of nursing personnel, including nurse aides, Licensed Practical Nurses (LPNs), Registered Nurses (RNs), Advanced Practice Registered Nurses (APRNs), as well as other registered nurses with graduate degrees at the master's and doctoral-levels. However, most of the Task Force's attention focused on Registered Nurses, who make up approximately 82% of the state's licensed nursing workforce.

The Current and Future North Carolina Nursing Workforce

Determining the exact number of nurses that will be needed in North Carolina in the future is difficult, as both the supply of nurses and the demand for nurses are constantly changing. But there are good reasons to believe that without some intervention, North Carolina will experience a shortage of registered nurses and other nursing assistive personnel over the next two decades. North Carolina's population continues to grow at a rapid pace and the age groups most likely to use healthcare services (those aged 65 and older) are among the fastest growing age groups. The nursing workforce in North Carolina is aging at an even faster rate. The average age of the North Carolina workforce

[1] Dr. Freund has had extensive experience in all aspects of nursing education and is herself a nurse practitioner who has practiced in North Carolina. Mr. Crocker is an experienced hospital trustee, member of the North Carolina Medical Care Commission, Chair of the Board of Trustees of Western Carolina University, and very familiar with the workforce issues in the nursing field.

in general grew from 37.7 (1984) to 40.4 (2001),[1] but the average age of RNs increased from 38.3 in 1983 to 43.6 (2001), and the average age of LPNs increased from 40.5 (1983) to 44.9 (2001). Traditionally, registered nurses move out of full-time employment rapidly after the age of 55. In 2001 about 14% of the RN workforce and 18% of the LPN workforce was age 55 or older. Another 31% of RNs and 32% of LPNs was between the ages of 45 and 54. These two factors, along with others, will exert enormous pressure on the balance between supply and demand for nurses in North Carolina over the next ten to twenty years.

As the general population ages, the use of healthcare services will increase. But this is not the only factor that drives demand for nursing services. Demand is driven by the number of people needing services, the acuity level of patients, healthcare technological and informatics changes, medical advances, labor productivity, regulatory and market changes, and advances designed to improve quality of care (including required nurse staffing levels). The current and future *supply* of nurses in North Carolina is also affected by a variety of other factors, including: the rate at which North Carolina can enroll and graduate new professionals from our educational institutions, the capacity of our educational system to expand or contract to meet market demands, the rate at which nurses move out of or into our state from other states or other countries (in- and out-migration), new and expanding career options for women and people with nursing degrees, demographic trends that affect the size and age of the labor force now and in the future, and workplace issues such as wage levels and working conditions that affect people's willingness to work in certain environments.

An obvious solution to a pending nursing shortage is simply to produce more nurses. However, before encouraging more people to enter the nursing profession, it will be necessary to expand the capacity of the state's nursing education programs to accommodate new students.

The state should also take additional steps to attract a more diverse workforce into nursing, as the characteristics of North Carolina nurses do not reflect the diversity of the state's population. For example, only about 6% of the RN workforce and about 5% of the LPN workforce is composed of men, compared to 52.8% of the state's workforce in general.[1] Twelve percent of RNs and 26% of LPNs represented racial or ethnic minority groups in 2001. In contrast, racial or ethnic minorities account for 28% of the state's population. These statistics are not inconsistent with national profiles of the US nursing workforce.

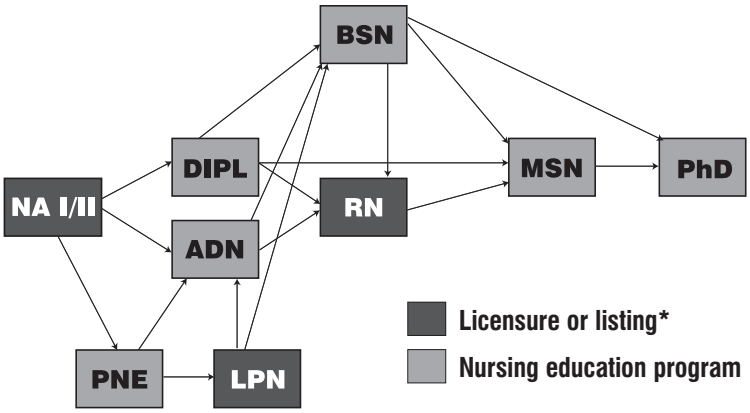
While the nursing workforce situation in North Carolina has not yet reached "crisis" proportions, the projected loss of our most experienced nurses due to aging and retirement, at a time when demand for nurses will be increasing, will undoubtedly lead to a severe shortage of nursing personnel by the end of the decade unless remedial steps are taken. The Task Force recommendations are aimed at attenuating what many have anticipated will be a "crisis" in regard to our state's nursing workforce.

Educating the Future Nursing Workforce

The entry-level credential for nursing practice is the basic license as a Registered Nurse (RN) or Licensed Practical Nurse (LPN). Nurses obtain their RN or LPN licensure by completing a basic course of study from a baccalaureate (BSN), associate degree (ADN), hospital-based diploma, or practical nursing education (PNE) program and passing the National Council Licensure Examination (NCLEX-RN or NCLEX-PN). Once licensed, there are also multiple routes to obtain advanced professional education (Figure 1).

There were 64 nursing education programs in North Carolina offering credentials for entry-level RN licensure (BSN/ADN/Diploma) in 2004 (Figure 2). Among states in the Southeastern Region (i.e., those states served by the Southern Regional Education Board), only Texas has more nursing education

Figure 1.
Possible Educational Pathways in Nursing

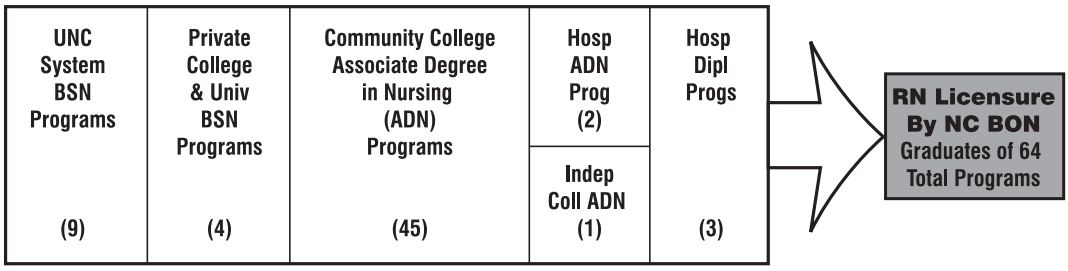


programs than North Carolina. Moreover, North Carolina has the lowest proportion of BSN programs in relation to ADN and hospital diploma programs of any of the SREB states.

While we have many geographically dispersed educational programs to educate nurses and nursing assistive personnel, our educational system lacks the necessary infrastructure to significantly increase the number of new nursing students at this time. Increased funding for faculty positions, faculty recruitment and retention and securing appropriate clinical sites for nursing education are key components affecting the capacity of these nursing education programs to educate students. Our problem is not one of needing to attract more young people into nursing. Each year we are turning away hundreds of applicants who meet entry requirements from our North Carolina nursing programs. Altogether more than 5,446 potential new RNs and 1,707 potential new LPNs were denied admission to North Carolina nursing education programs last year because these programs were unable to add more faculty, more clinical practice sites, and/or more space for students, due largely to budget constraints. Once admitted to nursing education programs, tuition support and student support services (such as academic and educational financial counseling) are critical to the success of nursing education programs.

North Carolina must increase the number of nurses in every category (LPN, ADN, BSN, Diploma, MSN and PhD), and expand education programs that have demonstrated acceptable levels of quality, accessibility, effectiveness and efficiency. However, the issue isn't just the numbers of new nurses produced, but the mix of nurses with a range of educational credentials. In the future, with changes in medical technology and acuity levels of patients seen in certain inpatient or institutional settings, North Carolina is likely to need not just an increased number of new nurses, but nurses who have enhanced educational preparation. For example, there is growing evidence that hospitals that have smaller staff-to-patient ratios and more staff with higher levels of nursing education, also have decreased mortality rates, fewer medical errors and nursing practice violations, and better patient outcomes.[2,3,4,5,6]

Figure 2.
North Carolina Nursing Education Programs Preparing Graduates for Entry-Level RN Licensure, 2003



An additional BSN program is in the second phase of development as of February 2004.

* North Carolina does not "certify" nurse aides. These personnel are "listed" after successfully completing the required training and competency evaluation program of the Nurse Aide I or Nurse Aide II Registry.

Regardless of how nurses enter the profession, they should be offered opportunities to enhance their educational preparation for nursing practice. By greatly expanding the opportunities to pursue education at higher levels, the overall educational level of North Carolina nursing care will increase, and, in turn, provide a variety of nursing career options to a broad spectrum of North Carolina citizens. By expanding prelicensure BSN, RN-to-BSN, and accelerated BSN programs, the Task Force envisioned that the current ratio of 60% ADN/Diploma and 40% BSN nurses could gradually change over the next 10-15 years to 40% ADN/Diploma and 60% BSN. This ratio change is also important because it will increase the number of nurses qualified for graduate programs that prepare nursing faculty.

School-to-Work Transitions

Unlike the experience of other professionals, nurses are often expected to practice fully in a relatively short time span after licensure. However, studies have shown that new nurses often have difficulties translating their educational experience into practice, particularly as it relates to skills in recognizing abnormal findings, assessing the effectiveness of treatments and supervising care provided by others.[7] This, in turn, causes new graduates to feel insecure in their job responsibilities and be less satisfied in their jobs. To better prepare nursing students for the transition into the workplace, students should be given a more intensive clinical experience during their final semester of school, followed by a more intensive orientation or internship opportunity once the new nurse begins practice. Once employed, new graduates should be provided supervised on-the-job skills training, along with a system of peer support. Ensuring an adequate school-to-work transition will help new nurses understand their job responsibilities and obtain the confidence and skills necessary to provide higher quality care.

The Work Environments of North Carolina Nursing Personnel

Nurses report lower job satisfaction than other professionals. This is problematic because job satisfaction is strongly correlated with turnover and retention. In North Carolina, only about half of all nurses report being happy with their jobs; close to one-fifth of all nurses report being unhappy with their work situations (19.9% of staff RNs and 17.7% of staff LPNs), and the rest are neutral.[8] The aspects of job satisfaction vary among work settings, with nurses in hospitals and long-term care settings being least satisfied with their jobs; and those in community settings much more satisfied. Job dissatisfaction in nursing often results in low morale, absenteeism, turnover, and poor job performance.

When nurses are dissatisfied at work, they are more likely to change jobs. Not only does staff turnover reduce the number of experienced staff who are familiar with the organization, it brings added expense to employers. Some North Carolina nursing employers reported significant financial outlays to recruit and train new nursing staff. A recent study suggested that the cost of turnover for one hospital nurse ranges between $62,000-$68,000.[9]

In addition to affecting turnover and performance in a particular job, job satisfaction can also affect satisfaction with nursing as a career. Nurses, especially those working in inpatient hospital settings, were less willing to recommend nursing as a career to other people. Only 40% of hospital inpatient RNs, and 50% of inpatient LPNs reported that they would encourage others to become a nurse.

The Task Force considered the role of nurses in different workplace settings in North Carolina, including institutional settings (e.g., hospitals, psychiatric institutions), long-term care facilities (nursing homes and assisted living facilities) and community-based settings (home health and hospice, public health and school nursing). There are several critical elements for a successful nursing work environment that cut across workplace settings. These include: management support and skilled nurse managers; an environment that promotes positive team relationships with coworkers; orientation and mentoring programs; the involvement of nurses and nurse aides in policy and decision making at both the institutional and unit level; competitive salaries and benefits; reasonable work loads; a safe working environment; career ladders and opportunities for advancement; minimizing paperwork and administrative burdens; flexible scheduling; supporting nurses in their role as patient care integrators; and professionalism and process standards in all departments with accountability.

Advanced Practice Nursing

There are four types of advanced practice registered nurses (APRNs) practicing in North Carolina: nurse

practitioners (NPs), certified nurse midwives (CNMs), clinical nurse specialists (CNSs), and certified registered nurse anesthetists (CRNAs). All APRNs are licensed registered nurses, have advanced academic preparation and many categories of APRNs are nationally certified. The Task Force heard testimony that advanced practice registered nurses in North Carolina are not currently permitted to practice to the full extent of their educational preparation. Although the education and certification requirements for each APRN group are similar across the country, the allowable scope of practice for each type of APRN varies depending on the state in which they practice. The Task Force was unable to fully explore these issues, but recommended further study of APRN practice issues.

Summary of Recommendations and a Blueprint for Action

The Task Force built upon these findings to formulate a series of recommendations to prevent a future nursing workforce crisis. These recommendations were grouped into seven areas: (1) nursing faculty recruitment and retention, (2) nursing education programs, (3) transition from school to work, (4) nursing work environments, (5) Advanced Practice Nursing, (6) building an interest in nursing as a career, and (7) cross-cutting issues. Absent new faculty, the state may be unable to expand the production of new nurses, and absent the production of new nurses, North Carolina may have insufficient nurses to meet the demands of the nurse workforce environment. In addition, efforts need to be made to smooth the transition from school-to-work, so that nurses are better prepared to assume clinical responsibilities. Finally, the Task Force recognized that North Carolina needs to address workplace issues in order to retain nurses in their jobs and the profession.

In total, the Task Force made 47 recommendations, which, if implemented, would expand the numbers, educational level, and retention of nursing personnel. The 16 *highest priority* recommendations are identified in shaded cells. Recommendations that require legislative action are separately noted, as are those that can be addressed through educational institutions, employers, foundations, the NC Board of Nursing or other organizations. The full text of all recommendations can be found in the corresponding chapter listed after the summary recommendation (for example, Rec. #4.1 refers to the first recommendation in Chapter 4). We hope that segmenting the Task Force recommendations in this way will facilitate a more systematic response to the findings and recommended actions discussed throughout this report.

	ACTION TO BE TAKEN BY ORGANIZATION, INSTITUTION OR GROUP						
RECOMMENDATIONS	**Legislature**	**Educational Institutions or AHEC**	**Employers**	**Nursing Community**	**Foundations**	**Board of Nursing**	**Other**
Nursing Faculty Recruitment/Retention							
Priority Recommendation:							
The Faculty Fellows Program (as proposed in House Bill 808 in last session of NC General Assembly) be enacted and funded to support the effort of BSN nurses who wish to pursue MSN degrees in preparation for nursing faculty careers. (Rec. # 3.25)	✓				✓		
Other Recommendations:							
The NC General Assembly should increase funding to the NC AHEC to offer off-campus RN-to-BSN and MSN nursing programs using a competitive grant approach which is available to both public and private institutions statewide. (Rec. # 3.20)	✓	✓			✓		
Nursing doctoral programs should be expanded. (Rec. # 3.21)	✓	✓			✓		

	ACTION TO BE TAKEN BY ORGANIZATION, INSTITUTION OR GROUP						
RECOMMENDATIONS	**Legislature**	**Educational Institutions or AHEC**	**Employers**	**Nursing Community**	**Foundations**	**Board of Nursing**	**Other**
RN Education Programs							
Priority Recommendations:							
Production of prelicensure RNs should be increased by 25% from the 2002-2003 graduation levels by 2007-08. The NC Community College System (NCCCS), UNC System, private colleges and universities, and hospital-based programs affected by these goals should develop a plan for how they will meet this increased production need and report to the NC General Assembly in the 2005 session. Greater priority should be placed on increasing production of BSN-educated nurses in order to achieve the overall Task Force goal of developing a nursing workforce with a ratio of 60% BSN: 40% ADN/hospital diploma graduates. (Rec. # 3.1a-c)	✓	✓				✓	
Nursing education programs in the community colleges should be reclassified as "high cost" (therefore increasing per capita funding of these programs). (Rec. # 3.6)	✓						
The NC General Assembly and/or private philanthropies should invest funds to enable NC community colleges to employ student support counselors specifically for nursing students and to provide emergency funds to reduce the risk of attrition for students in ADN and PNE programs. (Rec. # 3.8)	✓				✓		
The NC General Assembly should restore and increase appropriations to enable UNC System institutions to expand enrollments in their prelicensure BSN programs above current levels. These funds should be earmarked for nursing program support and funneled to university programs through the Office of the President of the UNC System. Funds should be allocated on the basis of performance standards related to graduation rates, faculty resources, and NCLEX-RN exam pass rates. (Rec. # 3.15)	✓						
The NC General Assembly and private foundations are encouraged to explore new scholarship support for nursing students in NC's schools of nursing. (Rec. # 3.19)	✓				✓		
Nurse Scholars Program should be expanded, per-student loans increased and new categories of eligible students added (as specified in Chapter 3). (Rec. # 3.24a-f)	✓						
Private institutions offering the BSN degree should be encouraged to expand their enrollments. (Rec. # 3.17)		✓		✓			
NC residents with a baccalaureate degree who enroll in an accelerated BSN or MSN program at a NC private college of nursing should be eligible for state tuition support equivalent to students in these institutions pursuing the initial undergraduate degree. (Rec. # 3.18)	✓						
The Comprehensive Articulation Agreement between community colleges and UNC System campuses should be further refined and implemented fully. a. Associate Degree nursing curricula should include non-nursing courses that are part of the Comprehensive Articulation Agreement (CAA) between the NCCCS and the UNC System. b. The UNC System and Independent Colleges and Universities offering the BSN degree should establish (and accept for admission purposes, UNC System-wide) General Education and Nursing Education Core Requirements for the RN-to-BSN students who completed their nursing education in a NC community college or hospital-based program after 1999. (Rec. # 3.28a-b)		✓					

	ACTION TO BE TAKEN BY ORGANIZATION, INSTITUTION OR GROUP						
RECOMMENDATIONS	**Legislature**	**Educational Institutions or AHEC**	**Employers**	**Nursing Community**	**Foundations**	**Board of Nursing**	**Other**
Other recommendations:							
Approval for (and funding to support) enrollment growth should be limited to those nursing education programs where attrition (failure to complete) rates are lower than the three-year average attrition rate for that category of education program (BSN, ADN, or PNE) and the pass rates on the NCLEX-RN or NCLEX-PN examination exceed 80%.) (Rec. # 3.2)		✓			✓	✓	
NC BON-approved "slots" should be realigned with current enrollment in NC nursing education programs by 2006. (Rec. # 3.3)		✓				✓	
Clinical facilities, in collaboration with local/regional nursing education programs, should identify and make available more clinical training sites for nursing education. (Rec. # 3.4)		✓	✓				
Nursing education programs and clinical agencies should work together to develop creative partnerships to enhance/expand nursing education programs and help ensure the availability and accessibility of sufficient clinical sites: a. AHEC should convene regional meetings of nursing educational programs and clinical agencies to develop creative educational opportunities for *clinical* nursing experiences. b. Nursing education programs of all types at every level should work together to develop creative educational collaborations with clinical facilities and programs that promote educational quality, efficiency and effectiveness. (Rec. # 3.5)		✓	✓				
An alternative method of financing the expansion of community college-based nursing programs should be considered by the NC General Assembly (instead of the dependence on external resources for such expansions). (Rec. # 3.7)	✓						
Funding should be made available to enable every nursing education program to apply for and attain national accreditation by 2015. (Rec. # 3.9)	✓	✓					
The Community College System should include in the comprehensive data and information system being developed data on nursing student applications, admissions, retention and graduation. (Rec. # 3.10)	✓	✓					
A consistent definition of “retention” (or “attrition”) should be developed by the Community College System and used in every community college. (Rec. # 3.11)		✓				✓	
A consistent standard should be developed and used within the Community College System for the evaluation of retention-specific performance criteria for each nursing education program. (Rec. # 3.12)		✓				✓	
The NC General Assembly or private philanthropies should fund the Community College System to undertake a systematic study of the relationship between competitive, merit-based admission policies and graduation/attrition rates. (Rec. # 3.13)	✓	✓					
Admission criteria in community college nursing programs should be coupled with competitive, merit-based admission procedures in all community college-based nursing education programs. (Rec. # 3.14)		✓					
The UNC Office of the President, utilizing data provided by the NC Board of Nursing, should examine the percentage of first-time takers of the NCLEX-RN exam who are BSN, ADN and hospital-based school of nursing graduates. If necessary, the UNC Office of the President should convene the UNC System deans/directors of nursing for baccalaureate and higher degree programs to plan for increases in funding to support enrollment that will assure, at a minimum, a 40% or greater ratio of BSN prelicensure graduates (in relation to		✓					

	ACTION TO BE TAKEN BY ORGANIZATION, INSTITUTION OR GROUP						
RECOMMENDATIONS	**Legislature**	**Educational Institutions or AHEC**	**Employers**	**Nursing Community**	**Foundations**	**Board of Nursing**	**Other**
ADN and hospital graduates) and, where possible, a gradual increase in the BSN ratio over the next decade. These ratio increases should take into consideration increases in prelicensure BSN program enrollment, as well as ADN-to-BSN and accelerated BSN program productivity. (Rec. # 3.16)							
Hospitals and other nursing employers are encouraged to consider tuition remission programs to encourage their nursing employees to pursue LPN-RN, RN-BSN, MSN or PhD degrees. (Rec. # 3.27)			✓				
An RN-to-BSN statewide consortium should be established to promote accessibility, cost-effectiveness and consistency for these programs. (Rec. # 3.29)		✓					
PN Education Programs							
Priority recommendation:							
Production of prelicensure LPNs should be increased by 8% from the 2002-2003 graduation levels by 2007-08. NCCCS and private institutions affected by this goal should develop a plan for how they will meet these increases. NCCCS should convene this planning group, including representatives of private institutions offering these nursing programs, and a plan should be reported to the NC General Assembly in the 2005 session. Each year thereafter, the PNE programs should provide a status report to the NC General Assembly showing the extent to which they are meeting these goals; and whether production needs should be modified based on job availability for new graduates, changes in in-migration, retention or overall changes in demand for nurses in NC. (Rec. # 3.1d-e)	✓	✓				✓	
Other recommendations:		✓					
All NC BSN and ADN nursing education programs should explore creative LPN-to-ADN and LPN-to-BSN pathways to facilitate career advancement and avoid unnecessary duplication of content in these curricula. (Rec. # 3.30)	✓	✓				✓	
The State Board of Education and the NCCCS should promote dual enrollment programs for PNE programs in high schools. (Rec. # 3.31)	✓	✓					
All PNE programs in NC should seek and attain national accreditation by 2015 with adequate funding provided for faculty resources, student support services, and NLN accreditation application fees. (Rec. # 3.32)							
Nursing Assistant (Nurse Aide) Education Programs							
NC DHHS should develop special designation for licensed healthcare organizations providing LTC services that choose to meet enhanced workplace environmental and quality assurance standards. (Rec. # 4.5)			✓				✓ NC DHHS
The NC General Assembly should appropriate funds to be used as a wage pass-through to enhance the salaries of nursing assistants, especially within LTC facilities that have chosen to enhance workplace and quality assurance standards. (Rec. # 4.9)	✓		✓				
Efforts of NC DHHS, NC BON and NCCCS to create "medication aide" and "geriatric aide" classifications should be encouraged and supported. (Rec. # 3.33)				✓			✓ NC DHHS
NC Division of Facility Services in conjunction with the NC BON should develop a standardized Nurse Aide I competency evaluation program, to include a standardized exam and skills demonstration process. (Rec. # 3.34)		✓					✓ NC DHHS

RECOMMENDATIONS	ACTION TO BE TAKEN BY ORGANIZATION, INSTITUTION OR GROUP						
	Legislature	Educational Institutions or AHEC	Employers	Nursing Community	Foundations	Board of Nursing	Other
Transitions from Nursing School to Nursing Practice							
Priority recommendation:							
NC BON should convene a group to study options to improve school-to-work transitions, including: ■ intensive clinical experience in direct patient care during the final semester of study for nursing students, and ■ a supervised/mentored clinical internship experience either pre- or post-licensure. (Rec. # 4.3)		✓	✓	✓		✓	✓
Nursing Work Environments							
Priority recommendations:							
Employers should take steps to create "positive work environments" (meeting several defining criteria). (Rec. # 4.1)			✓		✓		
AHEC and the professional nursing schools should offer educational opportunities for leadership development, conflict resolution and communication skills training, interdisciplinary team building, and preceptor training. (Rec. # 4.2)		✓	✓				
NC BON and Division of Facility Services should implement regulations to prohibit nurses from providing direct patient care more than 12 hours in a 24 hour time period, or 60 hours in a 7 day time period. (Rec. # 4.10)						✓	✓ NC DHHS
Other recommendations:							
NC nursing organization leaders and healthcare trade associations should develop model programs and best practices (e.g., Magnet Hospital principles) for statewide dissemination. (Rec. # 4.4)			✓	✓	✓		✓
Trade associations, AHEC and private philanthropies should take the lead in disseminating best practices that help create a positive workplace culture for nursing personnel. (Rec. # 4.6)		✓	✓		✓		✓
NC Nurses Association should promote consumer advocacy efforts toward a well-educated, adequately staffed healthcare system in the interest of higher quality of care. (Rec. # 4.7)				✓			✓
Philanthropic organizations should support the provision of technical assistance to healthcare organizations as they attempt to make the changes necessary to improve the nursing workforce environment and enhance the quality of patient care. Financial assistance should be targeted to those facilities that would be unable to make these changes without financial assistance. (Rec. # 4.8)					✓		
Advanced Practice Registered Nurses							
The NC IOM should convene a workgroup to study issues specific to the practice of APRNs. (Rec. # 5.1)				✓		✓	✓ NC IOM
Trade and professional associations in NC should initiate an aggressive statewide effort to effect changes in federal and state legislation and regulations that affect Medicare, Medicaid and commercial managed care reimbursement in order to promote the full utilization of APRNs in long-term care and in other health care arenas. (Rec. # 5.2)			✓	✓			✓

RECOMMENDATIONS	ACTION TO BE TAKEN BY ORGANIZATION, INSTITUTION OR GROUP						
	Legislature	Educational Institutions or AHEC	Employers	Nursing Community	Foundations	Board of Nursing	Other
Building an Interest in Nursing as a Career							
Priority recommendation:							
Existing programs via AHEC, the health science programs in community colleges, universities and colleges, the NC Center for Nursing, and employers that target a diverse mix of middle and high school students to encourage them to consider health careers and prepare them for entry into programs of higher learning need to be strengthened and expanded. (Rec. # 3.22a-d)	✓	✓	✓	✓	✓		
Other recommendation:							
High school and college-level guidance counselors should receive additional training in the requirements of NC's nursing education programs, with counselors designated to provide nursing-specific advice to interested students. (Rec. # 3.23)		✓					
Additional Cross-Cutting Recommendations							
Employers of nurses (RN and LPN) who hold licenses in compact states other than NC should be required to report annually the names, states in which licensed, and period of employment of these nurses working in their facilities and programs. (Rec. # 2.1)	✓		✓				✓
Any NC resident enrolled in a public or private nursing education program should receive a state income tax credit to offset their nursing education expenses. (Rec. # 3.26)	✓						

Summary

North Carolina is indeed fortunate to have avoided many of the extreme shortages of nurses reported in other states. Yet, there are important developments on the horizon that have the potential to cause such shortages. Taking action today to expand the production of new nurses, enhance their education, augment school-to-work transitions, and improve the nursing workplace environment can help reduce the likelihood of a future nursing workforce crisis. Some steps will require new financial commitments either from public or private sources. Others will require a renewed commitment on the part of employers, educators, regulators and the nursing community. However, these steps are necessary if we are to recruit and retain well-prepared and motivated nurses who are needed to meet our healthcare needs now and in the future. Nursing, especially nursing at the bedside in hospitals and in long-term care, requires increasingly sophisticated technical skills and continues to demand intellectual, physical and emotional energy beyond what would be required in many other professions and occupations.

It is hoped that the recommendations offered here will help focus the efforts of legislators, educators, employers, the nursing community, trade associations, foundations and the public at large to ensure an adequate supply of well-trained nursing personnel for the future.

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Chapter One
Background and Purpose of the Task Force

Nursing personnel represent one of the most essential components of the healthcare system. Any time there is a likelihood of a shortage of this critical workforce, such a condition is considered a "crisis" and a situation demanding the highest level of administrative and policy analysis. The report summarized here came about because a number of prominent stakeholders related to the field of nursing in North Carolina were concerned that a "shortage" of professional nurses and nurse aides was on the horizon. These stakeholders urged the North Carolina Institute of Medicine, in partnership with a number of other key organizations, to undertake a careful study of the broad set of circumstances which had led to this situation with the hope of identifying a number of concrete steps that might be taken to avoid a healthcare workforce crisis in our state.

Over the period from 2000-2003, many states, including North Carolina, began to receive reports of increasing difficulties filling nursing positions, especially in hospitals and particularly in small rural communities. But these recruitment problems were not solely reported in smaller hospitals and rural areas. By 2002, there was a widening concern that the nation as a whole was entering a period of serious nursing workforce shortages. The level of concern was higher with regard to this shortage than in seemingly temporary shortages of the past for several reasons. Berliner and Ginzberg (2002) have agreed that "...this shortage is different (than previous shortages) and the emerging challenge will be much greater." Berliner and Ginzberg comment in their conclusion that:

> Nursing shortages occur relatively frequently and have, in the past, been solved largely through increasing wages and benefits... The nursing shortage the United States faces today... will become substantially worse in 2010 and beyond (and) is not likely to respond solely to economic solutions. Market solutions (e.g. wage increases) may help moderate the problem in the short term, but will not resolve the fundamental imbalances that plague nursing... declining nurses entering the profession, retention in hospital jobs, and early retirement.[1]

National perspectives on the current nursing workforce shortage situation further underscored the necessity of states (and the federal government) taking immediate steps to offset the projected increases in demand for additional nursing personnel which current education systems were unlikely to be able to meet.[2]

A Statewide Task Force on the North Carolina Nursing Workforce

It was in this context that several organizations in North Carolina began discussions in the spring and summer of 2002 considering the possibility of a concerted effort to analyze the state's nursing workforce situation and to recommend concrete steps that might be taken to deal with these issues. These discussions grew out of a series of meetings organized by the North Carolina Area Health Education Centers Program and the North Carolina Center for Nursing and led to the request that the North Carolina Institute of Medicine (NC IOM), a state health policy development agency created in 1983 by the North Carolina General Assembly, undertake to plan such a statewide study. Subsequently, the NC IOM sought to partner with the North Carolina Nurses Association, the North Carolina Center for Nursing, the North Carolina Area Health Education Centers Program, the North Carolina Board of Nursing, and the North Carolina Hospital Association to develop a plan for a statewide task force on the nursing workforce.

Discussions with The Duke Endowment in Charlotte led to a proposal from the NC IOM, with the partner organizations listed above, for funding to support a one-year task force effort. In December of 2002 this proposal was approved by The Duke Endowment and the work of the Task Force on the North Carolina Nursing Workforce officially began in January 2003.

Organization of the Task Force

The NC IOM approached two outstanding individuals to serve as Co-Chairs of the Task Force. They were Cynthia M. Freund, RN, PhD, FAAN, Dean Emerita of the School of Nursing at the University of North Carolina at Chapel Hill, and Joseph D. Crocker, Senior

Vice President, Wachovia and Manager of Community Affairs of The Carolinas Bank in Winston-Salem, NC. Dr. Freund has had extensive experience in all aspects of nursing education and is herself a nurse practitioner who has practiced in North Carolina. Mr. Crocker is an experienced hospital trustee, member of the North Carolina Medical Care Commission, and Chair of the Board of Trustees of Western Carolina University and very familiar with the workforce issues in the field of nursing.

Members of the Task Force represented a number of key stakeholder perspectives and included representatives of all levels of licensed nursing personnel (RN, LPN) as well as those state agencies responsible for the registration of nursing aides (I and II), the NC Board of Nursing, professional nursing associations, the NC Center for Nursing, the University of North Carolina System, the NC Community College System, the NC Independent Colleges and Universities, the NC Hospital Association, the NC Healthcare Facilities Association, home health and assisted living services providers, the NC Area Health Education Centers Program, school health nurses, and mental health nurses.

The Task Force was guided by a smaller Steering Committee composed of representatives of the several co-sponsoring organizations responsible for launching the Task Force effort: the North Carolina Nurses Association, the North Carolina Center for Nursing, the North Carolina Hospital Association, the North Carolina Area Health Education Centers Program, the North Carolina Community College System, the University of North Carolina System, the North Carolina Board of Nursing, and the North Carolina Institute of Medicine, the latter acting as convener of both the Task Force and the Steering Committee. We were very pleased that representatives of The Duke Endowment were present at all meetings of the Task Force and at most meetings of the Steering Committee throughout the life of the project.

Preparation for the Work of the Task Force

Prior to the initiation of the work of the Task Force, The Duke Endowment asked the NC Institute of Medicine to organize a national conference on the nursing workforce issues as a set of "terrain mapping" discussions serving as background for the proposed state-focused task force effort. This conference took place in Charlotte, North Carolina on December 4, 5 and 6th, 2002 (during one of the worst ice storms on record) but was attended by an outstanding group of some 60 individuals from North Carolina and the nation who were experts in various aspects of the nursing workforce. Proceedings of the Charlotte meeting have been summarized in a single issue of *The Tarheel Nurse*, the official journal of the North Carolina Nurses Association.[3] The Charlotte conference brought together national experts with some of North Carolina's leading nursing educators, employers, regulators, researchers and policy makers to consider four broad dimensions of the current nursing workforce situation in the state and nation. These were:

1. How many? How few? Where? When? Documenting the extent of the current workforce shortage
2. Levels of practice and the diversification of nursing roles
3. Jobs vs. Careers: Recruiting and retaining skilled and dependable nursing personnel at all levels in hospitals and long-term care
4. The educational preparation of nursing personnel, now and in the future

Most of the participants in the Charlotte conference were invited to become members of the NC IOM Task Force, which held its first meeting in February of 2003 (due to cancellation of its first meeting in late January because of inclement weather). Since that time, the Task Force has met for full-day meetings once each month (every month except August 2003). During the months since April 2003, meetings of the Task Force have generally been organized as workgroup sessions. Two principal workgroups were initially constituted to address broad sets of issues related to (1) nursing education programs, and (2) the work environments for nursing personnel. These initial workgroups were chaired, respectively, by Gordon H. DeFriese, PhD, President and CEO, North Carolina Institute of Medicine; and Pam C. Silberman, JD, DrPH, Vice President, North Carolina Institute of Medicine. After five, day-long meetings of each of these workgroups, they were reconstituted in order to give attention to the separate, but related, issues of (1) nursing faculty recruitment and retention, and (2) transitions from nursing school to work. The two reconstituted workgroups were also chaired, respectively, by Drs. DeFriese and Silberman. The final

meetings of the Task Force were devoted entirely to plenary session discussions of the entire Task Force membership. During these final sessions a half-day was devoted to Advanced Practice Nursing issues (December 2003), to Licensed Practical Nursing (January 2004), and to the detailed consideration of formal recommendations from each of the work-groups.

The Terms of Reference (Charge) to the Task Force

This task force undertook to carefully analyze the current and projected future demand for nursing professional and paraprofessional personnel in all segments of the NC healthcare industry, then estimate the degree to which current and developing educational and in-service educational programs are meeting (and are likely to meet) these demands. The proposed task force set out to engage a wide variety of policy shapers and policy makers in focused discussion of key issues such as: whether current levels of productivity among existing nursing education programs are adequate to meet the demand; whether appropriate and meaningful incentives are in place to attract the best and most capable individuals for such training and potential job opportunities in healthcare settings; whether employers of nursing professional and paraprofessional personnel have taken appropriate and feasible steps to ensure that the positions they offer are able to recruit and retain qualified personnel; whether there are credentialing issues that might provide meaningful career ladders for personnel in a variety of nursing roles, while also making recruitment and retention more likely to succeed; and whether there are infrastructure supports that are missing in existing nursing education programs.

The overarching concern of the Task Force was a focus on assuring an adequate supply of nursing personnel to meet the healthcare needs of North Carolina's growing (and changing) population, as well as the efforts of the state's healthcare industry to recruit and retain these personnel once trained. Yet, beyond these important goals, there were additional concerns having to do with the effort to attract highly competent individuals to this profession and to the opportunities of nursing practice in North Carolina, as well as the enhancement of the overall quality and appropriateness of nursing education as the principal means of preparing the nursing workforce of the future.

The Report and Its Content

This document represents a summary of the deliberations of the Task Force compiled over more than 14 months of concentrated activity. The report begins with an overview of the nursing workforce situation nationally and within North Carolina, and is followed by chapters which provide detailed explanations of nursing education programs and efforts to address concerns about the work environments of nursing personnel in a variety of healthcare settings in our state. Each of these chapters ends with a listing of important recommendations for action that the Task Force urges in order to deal with the problems and issues raised.

These chapters are followed by a chapter describing the situation faced in North Carolina at the moment by nurses who are engaged in one of several categories of "advanced practice" nursing. The situation faced by each of these categories of nurses is somewhat different and there are issues related to the type of practice of each which deserve attention through either administrative or legislative measures.

The final chapter of the report summarizes in succinct detail the full range of recommendations from the work of the Task Force and suggests a timetable through which these should be addressed by identifying selected recommendations as highest priority.

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Chapter Two
The North Carolina Nursing Workforce in 2003

Overview of the Nursing Workforce Shortage*

As of 2000 there were approximately 2.2 million registered nurses (RNs) working in various healthcare settings across the United States, making registered nurses the single largest group of healthcare professionals in an industry that represents approximately 14% of the US gross domestic product.[1] The federal Bureau of Labor Statistics estimates that there were 679,470 Licensed Practical Nurses (LPNs) employed in the nursing workforce in that year along with almost 1.3 million nurse aides, orderlies and nursing attendants.[2] Disruptions, maldistributions, and shortages in the nursing labor market have important consequences for access to care and for the quality of care patients receive once in the healthcare delivery system. Therefore, the nursing and nursing assistive labor market, particularly the workforce of registered nurses (RNs), has been the topic of numerous articles, reports, and books. Several recent and high profile reports either assert that there currently is a national shortage of registered nurses or predict that there will be one soon.[3,4,5,6] An analysis by the National Center for Health Workforce Analysis showed a shortfall of 110,000 RNs as of 2000, or six percent of total demand, that is expected to reach 12% by 2010 and will escalate to a shortage of a half-million RNs—about 20% of the total needed—by just 2015.[6] Such forecasts bring into question whether there will be sufficient numbers of registered nurses to meet the future demands of an aging society.[7]

Whether there is currently a nursing workforce crisis in North Carolina is open to debate. Yet, there is little question that, without some intervention, North Carolina is likely to experience a severe shortage in the coming decade due to the combination of an aging population and an aging nursing workforce. Although there is no way to determine the exact number of nurses that will be needed in North Carolina in the future, long-range forecasts of supply and demand for RNs in North Carolina predict a shortage of anywhere from 9,000 in 2015 to almost 18,000 by 2020.[8] The actions recommended in this report to be taken by legislators, educators, researchers, healthcare delivery organizations, and members of the business community are proposed in an effort to attenuate what many have characterized as a future "crisis" in regard to our state's nursing workforce.

Both the supply and the demand for nurses are affected by a variety of elements, but there are a number of circumstances that suggest a shortage of registered nurses and other nursing assistive personnel will most likely develop over the next two decades. North Carolina's population continues to grow at a rapid pace and the age groups most likely to use healthcare services (those age 65 and older) are among the fastest growing groups. At the same time, the nursing workforce in North Carolina is aging at an even faster rate. Traditionally, registered nurses move out of full-time employment rapidly after the age of 55. In 2001 about 14% of the RN workforce was age 55 or older. [9] Another 31% were between the ages of 45 and 54. The LPN workforce is even older: 18% were 55 or over in 2001 and another 32% were age 45 - 54.[10] These two factors, along with others, will exert enormous pressure on the balance between supply and demand for nurses in North Carolina over the next ten to twenty years. This chapter briefly discusses the various factors that affect demand and supply, as well as forecast estimates of future supply and demand in North Carolina.

Factors Influencing Demand for Nurses

The factors that affect demand for nursing care are likely to lead to an increased demand for all categories of nursing personnel, from nurse aides to registered nurses to advanced practice registered nurses in future years. The demand for nurses is determined by the intersection of two factors: the number of people who need nursing services and the amount of money available to pay for those services. These, in turn, are

* The Task Force gratefully acknowledges the work of Linda Lacey of the North Carolina Center for Nursing who took the lead in completing the writing of this chapter and the North Carolina nursing data analyses it contains.

affected by healthcare technology and medical advances, labor productivity, healthcare payment systems, and the general economy.

The number of people needing services

Population growth will increase the demand for healthcare of all types in our state. Between 1990 and 2000 North Carolina's population grew by about 1.4 million people, from a total of 6,632,448 to 8,049,313—a growth rate of 21%. Our population is expected to maintain that rate of growth and increase by another 1.5 million by the year 2010, and by another 1.5 million to a total of almost 11 million people by the year 2020.[11] In addition, the number of persons age 65 and older in North Carolina is expected to double from 969,048 in 2000 to more than 2.2 million in the year 2030, at the same time increasing as a proportion of the total population from 12% in 2000 to almost 18% by 2030.[12] The number of persons age 85 and older is projected to increase by more than 150%, from about 105,000 in 2000 to 268,000 in 2030.[12]

Individuals age 65 and older spend, on average, three times more on healthcare than younger persons,[8] these statistics have strong implications for the future demand for nurses. Not only will more nurse aides, LPNs and RNs be needed to meet this growing demand, but there will also be a growing demand for nurses with specialized skills in areas such as geriatrics, oncology, dialysis, critical care, cardiology, home care, and case management to handle the multiple conditions, severity of chronic illness, and multiple treatment regimes that are characteristic needs of the elderly. More RNs in advanced practice, such as Nurse Practitioners, Nurse Midwives, Clinical Nurse Specialists, and Certified Registered Nurse Anesthetists, will also be needed as the size of the general population expands and the demand for services increases from all age groups.

Technological changes and medical advances

The impact of technological change and medical advances on the demand for nurses is more difficult to predict. Medical advances that result in the need for intensive and/or complex nursing interventions will increase the demand for nurses in the future. On the other hand, some technologies may decrease the demand for nurses inasmuch as they increase nurse productivity or allow patients to care for themselves, as has happened with new pain management technologies. Over the past 20 years, changes and advances in healthcare have generally increased the overall demand for nurses and have created new arenas of patient care that require nurses with highly specialized skills. It is reasonable to expect that trend to continue. The growing technical complexity of care over the next 20 years will most likely create an increasing demand for nurses with specialized clinical skills who are prepared to practice at advanced levels to meet patient needs.

Labor productivity, nurse staffing and quality

The healthcare industry is often cited as one of the least efficient when it comes to using new technologies to improve worker productivity.[13,14,15,16] The non-standard nature of the work makes it difficult to find pre-existing technology fixes that actually decrease workload rather than add to it, but it can be expected that productivity aids, such as point-of-service electronic charting and real-time access to patient records, will become more widespread, improving the productivity of nurses. Generally, productivity improvements in any industry have the effect of reducing the demand for labor.

Conversely, an increase in demand for registered nurses is being fostered by several recent and high profile studies which provide evidence of the link between higher RN staffing levels and lower incidences of patient pneumonia, urinary tract infections, pressure sores, shock or cardiac arrest, deep vein thrombosis, failure to rescue, 30-day mortality, and upper gastrointestinal bleeding.[17] This body of literature empirically validates the registered nurse as a central and critical component in the delivery of quality care to patients. Additionally, this literature reinforces the importance of having a nursing workforce of adequate size. For example, Aiken et al. found that for every additional patient added to a registered nurse's workload, the probability of patient mortality increases by 7%.[18] This research suggests that substantial decreases in mortality rates could result from decreasing the size of patient loads assigned to nurses and increasing nurse staffing ratios in our nation's hospitals. Aiken, et. al also found that by increasing the proportion of staff nurses with baccalaureate degrees, mortality decreased 5%. Higher adverage education levels of the nursing workforce has a significant effect on patient mortality.[18] As hospitals and other quality-oriented healthcare delivery systems implement the staffing standards identified in this body of research, the overall demand for registered nurses, and the demand for

more highly educated registered nurses will probably increase over current levels.

Factors Influencing the Supply of Nurses

The current and future supply of nurses in North Carolina is affected by a variety of factors: the rate at which we can enroll and graduate new professionals from our educational institutions, the capacity of our educational system to expand or contract to meet market demands, the rate at which nurses move out of or into our state from other states or other countries, social revolutions such as the increase of women in the workforce in the past 30 years, new and expanding career options for women, demographic trends that affect the size and age of the labor force now and in the future, and workplace issues such as wage levels and working conditions that affect people's willingness to work in certain environments. We will review each of these factors in turn after a brief review of how the supply of nurses has been changing in recent years.

Overview of current nurse supply trends

On the national level, the RN workforce (those employed in nursing positions) grew by 73% from 1980 through 2000.[19] However, between 1996 and 2000 the growth rate slowed to less than one-half the rate of the previous four-year period. Specifically in the period 1996-2000, only 86,000 registered nurses were added to the national nursing workforce. This is the lowest number added in a four-year period over the past two decades, and importantly, only comprises two-thirds of the growth rate that occurred during the last national nursing shortage (1984-1988).[20]

In North Carolina our RN workforce grew by 111% between 1982 and 2000, due in part to the high rates of in-migration (including newly educated and licensed nurses) that the state enjoyed during that period. And, in spite of the fast growth in our general population, the ratio of RNs-to-population in North Carolina improved from 47.4 full-time employed (FTE) RNs for each 10,000 persons in 1982 to 72.3 RN FTEs per 10,000 in 2001.[21] There was a slight and temporary decline in this ratio in 1995 and 1996 congruent with national trends, but the ratio has risen consistently since then. This growth in the RN labor market reflects the growth of the healthcare industry in this state, as well as a widening of job opportunities for nurses as their knowledge and skills become more widely recognized outside of traditional healthcare settings. For instance, one of the fastest growing job markets for RNs in the past few years has been in clinical trials research sponsored by pharmaceutical companies, another growing industry in North Carolina.

Recently, however, the rate of growth in the total number of RNs holding an active license to practice has declined. The same is true for the number of RNs employed in nursing positions within the state and the number of full-time equivalent RNs (a translation of the number employed in nursing based on the actual number of hours spent in the workforce per week). All of these different views of the RN workforce in the state have shown declines in the past few years. (See Table 2.1)

The general trend for licensed practical nurses (LPNs) (who must work under the supervision of a registered nurse or physician) has been very different from that of RNs. While the overall numbers of LPNs licensed to practice in the state have increased slightly, the rate of growth totaled only 18% over the 19-

Table 2.1.
Declining growth rates in the number of RNs in North Carolina

	Total Number of RNs Licensed	Growth Rate From Previous Year	Total Number of RNs Employed In Nursing	Growth Rate From Previous Year	Total Number of RN FTEs in the Workforce	Growth Rate From Previous Year
1997	83,770	4.9%	56,203	5.4%	51,502.23	5.3%
1998	86,799	3.6%	58,516	4.1%	53,657.60	4.2%
1999	89,798	3.5%	61,255	4.7%	56,076.65	4.5%
2000	92,488	3.0%	63,288	3.3%	57,862.89	3.2%
2001	94,157	1.8%	65,115	2.9%	59,179.10	2.3%

year period from 1982 to 2001. The actual number of LPNs employed in the nursing workforce has dropped from 15,055 in 1994 to 14,474 in 2001. In addition, there has been a decrease in the total number of LPNs holding an active license to practice in the state in three out of the past six years. Table 2.2 shows how the rates of growth for LPNs have been declining. The reasons for this are complex, but most nursing leaders agree that the LPN role of assistant to an RN or a physician has been squeezed from both sides. Many hospitals in the state—once the primary place of employment for LPNs—have replaced LPNs with less educated and less expensive nursing assistants.

The aging of the nursing workforce

In North Carolina the primary factor leading to a nursing shortage in the coming years is the combination of an increase in demand due to an aging population and the concurrent aging of the nursing workforce. Nationally, the rate at which registered nurses have been aging exceeds that of the general workforce in the US.[22] The average age of working registered nurses in the US increased 4.5 years between 1983 and 1998, from 37.4 years to 41.9 years. By comparison, the average age of the entire US workforce increased by less than two years during that same period, from 37.4 to 39 years of age. In addition, the proportion of RNs in the workforce who were younger than 30 declined from 30.3% to 12.1% over the same period, compared to a decline of less than 1% for the total labor force.[22]

In North Carolina, the RN workforce aged even faster than the national trend, going from an average age of 38.3 in 1983 to 43.1 in 1998—a difference of 4.8 years. Since then, the average age has continued to climb, but at a slower rate. In both 2000 and 2001 the average age was 43.6 in the RN workforce. As a group, the LPN workforce tends to be slightly older than their RN colleagues. In 1983 the average age was 40.5 and had increased by 4.9 years to 45.4 in 1998. By 2000 it had increased to 46 years on average, but declined by just over a year to 44.9 years in 2001.[23]

More significant to the future prospect of a nursing shortage is the fact that a large portion of both the RN and LPN workforces are expected to retire within the next 10 years. In 2001, more than one-quarter of the North Carolina's active RN workforce and almost one-third of LPNs were over the age of 50.[23] Previous research conducted by the North Carolina Center for Nursing (2001) showed that after age 55 workforce participation drops significantly for both RNs and LPNs. The percent of nurses actively employed in full-time nursing positions is about 70% among all nurses age 46 - 55, but drops to 50% for RNs and about 44% for LPNs in the 56 - 65 age bracket. By age 66, almost all RNs and LPNs are out of the nursing workforce.[24] If these results are applied to the current nursing workforce, North Carolina can expect to lose at least 18,000 RNs and 4,000 LPNs by the year 2020 due to retirement alone.[24] Another segment of the NCCN study asked nurses the age at which they intend to retire and then translated that information into the number of years they expect to stay in the workforce. The results showed that 36% of all nurses over the age of 45 when the study was conducted in 2001 planned to retire by 2006.[25]

Traditionally the supply of licensed nurses who are not currently employed in nursing has been looked to as a source of additional personnel to ameliorate any temporary nursing shortage. However, the majority of

Table 2.2.
Declining growth rates in the number of LPNs in North Carolina

	Total Number of LPNs Licensed	Growth Rate From Previous Year	Total Number of LPNs Employed In Nursing	Growth Rate From Previous Year	Total Number of LPN FTEs in the Workforce	Growth Rate From Previous Year
1997	21,665	2.5%	14,240	2.5%	13,024.15	2.5%
1998	21,559	-0.5%	14,312	0.5%	13,146.60	0.9%
1999	21,568	0.0%	14,402	0.6%	13,268.02	0.9%
2000	21,544	-0.1%	14,341	-0.4%	13,222.03	-0.3%
2001	21,474	-0.3%	14,474	0.9%	13,401.65	1.4%

the registered nurses in North Carolina who reported they were not employed in nursing positions are at or nearing retirement age. In 2001, about 52% of the 14,350 licensed RNs not working in nursing were under the age of 50.[25] Nationally, the problem is even more severe: only about 35% of licensed RNs out of the workforce are under age 50. And, even if all of them returned to nursing, it is estimated their numbers would not fill all the vacancies currently available in just the hospital sector alone, where approximately 59% of all registered nurses work.[26]

Demographic factors affecting the supply of nurses

The number of young women between the ages 15-19 in the United States declined in the late 1980s and 1990s, decreasing the number of potential candidates for nursing education.[27] In fact, many nursing education programs saw a decline in the number of applicants during that period. In addition, young women in this age cohort are 30% - 40% less likely to become registered nurses than those graduating from high school in the 1960s and 1970s, due no doubt to expanding career opportunities in fields such as law, medicine, and business. Those new opportunities have drawn women away from nursing careers.

When women do choose nursing, they are doing so at later ages. Results from the 2000 National Sample Survey of RNs show that in 1980, 25.1% of all RNs were under the age of 30, but that by 2000, only 9.1% of RNs were under age 35.[28] This reduces the number of years they have available for nursing employment. Nationally, the average age at graduation from an entry-level nursing education program was 24.3 for RNs who graduated prior to 1985 and were in the workforce in 2000. For those who graduated between 1986 and 1994 the average age was 28.7. And for those who graduated between 1995 and 2000, the average age was 30.5.[28]

Although the number of nurses under the age of 30 has declined sharply over the past twenty years, the overall number of registered nurses has steadily grown until recently. This growth has been due in large part to nursing being an attractive second career option.[29,30] Nursing is unique in that there are currently three educational options that allow students to become registered nurses: non-degree diploma programs offered through hospitals; two-year associate degree programs offered at most community colleges; and four-year baccalaureate programs. In addition, baccalaureate nursing programs are now offering accelerated programs for students who already hold a four-year degree in another field, but want to make a career switch into nursing. These multiple educational opportunities offering choice and flexibility make it easier for people to consider a nursing career later in life, or after pursuing other educational or career options. While the number of people over age 30 entering the registered nurse workforce has increased, this has not been the case with regard to people under the age of 30. If this trend is allowed to continue, the registered nursing workforce will cease to expand and actually begin contracting by the year 2010 at a time when the demand for nursing services will be increasing most dramatically.[31] This scenario brings into question whether the supply of trained professional nursing personnel will be able to meet the future healthcare demands of an expanding population of older adults.[32]

One strategy for increasing the future supply of nurses is to improve recruiting efforts targeting those groups who have not previously been very interested in nursing as a career. Men and racial minority groups are two such groups. In North Carolina, for example, only about 6% the RN workforce and about 5% of the LPN workforce is composed of men.[33] Many stereotypes and biases exist within our culture that act as barriers to male participation in the nursing workforce. For example, participants in focus groups of male nursing students conducted in 1996 stated that they fear being perceived as unmanly by peers and patients.[34] Efforts to recruit men into the nursing profession must contest gender stereotypes in order to overcome them. In addition, the relatively low pay, and lower professional status and value given to nursing as compared with some traditionally male-dominated health professions can also create barriers which discourage men from entering nursing.

A larger proportion of the nursing workforce is made up of nurses from racial and ethnic minority groups, but these proportions do not resemble the population as a whole.[35] Nationally, only 14% of the RN workforce were members of racial or ethnic minority groups, compared to 31% of the total US population in 2000.[36] In North Carolina, 12% of RNs and 26% of LPNs were members of racial or ethnic minority groups in 2001. In contrast, racial or ethnic minorities account for 28% of the state's population.[37] As with males, there are a variety of reasons why racial

and ethnic minority students do not choose nursing as a career option. First, academically talented minority students now have access to a wide range of career options, such as law, medicine, and business which offer greater financial and prestige opportunities than nursing. In addition, due to the small number of minority representatives currently in nursing, minority students lack sufficient role models and mentors to guide and support academic and career decisions that could lead to nursing.[38] Many minority students also face significant financial barriers in pursuing nursing education. Finally many students graduating from high school lack the basic science and math background needed to succeed in a nursing education program. Continued efforts to improve the recruitment of men and minority groups into nursing could help mitigate any future shortage and lead to a nursing workforce that more closely matches the racial, cultural and gender profile of our society.

In- and Out- Migration and its Effect on the Supply of Nurses

North Carolina has become the residential and occupational destination of choice for many people in the past 20 years. From 1980 - 1990, the state population grew by 12.8%, but increased sharply to a rate of 21.4% between 1990 and 2000. Our temperate climate, mountains, coastal beaches, and growing economy all helped to fuel a massive in-migration from other states and countries that added more than two million people to our state's population between 1980 and 2000. A number of those new citizens are nurses. And, as a result, a sizeable proportion of North Carolina's nursing workforce include nurses educated elsewhere. In 2001, of all the RNs with an active license to practice in North Carolina, 60.1% had been educated in the state. Over the past decade, the number of RNs applying for a *new* license to practice in the state has increasingly been educated in another state. (see Table 2.3 below)

The addition of new nurses educated elsewhere has been an important element in the growth of the nursing workforce in North Carolina over the past two decades. In order to maintain a growing workforce, North Carolina must either maintain a high level of in-migration of new RNs from other states and/or increase the number of new nurses educated in our state. North Carolina's general population is expected to continue to grow between 2000 and 2010, but at a slower pace of about 17.6%, according to the projection estimates provided by the Office of State Budget, Planning and Management.[39] This rate of migration has important implications for decisions about the extent to which North Carolina will need to expand nursing education programs in the future.

Table 2.3.
Educational Location of Newly Licensed RNs in the State over the Past Decade

	Total Number of New RN Licensees[a]	Educated in NC		Educated in Other States	
		#	%	#	%
1990 - 1991	5320	2231	41.9	3089	58.1
1991 - 1992	6185	2652	42.9	3533	57.1
1992 - 1993	6396	2710	42.4	3686	57.6
1993 - 1994	6391	3024	47.3	3367	52.7
1994 - 1995	7244	3086	42.6	4158	57.4
1995 - 1996	7128	2904	40.7	4224	59.3
1996 - 1997	7481	2970	39.7	4511	60.3
1997 - 1998	7128	2879	40.4	4249	59.6
1998 - 1999	6949	2720	39.1	4229	60.9
1999 - 2000	6542	2501	38.2	4041	61.8
2000 - 2001	7486	2684	35.9	4802	64.1

[a] These RNs did not hold an active license to practice in North Carolina during the first year in the range, but were granted an active license at some point in the second year in the range.

Capacity of Educational Institutions to Train New Nurses

An obvious solution to the nursing shortage is simply to produce more nurses. North Carolina has 100 nursing education programs awarding a variety of degrees from an LPN certificate to entry-level RN education to the doctoral level. While we have many geographically dispersed educational programs to train nurses, our educational system lacks the necessary infrastructure and faculty base to significantly increase the number of new nursing students at this time. In November of 2001, only 8% of our RN entry-level programs said their programs could absorb a 15% increase in enrollment without hiring additional faculty.[40] The ability to expand the number of newly trained nurses is hampered by a lack of nursing faculty, state and local budget constraints, limited physical plant capacity and inadequate numbers of clinical sites and preceptors. Many nursing programs in the state are willing to expand their programs to train additional nurses, but are unable to do so because of these faculty and budgetary constraints.

A recent study by the NC Center for Nursing (NCCN) over the summer of 2003 found that most RN entry-level programs reported turning away students in the previous 12 months, despite the growing need for more nurses. Last year, associate degree programs, turned away a total of 4,371 qualified applicants; hospital-based programs denied admission to 165 applicants; baccalaureate programs denied admission to approximately 910 fully qualified applicants; and LPN programs denied admission to 4,371 applicants. These applicants were denied admission primarily because all available student placement slots were filled; further, insufficient classroom space, an insufficient number of clinical training sites, and an insufficient number of program faculty made it impossible to expand the number of student placement slots. Most programs (59%) indicated a need for more budgeted faculty positions to meet the demands of their current student enrollment; expansion would require even more faculty positions. When asked to identify the obstacles that impede their ability to expand enrollments, the majority of associate degree programs identified budgetary constraints (80%), insufficient space (73%), insufficient clinical sites (66%), lack of sufficient faculty positions (66%) and an insufficient number of qualified faculty to teach in the program (59%).[41]

Altogether more than 5,400 potential new RNs and 4,300 potential new LPNs were denied admission to North Carolina nursing education programs last year because the programs are running at full capacity and are unable—due to budget constraints—to add more faculty, more clinical practice sites, and/or more space for students. These numbers could include duplication as persons denied admission at one institution may be accepted by another. No available data enable us to ascertain the extent ot which this occurs. These issues are addressed more fully in Chapter Three and the appendices to that chapter.

Nursing Faculty Needs and the Future Supply of Nurses

The supply of nurses in North Carolina is determined in large part by our ability to educate new nurses. Central to that activity is the availability of knowledgeable and experienced faculty and instructors. However, just as the general nursing workforce is aging, the nursing faculty in the state are aging even faster. In 2001 the average age of nursing faculty in the state was 49.6 and almost half of the existing faculty (46%) were age 50 or older.[42] We can expect a substantial number of nursing faculty to retire in the next decade, just when our need to educate more new nurses is peaking.

One of the factors that inhibit the ability to recruit nurses into the faculty role is the disparity in wages between what can be earned in clinical settings versus the pay levels in most nursing education programs. Pay inequity is most pronounced in our associate degree programs, but was mentioned frequently by all types of nursing education programs in the state when asked to identify school and system policies that negatively impact the ability to hire or retain faculty or clinical instructors.[43]

The Influence of Wage Levels on Nurse Supply

Real annual wages for registered nurses have been flat since the last nursing shortage was resolved at the beginning of the 1990s. While actual earnings increased over that decade, when adjusted for inflation the increases disappear.[44] In addition, the Bureau of Labor Statistics reports that, nationally, annual earnings for RNs have been steadily falling behind the level of annual earnings for elementary school teachers for two decades now. The difference by 2001 was more than $13,000 annually.[44] This comparison is relevant

because teaching is an alternative career choice for potential nurses. Similar wage issues also affect LPNs and nurse aides, who can earn similar or better wages in less stressful jobs.[45]

In theory, at least, labor market shortages are self-correcting. As demand increases, wages also increase since a scarce commodity is worth more. Rising wages bring more people into the labor force, or demand decreases in the face of rising wages. In either case, an equilibrium is achieved between supply and demand. Historical trends in nurse wages suggest that this self-correcting mechanism was at work in solving the nursing shortage that occurred in the last half of the 1980s.[46] However, the financial constraints that have been imposed on our healthcare delivery systems by managed care and reduced reimbursement from federal and state insurance programs make it more difficult to raise wages now.

Working Conditions

Registered nurses report job satisfaction levels that are 11 to 25 percentage points lower than those reported by other professional workers in the US.[47] According to a study done by the NC Center for Nursing, less than half of the RNs and LPNs in North Carolina agreed with the statement: "I am happy with my current work environment" or "I would encourage other nurses to apply for a job with my employer".[48] These statistics are alarming because research shows that when job satisfaction is high nurses are less likely to leave their current position, less likely to leave nursing, less likely to burn out, and more likely to encourage others to enter into a career in nursing.[49] Numerous factors affect working conditions and job satisfaction for nurses: management support and in particular the quality of nurse management; the quality of relationships with physicians and other coworkers; nurses having autonomy and control over their practice; the physical demands of the job; physical and emotional stress; staffing levels; reasonable hours; flexible scheduling; adequate pay and benefits; career ladders and advancement opportunities; paperwork burdens; ergonomics; the use of technology; and having a safe and secure environment in which to work. These issues will be addressed more fully in Chapter 4. But it is safe to say that poor working conditions and stressful environments contribute to the nursing shortage.

Anticipating the Balance of Supply and Demand in the Future

In anticipating the demand for new nurses in the future, we must consider both the number of additional nursing jobs that are likely to be added to the health care industry, as well as the number of nurses that will be needed to replace nurses that retire or leave the occupation. Even if the total number of jobs for nurses were to remain constant over the next decade, we already know that the aging of the nursing workforce will result in the loss of at least 18,000 RNs and 4,000 LPNs by the year 2020 from retirement alone.

New job growth for nurses

The federal Bureau of Labor Statistics (BLS) expects employment for RNs to grow faster than the average for all occupations through 2010, increasing by 21% to 35% nationally during that period. Because nursing is one of the largest occupational groups, a very large number of new jobs are expected to be created.[50] Nationally, about 561,000 new jobs will be created for RNs between 2000 and 2010. This new job growth for RN positions is the largest of any occupation in the United States. The national estimates for LPNs show that employment is expected to grow for them about as fast as the average occupation through 2010 and will constitute approximately 322,000 new positions. Most of that growth will be in response to the long-term care needs of a rapidly growing elderly population and the growth of healthcare in general.[51] In addition, three other nursing-related occupations are projected to have higher than average national growth in new jobs: 496,000 additional positions for nurse aides, 370,000 additional positions for home health aides, and 322,000 new positions for home care aides.[52]

The BLS is able to compile these national estimates because each state conducts its own forecasts, based on in-state industries and employers, and makes the results available to the BLS. In North Carolina those forecasts are produced by the Labor Market Information section of the NC Employment Security Commission. They are predicting a 35% increase in new job growth for RNs between 2000 and 2010 and a 24% growth in new jobs for LPNs. This translates into an expectation of 21,975 new jobs for RNs and 3,822 new jobs for LPNs in North Carolina. The creation of these new jobs means that we will need this many more new nurses just to accommo-

date the expansion of the healthcare delivery system in the next decade.

Replacement openings for nurses

In addition to estimating the number of new jobs that will be created, the NC Employment Security Commission and the federal Bureau of Labor Statistics also calculate the number of job openings that will come about as people leave an occupation and start working in another, stop working altogether, or leave the state. These openings are referred to as "replacement openings." In North Carolina, a total of 12,837 net replacement openings are expected for RNs and 4,052 for LPNs between 2000 and 2010.[53]

In order to understand how the total demand for nurses will be affected, new job growth and replacement openings should be added together. For North Carolina the result is that the state needs to add a total of 34,812 more RNs to the workforce over 2000 levels (21,975 new jobs plus 12,837 replacement openings) by 2010 in order to meet the demands of both new job growth and replacement openings. Given that approximately 65,000 RNs were in the workforce in 2000, these figures suggest that North Carolina will need to increase it's RN workforce by approximately 50% by the end of the decade in order to avoid a shortage. For LPNs, projected new job growth of 3,822 positions plus the expected 4,052 net replacement openings means that 7,874 additional positions will need to be filled above 2000 levels. In 2000 there were approximately 14,500 LPNs in the workforce. In order to meet expected demand in 2010, the LPN workforce will also need to grow by approximately 50% in that short period of time.

Where will they come from?

Growth in the RN labor force during the past decade has come from a combination of new professionals educated in the state, as well as an influx of new and experienced professionals educated outside of North Carolina. During the past 12 years, the number of RNs holding an active license to practice and employed in a nursing position within the state has grown from a total of 42,717 in 1990 to 65,115 in 2001. During the last five years for which data are available, about 40% of the new RNs entering the state's workforce each year were educated in North Carolina nursing programs and about 60% were educated in other states. (See Table 2.4 for the annual numbers in the RN workforce.)

A similar pattern of in-migration has occurred in the LPN workforce as well, although in that case, LPNs coming into North Carolina from other states or other countries account for about 55% of the new licensees each year. About 45% come from the new LPNs produced in North Carolina practical nurse education programs. (See Table 2.5 for the source of new LPN licensees each year.)

Table 2.4.
Newly Licensed RNs Actively Employed in the North Carolina Workforce

	Educated Outside of NC			Educated Within NC			*Total # of Newly Licensed RNs Being Added to the Nursing Workforce*	*% of Total:*	
	New RN Grads	Graduated More Than 2 years Ago	RNs Re-activating a license	New RN Grads	Graduated More Than 2 years Ago	RNs Re-activating a License		*Educated Within NC*	*Educated Outside NC*
1997	854	3,224	286	2,669	103	125	7,261	42%	58%
1998	686	3,158	245	2,624	67	117	6,897	43%	57%
1999	647	3,138	264	2,404	61	153	6,667	41%	59%
2000	504	3,074	225	2,176	65	133	6,177	40%	60%
2001	539	3,414	576	2,201	144	179	7,053	41%	59%

Note: The term "new grad" refers to an RN who has graduated from their entry-level RN education program within the current or preceding calendar year.
Note: The numbers in this table are smaller than those in Table 2.3 because this table is restricted to just those new licensees that were employed in the nursing workforce within North Carolina. Table 2.3 is based on all newly licensed RNs regardless of their employment status

Table 2.5.
Newly Licensed LPNs Actively Employed in the North Carolina Workforce

	Educated Outside of NC			Educated Within NC			*Total # of Newly Licensed LPNs Being Added to the Nursing Workforce*	*% of Total:*	
	New LPN Grads	Graduated More Than 2 years Ago	LPNs Re-activating a license	New LPN Grads	Graduated More Than 2 years Ago	LPNs Re-activating a License		*Educated Within NC*	*Educated Outside NC*
1997	166	507	28	793	49	27	1570	55%	45%
1998	130	457	28	603	25	15	1258	51%	49%
1999	76	455	38	227	430	22	1248	54%	46%
2000	106	398	40	602	48	26	1220	55%	45%
2001	78	456	69	645	69	31	1348	55%	45%

Note: The term "new grad" refers to an LPN who has graduated from their entry-level RN education program within the current or preceding calendar year.

Table 2.6.
Historical and Future Production Levels of New RNs and the Amount of Increase Needed to Meet Projected Demand Levels in North Carolina

	Current Production of New RNs		Additional Production of New RNs Needed		Total Number of RN Graduates Needed to Meet Minimum Training Needs	Minimum Training Needs for RNs: New Job Growth + Replacement Openings	Percent of Increase Needed in New RN Graduates
	Graduated	*Pass NCLEX**	*Graduates*	*Pass NCLEX**			
	a	b	c	d	a + c	b + d	c / a
2000	2,306	2,075	1,563	1,407	3869	3,482	67.8%
2001	2,348 [a]	2,113	1,521	1,369	3869	3,482	64.8%
2002	2,459 [b]	2,213	1,410	1,269	3869	3,482	57.3%
2003	2,556	2,300 *	1,313	1,182	3869	3,482	51.4%
2004	2,556	2,300	1,313	1,182	3869	3,482	51.4%
2005	2,556	2,300	1,313	1,182	3869	3,482	51.4%
2006	2,556	2,300	1,313	1,182	3869	3,482	51.4%
2007	2,556	2,300	1,313	1,182	3869	3,482	51.4%
2008	2,556	2,300	1,313	1,182	3869	3,482	51.4%
2009	2,556	2,300	1,313	1,182	3869	3,482	51.4%
2010	2,556	2,300	1,313	1,182	3869	3,482	51.4%

* As of September 30, 2003 a total of 2,261 students has passed the NCLEX. Statistics for the final quarter of 2003 are not yet available. For purposes of this table we are assuming that a total of 2,300 students will pass the NCLEX in 2003 (a 90% pas rate). All years beyond 2003 assume North Carolina will maintain that level of production for new RNs.

[a] The actual number of RNs graduated in NC in 2001 was 2363.

[b] The actual number of RNs graduated in NC in 2002 was 2467.

Note: The calculations in this table assume a consistent 90% pass rate each year.

Table 2.7.
Historical and Future Production Levels of New LPNs and the Amount of Increase Needed to Meet Projected Demand Levels in North Carolina

	Current Production of New LPNs		Additional Production of New LPNs Needed		Total Number of LPN Graduates Needed to Meet Minimum Training Needs	Minimum Training Needs for LPNs: New Job Growth + Replacement Openings	Percent of Increase Needed in New LPN Graduates
	Graduated	*Pass NCLEX**	*Graduates*	*Pass NCLEX**			
	a	b	c	d	a + c	b + d	c / a
2000	867	806	0	0	846	787	na
2001	802	746	44	41	846	787	5.5%
2002	759	706	87	81	846	787	11.5%
2003	726	675*	120	112	846	787	16.5%
2004	726	675	120	112	846	787	16.5%
2005	726	675	120	112	846	787	16.5%
2006	726	675	120	112	846	787	16.5%
2007	726	675	120	112	846	787	16.5%
2008	726	675	120	112	846	787	16.5%
2009	726	675	120	112	846	787	16.5%
2010	726	675	120	112	846	787	16.5%

* As of September 30, 2003, a total of 668 LPN graduates from North Carolina PNE programs had passed the licensure exam. For purposes of this table, we are assuming that a total of 675 will pass the exam by the end of the year. All years beyond 2003 assume North Carolina will maintain that level of production for new LPNs.

Note: The calculations in this table assume a consistent 93% pass rate each year.

One of the reasons that North Carolina has been able to avoid the severity of shortage experienced by other states in the past few years is that we have been able to import—through in-migration—more than half of the growth needed in the RN workforce. This is not really surprising, given that North Carolina had the fourth highest net in-migration rate in the country from 1995 to 2000.[54] And, although the NC Department of Commerce projects that net in-migration will continue to add about 17%-18% to our total population between 2000 and 2010, depending on high rates of in-migration to solve the pending nursing shortage would be high-risk public policy.

In their occupational projections, the Bureau of Labor Statistics claims that new job growth, added to net replacement openings, identifies the minimum level of training slots that will be needed for an occupation over the projection period.[55] It is a very conservative estimate,[56] and is probably an under-estimate of the true need for new nurses in our state.

When applying those estimates in a strategic planning initiative, it is important to remember that not all persons who complete a nursing education program will necessarily enter into the nursing workforce. In North Carolina the percentage of RNs that graduate from in-state entry-level RN programs and pass the NCLEX-RN licensing exam (and thus are able to enter to nursing workforce) hovered around 90% during the past three years for which data are available (2000 to 2002). For LPNs the average NCLEX-PN passing percentage has been around 93%. Table 2.6 reports the annual need for new RNs created by new job growth and replacement openings, and estimates the additional number of new graduates that North Carolina RN education programs must produce in order to meet those minimum training needs identified by the BLS. The result is that we have had a shortfall in the number of RN graduates needed to meet the minimum training needs identified by the BLS projections since 2000 and, although RN graduation levels rose by about 10% between 2000 and 2003, North Carolina will need to increase the number of RN graduates and the number passing the NCLEX-RN exam each year by more than 46% and maintain that level through the end of the decade. That assumes, of course, that North Carolina's entire need for new RNs should be met by our in-state educational institutions. These findings do not take into account the effect of in-migration.

Table 2.7 presents the same information for LPNs. Both tables use an average of the NCLEX pass rates from 2000 - 2002 (90% for RNs and 93% for LPNs) when figuring the number of graduates needed to achieve a certain number of new RNs passing the NCLEX and eligible to join the workforce. And, as with RNs, the assumption is that the nursing education system in North Carolina should be responsible for producing all of the LPNs that will be needed. The size of the increase needed for LPN graduating classes is much smaller than for RNs. In the case of LPNs, the size of the graduating class in 2000 and the number passing NCLEX was slightly larger than the annualized estimate of demand projected by the BLS. But since then, the size of graduating classes and the number passing the NCLEX exam have fallen short. North Carolina will need to increase the number of LPN graduates and the number passing the NCLEX each year by about 16% and maintain that level through the end of the decade.

Other Uncertainties in Relation to Nursing Workforce Supply

Over the course of the Task Force's investigation of nursing workforce issues in North Carolina, it was noted that there was no mechanism at this time for registering the number of nurses who are practicing in North Carolina while holding a license to practice in one of the "compact" states, but no license issued by the NC Board of Nursing. Because nurses licensed in these other jurisdictions are allowed to practice in North Carolina as part of the agreement among compact states, it is impossible to estimate precisely the number of additional nurses who have entered practice in our state through this means and what these numbers might do to estimates of either supply or demand for nursing personnel in the future. In view of this situation, the first recommendation of the Task Force is as follows:

2.1 Employers of nurses (RN and LPN) who hold licenses in compact states other than North Carolina should be required to report annually to the NC Board of Nursing the names, states in which licensed, license numbers, and period of employment of these nurses working in their facilities and programs.

Conclusion

Chronic understaffing in our hospitals and nursing homes, unsafe working conditions, low job satisfaction among nursing professionals, a bottleneck in our ability to enroll more students interested in a nursing career, and the under-representation of males and minorities in the workplace must all be confronted as we seek solutions to a coming crisis in the healthcare workforce.[57] While the nursing workforce shortage has not yet reached "crisis" proportions in North Carolina, the projected loss of our most experienced nurses due to aging and retirement, at a time when demand for nurses will be increasing, will undoubtedly lead to a severe shortage of trained nursing personnel by the end of the decade. Although the vacancy rate for registered nurses in North Carolina hospitals recently improved somewhat (from 8.4% in 2000 to 6.0% at the end of 2002) it appears this relief will be only temporary. The economic downturn in North Carolina and the nation as a whole has postponed retirement plans for a great many people, including nurses. However, large numbers of nurses who have targeted 2006 as their retirement date will undoubtedly follow through with these plans when economic conditions improve. Other sectors of our healthcare system are already showing signs of the problems to come. Vacancy rates of 10% or more for RNs with experience in critical care, geriatrics, and mental health have been recently reported, as have vacancy rates of 12.4% for Nurse Practitioners and Certified RN Anesthetists.[58] More than half of all long-term care facilities reported an RN turnover rate greater than 33% in 2002.[59] And public health departments in the Eastern and Central regions of the state are having a more difficult time finding experienced public health nurses than departments in the West.[60] These signs and others show that the workforce challenges facing our healthcare facilities are serious and require an immediate response.[61] Therefore, the remaining chapters of this report will explore specific policy and private sector options that will help North Carolina prepare for, and possibly avoid, the severe nursing shortage that is currently anticipated.

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Chapter Three
Educating the Future Nursing Workforce for North Carolina*

The critical issue confronting the Task Force with regard to nursing education programs was whether existing programs (and educational systems) have the capacity to produce the numbers of additional nursing personnel with the appropriate levels of education likely to be needed in the future. But producing adequate numbers of nursing personnel must be coupled with a concern for the program *quality* for graduates who will represent the future of nursing practice in our state. The conditions under which nursing personnel must practice are changing rapidly, and, consequently, the diversity of nursing roles is also changing. Beyond concerns for meeting the demands of a rapidly changing practice environment (as described in Chapter 4), the Task Force and its Work Group on Nursing Education Program Capacity had to deal immediately with the impending shortage of faculty in nursing education programs at every level. This set of issues is the focus of the present chapter.

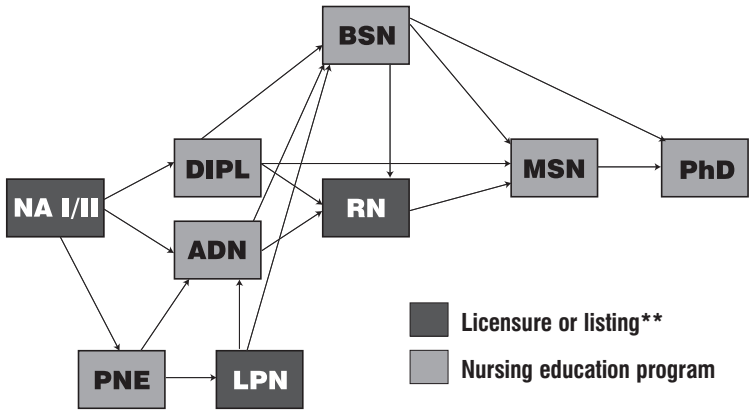
The Task Force realized from the outset of its analysis of North Carolina nursing education programs that there are multiple routes to licensure as a nurse (see Figure 3.1 below) and these pathways provide individuals with many different options to obtain pre- and post-licensure education.

In recognition of this complexity, the Task Force decided to focus its attention sequentially on various categories of licensure or certification, and for Registered Nurses, the various educational pathways to licensure and post-licensure opportunities for educational advancement.

A Focus On The Registered Nurse (RN) Workforce

Depending on whose voice is being heard, the term "nursing personnel" may (or may not) include persons working in healthcare settings as nurse aides, Licensed Practical Nurses (LPNs), Registered Nurses (RNs), Advance Practice Registered Nurses (APRNs), other master's degree prepared nurses (MSNs) who work in a variety of non-clinical roles, or nurses holding PhD degrees. In order to minimize the confusion and potential for disagreement over the terms of reference in discussing various components of the nursing workforce, this report (especially this chapter on education programs) focuses first and predominantly on RN-licensed nurses (which includes graduates of hospital-based diploma programs, associate in applied sciences in nursing degree programs, baccalaureate degree programs, master's degree programs and doctoral-level programs). We chose to focus on RNs because they comprise 81.6% of the more than 91,000 nurses (RNs and LPNs) holding a license to practice in the state. The chapter then presents separate, but less detailed, discussions of issues related to the education of other categories of the nursing workforce. There is no intent to suggest a lack of importance of LPNs or nursing assistants in the overall nursing workforce. However, the volume of material and the complexity of the issues necessitated some division of the work of the Task Force.

Figure 3.1.
Possible Educational Pathways in Nursing



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** North Carolina does not "certify" nurse aides. These personnel are "listed" after successfully completing the required training and competency evaluation program of the Nurse Aide I or Nurse Aide II Registry.

Simultaneous with the initiation of the Task Force here in North Carolina, the Institute of Medicine of the National Academy of Sciences released its report entitled *Health Professions Education: A Bridge to Quality in 2003*.[1] This report underscored the importance (for *every* healthcare profession) of five key practice competencies anticipated to be highly relevant to the coming era of healthcare provision in the United States: (1) delivering patient-centered care, (2) working as part of interdisciplinary teams, (3) practicing evidence-based medicine (nursing), (4) focusing on quality improvement, and (5) effectively using information technology. The Task Force endorses these ideas as critical dimensions of professional nursing education and practice. The Task Force further commends the NC Board of Nursing (NC BON) for its current effort to strategically plan for the incorporation of these areas of assessment in its approval and regulation of nursing education programs in the state.

Historically, there have been barriers to the collaboration between different types of nurse education programs. It is a tribute to the leadership and wisdom of those chosen to serve on this Task Force, and the process through which these deliberations took place, that much of the previous difficulties in discussing the respective problems and potentials of different educational systems for educating the future nursing workforce were set aside in favor of a coherent, goal-oriented approach that would enable North Carolina to achieve the most highly educated nursing workforce possible.

"RN"—Many Pathways to First-Level Licensure for Nursing Practice

The entry-level credential for nursing practice is the basic license as a "Registered Nurse." Nurses obtain their RN licensure by completing a basic course of study (i.e., BSN, ADN, or hospital diploma) and passing the National Council Licensure Examination (NCLEX-RN). For registered nurses, the basic entry-level knowledge and skill are assumed to be that required to pass the NCLEX-RN examination.

Although there are some disagreements about the relative quality of preparation of graduates from different types or levels of nursing education programs, the only recognized standard to measure preparation for nursing practice is the NCLEX-RN examination. Yet, the NCLEX-RN examination "...is not intended to define excellence or expertise at any level of nursing practice. To use the NCLEX-RN as the vehicle to make explicit the distinctions that result from different academic preparation is to misunderstand its purpose and requirements."[2] As Cathcart points out, "(Though)...the academic requirements of associate's degree, diploma and baccalaureate programs may vary widely...healthcare settings that employ nursing graduates often make no distinction in the scope of practice among nurses who have different levels of preparation." Taking this into account, the Task Force made no attempt to distinguish among the three pathways to RN licensure with regard to presumptive differences in preparation for various levels of nursing practice at the point of entry to the profession.

However, as the Task Force went about its work, there was growing concern throughout the nation over reports of avoidable clinical errors and untoward outcomes of health and medical care. Nurses are a significant, perhaps the most significant, providers of day-to-day patient care in some healthcare settings. Despite growing evidence that both larger numbers of nursing personnel employed in these settings[3,4,5] and the higher average levels of nursing education in a given facility[6,7,8] make a difference in decreasing mortality rates, reducing medical errors and nursing practice violations, and improving patient outcomes, nurses continue to be used interchangeably in most healthcare settings.[9]

The Task Force responded to these recent findings by underscoring the following **Nursing Workforce Development Goals for North Carolina:**

1. *to produce the numbers of nurses needed to meet North Carolina's needs for the future,*
2. *to produce the best educated nursing workforce possible, and*
3. *to promote those innovations that would enable any nurse practicing in North Carolina to gain additional professional education and advancement opportunities throughout her/his career.*

There was complete agreement that *all categories* of nursing education programs should be strengthened, and that graduates of each should become increasingly well-prepared to meet the nursing and patient care challenges of the future. Given the fact that close to 70% of all nurses in the nation, and more than 60% of nurses currently practicing in North Carolina, are graduates of ADN or hospital-based

Table 3.1.
Number of Entry-Level RN Nursing Education Programs by State in Southern Regional Education Board (SREB) States, 2002 (2004, NC data only)

State	Total Programs N	BSN Programs N (%)	ADN Programs N (%)	Diploma Programs N (%)
TX	83	30 (36)	51 (61)	2 (2)
NC	**64**	**13 (20)**	**48 (75)**	**3 (5)**
FL	48	18 (38)	29 (60)	1 (2)
TN	33	20 (61)	12 (36)	1 (3)
VA	38	14 (37)	17 (45)	7 (18)
AL	37	13 (35)	22 (59)	2 (5)
GA	39	19 (49)	19 (49)	1 (2)
KY	37	14 (38)	23 (62)	0
OK	31	14 (45)	17 (55)	0
LA	22	13 (59)	6 (27)	3 (14)
MD	27	10 (37)	14 (52)	3 (11)
SC	22	9 (41)	13 (59)	0
MS	22	7 (32)	15 (68)	0
WV	25	14 (56)	10 (40)	1 (4)
AR	26	9 (35)	14 (54)	3 (11)
DE	9	4 (44)	4 (44)	1 (11)

Sources: Southern Regional Education Board, 2003 and NC Board of Nursing, 2004.

programs, these programs are absolutely essential to meeting the nursing needs of our population now and in the future. At the same time, however, programs preparing nurses at the BSN, MSN, and higher levels are meeting critical needs as the demands of nursing practice, the needs for additional nursing faculty, and professional leadership positions demand higher levels of nursing education.

Every nursing education program, and every category of program, has its unique set of problems and issues, yet each has a critical role in meeting some part of our overall need for nurses in this state. Both public and private financial investments in the development of North Carolina's nursing workforce need to be managed with effectiveness and efficiency. The Task Force concluded that nursing workforce development goals for the future will require a great deal of collaboration and cooperation across all types of nursing education programs and with the healthcare employer community. From this perspective we began our examination of issues, problems and possible options for change.

RN Nursing Education Programs in North Carolina

North Carolina has an abundance of nursing education programs at every level. Few other states have as many separate programs offering pre-licensure educational opportunities for persons interested in a nursing career. As of the year 2004, there were 64 nursing education programs in North Carolina offering credentials for entry-level RN licensure (BSN/ADN/Diploma). Among states in the Southeastern Region (i.e., those states served by the Southern Regional Education Board), only Texas has more nursing education programs than North Carolina (see Table 3.1).

The issue isn't just the *number* of programs, but the *mix* of programs producing an eventual mix of nurses with a range of educational credentials. This is important because one of the Task Force goals is to advance the overall level of nursing education in the state's workforce by extending opportunities for higher levels of educational credentials and avenues for career advancement to North Carolina nurses. When we examine the mix of nursing education programs in each state preparing nurses at various levels, we find that North Carolina has the lowest *proportion* of BSN programs of any of the SREB states. In Texas, the state with the most nursing programs (83), 36% are BSN programs. In Florida, 18 of 48 or 38% are BSN programs; and in Tennessee 61% of nursing education programs offer the BSN degree. In North Carolina, only 13 (20%) of its 64 programs prepare graduates for entry-level RN licensure in BSN programs. Likewise North Carolina has the highest percentage of ADN programs among the SREB states at 75%. While data on RN program graduates are inconclusive, they suggest that North Carolina with its many programs produce no more nurses than states with fewer programs.[A] Two of the issues of concern to the Task Force, therefore, were the *capacity* and *efficiency* of

[A] The Task Force attempted to acquire data from the SREB to make a more precise determination of this impression, but unfortunately SREB relies on annual or semi-annual surveys of state boards of nursing, for which response rates are disappointing and therefore unreliable. Anecdotal surveys of data published on the Internet sites for some state boards of nursing in SREB states do support this point, but one cannot at this point arrive at a conclusive statement of fact.

existing nursing education programs. At a minimum, the Task Force attempted to understand whether existing programs, at every level, could produce the numbers of nurses needed by our state's growing population.

How Many RNs Are Current Programs Able to Produce?

Determining the capacity and efficiency of North Carolina's nursing education programs are not new policy questions. These same questions were the focus of much of the effort leading to the findings of a special *Consultation Report on Baccalaureate Nursing Education in the University of North Carolina: Report to the President* commissioned by the UNC System in April of 1990. Reference to this report, although rendered 13 years ago, is important to set the context for the work of the current Task Force. If for no other reason, it reminds us that much of what the Task Force discussed regarding nursing education programs was a continuation of problems/issues which were identified years ago and for which no effective or lasting solutions have been found. It is hoped that 13 years hence those reviewing the present report will not conclude that the same issues and problems still exist.

In the 1990 report to the UNC Board of Governors, citing earlier data from the SREB, it was noted that North Carolina had nine BSN programs, 48 ADN programs and four diploma programs. It was noted that "articulation" programs through which associate degree and diploma graduates may enter BSN programs in the state's public universities were "...complicated by the number of ADN programs and the differences among them." Furthermore, the report called attention to the fact that the neighboring state of Tennessee, with 35 entry-level RN programs at that time, prepared only 86 fewer nurses than did North Carolina with 56 programs. Most of the ADN programs in North Carolina were then, as they are now, small in terms of numbers of graduates.

There have been some notable improvements in the level of faculty credentials in community college nursing programs over the past decade. In 1990 fewer than 50% of the nursing faculty teaching in ADN programs in North Carolina held master's degrees in nursing. The NC Board of Nursing now reports that the number of full-time master's-prepared nursing faculty in these programs is 78%.

The 1990 report underscored the need for better coordinated planning for nursing education in our state as a means of making nurse education more cost-effective. Finally, the 1990 report called attention to the need to achieve a higher level of gender and racial diversity in nursing education programs (ADN, BSN, and MSN) and the state's nursing workforce, two issues of concern to the present Task Force.

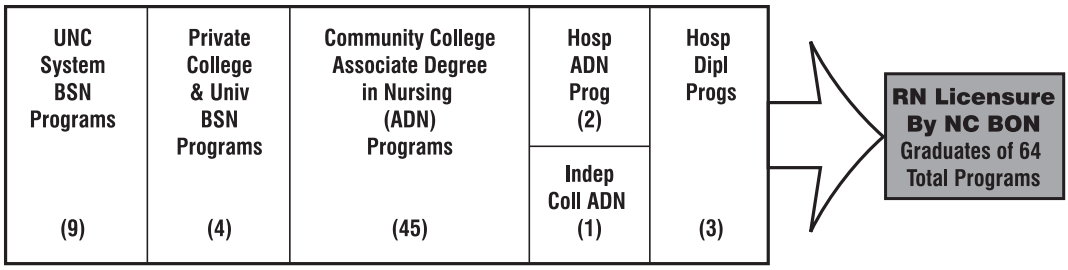
Though the number of entry-level RN nursing education programs in North Carolina has continued to grow at a rapid pace, the issues and problems identified more than a decade ago remain major concerns.

Prelicensure Nursing Education Programs

There are currently 64 programs offering credentials for RN licensure (13 BSN/3 Diploma/48 ADN). All 13 prelicensure BSN programs are nationally accredited. Nine of the BSN programs are part of the UNC System and four are offered by private colleges and universities. Of the 48 ADN programs, 12 are nationally accredited. Forty-five of these programs are offered through the NC Community College System (NCCCS); two are hospital-based; and one is offered through a private college. There are three hospital-based diploma programs; all are nationally accredited. One additional new BSN program (within the UNC System) is in the second phase of development.

The mosaic of

Table 3.2.
North Carolina Nursing Education Programs Preparing Graduates for Entry-Level RN Licensure, 2003



An additional BSN program is in the second phase of development as of February 2004, within the UNC System.

North Carolina nursing education programs preparing graduates for entry-level RN licensure (diagrammed in Figure 3.1) is complicated, reflecting the different histories and rationales for the creation of programs within various sponsoring educational institutions.

Many of the prelicensure programs are small. The NC Board of Nursing reports that in 2002, 25 of the 63 programs (40%) providing writers for the NCLEX-RN examination each had fewer than 30 graduates taking the exam for the first time; nine programs (14%) each had fewer than 20 first-time examinees. Twenty-five of these programs had fewer than 30 first-time examinees in 2003, and eight of these programs had fewer than 20 first-time testers.

A detailed appendix (Appendix 3.2) to this chapter provides important data for each of these programs. In addition, a separate appendix (Appendix 3.3) provides trend data on the capacity and productivity of North Carolina's nursing education programs by type.

Accelerated BSN Programs

One of the innovative nursing education program developments that has been offered in three of North Carolina's collegiate schools of nursing (Duke, UNC-Chapel Hill and Winston-Salem State University) is the accelerated BSN Program. Through such programs, individuals who already possess an undergraduate degree from a four-year college or university and who have already taken the appropriate science and other prerequisite courses normally part of the initial two years of the baccalaureate curriculum can apply to enter a school of nursing offering the accelerated BSN option. These programs, typically 14-16 months in duration, provide an intensive exposure to the clinical skills component of nursing, nursing practice theory and an orientation to the structure and functioning of the healthcare system and the role of nursing as a profession. Program graduates are awarded the BSN degree and are eligible to sit for the NCLEX-RN examination.

Nationally, accelerated BSN programs are being recognized as an effective way to recruit a new "pool" of well-educated young and middle-aged, college-educated persons into nursing, while at the same time adding to the diversity of the nursing workforce. For example, the Duke University accelerated BSN program has among its student population about 15% males and 14% minority candidates. Because the timeframe to acquire the skills necessary for entry-level licensure and employment is considerably less than half of what it would take to acquire a four-year academic degree in any other field, these accelerated BSN programs have become attractive options to those who already have a college degree and who are considering career changes.

Post-Licensure Nursing Education Programs

There are currently 16 RN-to-BSN programs in North Carolina. These programs enable licensed RNs, who received their basic entry-level education in an ADN or hospital-based diploma program, to acquire a baccalaureate degree. All of these programs in North Carolina are nationally accredited. Ten of these programs are part of the UNC System, one is hospital-based, and five are offered by private colleges. These programs do not add to the overall number of licensed nurses, but do increase the overall educational levels of the basic RN workforce while providing individual nurses with many options for career advancement, which is a central, overall goal advanced by the Task Force. Strengthening and expanding these programs is an important strategy for nursing workforce development in North Carolina.

Master's Degree Programs

There are ten institutions offering master's degrees in nursing. Seven of these institutions are part of the UNC System and three are offered by private colleges. Graduates of master's degree programs are prepared for faculty, administrative, informatics and a variety of advanced practice clinical nursing roles, including nurse practitioner, clinical nurse specialist, nurse-midwife, and nurse anesthetist.

Doctoral Degree Programs

There are currently two institutions (East Carolina University and UNC-Chapel Hill) offering a doctoral (PhD) degree in nursing. Additional doctoral programs in nursing are being planned at Duke University in Durham and UNC-Greensboro. Graduates of nursing doctoral programs are prepared for faculty roles in universities, providing contributions to both teaching and research, and for leadership positions in healthcare service and policy.

As the Task Force examined these data, it was clear that North Carolina has an abundance of nursing education programs, some of these being very small in terms of both faculty and student populations.

Hence, the Task Force attempted to address the following questions:

1. Are there *too many* nursing education programs in North Carolina; are existing programs able to operate at an acceptable level of efficiency and quality?
2. Do we have the *right mix* of nursing education programs, likely to yield the right mix of graduates and practicing nursing personnel?
3. Is there a rationale for maintaining the present number of nursing educational programs, or allowing additional programs to develop?
4. Are there cost-effective ways of reorganizing North Carolina's existing array of nursing education programs so that the overall quality and productivity of these programs could be enhanced?
5. What are the principal factors affecting the quality and productive capacity of existing nursing educational programs and how might these be improved?

Issues Regarding the *Number* and *Capacity* of Entry-Level RN Nursing Education Programs in North Carolina

There are differences of opinion with regard to whether our state's large, and growing, number of entry-level RN nursing education programs is seen as a potential problem, or a positive accomplishment. As the Task Force considered these issues, it became increasingly clear that our discussion would have to take place separately for each of the types of programs and their respective sponsoring institutions. Hence, the report separately discusses issues related to (1) associate degree programs offered primarily through the state's Community College System, (2) baccalaureate programs offered through the state's public institutions, (3) baccalaureate programs offered through private colleges and universities, and (4) diploma programs offered through hospital-based nursing education programs. In this way we hope to make the set of recommendations which follow more logical and specific to the needs and capacities of each type of program.

Four principal themes were central to the Task Force's consideration of the number of nursing education programs in North Carolina. These were:

- **Capacity** (i.e., the number of nursing students enrolled in these programs; the availability of appropriate clinical sites for offering clinical nursing education and experience; numbers of faculty; physical space to conduct the didactic portion of these curricula)
- **Access** (i.e., the extent to which educational opportunities exist for persons interested in pursuing—or advancing in—a nursing career)
- **Efficiency and Effectiveness** (i.e., the extent to which retention and graduation rates were high, attrition rates were low, and the extent to which resources are used most efficiently to accomplish these education goals, including the possibility of consolidation of programs where economies of scale and duplication were considered)
- **Quality** (i.e., the performance of programs reflected in pass rates for the NCLEX-RN exam, meeting national standards of accreditation, and faculty numbers and their credentials).

The Task Force singled out *faculty recruitment and retention* and securing *appropriate clinical sites* for nursing education as key components of nursing education programs that affect the capacity of these programs to educate students. The Task Force examined the problems and issues surrounding faculty recruitment and retention in North Carolina nursing education programs at some length. This is a national issue as well, but in North Carolina the issue is manifest in different ways depending on the nursing education program being considered. Faculty shortages have much to do with the current and future capacity of nursing education programs to expand in order to meet the state's needs for additional nursing personnel. As noted in Chapter 2 of this report, a large number of prospective nursing students each year are being denied admission to the state's nursing education programs due to nursing faculty shortages and only a small number of such programs indicate that they could expand their student enrollments without additional faculty.

Nursing education programs face a continuing problem of identifying appropriate facilities where patient care is actively being given and where it is possible to integrate student learning opportunities under direct faculty supervision. Education programs affiliated with large academic health centers have a considerable advantage in this regard, but most hospitals, nursing homes and other clinical facilities make learning opportunities available to students

from several nursing education programs. Coordination of the placement and supervision of these students is an on-going problem, both for the clinical facility and for the school of nursing. The Task Force heard anecdotal accounts of nursing programs encountering difficulties in working out overlapping assignments of students to the same clinical facilities and instances of one nursing education program having preferential access to clinical facilities in a certain geographical area. With so many nursing education programs in the state, each with specific mandates for both the types and amounts of supervised patient care experience as part of their curricula, coordination of access to these facilities is a major concern among nursing educators, the Board of Nursing, and these clinical facilities.

While the availability of nursing faculty and clinical sites affects the ability of nursing programs to educate nursing students, there is no widely accepted index to measure the capacity of nursing education programs. While at first glance it was thought that the number of student "slots" approved by the NC BON could serve as such an index, many objections were raised over the meaning and interpretation of these NC BON approved slots as indicators of *current* program capacity. Task Force members noted that the enrollment and capacity data provided by the NC BON indicate that only about 85% of available slots (i.e., BON-approved capacity) in BSN and ADN programs[B] preparing graduates for RN licensure are being used at the present time. If all slots in these programs could be filled, another 1,452 nursing students could be in the pipeline to obtain RN licensure. However, there has been no historical impetus to reduce BON-approved slots when conditions at a school of nursing change in a way that reduces its capacity to educate the approved number of students (due, for instance, to faculty position reductions or shortages, increased competition for clinical sites, etc.) These data raise important questions about the *capacity* of these programs, but also about the meaning and utility of BON approval of slots in these programs as a measure (or index) of nursing education program capacity. This issue will be discussed further as specific recommendations are presented in later sections of this chapter.

For each type of program, we will attempt to address the principal themes in as much detail as was available to the Task Force during its deliberations.

Associate Degree Programs offered through the Community College System

All but three Associate Degree (ADN) programs in North Carolina are offered through the Community College System. Two ADN programs are offered by hospital-based schools of nursing; one is offered through a private college. Since 1998, approximately 60% of all prelicensure RN graduates from North Carolina schools of nursing have received their entry-level nursing education through an ADN program. Because of the large number of ADN programs in the state and their proportion of all nursing programs, a great deal of the Task Force's attention was directed to these programs, their structure, performance, and financing.

Capacity

Associate Degree nursing education programs preparing graduates for RN-licensure use about 77% of their 6,280 BON-approved slots (based on three-year average enrollments). Community-college programs do not request additional slots until such time as they have the funds approved and are able to identify both students to enroll and clinical sites within which to educate these students.

Adequate faculty resources in North Carolina's Community College System is an issue for the System in general and one of the key issues related to community college-sponsored nursing education programs in particular. Faculty in many community college nursing education programs are older and nearing retirement age (36% of full-time nursing faculty in North Carolina community colleges are older than age 50; 45% are between the ages of 40 and 50). Salary levels for faculty in these programs is not only lower than in community colleges elsewhere in the nation, but North Carolina community college faculty salaries are substantially below what nursing graduates (i.e., the *students* of these faculty) are routinely offered in entry-level nursing practice positions. The data in Table 3.3 show the relative discrepancy between levels of salary compensation for faculty (in all disciplines) in North Carolina community colleges versus salaries in other SREB states.

[B] No data were available on percent of NC BON capacity used in hospital-based programs.

Table 3.3.
Average Salary of Full-Time Instructional Faculty in Two-Year Community Colleges in SREB States, the Nation, and North Carolina

State	Average Salary for All Ranks of Faculty 2001-2002	Percentage of US Average	State Salary-Level Rank
Maryland	$53,271	115.6	1
Delaware	$51,113	110.9	2
Virginia	$46,668	101.9	3
UNITED STATES	**$46,053**	**100.0**	
Georgia	$45,681	99.1	4
Florida	$44,694	97.0	5
Texas	$44,233	96.0	6
Kentucky	$43,429	94.3	7
Alabama	$43,387	94.2	8
16 SREB STATES	**$41,016**	**89.0**	
West Virginia	$40,927	88.8	9
South Carolina	$40,074	87.0	10
Mississippi	$40,054	86.9	11
Oklahoma	$39,959	86.7	12
Tennessee	$38,924	84.5	13
Louisiana	$38,147	82.8	14
NORTH CAROLINA	**$36,809**	**79.9**	**15**
Arkansas	$36,778	79.8	16

Sources: SREB State Data Exchange, National Center for Education Statistics, American Association of University Professors, 2002.

Although the percentage of ADN program faculty with master's degrees and above has risen to 78%, these programs are still dependent on as many as one-fifth to one-fourth of their faculty who hold only a baccalaureate degree. At the time this report was written, there were 12 vacancies for full-time faculty in North Carolina community college nursing education programs, eight of which have been vacant for longer than six months.[c] It should be pointed out that ADN program directors responding to the 2003 survey from the NC Center for Nursing (NCCN) reported vacancy rates for full-time and part-time faculty that were not that different from rates in the state's four-year collegiate nursing programs offering the BSN degree. Hence, faculty recruiting and retention is a generalized problem within all types of nursing programs in our state. With the current difficulty of recruiting adequately prepared faculty, the low salaries offered to community college faculty, and the often rural location of some community college campuses, extreme faculty shortages are expected in nursing education programs of North Carolina's community colleges in the decade ahead.

Beyond these salary level deficiencies, faculty in community college nursing education programs often have a number of responsibilities assigned to them beyond their traditional classroom or clinical teaching roles. Many, if not most, nursing faculty in these programs also serve as student advisors and mentors outside the classroom on matters unrelated to curriculum content. The non-traditional student typically attending these programs is older than most college age students, (see Table 3.4) has other work and family obligations, and requires support services of various kinds in order to stay enrolled. A shortage of student support services in North Carolina's community colleges means nursing faculty often fill this void.

Aside from the Program Director, faculty members in the Community College System are usually hired on a year-by-year basis. Community college nursing faculty experience no differentiation in academic rank (and associated salary increments) and no job security equivalent to the tenure provisions available to some

Table 3.4.
Student Age Group Distribution in BSN and ADN Programs in NC, 2003

Age Groups	BSN Programs	ADN Programs
< 30	86.5%	61.3%
31-40	8.4%	26.2%
> 40	6.8%	12.1%

Sources: NC Center for Nursing, 2003.

[c] The 2003 survey of nursing education programs by the NC Center for Nursing finds 16 unfilled full-time positions and two unfilled part-time positions in these ADN programs.

(but not all) faculty in university and college programs, or to faculty in the state's public school system.

The directors of nursing education programs in the Community College System know from year-to-year how many faculty they can hire based on actual or projected enrollment in these programs and on the basis of faculty compensation levels established by the individual community college as a whole. Community college program expansions must occur "retrospectively," through faculty overloads or seeking of external funds. Any new faculty hired to increase enrollment must be hired by having current faculty assume a higher per-faculty teaching load in a given year, with the prospect that in the subsequent year the per capita payment of state funds to the community college will recognize the additional enrollment and enable the local institution to extend an offer to an additional faculty member. This expansion is especially difficult when clinical courses are involved since the program must not exceed the clinical faculty-to-student ratio (of 1:10) mandated by NC BON regulations.[D] Because expansion of community college programs occur *prior* to funding increases, community colleges often seek external funding from the Kate B. Reynolds Charitable Trust and other sources to support the initial expansion of the nursing program until the program obtains increased legislative funding. In contrast, expansion of programs in the state's public universities can normally depend on enrollment growth funding to be available in the same year as the enrollment growth occurs.

The major problems at the moment related to faculty recruitment and retention within the Community College System appear to be concerned with the availability of nurses with graduate-level (MSN) degrees to serve as faculty and the salary levels of community college faculty positions, the latter being a System-wide problem for community college faculty recruitment and retention efforts. In response to the first of these problems, the state's colleges and universities offering graduate-level nursing education programs have responded by offering a number of off-campus and/or distance learning programs that put these educational opportunities within reach of nurses who must remain employed while pursuing advanced degrees and who cannot relocate to a university campus for full-time study. East Carolina University, UNC-Greensboro, UNC-Charlotte, UNC-Chapel Hill and Duke University have each offered new master's degree programs tailored specifically to the needs of nurses who are only able to pursue master's degrees through non-traditional programs. Further efforts to meet the needs of community college faculty expansion include the development of special curricular components with an emphasis on adult education teaching methods and technologies appropriate for persons choosing careers in nursing education. In addition, there was a proposal for the development of a North Carolina Nursing Faculty Fellows Program introduced in the last session of the General Assembly (House Bill 808) which, if enacted and funded, would assist persons with nursing education career goals in entering this field. This bill would provide a two-year scholarship loan in the amount of $20,000 per year per recipient to persons who, after completing their MSN, would work in a faculty position in a university, community college or hospital school of nursing.

Access

There are important historical reasons why so many nursing education programs have developed through the NC Community College System. There are important philosophical underpinnings of the System that provide at least part of the rationale for the present number and any future growth in the number of such programs.

Though North Carolina is the 10th largest state, it is arguably one of the nation's leaders in assuring accessible and affordable higher education opportunities for all its citizens in close proximity to where they live. The distribution of community college programs throughout the state is such that a North Carolina citizen who wants to pursue post-high school education in almost any field has a program in his/her county or in an adjacent county. The philosophy which has motivated the expansion of community college programs throughout our state, within a system that gives most of the control over the content and structure of these programs to local (county) decision makers, has a significant implication for the future prospects for change in the state's nursing education programs.

[D] The ratio of 1:10 is a "clinical" ratio, which is often further reduced by the host clinical facilities to 1:8, and in specialty areas it may be even smaller.

Community college administrators point out that nursing education programs, existing on virtually all of the System's campuses, are expensive and drain resources from other programs sponsored by these Colleges. Community colleges, being locally governed but state-supported, operate primarily to serve the local economic development needs of their communities, including the healthcare providers who employ nursing personnel. It is in response to local demand for nursing personnel that community colleges have developed nursing education programs. Some community college administrators say that were the demand not there, they would be motivated to discontinue nursing programs and reallocate these resources to other programs.

Efficiency and Effectiveness

Problematic with the philosophy of assuring virtual statewide access to nursing education is the fact that not enough resources are allocated to support equally high quality programs in every community college. The fact that some of these programs produce very few graduates who sit for the licensure examination each year was cause for concern about the wisdom of further expansion of the number of such small programs. Though the Task Force did not do a detailed "cost/graduate" analysis for each ADN program (nor did it do a similar calculation for baccalaureate degree nursing education programs), observations of this kind naturally led to questions about the feasibility of program consolidation and the potential for inter-campus consortia. Some consolidation of programs would presumably help to maximize the efficiency of resource utilization.

Representatives of the Community College System noted that past attempts to regionalize or consolidate nursing education programs were not well-received by the participating campuses and they were generally more expensive than operating these programs separately, although there were no data available to document this. Despite the fact that the NC BON approved a single number of student slots for the combined program, and there was a single nursing program director appointed, each community college in the consortium appointed a campus coordinator of nursing education in addition to the consortium director, thus increasing overall faculty costs. Discussion of the potential for "re-structuring" nursing education programs, at least with regard to consolidation, was not conclusive.

The larger issues regarding the efficiency and effectiveness of ADN programs offered through the NC Community College System have to do with high attrition/low retention rates in these programs. Depending on which data are used, and for which cohort of students, only about 50% of those who enter ADN programs in the community colleges actually complete these programs within two years of enrollment and become eligible to sit for the NCLEX-RN examination. The Office of the President of the Community College System has taken the lead in identifying this problem and potential approaches to increasing the rate of retention and graduation from these programs. One of the factors which was of concern to some Task Force members was the highly variable admission criteria among these programs and the fact that some (probably only a few) local colleges were not employing a thoroughly "merit-based" system for student selection and admission decision making. Although the admission criteria were found to be highly variable, most North Carolina community colleges do in fact rank-order applicants in terms of a number of conventional college-level admission criteria (e.g., high school grade point averages, high school and college preparatory courses taken, SAT scores, the Nurse Entrance Test, etc.) and do not use a "waiting list" of persons compiled on the basis of one's date of application.

A larger problem contributing to the low completion rates in some ADN programs may be due to the student's family and economic needs. Many of the ADN students are older than typical undergraduate college student populations and have other obligations (associated with employment and/or family), that make it difficult for them to focus exclusively on their nursing education. As a result, some students need to extend the time taken to complete their degrees. Because of the complexity of student needs in these programs, student support services (e.g., academic and career counseling, financial support for tuition and other educational expenses, child care and transportation) are critical to these student populations. Unfortunately, the NC General Assembly eliminated support for much of the student support function in the Community College System over the past two sessions and these types of services are no longer available. The case for reinstating the support for these services was compelling and the Task Force therefore offers a specific recommendation in this regard.

Quality

At present, nine of the 45 ADN programs within the Community College System are nationally accredited; three additional ADN programs offered by private colleges are also accredited, bringing the total number accredited to 12 out of a total of 48 (25%).

Data from the NC BON indicate that pass rates on the NCLEX examination show only minor differences between accredited and non-accredited programs, although accredited programs in fact do have higher overall NCLEX-RN pass rates. The fact remains that all of North Carolina's nursing education programs score better than national averages on this one criterion of program quality.

Table 3.5.
NCLEX-RN Five-Year Average Pass Rates by Type of Program and Program Accreditation

Type of Program	NCLEX-RN Pass Rate
All Types (National)	85.15 %
All Types (North Carolina)	88.96 %
ADN (National)	85.09 %
ADN (North Carolina)	88.90 %
NCCCS Accredited	89.56 %
NCCCS Non-Accredited	88.00 %
Non-NCCCS Accredited	86.00 %

Data for this table provided by the NC Board of Nursing, 2002.

Summary: Community College System-sponsored nursing education programs have three significant problems: First, community colleges have a problem with nursing faculty salaries and the ability to assist individual faculty who wish to pursue graduate-level credentials leading to the MSN degree. Second, community colleges cannot expand their programs, even with significant student interest in nursing careers, without first finding non-state funds to cover these program expansion costs. This retrospective funding situation makes community college-based nursing education programs dependent on the availability of private philanthropic sources of funding for program expansion. Third, there is a critical need for the restoration of student support services to enable ADN and PNE students enrolled in community college-based nursing education programs to pursue their education without undue interruption to their lives and families. If these ADN nursing education programs could increase their retention/graduation rates by just 10%, given the fact that such a high proportion of these ADN graduates stay to practice in North Carolina, it could increase our annual number of new registered nurses by over 450 per year. If the number of filled slots in these programs could reach the number currently approved by the NC BON, the number of additional nurses graduating from these programs assuming the higher graduation rate, could increase to more than 600 new registered nurses per year.

Baccalaureate Degree Programs offered through the University of North Carolina System

In the mid-twentieth century, nursing gradually moved its educational programs from hospitals to universities in keeping with the nation's growing commitment to an educated citizenry. In the 1940s, healthcare in North Carolina was in a dismal state. A study of draft records during World War II revealed that over half of North Carolina's men had been rejected for military service during the war due to poor health status. Lawmakers enacted legislation to create a hospital at the University of North Carolina, as well as to build local hospitals throughout the state, with the help of federal Hill-Burton funds. In addition, state funds were allocated to develop a five-unit Division of Health Affairs at UNC-Chapel Hill that would include previously existing schools of medicine, pharmacy, and public health, while adding two new schools in dentistry and nursing. The state's first baccalaureate program in nursing was established at UNC-Chapel Hill in 1950, two years prior to the opening of North Carolina Memorial Hospital. Other BSN and higher degree programs emerged thereafter in response to state demands for collegiate-educated nurses.

Since BSN-level credentials are a prerequisite for more advanced education in the field of nursing (e.g., MSN or PhD), and for many nursing roles beyond bedside staff nursing care, strengthening these collegiate programs at various public and private institutions in North Carolina opens opportunities for career ladder advancement for persons wishing to pursue careers in nursing. Healthcare agency employers cannot hire all the BSN graduates they prefer to hire and with current research showing the link between higher proportions

Table 3.6.
Age and Initial Educational Background of Nurses Pursuing Advanced Degrees, 2002

MSN - 45 Years of Age and Younger			Total MSN-Regardless of Age		
Total MSN	2,556	%	Total MSN	5,785	%
DIPLOMA	173	7%	DIPLOMA	864	15
ADN	438	17%	ADN	1,126	19
BSN	1,858	73%	BSN	3,576	62
	2,469	97%		5,566	96%
(3% are unknown or "other" degree)			(4% are unknown or "other" degree)		

Doctoral Degrees - ≤ 45 Years of Age			Total Nurses with Doctoral Degrees		
Total Doctoral	41	%	Total Doctoral	206	%
DIPLOMA	4	10%	DIPLOMA	44	15
ADN	4	10%	ADN	28	19
BSN	26	63%	BSN	115	62
	34	83%		187	96%
(17% are unknown or "other" degree)			(9% are unknown or "other" degree)		

Source: NC Board of Nursing, 2003

of nursing staff who are BSN prepared and quality of hospital care, the demand for BSN graduates is likely to increase in the future.[10] Moreover, most nursing faculty in the Community College System are BSN program graduates who have also earned MSN degrees. A steady stream of BSN graduates who then pursue the MSN are critical to the Community College System's ability to expand nursing enrollments in the state.

The Task Force took note of the fact that, at present, there is a ratio of approximately 60:40 in the proportion of the state's new graduates each year who come from ADN/hospital diploma programs versus those graduating from BSN programs. These ratios may suggest that we will not have sufficient numbers of nurses who can eventually assume leadership positions in nursing education, clinical practice and administration where a broader undergraduate education better prepares them for some of these higher-level roles and enables a quicker path to advanced education opportunities in the nursing profession. Even more importantly, ADN program capacity and quality are contingent on an ever increasing number of BSN graduates. The future need for nurses educated at any level cannot be met without increases in the number of persons educated initially at the BSN level either through traditional or accelerated options and without increasing the numbers of RN-to-BSN graduates.

The majority of nurses with advanced degrees are originally educated in BSN programs. Data analyses provided by the NC Board of Nursing in October 2003 (see Table 3.6) indicate that (1) the percentage of nurses who pursue advanced degrees who were originally educated in BSN programs increases if we look only at nurses who are 45 years of age or younger. In other words, even during the time period when articulation in RN-to-BSN programs improved considerably, nurses with graduate degrees were even more likely to have come from pre-licensure education in BSN programs. Even though we may encourage more ADN-prepared nurses to pursue advanced degrees, there is a concern that they will not do so in sufficient numbers to meet the state's need for faculty, clinical leaders, administrators and advanced practice nurses. For this reason, there is a need to expand the state's baccalaureate and higher degree programs in nursing.

Capacity

Public universities in the UNC System, use an average of 68% of their NC BON-approved capacity in 2003. These UNC System schools of nursing had 1,505 prelicensure BSN students enrolled (in the final two years of the nursing BSN curriculum) as of October 1, 2003, and graduated 601 in the most recent academic year. A study of new graduates conducted by the NC Center for Nursing in 1996 showed that approximately 87% of new BSN graduates educated in the state began their nursing careers in North Carolina facilities.[11]

In the public university system, faculty with terminal degrees (e.g., PhD or equivalent), or in some cases those with MSN degrees, hired in a tenure track have the possibility of career ladder advancement through the ranks from Instructor, to Assistant, Associate and Full Professor, with different salary opportunities, provided they achieve the requisite teaching and scholarship standards necessary for such advancement. There are, however, no guarantees of either academic advancement or the awarding of tenure. Our state's university system is highly competitive as each university attempts to meet both institutional and national standards of excellence in their faculty and curricula.

While the universities and colleges offering nursing education in North Carolina face the annual problem of budgetary support for faculty positions, the deans and directors of these collegiate programs operate them in such a way that they are able to assure individual faculty of certain ranks (especially those with academic tenure) continuing employment, as deans and directors adjust the number of students they admit in accordance with overall budgets available to support their faculty.

Collegiate schools of nursing in the UNC System report being able to hire at least 60% of their faculties with the degree level (MSN or PhD) they sought. Vacancy rates for faculty in these schools of nursing are similar to those in community college ADN programs (7.4% for full-time positions and 11.7% for part-time positions).

Seventy-eight percent (11 of 14) of North Carolina's collegiate nursing education programs offering the BSN and/or MSN degrees and higher report difficulties in recruiting and retaining faculty, and yet most of these programs report being able to compensate their existing faculty at salary levels at or above the national average in comparison with similar institutional members of the American Association of Colleges of Nursing. However, faculty recruitment is a highly competitive endeavor. A salary offer at the national average level will not bring in a new faculty member since many schools vie for the same faculty candidate. Further, many other benefits in addition to a competitive salary are needed to recruit the few available faculty each year.

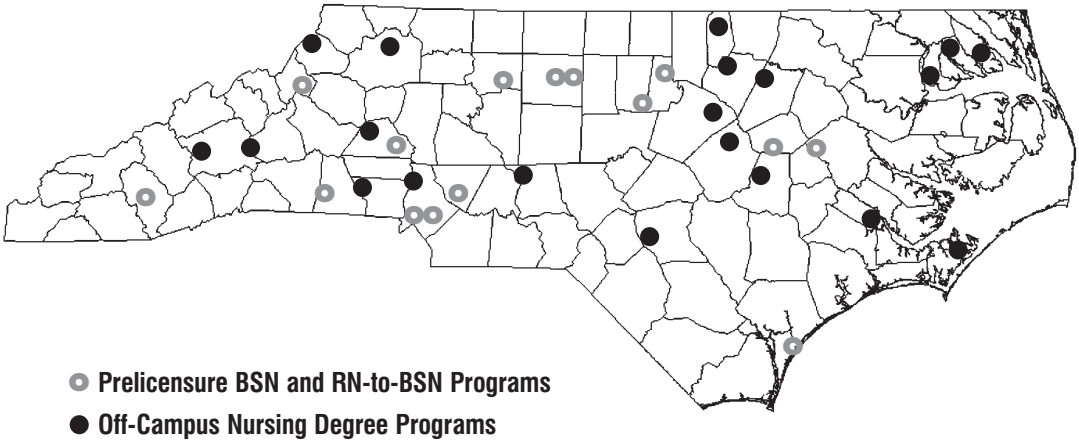
Most of the North Carolina collegiate nursing education programs within the UNC System have faced the problems of budget reductions in recent years, which have necessitated retrenchment. Few faculty in these programs have had real salary increases in the past three years due to state budget constraints. Consequently, nursing education programs from the UNC System represented among the membership of the Task Force reported having to reduce the number of faculty positions as budget cuts have been mandated by the General Assembly in order to meet state budget rescission goals. Yet, data from the NC Center for Nursing Survey of Schools of Nursing reported that the actual number of budgeted positions in these programs actually increased from 2000-2002. The elimination of faculty positions has been coupled with reductions in the number of students admitted (in part because the supervision of students in the clinical portion of their curricula must meet strict student-to-faculty ratios). In combination with demands for greater diversity of MSN and doctoral program offerings and the resulting diversion of faculty resources to those efforts, 20-30% of NC Board of Nursing-approved slots in these UNC System programs offering the BSN degree have not been filled.[12]

Collegiate nursing education programs offering the BSN, MSN and PhD degrees in North Carolina's public universities do not have a major problem with salary levels compared to other academic disciplines, however, if salary levels continue to remain flat, recruitment as well as retention of quality faculty will be a serious issue.

Access

Campuses of the UNC System are geographically dispersed throughout the state, and this is especially true of campuses with schools of nursing. However, it cannot be said that there is a public university-based school of nursing offering a BSN degree option within daily commuting distance of every resident in the state who may choose nursing as a career. For this reason, several UNC System campuses have developed innovative distance learning and Internet-based curricula to enable persons wishing to pursue such educational opportunities to access these programs without being completely uprooted from their homes, families and communities. Since the late 1970s, the NC AHEC Program began supporting collegiate nursing programs in the state offering the opportunity to pursue BSN degrees to RNs in areas where on-campus programs were not readily available. This was in response to a growing demand for baccalaureate degrees from practicing RNs who held a nursing diploma or two-year associate degree. In 1982, the NC General Assembly provided a special appropriation to the NC AHEC Program to expand RN-to-BSN and RN-to-MSN programs for nurses in underserved regions of the state. There was a growing recognition by hospitals that nurses with BSN and MSN degrees were needed for nursing management positions and leadership roles in their hospitals and communities. Working in partnership with ten universities (i.e., Duke University, East Carolina University, Fayetteville State University, NC Central University, UNC-Chapel Hill, UNC-Charlotte, UNC-Greensboro, UNC-Pembroke, Western Carolina University, and Winston-Salem

Figure 3.2.
Distribution of On- and Off-Campus BSN Degree Programs at Public and Private Institutions and in Partnership with the NC Area Health Education Centers Program



State University) and in collaboration with the UNC Office of the President, the NC AHEC Program's off-campus degree programs have graduated over 1,000 nurses with BSN and MSN degrees and have 120 nurses currently enrolled in 2003-2004. AHECs throughout the state provide financial support, needs assessments, classrooms, library support, and clinical sites that support the needs of these non-traditional students.

Two of the collegiate schools of nursing (Duke University and East Carolina University) developed, in partnership with the NC AHEC Program, the "Partnership for Training" program with support from the Robert Wood Johnson Foundation that offered off-campus training for nurse practitioners, physician assistants, and certified nurse midwives in several Eastern North Carolina counties. Some of these programs are continuing and have enabled many of these counties to acquire the skills of advanced practice nurses and physician assistants without these individuals having to relocate to Durham or Greenville.

The NC AHEC Program's RN Refresher Program is a successful option for RNs who are no longer actively in practice, but who would consider employment were their skills and knowledge updated. RN Refresher coordinators in each of the nine AHECs and the coordinator at UNC-Chapel Hill's School of Nursing support students during the didactic modules and then arrange precepted clinical experiences in over 50 healthcare organizations, ensuring that students can be assigned close to home or in their preferred practice site. Over 200 RNs are actively participating in the program this year. Since 1990, there have been 738 graduates of these programs who have re-entered the North Carolina nursing workforce.

Efficiency and Effectiveness

UNC System colleges of nursing have consistently recorded very high graduation rates. Individuals admitted to these programs typically are selected after completion of the first two years of undergraduate college coursework, hence these nursing schools have the advantage of considerable certainty that an applicant can complete, and already has completed, college-level coursework related to the highly technical field of nursing.

The schools of nursing at UNC-Chapel Hill, Winston-Salem State University and Duke University have begun to offer "Accelerated BSN" options through which they admit individuals who have already completed a baccalaureate degree in another field to a special 14-16 month intensive program through which these individuals acquire a BSN degree and become eligible to sit for the NCLEX-RN examination. These programs are highly efficient, use existing resources and faculty, are able to attract a highly diverse group of applicants with regard to both

gender and racial/ethnic characteristics, and they attract individuals with impressive academic capabilities into professional nursing. The Task Force views these programs as the most effective and most rapid means of increasing the number of nurses at the present time.

In order to stimulate the more effective use of clinical facilities for nursing training in the state, the NC AHEC Program, following a legislative mandate, has collaborated with the North Carolina community colleges and UNC System schools of nursing to develop a program to fund innovative efforts in clinical site development. This effort gives emphasis to high-need specialty areas of nursing (e.g., mental health and geriatrics) and rural and underserved areas. Grants for two or three years are made to schools of nursing for this purpose. Through these grants, over 250 additional clinical training sites have been identified and developed for nursing education in North Carolina, and 52 new sites are currently under development with AHEC grant support.

Quality

An overall average of 89% (2000: 87%; 2001: 91%; 2002: 91%; 2003: 87%) of the graduates of North Carolina's BSN programs in public universities who sat for the NCLEX-RN exam in 2003 passed the exam. Of the 9 public prelicensure BSN programs, only one failed to achieve the minimal 75% pass rate on the NCLEX-RN exam in 2003. All of the public university nursing education programs in the UNC System are nationally accredited, indicating that they meet quality standards of the nursing profession. The UNC Board of Governors has established an 85% NCLEX-RN pass rate as the standard for UNC nursing programs and if programs fail to meet this standard two years in a row the programs will be reviewed.

Baccalaureate Degree Programs offered through Private Colleges and Universities

Independent higher education in North Carolina traces its roots to the late 1700's when the oldest institution in the state opened its doors. Private colleges and universities also had been driven throughout their history in North Carolina by a sense of responsibility to respond to the needs of the public from the earliest days of teacher education to today's computer technology programs. Nursing education has been a major part of the curriculum in private colleges and universities throughout their history.

Capacity

Seven of the 37 private colleges and universities in North Carolina offer nursing education programs. Three of these institutions offer prelicensure BSN programs and six of them offer BSN completion programs. The private BSN programs contributed 8.8% of the total prelicensure BSN graduates (60 out of 682), and 14.8% of the RN-to-BSN graduates (45 out of 305) in 2003. Duke University, Queens University and Gardner-Webb University offer MSN degrees and estimate that they produce about a third of all MSN graduates in the state each year.[13] Two private institutions (Cabarrus College of Health Sciences and Gardner-Webb University) offer the Associate in Science Degree (ADN) in nursing.

Program expansions in the private institutions are managed differently in different schools. For the most part, private colleges and universities are enrollment driven, and new faculty hires are tied to an increase in enrolled students; and sometimes to the overall financial health of the college. All of the private colleges and universities offering the BSN degree could increase or have increased their capacities. However, their difficulties in expanding are similar to those of community college nursing programs. First, enrollment is increased while faculty take on an even bigger workload with the hope of increasing faculty in the next year. All of these private nursing education programs face serious difficulty in providing scholarship support for students, which is another factor to be considered when increasing enrollment.

The level of faculty preparation varies by the type of institution, with faculty with doctorates ranging from 70% of the total faculty in a private academic health center, to 25% in one liberal arts college. The private colleges and universities face the same issues regarding faculty recruitment as does our public UNC system. Faculty salaries often lag behind the salaries of those in service, and the national faculty shortage has resulted in recruitment difficulties as well as "faculty raids" by other colleges and universities. Faculty salaries in small private colleges are less than those in the public UNC system. As is true in the community colleges and UNC System schools of nursing, the use of part-time adjunct faculty to teach students clinically is common; however, it is increasingly difficult to hire such faculty because practice salaries greatly exceed faculty salaries.

Access

The private colleges of nursing exist in widely dispersed regions of the state, and while they do recruit nationally, over three-fourths of their students are North Carolinians. The private colleges and universities have also extended their geographic reach through distance education programs. These programs have had a marked impact on increasing the number of family nurse practitioners in health professional shortage areas and in educating nurse educators for rural community colleges and hospitals.

Tuition at private institutions can be more expensive than at one of the UNC System campuses. Although tuition costs vary, the average cost of tuition and fees at North Carolina's private colleges is about 11% below the national average for private colleges and universities. North Carolina residents in private colleges and universities are usually eligible for tuition support of $1,800 (in 2003) from the state of North Carolina. This tuition support, however, is not available for students enrolling in second degree accelerated BSN programs, or for students enrolling in master's programs. Extending this benefit to these North Carolinians would help improve the number and diversity of new nurses, and the education level of our nursing workforce. Nearly all students enrolled in private colleges of nursing are in need of scholarship support. In addition to the tuition assistance available to North Carolina residents attending these programs, philanthropic dollars from North Carolina Foundations are needed to provide this scholarship support and build capacity in nursing programs in our private colleges and universities.

Nineteen of the private colleges and universities in North Carolina (seven of these institutions having nursing education programs) have voluntarily participated in the comprehensive articulation program developed originally between the Community College System and the UNC System.

Efficiency and Effectiveness

Graduation rates for nursing students in the state's private colleges average around 60%.[14] The pass rates on the NCLEX-RN examination for graduates average 88% in 2003. What is less well known, but critically important to the numbers of nurses in North Carolina is whether or not most graduates are North Carolinians, and whether or not most stay in North Carolina. Generally, 75% to 95% of nursing students in private institutions are North Carolinians, and 85% to 92% stay and practice in North Carolina. More than 75% of MSN graduates stay and practice in North Carolina. Increasing capacity in the private sector would positively impact the current and projected shortage of nurses in North Carolina.

Quality

The nursing programs offered by North Carolina's private colleges and universities are all nationally accredited, with all faculty holding advanced degrees in nursing.

Nursing Education Offered Through Hospital-Based Nursing Education Programs

Capacity

Hospital-based nursing education programs, although far less common than they were two or three decades ago, continue to exist in some of the state's larger hospitals. While it is generally presumed that the graduates of these programs predominantly work for the hospitals where they received their nursing education, the Task Force was unable to obtain reliable data by which to verify this assumption. It is known, however, that graduates of these programs migrate both within North Carolina and to other states. There are actually five hospital-based nursing education programs in the state, but two of these (Carolinas College of Health Sciences and Cabarrus College of Health Sciences) award associate degrees in nursing, so are not counted as "diploma" programs. Cabarrus College of Health Sciences also awards the BSN through a BSN-completion program. These hospital-based programs do not receive state funds for their institutional support, but they do benefit from the allocation of federal funds for Graduate Medical Education (GME) received by their host institutions through the Medicare program. These funds generally account for only one-third of the overall budget of these programs, with the remainder coming from a combination of tuition payments, foundation support and other types of fundraising. Though these funds are of critical importance to those hospital-based education programs receiving them, they are not sufficient to serve as an exclusive source of program support.

Access

Students in these programs, with the exception of

those enrolled in the Carolinas College of Health Sciences, are eligible to receive tuition assistance support from the State of North Carolina available for in-state residents attending a private college or university. Because the Carolinas College of Health Sciences is affiliated with a public hospital system which operates as a "hospital authority," it is considered a "public" nursing school, and therefore its students are not eligible for tuition assistance through the state program for North Carolina residents attending private higher education institutions in North Carolina.

Efficiency and Effectiveness

Hospital-based nursing education programs use 77% of their NC BON-approved slots. Because of the expense of operating such programs, and the uncertainties of the hospital industry generally, the program at Presbyterian Hospital Medical Center will merge with the program at Queens University in Charlotte in 2004.

The ADN program offered through the Carolinas College of Health Sciences was the largest ADN program in the state last year, when measured in terms of the number of first-time takers of the NCLEX-RN examination. This program is even larger than most four-year BSN programs in the state (with 208 students enrolled in the fall of 2003, only two other ADN programs in the state have more students enrolled). Nurses who graduate from these hospital-based programs, contrary to expectation, do not stay in North Carolina in any greater proportion than do graduates of other nursing education programs. In fact, the percentages of graduates of these programs who eventually practice in North Carolina is slightly less than for ADN and BSN programs, although it is difficult to obtain data that groups information for Carolinas College of Health Sciences and Cabarrus College of Health Sciences with data from other hospital-based programs.[15] The five hospital-based programs educated 260 (9%) of the 2882 newly licensed by exam RNs in North Carolina in 2003.

Quality

These hospital-based programs are all nationally accredited and have high pass rates (an average of 91.3%) on the NCLEX-RN examination. When the two hospital-based programs are grouped with the three diploma programs, the five-year average NCLEX-RN pass rate is 89.5%.

A Focus on the Licensed Practical Nurse (LPN) Workforce

The LPN Role Defined

The role of the LPN, as defined by the NC Nursing Practice Act, is a dependent role in that a legally authorized RN, physician or other person defined by the Nurse Practice Act must provide supervision for the LPN. The primary role for the entry-level LPN is to provide nursing care in structured healthcare settings for individual clients who are experiencing common, well-defined health problems with predictable outcomes under the direction and supervision of an RN, MD or other person authorized in law. The actual duties assigned to an LPN, even within the legally specified scope of practice, may vary depending on the specific clinical situation, the supervisory relationship between RN and LPN staff, the complexity of the nursing task, the stability of the patient/client's clinical condition, and other factors having to do with the availability of other personnel and resources in a given clinical care setting. LPNs fill a critical need in some healthcare settings, especially in long-term care.

With specific regard to Practical Nurse Education (PNE) programs in North Carolina, the following observations and findings are presented:

Capacity

Thirty-two of the 33 North Carolina PN education programs are a part of the NC Community College System. The one exception is the Department of the Army program. Two new PN programs are presently under development by private entities. There are 1,144 slots for PNE students as of October 1, 2003 in the approved PNE programs. Of these, 924 (80.7%) slots were filled. Six-hundred and thirty-six PNE students graduated in the past academic year. Adequate faculty, resources, and clinical sites are the reasons for unfilled slots. As previously discussed with regard to ADN education programs, program and faculty expansions are funded in the same "retrospective" manner. Many PNE programs have higher faculty turnover rates than the ADN programs as faculty are internally promoted to fill ADN program vacancies.

Students applying to PN programs come from very diverse backgrounds. Many enter with GED backgrounds having never had academic success at a higher education level. They bring economic, family and life issues with them that often need resolving or remain unresolved during their education tenure. Adequate

student support services are a key factor in the attrition, success or failure of these students.

Seven of the ADN nursing education programs allow for an LPN "exit point" after one year. In these programs, coursework in the initial year of the ADN curriculum has been determined to be equivalent to the requirements of the one-year LPN curriculum, and has been accepted by the NC Board of Nursing as eligibility to take the NCLEX-PN examination. Persons who opt for the PN-Exit Point do not receive a "diploma" signifying graduation from the PNE program, as do other graduates; however, they are eligible to sit for the NCLEX-PN examination and obtain licensure as an LPN upon passing the exam. Only a small number of ADN students take this exist point option; the majority continue in the ADN program and enter the nursing workforce as RNs.

Access

North Carolina has a higher number of LPNs-per-10,000 population than the national average (21.8 LPNs/10,000 population vs. 15.1/10,000), and an even higher ratio of LPNs-per-population in its more rural counties. The demand for educating LPNs comes from certain sectors of the North Carolina healthcare industry, such as public hospitals and long-term care. With the existing PN programs, most North Carolina citizens can access a PN education program within a 100 mile commute from their home making PN education extremely accessible without the utilization of advanced educational technology. The graduates receive a diploma and are eligible to take the NCLEX-PN licensure examination. Practice and licensure issues are regulated by the NC BON.

Effectiveness and Efficiency

PNE programs are offered by post-secondary educational institutions, primarily the NC Community College System. The curriculum includes classroom and clinical experiences on caring for patients across the lifespan in hospital, long-term care, and community settings. Upon graduation, the student receives a diploma and is eligible to take the NCLEX-PN and apply for licensure as an LPN. Graduates of PNE programs in North Carolina have relatively high pass rates on the NCLEX-PN examination (average of 94.5% in 2003). Attrition rates from these one-year programs vary from 10%-80%, with an average of 34%. In 2003, only 5 PNE programs produced more than 30 first-time examinees for the NCLEX-RN exam, while 17 produced 20 or fewer first-time examinees.

For adults, with or without family commitments, wishing to enter the nursing workforce, the PNE program is an efficient way of doing so. It assures access into the nursing profession for nontraditional, high school and adult students who do not have more than 12 months to invest in educational pursuits because they must support a family. LPNs have limited opportunity with regard to career ladders and educational programs that allow them to advance their nursing careers. Considering the need for nurses at the bedside, program length and accessibility, the PN education may be one of the more cost-effective ways to increase direct care nursing workforce numbers.

Quality

None of the PNE programs in the state are accredited, although accreditation is available for Practical Nurse Education through the National League for Nursing Accrediting Commission. The reason for lack of accreditation status does not necessarily reflect a poor quality of educational programs in the state, but the lack of financing to hire properly credentialed faculty, develop the support structure and pay the accreditation fees. NCLEX-PN pass rates for those PNE programs operated by the Community College System average 97.6% (for 2003), but, by themselves, these rates do not measure or provide information regarding the quality of the programs in the state. NCLEX-PN rates only reflect the extent to which graduates of these programs meet the minimum standards for licensure. Presently NC BON approval is the only measure of quality outside the review of NCLEX-PN pass rates.

An average of 49% of full-time community college faculty in PNE programs have master's degrees or above.

A Focus on the Nursing Assistant (NA-I AND NA-II) Workforce

Based on 2002 data, there are 507 training and competency evaluation programs for nursing assistants in North Carolina. Two-hundred and six of these programs are offered through the Community College System; 177 are offered through public high schools. There were 21,885 new, first-time examinees or practicing nursing assistants who renewed their listing in

2002. While many of the graduates of these programs never work as nurse aides in North Carolina (some complete their training in order to establish eligibility for ADN programs in nursing and other fields, or for BSN students to work as nursing assistants while students in BSN programs), nurse assistants represent an important part of the overall healthcare workforce in our state. There is tremendous instability and volatility in this component of the North Carolina healthcare workforce. Long-term care is particularly dependent on the stream of graduates from these training programs and has experienced greater than 100% annual turnover among personnel hired in these positions.[16] Detailed studies of the labor market in these occupations within the long-term care field have been completed by the Division of Facility Services of the NC Department of Health and Human Services (NC DHHS).[17] Those analyses indicated a need for additional direct care workers between 1998 and 2008 of 30,850, which puts North Carolina among the top ten states with regard to workforce needs for this level of worker to serve its healthcare industry. The NC Institute of Medicine also published a special issue of the *North Carolina Medical Journal* in 2002 on the "Critical Shortage of Direct Care Workers in Long-Term Care."[18] There is a need for similar analyses within the hospital industry.

The Task Force did not adequately address these issues and has not offered many recommendations in this regard. The NC Institute of Medicine convened a statewide task force on long-term care in 2000, which rendered its report in March of 2001. The report of that task force[19] discussed the labor market for nurse aides in that industry and offered systematic recommendations in that regard. For the most part, though concrete steps have been taken to address these issues by NC DHHS, private foundations, and the trade associations for home health, assisted living, and nursing facilities, this remains one of the major issues related to the healthcare workforce in our state.

The NC Department of Health and Human Services is working with the UNC Institute on Aging on a

Table 3.7.
Numbers and Sponsorship of Nursing Assistant Programs in NC, 2003

Nursing Program Type	Program Characteristics	UNC System Programs	Independent Colleges & Universities	NC Community College System	Hospital Based Programs	Totals
Nurse Aide	Programs: Enrolled: Graduates:	Not Applicable	Not Applicable	206 16,668	Not Applicable	507 21,885

Nurse Aide Training and Competency Evaluation Graduates and Programs (based on 2002 data)

Setting	NAI	NAII	CEP*	NAI/II	Total	Total	Programs
	Cont. Educ.	Cont. Educ.	Cont. Educ.	Curriculum	Enrolled	Listed	
Community College	12,394	1,762	1,652	860	16,668	12,902	206
High School						2,287	177
Home Care						67	2
Hospital						85	5
Mental Health Hospitals†						95	4
Nursing School						2,537	97
Proprietary						3,540	16
Unknown						372	
Total						**21,885**	**507**

* Competency Evaluation Program
† Four state-supported

Source: NC Department of Health and Human Services, Division of Facility Services

"Win-A-Step-Up" project designed to provide continuing education to nurse aides working in long term care in areas identified by nurse aides and their supervisors for additional skill development. This project involves commitments from nursing facilities to teach these courses to a selected number of employed nurse aides, and from nurse aides to commit to remaining employed at the facility for nine month after the completion of the first educational module. The aides receive a stipend for successful completion of each educational module. Payment is made at the end of each successfully completed module. Facilities are encouraged and can receive an incentive payment if they give aides who remain employed after the program's completion either a raise in hourly wage or a retention bonus in addition to the course completion bonuses. This is described more fully in Chapter 4.

Recommendations

After reviewing all of the nursing education issues and problems discussed throughout this chapter, the Task Force came to the conclusion that three goals were of paramount importance if our state is to avoid serous nursing workforce shortages and achieve the highest possible quality of nursing care in the future. These are:

- **North Carolina must increase the number of nurses in every category (LPN, ADN, BSN, Diploma, MSN and PhD), expanding those education programs which have demonstrated acceptable levels of quality, accessibility, effectiveness and efficiency;**
- **North Carolina must find ways of enabling those nurses in practice to pursue advanced education, no matter what portal to nursing practice may have been their entry level; and**
- **North Carolina must increase the overall level of education of the entire nursing workforce.**

Through this approach, the Task Force is recognizing the importance of each of several pathways to nursing practice. Each of the pathways to RN licensure should remain viable, efficient, and offer high quality nursing education. Educational opportunities should be available throughout one's career and each should open new doors for those who choose them. By strengthening each of these pathways, while greatly expanding opportunities for pursuing education at higher levels, the overall educational level of North Carolina nursing can increase, while giving a variety of nursing career options to a broad spectrum of North Carolina citizens. Through this broad strategy, it is envisioned that over the next 10-15 years it is possible that the current ratio of 60% ADN/Diploma to 40% BSN could become 40% ADN/Diploma to 60% BSN, particularly if North Carolina is able to expand prelicensure BSN, RN-to-BSN, and accelerated BSN programs beyond their current capacities.

It is the conclusion of the Task Force that if North Carolina is to meet the challenges of any projected shortfall in the supply of qualified nursing personnel in the years ahead, we need high quality, accessible, effective and efficient nursing education programs. Moreover, the number of graduates of each of these programs who successfully complete both their educational programs and the relevant licensing examination must increase substantially. Furthermore, the number of qualified faculty must increase substantially to enable program expansion. If new resources are to be invested toward these ends, it is important to determine where best to make those investments. In making such recommendations, it is also important to determine not only where we are likely to produce the greatest number of additional graduates, but where we are likely to gain new entry-level nursing practitioners who are best prepared to meet the challenges of North Carolina's changing population and the technological demands of patient care in the years ahead.

The recommendations offered in this section of the report are ones for which the strong support and encouragement of the state's healthcare industry (especially the employers of nursing personnel) are crucial. Moreover, federal, state and private healthcare insurers (third party payers) must recognize the need for the inclusion of higher costs for nursing care in the reimbursable cost of healthcare services generally.

Establishing a Goal for the Number of New Nurses Entering the Profession

Based on US Bureau of Labor Statistics estimates of need, the Task Force anticipated that North Carolina may need to increase RN production by at least 50% from 2003 production levels by 2010 (See Table 2.6). Changes in RN production can be accomplished through increased enrollment, decreased attrition or some combination thereof. Unfortunately, the need for new nurses is a "moving target," as it is affected by in-migration of nurses from

other states, retention of existing nurses in the workforce, and changes in demands for nurses. The actual number of nurses is likely to change over the next ten years as a result of these factors. Therefore, the Task Force set more modest immediate goals to expand the production of new nurses, along with a method to continue monitoring need and production. The Task Force recommends that:

3.1 NC Nursing Programs increase the production of prelicensure RN and LPN nurses.

a. Production of prelicensure RNs should be increased by 25% from the 2002-03 graduation levels by 2007-08. This is a statewide productivity goal, not necessarily a goal for individual nursing education programs.

b. The NC Community College System, University of North Carolina System, private colleges and universities, and hospital-based programs affected by these goals should develop a plan for how they will meet this increased production need. A representative of each system or association should jointly convene a planning group to address these issues. The plan should be reported to the NC General Assembly in the 2005 session. Each year thereafter, the nursing education programs should provide a status report to the NC General Assembly showing the extent to which they are meeting these goals; and whether production needs should be modified based on job availability for new graduates, changes in in-migration, retention or overall changes in the demand for nurses in North Carolina.

c. Greater priority should be placed on increasing production of BSN-educated nurses in order to achieve the overall Task Force goal of developing a nursing workforce with a ratio of 60% BSN: 40% ADN/hospital diploma graduates.

Similarly, the Bureau of Labor Statistics estimates suggest that North Carolina will need to increase PN production by at least 16% from 2003 production levels by 2010 (See Table 2.7). The same factors that affect supply and need for RNs also apply to LPNs. Therefore, the Task Force recommends that:

d. Production of prelicensure PNs should be increased by 8% from 2002-03 graduation levels by 2007-08. This is a statewide productivity goal, not necessarily a goal for individual nursing education programs.

e. The NC Community College System and private institutions affected by this goal should develop a plan for how they will meet these increases. The NC Community College System should convene this planning group, including representatives of private institutions offering these nursing programs, and a plan should be reported to the NC General Assembly in the 2005 session. Each year thereafter, the PNE programs should provide a status report to the NC General Assembly showing the extent to which they are meeting these goals; and whether production needs should be modified based on job availability for new graduates, changes in in-migration, retention or overall changes in demand for practical nurses in North Carolina.

Building the Capacity of Nursing Education Programs in General

The Task Force considered the prospect of future investments in nursing education programs in North Carolina, particularly the investment of public funds, and came to the conclusion that such investments should be tied to the performance of these programs in terms of quality and productivity. The Task Force noted the varying number of individual nursing program graduates who sit for the licensure examination and the rates of attrition from (or failure to complete) some programs. Based on these observations, the Task Force recommended that funding to expand programs be targeted to those programs with a demonstrated history of graduating a high percentage of enrolled students who pass the basic licensure examination. Accordingly, the Task Force recommends:

3.2 The NC General Assembly, NC Board of Nursing, and other relevant educational authorities limit approval for (and funding to support) enrollment growth to those nursing education programs where attrition (failure to complete) rates are lower than the three-year average attrition rate for that category of education program (BSN, ADN, or PNE) and the pass rates on the NCLEX-RN or NCLEX-PN examination exceed 80%.

Although there was disagreement among the Task Force over the value of having the NC Board of Nursing continue to review and approve slots in nursing education programs, the Task Force felt the NC BON should continue to have a role in assessing capacity among these programs. The NC Board of Nursing assesses the capacity of nursing education programs to accommodate additional students in each approved curriculum, based on the number of appropriate faculty and physical space to support the curricula, as well as the availability and accessibility of appropriate clinical sites for nursing education. Accordingly, the Task Force recommends:

3.3 In order to accurately reflect nursing education program capacity, nursing education programs, in consultation with the NC BON, should realign the number of enrollment slots approved for each nursing education program. Nursing programs that are unable to fill their approved enrollment slots within a range of 85% to 115% (100 +/- 15%) for a period of three consecutive years should eliminate these slots from the total number of approved slots by December 31, 2006. The NC BON should mandate that all nursing education programs submit updated information by January 2006 verifying the support for their approved slots after elimination of those slots unfilled for three years (since December 31, 2001). These adjustments will be reviewed by the NC BON in 2007.

Basically, the NC Board of Nursing allows schools of nursing to make their own decisions for either the enlargement or contraction of the size of their entering classes. Applications to the NC BON for approval of additional slots are generally approved, unless the school has experienced other performance or quality deficiencies, once the school demonstrates adequate faculty and clinical site availability. Few programs have ever asked to have the number of approved slots reduced, hence the need for realignment if approved slots are to be used as a meaningful index of program capacity.

Due to the importance of identifying appropriate clinical education sites for nursing education programs, the Task Force was concerned that there should be some more focused statewide or regional effort to identify sites that took place in conjunction with the chief executive officers of major clinical care facilities throughout the state. Accordingly, the Task Force recommends that:

3.4 Clinical facilities (hospitals and nursing homes, particularly), through their statewide trade associations, and in collaboration with all nursing education programs in their respective geographic areas/regions, should undertake to foster a more transparent and equitable system for the allocation of clinical training sites among nursing education programs on a sub-state regional basis.

3.5 Nursing education programs and clinical agencies should work together to develop creative partnerships to enhance/expand nursing education programs and help ensure the availability and accessibility of sufficient clinical sites:

a. AHEC should convene regional meetings of nursing educational programs and clinical agencies to develop creative educational opportunities for clinical nursing training.

b. Nursing education programs of all types, at every level, should work together to develop creative educational collaborations with clinical facilities and programs that promote educational quality, efficiency and effectiveness.

In many areas of the state, all regional nursing programs sit at the same table with clinical care agencies and work out clinical rotations for nursing students

with few or no problems. It is important to emphasize that the Task Force encourages these efforts and does not propose any disruption of these existing patterns of dealing with these matters.

Strengthening the Capacity of NC's Community College Associate Degree Nursing Programs

The Task Force recognized the need to strengthen nursing education programs within the state's Community College System. The Task Force observed that nursing education programs are not classified as "high-cost" programs within the System, despite the expense of increasingly sophisticated healthcare technology and the need for higher salary incentives to attract and retain qualified faculty for these programs. Therefore, the Task Force recommends:

3.6 The NC General Assembly should reclassify community college-based nursing education programs (ADN and PNE) as "high-cost" programs and provide additional funds ($1,543.39) per FTE student to cover actual costs of operating these programs.

3.7 Recognizing the current retrospective way in which the community college programs develop and fund new initiatives, the NC General Assembly should give consideration to an alternative method of funding prospective program expansions within the Community College System that will allow these institutions to add students to existing programs or add new programs where needed (and where past program performance, quality, and efficiencies meet minimum standards for expansion and approval of the NC BON) without the necessity of securing outside (private or local) funding for program initiation.

With this additional flexibility, the community colleges may become more responsive to local need for additional nursing personnel when the need arises.

3.8 The NC General Assembly and/or private philanthropies should invest funds to enable NC community colleges to employ student support counselors specifically for nursing students and to provide emergency funds to reduce the risk of attrition for students in ADN and PNE programs.

The Task Force also supports the goal of seeking accreditation for all community college ADN nursing programs. The Task Force members generally believe that the *process* required for national accreditation as well as the demonstration of having met the specific *criteria* for being nationally accredited are worthy goals of any professional education program or institution. However, the Task Force recognizes that currently the resources simply do not exist within the Community College System to facilitate every nursing education program achieving such standards. The Task Force maintains that enabling all nursing education programs to acquire the resources to meet the standards implied in national accreditation would be a goal of which we could all be proud, and something which we could extend to all our graduates of these programs. Moreover, it is presumed that the prestige of being a faculty member in a nationally accredited program could assist in faculty recruitment and retention. Therefore, the Task Force recommends:

3.9 NC should create incentives, and provide the necessary infrastructural supports, to enable any non-accredited nursing education programs operating within the NC Community College System to pursue and attain national accreditation by 2015.

The Task Force was frustrated throughout much of its deliberations by the inability to access detailed program data on nursing education programs offered through the NC Community College System. It is recognized that an expanded information system is in development and should address many of these problems in the near future. Hence, the following recommendation:

3.10 The Community College System should include in the comprehensive data and information system currently under development data on nursing student applications, admissions, retention and graduation for use by the Community College System and the NC Board of Nursing.

Because of the extraordinary attrition rate in many community college-sponsored nursing education programs, the Task Force recommends:

3.11 A consistent definition of "retention" (or "attrition") should be developed by the NC Community College System and used within all community college nursing education programs.

3.12 A consistent standard should be developed for the evaluation of retention-specific data statewide across all community college-sponsored nursing programs. It is proposed that retention data be analyzed and reported as three-year averages and that all community college nursing programs be expected to attain a standard retention rate for all Associate Degree programs within the state (this standard rate to be set by the Community College System in consultation with the NC Board of Nursing).

There was strong support for merit-based and competitive admission procedures in all nursing education programs, with the presumption that such procedures would help assure that the applicants who were better-prepared for college-level academic work would be given preference for admission and therefore reduce what were seen as very high rates of attrition in these programs. However, the Task Force was unable to locate data to support its presumed relation between competitive admission policies and lower attrition (higher graduation) rates. Therefore, the Task Force recommends:

3.13 The NC General Assembly or private philanthropies should fund the NC Community College System to undertake a systematic institutional evaluative study of the relationship between competitive, merit-based admission policies and graduation/attrition rates in its nursing education programs.

3.14 To reduce the likelihood of attrition from community college nursing programs due to academic performance or ability, admission criteria should be coupled with "competitive, merit-based" admission procedures in all community college-based nursing education programs.

Building the Capacity of North Carolina's University- and College-Based Baccalaureate and Advanced Degree Nursing (BSN, MSN, and PhD) Programs

In its examination of nursing education programs throughout North Carolina, the Task Force was aware of the different needs of nursing education programs based in our state's public and private colleges and universities. Even within this set of programs, there is considerable diversity. Although most of these institutions offer the BSN degree, some do not. Ten offer the MSN, and only two currently offer the PhD in nursing. Given the diversity of these programs and host institutions, the needs of these programs differ as well. The following represent recommended strategies for strengthening these collegiate programs in North Carolina.

3.15 The NC General Assembly should restore and increase appropriations to enable UNC System institutions to expand enrollments in their prelicensure BSN programs above current levels. These funds should be earmarked for nursing program support and funneled to university programs through the Office of the President of the UNC System. Funds should be allocated on the basis of performance standards related to graduation rates, faculty resources, and NCLEX-RN exam pass rates.

3.16 The UNC Office of the President, utilizing data provided by the NC Board of Nursing, should examine the percentage of first-time takers of the NCLEX-RN exam who are BSN, ADN and hospital-based school of nursing graduates. If necessary, the UNC Office of the President should convene the UNC System deans/directors of nursing for baccalaureate and higher degree programs to plan for increases in funding to support enrollment that will assure, at a minimum, a 40% or greater ratio of BSN prelicensure graduates (in relation to ADN and hospital graduates) and, where possible, a gradual increase in the BSN ratio over the next decade. These ratio increases should take into consideration

increases in prelicensure BSN program enrollment, as well as ADN-to-BSN and accelerated BSN program productivity.

3.17 Private institutions offering the BSN degree should be encouraged to expand their enrollments.

3.18 North Carolina residents with a baccalaureate degree who enroll in an accelerated BSN or MSN program at a NC private college of nursing should be eligible for state tuition support equivalent to students in these institutions pursuing the initial undergraduate degree.

Increasing scholarship support is an effective strategy for increasing enrollment in all schools and it is particularly important for private institutions.

3.19 The NC General Assembly and private foundations are encouraged to explore new scholarship support for students in NC's schools of nursing.

3.20 The NC General Assembly should increase funding to the NC AHEC to offer off-campus RN-to-BSN and MSN nursing programs using a competitive grant approach which is available to both public and private institutions statewide.

3.21 Nursing doctoral (PhD) programs should be expanded.

Building an Interest in Nursing as a Career

The Task Force also recognized the need to recruit new people into the nursing profession, especially among men and racially diverse populations. To address this issue, the Task Force recommends that:

3.22 Programs already in place via AHEC, the health science programs in community colleges, four-year universities and colleges, the NC Center for Nursing, and employers (e.g., "Code Blue"[E]), that target a diverse mix of middle and high school students to encourage them to consider health careers and prepare them for entry into programs of higher learning need to be strengthened and expanded.

Specifically:

a. The NC General Assembly should appropriate funds to create a new grant program administered jointly by the NC AHEC Program and the NCCN, to foster innovative efforts in the community colleges and universities to recruit a more diverse set of students into nursing education programs. Grants would be made through an application process on an annual basis to support programs to recruit more underrepresented minorities and men into nursing careers.

b. Private foundations should continue funding for innovative community-based programs to recruit more young people into nursing and other health careers. These include programs such as "Code Blue," health academies, and efforts to work with faith-based groups to strengthen entry into health careers for a more diverse group of students.

c. The NC General Assembly should increase funding to NC AHEC to add one additional health careers recruitment coordinator at each of the nine regional AHECs in order to expand activities in middle and high schools through summer enrichment programs, weekend activities and other educational and mentoring efforts targeted at recruiting young people into nursing and other health careers. This effort should be developed in tandem with the "virtual advising center" being developed by the NCCN (in partnership with the College Foundation of North Carolina).

[E] Code Blue (www.codebluecareers.com) is a Piedmont Triad health careers awareness program jointly sponsored by Forsyth Medical Center/Novant Health, High Point Regional Health System, Moses Cone Health System, and Wake Forest University Baptist Medical Center.

d. The NC General Assembly should increase funding to the NC Center for Nursing to further develop and distribute recruitment materials aimed at racial minorities and men with a target goal of doubling the 2003 levels of minority and male RNs entering the workforce by 2010.

3.23 High school, community college and university guidance counselors should receive additional training in the requirements of North Carolina's nursing educational programs. North Carolina should provide resources for counselors designated to provide student support for nursing and allied health students.

3.24 The NC General Assembly should increase funding to the Nurse Scholars Program to expand the number and types of awards and amount of support given.

Specifically:

a. Increase the award amount for each bachelor's degree category to $6,500, which is equal to the award amount for the Teaching Fellows Program, and increase each half-time slot from $2,500 to $3,250. (Sixty-five hundred dollars would cover approximately 47% of the $13,815[F] estimated cost of education for an undergraduate nursing student in a public university in North Carolina).

b. Increase the award amount for associate degree and hospital diploma categories from $3,000 to $5,600 per award to cover approximately 47% of the $11,986[F] cost of education.

c. Increase the maximum full-time award amount for each master's level slot from $6,000 to $6,300 to cover approximately 47% of the total $13,4816 estimated annual cost of these programs, and increase each half-time slot from $3,000 to $3,150.

d. If items a - c above are rejected, it is recommended that all bachelor's level awards be made equal in value.

Presently, depending upon the specific bachelor's funding category, the maximum award may be either $3,000 or $5,000. To make all of the full-time bachelor's level awards equal would cost roughly an additional $450,000 per year or would necessitate reducing the numbers served by approximately 100 participants.

e. Funding categories of the Nurse Scholars Program should be expanded to include students enrolled at least half-time in study leading to an RN-to-MSN degree and to recipients enrolled at least half-time in study leading to a diploma, ADN, or BSN degree.

f. The Nurse Scholars Program needs to be expanded to grant support to both full- and part-time students in nursing doctoral programs.

The current legislation omits the funding of awards to students who pursue RN-to-MSN programs, perhaps because such programs did not exist when the legislation was first written. Also, part-time awards for undergraduates are limited to the RN-to-BSN programs (also known as "bridge programs" or BSN completion programs) only. Recently, there has been significant interest from nursing school officials and students regarding both the bridge programs and undergraduate awards for part-time school attendance.

3.25 A NC Nursing Faculty Fellows Program should be enacted and funded as specified in House Bill 808 in the 2003 session of the NC General Assembly.

House Bill 808 would have provided a scholarship in the amount of $20,000 per year for an individual who expressed an intention to prepare for a career in nursing education and chose to pursue full-time study toward the MSN degree. Individuals selected for this

[F] This educational cost data reflects the average cost of attendance at North Carolina public institutions for FY 2001-2002 as reported in a State Auditor's Performance Report of nursing scholarship loan programs.

program would repay their loans by teaching in an approved North Carolina school of nursing for a period of two years for each year of scholarship support.

Career Development for Practicing Nurses

3.26 Any North Carolina resident enrolled in a North Carolina public or private nursing education program should receive a state income tax credit to offset these educational expenses.

3.27 Hospitals and other nursing employers are encouraged to consider tuition remission programs to encourage their nursing employees to pursue LPN-to-RN, RN-to-BSN, MSN or PhD degrees.

Though there is a Comprehensive Articulation Agreement between the UNC System and the Community College System with the intent of enabling students who begin their college experience in a community college with plans to progress to a four-year campus, the Task Force identified problems that prevent some students from realizing these opportunities. Hence, the Task Force proposed several specific steps that would greatly facilitate these intended articulation arrangements.

3.28 The Comprehensive Articulation Agreement between the Community College System and the UNC System campuses (Associate in Arts degree), and the bilateral articulation agreements for students with an Associate in Applied Science degree (AAS) in Nursing and the UNC System, should be carefully evaluated and improved by the Transfer Advisory Committee (TAC) so that students wishing to advance from one level of nursing education to another will experience these transitions without course duplication.

a. Associate Degree nursing curricula should include non-nursing courses that are part of the Comprehensive Articulation Agreement (CAA) between the NC Community College System and the UNC System.

b. The UNC System and Independent Colleges and Universities offering the BSN degree should establish (and accept for admission purposes, UNC System-wide) General Education and Nursing Education Core Requirements for the RN-to-BSN students who completed their nursing education in a NC Community College or hospital-based program after 1999.

3.29 An RN-to-BSN statewide consortium should be established to promote accessibility, cost-effectiveness and consistency for RN-to-BSN education in North Carolina.

Practical Nurse Education Programs

3.30 North Carolina nursing education programs should encourage LPN-to-ADN pathways (within community college nursing education programs) and LPN-to-BSN cooperative arrangements between community colleges and campuses of the UNC System to facilitate career advancement and to avoid unnecessary duplication of content in these curricula.

3.31 The State Board of Education and the NC Community College System should promote dual enrollment[G] programs for Practical Nursing Education Programs and the General Assembly should appropriate funds to support these programs enabling high school students to advance to LPN, ADN, and BSN programs in pursuit of a nursing career.

3.32 All PNE programs in North Carolina should seek and attain national accreditation status by 2015 with adequate funding provided by the NC General Assembly for faculty resources, student support services and NLN accreditation application fees.

[G] Dual enrollment programs allow high school students to take college level academic, technical and advanced courses not otherwise available to them and to effect an uninterrupted education flow from the high school into the community college or four-year college or university.

Nursing Assistant (NA-I and NA-II) Education Programs

3.33 The Nursing Workforce Task Force supports the efforts of the NC Department of Health and Human Services, the NC Board of Nursing, the NC Community College System, and applicable private and hospital-based programs to create "medication aide" and "geriatric aide" classifications in North Carolina.

While the overall issues concerning the nurse aide workforce were not adequately addressed, the Task Force does recognize several major efforts currently under development in North Carolina. First, the NC Department of Health and Human Services and the NC Board of Nursing are leading a broad-based initiative to develop a Medication Aide training and competency program. This effort involves three stakeholder workgroups to develop standards for the following:

- Prerequisites and Training Requirements for Faculty and Students
- Statewide Competency Testing
- Statewide Registry

All workgroups have been meeting for the past year. Pilot testing is expected to begin in the spring of 2004. Legislative changes will be developed for introduction in the 2005 session.

Second, the NC Department of Health and Human Services and the NC Community College System are working cooperatively on the development of a Geriatric Aide education program. The curriculum is currently under development and will be focused on more in-depth education for nurse aides in the areas of prevention and care of pressure ulcers, unplanned weight loss/dehydration, infection control, pain management, behavioral management, resident depression, safe mobility, care of the terminally ill and care of the caregiver. This training program will require Nurse Aide I training as a prerequisite and will be a key component of the career ladder initiative.

In addition to these initiatives, the Department has created workplace initiatives and continuing education programs, which are addressed more fully in Chapter 4. These North Carolina initiatives are seen as cornerstones to address the nurse aide workforce recruitment, retention and career ladder issues.

3.34 North Carolina should develop a standardized Nurse Aide I competency evaluation program, to include a standardized exam and skills demonstration process.

The NC Department of Health and Human Services has responsibility for the review and approval of all Nurse Aide I training and competency evaluation programs and Nurse Aide I competency evaluation programs. These programs have the responsibility to develop their own competency evaluation process, which must be approved by the Department. This current process, which is allowable by federal regulations, has led to inconsistencies in the competency evaluation of nurse aides and the level of concern by providers that many persons completing these evaluations are not adequately prepared to function as nurse aides. The Task Force has concluded that to address these concerns, the Department should develop and administer a standardized Nurse Aide I competency evaluation process that includes a standardized written exam and a skills demonstration process.

Summary: North Carolina's Challenges in Nursing Education

After examining the issues surrounding nursing education in our state, the Task Force reached several conclusions that should guide future policy development. First, the number and variety of nursing education programs in our state is large and the diversity of these programs is difficult to comprehend without careful study. The Task Force was unable to suggest ways of reducing the number of such programs, and no recommendation for expanding the number of such programs is proposed. Further expansion of existing programs should take place at all educational levels, but only those programs with proven capability to utilize their faculty and other resources effectively and efficiently (i.e., those with high graduation/completion rates, high pass rates on the relevant NCLEX examination, and those with faculty and other resources adequate to meet national accreditation standards) should be encouraged and financially supported to expand.

At the same time, there were general observations about the nature of nursing education programs sponsored by our collegiate institutions (both public and private) and by our community colleges and hospitals

that suggested the need for both immediate and longer-range approaches to the enhancement of both the quality and increasing the number of nursing graduates likely to come from these institutions.

University and college-sponsored nursing education programs have been severely reduced in their effective capacities through state governmental mandated budgetary cuts in recent years. These funds, and the faculty positions they would support, need to be restored and enhanced in order to increase the numbers and ratio of BSN prelicensure graduates annually. Moreover, these institutions need to expand (in several formats) the number of programs they offer for MSN-level training for those wishing to enter the field of nursing education and advanced practice nursing roles.

Community College System-sponsored nursing education programs need to be enhanced through three specific steps: (1) reclassifying these programs as "high cost" programs within the per capita allocation formulas for the Community College System's allocations with these additional funds earmarked for faculty salary enhancement; (2) increasing (or restoring previously eliminated) student support services, such as counseling and guidance programs which are necessary for assisting the modal type of (often older) student served by these institutions in moving with all deliberate speed through a nursing education program toward graduation and eventual nursing practice; and (3) changing the way in which funding for nursing education program expansion takes place from the present "retrospective" system to one that can allow more "prospective" enrollment growth and program planning. With regard to the latter of these steps, ways should be explored for doing this without disrupting Community College System-wide fiscal management procedures, but with the clear goal of expanding the capacity of these institutions to meet what is anticipated to be an imminent and continuing need for additional nurses in our state.

Both our collegiate and community college programs need additional sources of student financial support to encourage young persons with the appropriate academic abilities to consider and pursue career opportunities in nursing. Expansion and some refinement of the NC Nurse Scholars Program are recommended and would meet an important need in our state.

Guidance counselors at the high school level should be better informed and motivated to encourage capable young persons to consider careers in nursing and be able to assist interested students in locating the type of nursing education program most appropriate for their needs, personal situations and abilities.

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[11] North Carolina Center for Nursing, unpublished data from the 1995 Survey of New Graduates.

[12] While the appendix tables to this chapter indicate that 32% of BON-approved capacity in these programs is unused, the 2003 Survey of Schools of Nursing conducted by the NC Center for Nursing reports that only 21.5% of capacity is unused.

[13] The Task Force was unable to verify this figure.

[14] Attrition rates for Duke University's program were not available at the time this report was written.

[15] These data provided by Katie Delgado and Gwen Metz, March 4, 2003, unpublished manuscript prepared using data from the NC Health Professions Data and Analysis System maintained by the Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill. Data come from the annual licensure files of the NC Board of Nursing, 1998-2001.

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Appendix 3.1 List of NC Nursing Education Programs

Nursing Programs Leading to Baccalaureate Degree

A program leading to a baccalaureate degree in nursing is generally four years in length and is offered by a college or university which provides baccalaureate and/or higher degree education. The nursing curriculum includes classroom and clinical experiences for patients across the lifespan in hospital and community/public settings. The program prepares a minimally competent, independent nursing practitioner for these settings.

Graduates of approved baccalaureate programs earn a college degree and are eligible to apply to take the NCLEX-RN. An RN license is awarded upon successful "Pass" on NCLEX and satisfaction of other licensure requirements.

Chapel Hill:	University of North Carolina at Chapel Hill
Charlotte:	Queens University of Charlotte
Charlotte:	University of North Carolina at Charlotte
Cullowhee:	Western Carolina University
Durham:	Duke University
Durham:	North Carolina Central University
Greensboro:	North Carolina Agricultural and Technical State University
Greensboro:	University of North Carolina at Greensboro
Greenville:	East Carolina University
Hickory:	Lenoir Rhyne College
Wilmington:	University of North Carolina at Wilmington
Wilson:	Barton College
Winston-Salem:	Winston-Salem State University

Nursing Programs Leading to Associate Degree

A nursing program leading to an associate degree is generally two years in length and is offered by a college that awards associate and/or applied science degrees. The nursing curriculum includes classroom and clinical experiences for patients across the lifespan in hospital, long-term care, and community settings. The program prepares a minimally competent, independent nursing practitioner for these settings.

Graduates of approved associate/applied science programs earn a college degree and are eligible to apply to take the NCLEX-RN. An RN license is awarded upon successful "Pass" on NCLEX and satisfaction of other licensure requirements.

Ahoskie:	Roanoke-Chowan Community College
Albemarle:	Stanly Community College
Asheboro:	Randolph Community College
Asheville:	Asheville-Buncombe Technical Community College
Boiling Springs:	Gardner-Webb University
Charlotte:	Carolinas College of Health Sciences
Charlotte:	Central Piedmont Community College
Clinton:	Sampson Community College
Clyde:	Region A Nursing Consortium
Concord:	Cabarrus College of Health Sciences
Dallas:	Gaston College
Dobson:	Surry Community College

Durham:	DurhamTechnical Community College
Elizabeth City:	College of The Albemarle
Fayetteville:	Fayetteville Technical Community College
Flat Rock:	Blue Ridge Community College
Goldsboro:	Wayne Community College
Graham:	Alamance Community College
Greenville:	Pitt Community College
Hamlet:	Richmond Community College
Henderson:	Vance-Granville Community College
Hickory:	Catawba Valley Community College
Hudson:	Caldwell Community College & Technical Institute
Jacksonville:	Coastal Carolina Community College
Jamestown:	Guilford Technical Community College
Kenansville:	James Sprunt Community College
Kinston:	Lenoir Community College
Lexington:	Davidson County Community College
Lumberton:	Robeson Community College
Morganton:	Western Piedmont Community College
New Bern:	Craven Community College
Pinehurst:	Sandhills Community College
Raleigh:	Wake Technical Community College
Rocky Mount:	NEWH Nursing Consortium
Roxboro:	Piedmont Community College
Salisbury:	Rowan-Cabarrus Community College
Sanford:	Central Carolina Community College
Smithfield:	Johnston Community College
Spindale:	Foothills Nursing Consortium
Spruce Pine:	Mayland Community College
Statesville:	Mitchell Community College
Washington:	Beaufort County Community College
Wentworth:	Rockingham Community College
Whiteville:	Southeastern Community College
Wilkesboro:	Wilkes Community College
Wilmington:	Cape Fear Community College
Winston-Salem:	Forsyth Technical Community College

Hospital-based Nursing Programs Leading to Diploma in Nursing

A program leading to a diploma in nursing is generally 18-32 months in length and is offered by a hospital. The nursing curriculum includes classroom and clinical experiences for patients across the lifespan in hospital, long term care, and community settings. The program prepares a minimally competent, independent nursing practitioner for these settings.

Graduates of the hospital-based programs receive a diploma and are eligible to apply to take NCLEX-RN. An RN license is awarded upon successful “Pass” on NCLEX and satisfaction of other licensure requirements.

Charlotte:	Mercy School of Nursing
Charlotte:	Presbyterian Hospital
Durham:	Watts School of Nursing

Programs Enabling Practicing Nurses without Baccalaureate Degrees to Move from RN-to-BSN

Barton College
Cabarrus College of Health Sciences
East Carolina University
Gardner Webb University
Lees-McRae College
Lenoir-Rhyne College
North Carolina Agricultural and Technical State University
North Carolina Central University
Queens University of Charlotte
Southeastern North Carolina Nursing Consortium
Fayetteville State University
University of North Carolina at Pembroke
University of North Carolina at Chapel Hill
University of North Carolina at Charlotte
University of North Carolina at Greensboro
University of North Carolina at Wilmington
Western Carolina University
Winston-Salem State University

Programs Offering the Master's Degree in Nursing

Duke University (Durham)
East Carolina University (Greenville)
Queens University of Charlotte
Gardner-Webb University (Boiling Springs)
University of North Carolina at Chapel Hill
University of North Carolina at Greensboro
University of North Carolina at Wilmington
University of North Carolina at Charlotte
Western Carolina University (Cullowhee)
Wake Forest University (CRNA) (Winston-Salem)
Raleigh School of Nurse Anesthesia (in conjunction with UNC-Greensboro)

Programs Offering the Doctoral Degree (PhD) Degree in Nursing

East Carolina University (Greenville)
University of North Carolina at Chapel Hill

Appendix 3.2 Comparison Table of Nursing Programs in North Carolina

National Nursing Accreditation	#	Program Location/Name	NC BON Approved Enrollment as of Jan 1 2004	Length of Program in Semesters Type of Student		Number of Full-Time Faculty Oct. 1, 2003	Number of Part-Time Faculty Oct. 1, 2003	Total Student Enrollments as of Oct. 1, 2003		# Qualified Applicants Not Admitted
		Entry-level BSN Programs		Pre-license RN	RN-BSN			Pre-license RN	RN-BSN	
CCNE	1	Chapel Hill: University of North Carolina at Chapel Hill	330	6	3	41	24	285	26	162
CCNE	1	Charlotte: Queens University of Charlotte	80	4	2	6	3	45	14	0
CCNE	1	Charlotte: University of North Carolina at Charlotte	240	4	3	32	18	192	53	103
CCNE	1	Cullowhee: Western Carolina University	140	4	4 or 5	15	2	92	27	34
NLNAC	1	Durham: NC Central University	125	4	3	13	10	80	18	5
NLNAC	1	Greensboro: NC Agricultural and Technical State University	200	4	4	21	2	131	8	4
CCNE	1	Greensboro: University of North Carolina at Greensboro	300	4	3	48	8	176	189	61
NLNAC	1	Greenville: East Carolina University	500	5	3	58	6	382	101	292
NLNAC	1	Hickory: Lenoir Rhyne College	208	8	2 or 3	10	19	174	3	16
NLNAC	1	Wilmington: University of North Carolina at Wilmington	140	5	2 or 3	18	7	105	36	32
NLNAC	1	Wilson: Barton College	96	5	3	8	4	67	13	0
NLNAC	1	Winston-Salem: Winston-Salem State University	245	4 or 5	4	24	23	62	150	18
	12	***TOTAL***	***2604***			***294***	***126***	***1791***	***638***	***727***
		Accelerated Entry-level BSN Programs								
	1	Chapel Hill: University of North Carolina at Chapel Hill	see above	14 months	N/A	see above	see above	31	N/A	127
CCNE	1	Durham: Duke University	100	16 months	N/A	8	9	88	N/A	56
		Winston-Salem State University	see above	13 months	N/A	see above	see above	37	N/A	81
		Winston-Salem State University Paramedic-RN Option	see above	13 months	N/A	see above	see above	29	N/A	0
	3	***TOTAL***				***8***	***9***	***119***		***183***
		ADN Programs		Generic RN	LPN Advanced			Generic RN	LPN Advanced	
	1	Ahoskie: Roanoke-Chowan Community College	60	5	4	5	1	47	0	1
	1	Albemarle: Stanly Community College	108	5	3	6	9	93	13	127
NLNAC	1	Asheboro: Randolph Community College	80	5	3	4	5	62	2	103
		Asheville: Asheville-Buncombe Technical CC – Evening Prgm	see above	7	N/A	see above	see above	43	0	no data
	1	Asheville: Asheville-Buncombe Technical Community College	208	5	4	9	16	114	12	162
NLNAC	1	Boiling Springs: Gardner-Webb University	140	4	N/A	8	11	135	0	0
NLNAC	1	Charlotte: Carolinas College of Health Sciences	250	5	4	15	11	208	2	66
	1	Charlotte: Central Piedmont Community College	200	4	N/A	6	5	108	0	48
	1	Clinton: Sampson Community College	90	5	3	6	5	48	6	31
NLNAC	1	Concord: Cabarrus College of Health Sciences	200	5 or 6	4	10	6	139	2	22

National Nursing Accreditation	#	Program Location/Name	NC BON Approved Enrollment as of Jan 1 2004	Length of Program in Semesters Type of Student		Number of Full-Time Faculty Oct. 1, 2003	Number of Part-Time Faculty Oct. 1, 2003	Total Student Enrollments as of Oct. 1, 2003		# Qualified Applicants Not Admitted
		ADN Programs		Generic RN	LPN Advanced			Generic RN	LPN Advanced	
	1	Dallas: Gaston College	120	5	N/A	10	8	114	0	57
	1	Dobson: Surry Community College	167	5	5	13	8	136	26	106
	1	Dublin: Bladen Community College To begin Fall 2004	40	no data	no data	no data	no data	no data		no data
	1	Durham: DurhamTechnical Community College	125	5	4	8	8	100	14	150
NLNAC	1	Elizabeth City: College of The Albemarle	80	5	4	5	4	50	3	146
NLNAC	1	Fayetteville: Fayetteville Technical Community College	180	5	3	12	5	144	11	136
	1	Flat Rock: Blue Ridge Community College	60	5	N/A	3	8	54	0	13
	1	Goldsboro: Wayne Community College	81	5	3 or 4	7	5	70	5	45
	1	Graham: Alamance Community College	106	5	N/A	5	7	88	0	150
	1	Greenville: Pitt Community College	150	5	2	10	5	93	2	70
	1	Hamlet: Richmond Community College	112	5	N/A	7	7	104	0	153
	1	Henderson: Vance-Granville Community College	110	5	3 or 4	7	5	72	5	24
NLNAC	1	Hickory: Catawba Valley Community College	120	5	4 or 5	8	9	119	0	147
	1	Hudson: Caldwell Community College & Technical Institute	110	5	3 or 4	7	5	96	0	107
	1	Jacksonville: Coastal Carolina Community College	100	5	3	7	2	54	1	55
	1	Jamestown: Guilford Technical Community College	220	5 or 6	3 or 5	14	11	173	12	188
	1	Kenansville: James Sprunt Community College	80	5	3	6	2	60	12	84
	1	Kinston: Lenoir Community College	80	5	3	5	1	39	6	120
NLNAC	1	Lexington: Davidson County Community College	100	5	3	7	6	92	2	61
	1	Lumberton: Robeson Community College	82	5	2	6	4	79	6	32
NLNAC	1	Morganton: Western Piedmont Community College	115	5	N/A	8	12	110	0	49
	1	New Bern: Craven Community College	144	5	3	4	11	107	9	11
	1	Pinehurst: Sandhills Community College	140	5	3	11	7	97	3	35
	1	Raleigh: Wake Technical Community College	240	6	5	17	10	214	3	600
	1	Rocky Mount: NEWH Nursing Consortium	340	5	N/A	22	7	275	0	210
	1	Roxboro: Piedmont Community College	64	5	N/A	4	3	45	0	0
NLNAC	1	Salisbury: Rowan-Cabarrus Community College	160	5	4	8	6	94	2	52
	1	Sanford: Central Carolina Community College	60	5	3	5	1	53	8	23
	1	Smithfield: Johnston Community College	90	5	4	7	10	85	5	52
	1	Spindale: Foothills Nursing Consortium	180	5	4	6	12	75	7	100
	1	Spruce Pine: Mayland Community College	48	5	3	5	4	47	0	4

National Nursing Accreditation	#	Program Location/Name	NC BON Approved Enrollment as of Jan 1 2004	Length of Program in Semesters Type of Student		Number of Full-Time Faculty Oct. 1, 2003	Number of Part-Time Faculty Oct. 1, 2003	Total Student Enrollments as of Oct. 1, 2003		# Qualified Applicants Not Admitted
		ADN Programs		**Generic RN**	**LPN Advanced**			**Generic RN**	**LPN Advanced**	
NLNAC	1	Statesville: Mitchell Community College	90	5	N/A	7	5	80	0	17
	1	Wentworth: Rockingham Community College	70	5	N/A	6	2	60	0	5
	1	Whiteville: Southeastern Community College	150	5	5	14	6	117	5	13
	1	Wilkesboro: Wilkes Community College	70	5	4	5	2	70	0	9
NLNAC	1	Wilmington: Cape Fear Community College	180	5	4	13	16	141	10	176
	1	Winston-Salem: Forsyth Technical Community College	328	5	3	15	24	196	10	611
	46	**TOTAL**	**6028**			**373**	**317**	**4600**	**204**	**4371**
		Hospital-Based Diploma Programs		**Entry RN**						
NLNAC	1	Charlotte: Mercy School of Nursing	140	5		14	0	118		99
NLNAC	1	Charlotte: Presbyterian Hospital	325	6		17	2	248		66
NLNAC	1	Durham: Watts School of Nursing	150	4		10	6	105		0
	3	**TOTAL**	**615**			**41**	**8**	**471**		**165**
	61	**Total Entry RN Education Programs**	**9247**			**716**	**460**	**7185**		**5446**
		PNE (LPN) Programs		**PNE**						
	1	Asheville: Asheville-Buncombe Technical Community College	45	3		1	6	41		141
	1	Clinton: Sampson Community College	32	3		2	2	31		10
	1	Concord: Rowan-Cabarrus Community College	30	3		3	4	28		26
	1	Dobson: Surry Community College	30	3		3	2	24		38
	1	Dublin: Bladen Community College	30	2		3	1	30		46
	1	Durham: Durham Technical Community College	60	2 or 3		5	3	49		177
	1	Elizabeth City: College of The Albemarle	24	3		2	0	24		72
	1	Fayetteville: Fayetteville Technical Community College	67	3		3	1	36		29
	1	Goldsboro: Wayne Community College	20	3		5	0	20		28
	1	Greensboro: Guilford Technical Community College	30	No PNE students as of 10/1/03						
	1	Henderson: Vance-Granville Community College	40	3		2	2	32		48
	1	Jacksonville, FL: Department of the Army, 5th Brigade (HS)	20	9						
	1	Jacksonville: Coastal Carolina Community College	20	3		5	0	17		23
	1	Kenansville: James Sprunt Community College	20	3		2	0	19		56

National Nursing Accreditation	#	Program Location/Name	NC BON Approved Enrollment as of Jan 1 2004	Length of Program in Semesters Type of Student		Number of Full-Time Faculty Oct. 1, 2003	Number of Part-Time Faculty Oct. 1, 2003	Total Student Enrollments as of Oct. 1, 2003		# Qualified Applicants Not Admitted
		PNE (LPN) Programs		**PNE**						
	1	Kinston: Lenoir Community College	30	3		2	1	19		130
	1	Lillington & Pittsboro: Central Carolina Community College:	40	3		3	3	33		2
	1	Lincolnton: Gaston College (Lincoln Campus)	40	3		2	7	38		81
	1	Marion: McDowell Technical Community College	24	3		3	2	24		60
	1	Morehead City: Carteret Community College	30	3		2	1	23		16
	1	New Bern: Craven Community College	20	3		2	2	18		3
	1	Pinehurst: Sandhills Community College	30	3		3	2	30		15
	1	Polkton: South Piedmont Community College	20	3		1	1	19		0
	1	Rocky Mount: NEWH Nursing Consortium	96	3		5	4	95		289
	1	Shelby: Cleveland Community College	25	3		2	1	25		24
	1	Spindale: Isothermal Community College	30	3		2	2	24		25
	1	Supply: Brunswick Community College	27	3		1	2	27		65
	1	Sylva: Southwestern Community College	10	3		2	0	10		11
	1	Troy: Montgomery Community College	30	3		2	1	29		26
	1	Washington: Beaufort County Community College	20	3		2	1	20		12
	1	Wentworth: Rockingham Community College	28	3		3	1	25		4
	1	Whiteville: Southeastern Community College	30	3		14	6	26		29
	1	Wilmington: Cape Fear Community College	26	3		2	1	25		106
	1	Winston-Salem: Forsyth Technical Community College	120	3		6	4	63		115
	33	**TOTAL PN ENTRY**	**1144**			**95**	**63**	**924**		**1707**
		RN-BSN Programs (Entry-level BSN not offered)							**RN-BSN**	
CCNE	1	Banner Elk: Lees-McRae College	N/A	4		1	1	N/A	34	3
NLNAC	1	Boiling Springs: Gardner Webb University	N/A	6		2	0	N/A	43	0
CCNE	1	Concord: Cabarrus College of Health Sciences	N/A	3		1	3	N/A	19	0
CCNE	1	Southeastern North Carolina Nursing Consortium (Fayetteville State University and UNC-Pembroke)	N/A	3		8	1	N/A	112	0
	4	**TOTAL**				**12**	**5**		**208**	**3**
	16	**Total RN-BSN Programs**							**846**	

National Nursing Accredi-tation	#	Program Location/Name	NC BON Approved Enrollment as of Jan 1 2004	Length of Program in Semesters Type of Student	Number of Full-Time Faculty Oct. 1, 2003	Number of Part-Time Faculty Oct. 1, 2003	Total Student Enrollments as of Oct. 1, 2003	# Qualified Applicants Not Admitted
		MSN Programs						
NLNAC	1	Boiling Springs: Gardner-Webb University	Only those nursing programs preparing prelicensure students (RNs or LPNs) are regulated by the NC Board of Nursing and are required to report student and faculty statistics to the NC Board of Nursing on an annual basis. Unregulated nursing education programs are not assessed for their enrollment capacity. These programs are listed here to provide a complete accounting of the number and type of nursing education program available in North Carolina at this time.					
NLNAC	1	Chapel Hill: University of North Carolina						
CCNE	1	Charlotte: Queens University of Charlotte						
CCNE	1	Charlotte: University of North Carolina						
CCNE	1	Cullowhee: Western Carolina University						
NLNAC	1	Durham: Duke University						
NLNAC	1	Greensboro,: University of North Carolina						
NLNAC	1	Greenville: East Carolina University						
NLNAC	1	Wilmington: University of North Carolina						
	9	***TOTAL***						
		PhD Programs						
	1	Chapel Hill: University of North Carolina						
	1	Greenville: East Carolina University						
	2	***TOTAL***						

Note: This information comes from the NC Board of Nursing Annual Reports filed by each prelicensure nursing program as of November 1 each year.

The number of full- and part-time faculty is based on the number of budgeted and filled positions as of October 1, 2003. If that data was not available, full-time and part-time faculty count based on highest degree type was substituted.

Program Location/Name	Number of Graduates by Student Type October 1, 2002 – September 30, 2003			Attrition rate for most recent Graduating Class**		Number First-time NCLEX Writers 2003 as of Dec. 31st	NCLEX Pass Rate as of Dec. 31, 2003
BSN Programs - Prelicensure	***Prelicense RNs***	***RN-BSN***	***Total Grads***	***Prelicense RNs***	***RN-BSN***		
Chapel Hill: University of North Carolina at Chapel Hill	112	9	121	13.2	30.8	160	93
Chapel Hill: University of North Carolina at Chapel Hill - Accelerated RN	36	N/A	36	7.7	N/A	included above	included above
Charlotte: Queens University of Charlotte	15	6	21	17.7	85.7	14	79
Charlotte: University of North Carolina at Charlotte	79	0	79	14	N/A	84	89
Cullowhee: Western Carolina University	42	16	58	6.7	65.0	42	71
Durham: Duke University (Accelerated)	0	0	0	N/A	N/A	18*	100
Durham: NC Central University	37	13	50	32.7	62.5	37	81
Greensboro: NC Agricultural and Technical State University	51	3	54	17.7	57.1	52	75
Greensboro: University of North Carolina at Greensboro	77	43	120	9.9	94.7	75	95
Greenville: East Carolina University	132	39	171	28.9	73.1	134	81
Hickory: Lenoir Rhyne College	25	0	25	59.1	N/A	25	88
Wilmington: University of North Carolina at Wilmington	38	5	43	20.8	61.5	38	89
Wilson: Barton College	20	10	30	44.0	0.0	21	86
Winston-Salem: Winston-Salem State University	18	99	117	43.7	3.9	34	94
Winston-Salem: Winston-Salem State University Accelerated Options	0	N/A	0	N/A	N/A	included above	included above
Prelicensure BSN Totals	***682***	***243***	***925***			***734***	
BSN Programs - RN-BSN only							
Banner Elk: Lees-McRae College	0	10	10	N/A	23.1	N/A	N/A
Boiling Springs: Gardner Webb University	0	23	23	N/A	17.4	N/A	N/A
Concord: Cabarrus College of Health Sciences	0	6	6	N/A	33.3	N/A	N/A
Southeastern North Carolina Nursing Consortium (Fayetteville State U and UNC-Pembroke)	0	23	23	N/A	66.7	N/A	N/A
RN-BSN Totals	***0***	***62***	***62***				
ADN Programs	**Prelicense RNs**	**LPN Advanced**	**Total Grads**	**Prelicense RNs**	**LPN Advanced**		
Ahoskie: *Roanoke-Chowan Community College	9	0	9	70.0	N/A	11	91
Albemarle: *Stanly Community College	37	10	47	38.6	25.0	48	88
Asheboro: Randolph Community College	29	0	29	31.3	N/A	28	86
Asheville: Asheville-Buncombe Technical Community College	63	8	71	16.1	11.1	62	97
Boiling Springs: Gardner-Webb University	47	0	47	34.9	N/A	47	85
Charlotte: Carolinas College of Health Sciences	91	4	95	47.8	50.0	92	84
Charlotte: Central Piedmont Community College	21	0	21	69.1	N/A	22	91

Program Location/Name	Number of Graduates by Student Type October 1, 2002 – September 30, 2003			Attrition rate for most recent Graduating Class**		Number First-time NCLEX Writers 2003 as of Dec. 31st	NCLEX Pass Rate as of Dec. 31, 2003
ADN Programs	**Prelicense RNs**	**LPN Advanced**	**Total Grads**	**Prelicense RNs**	**LPN Advanced**		
Clinton: *Sampson Community College	28	3	31	64.3	0.0	28	96
Clyde: Region A Nursing Consortium	25	3	28	44.4	25.0	34	94
Concord: *Cabarrus College of Health Sciences	42	1	43	70.2	66.7	40	88
Dallas: Gaston College	35	0	35	47.5	N/A	35	100
Dobson: Surry Community College	32	8	40	45.8	20.0	41	85
Dublin: Bladen Community College To begin Fall 2004						N/A	N/A
Durham: Durham Technical Community College	18	3	21	66.7	57.1	23	96
Elizabeth City: College of The Albemarle	26	3	29	23.3	66.7	25	96
Fayetteville: Fayetteville Technical Community College	46	10	56	43.2	0.0	61	82
Flat Rock: Blue Ridge Community College	22	0	22	30.0	N/A	23	100
Goldsboro: Wayne Community College	38	13	51	32.5	0.0	38	92
Graham: Alamance Community College	34	0	34	20.9	N/A	33	94
Greenville: Pitt Community College	25	2	27	66.1	50.0	30	93
Hamlet: Richmond Community College	29	0	29	50.0	N/A	34	94
Henderson: Vance-Granville Community College	19	6	25	48.7	0.0	35	89
Hickory: Catawba Valley Community College	72	0	72	37.0	N/A	35	91
Hudson: *Caldwell Community College & Technical Institute	37	1	38	31.5	50.0	36	81
Jacksonville: Coastal Carolina Community College	26	2	28	27.6	0.0	26	88
Jamestown: *Guilford Technical Community College	51	12	63	54.8	33.3	57	86
Kenansville: James Sprunt Community College	13	13	26	67.5	38.5	21	100
Kinston: Lenoir Community College	13	3	16	56.6	40.0	18	83
Lexington: Davidson County Community College	37	1	38	29.8	0.0	37	92
Lumberton: *Robeson Community College	33	0	33	29.8	100.0	35	83
Morganton: Western Piedmont Community College	34	0	34	44.3	N/A	35	86
New Bern: Craven Community College	31	14	45	56.3	6.7	45	91
Pinehurst: Sandhills Community College	26	11	37	56.7	18.2	41	85
Raleigh: Wake Technical Community College	52	1	53	47.9	75.0	59	92
Rocky Mount: NEWH Nursing Consortium	65	0	65	69.6	N/A	67	94
Roxboro: Piedmont Community College	11	0	11	35.3	N/A	11	100
Salisbury: Rowan-Cabarrus Community College	30	0	30	49.2	100.0	30	93
Sanford: Central Carolina Community College	6	1	7	87.5	50.0	13	100
Smithfield: *Johnston Community College	15	2	17	69.4	83.3	23	91

Program Location/Name	Number of Graduates by Student Type October 1, 2002 – September 30, 2003			Attrition rate for most recent Graduating Class**		Number First-time NCLEX Writers 2003 as of Dec. 31st	NCLEX Pass Rate as of Dec. 31, 2003
ADN Programs	**Prelicense RNs**	**LPN Advanced**	**Total Grads**	**Prelicense RNs**	**LPN Advanced**		
Spindale: Foothills Nursing Consortium	30	7	37	12.1	22.2	35	97
Spruce Pine: Mayland Community College	29	3	32	42.9	0.0	17	94
Statesville: Mitchell Community College	45	0	45	13.0	N/A	45	96
Washington: Beaufort County Community College	25	3	28	48.8	0.0	28	93
Wentworth: Rockingham Community College	11	0	11	57.7	N/A	11	100
Whiteville: Southeastern Community College	39	10	49	70.7	0.0	39	100
Wilkesboro: Wilkes Community College	29	0	29	48.7	N/A	28	82
Wilmington: Cape Fear Community College	60	12	72	35.8	0.0	72	97
Winston-Salem: Forsyth Technical Community College	76	17	93	28.9	20.0	88	95
Associate Degree Program Totals	***1612***	***187***	***1799***			***1742***	
Hospital-based Diploma Programs	**Prelicense RNs**		**Total Grads**				
Charlotte: Mercy School of Nursing	42		42	45.8		45	91
Charlotte: Presbyterian Hospital	53		53	50.0		56	89
Durham: Watts School of Nursing	40		40	44.4		32	94
Hospital-Based Diploma Program Totals	***135***		***135***			***133***	
HPNE/LPN Programs	**Entry PNE**		**Total Grads**				
Asheville: Asheville-Buncombe Technical Community College	35		35	20.5		33	100
Clinton: Sampson Community College	18		18	10.0		25	100
Concord: Rowan-Cabarrus Community College	19		19	39.3		20	95
Dobson: Surry Community College	21		21	25.0		20	95
Dublin: Bladen Community College	29		29	33.3		30	97
Durham: Durham Technical Community College	40		40	34.4		41	88
Elizabeth City: College of The Albemarle	19		19	19.1		15	80
Fayetteville: Fayetteville Technical Community College	12		12	68.8		11	100
Goldsboro: Wayne Community College	12		12	45.0		14	93
Greensboro: Guilford Technical Community College						10	100
Henderson: Vance-Granville Community College	22		22	36.8		22	100
Jacksonville, FL: Department of the Army, 5th Brigade (HS)	no data		no data	no data		0	N/A
Jacksonville: Coastal Carolina Community College	14		14	35.0		14	100
Kenansville: James Sprunt Community College	15	15	25.0	13	77		

Program Location/Name	Number of Graduates by Student Type October 1, 2002 – September 30, 2003		Attrition rate for most recent Graduating Class**	Number First-time NCLEX Writers 2003 as of Dec. 31st	NCLEX Pass Rate as of Dec. 31, 2003
HPNE/LPN Programs	**Entry PNE**	**Total Grads**			
Kinston: Lenoir Community College	9	9	52.6	12	100
Lillington & Pittsboro: Central Carolina Community College	22	22	55.6	27	96
Lincolnton: Gaston College (Lincoln Campus)	27	27	32.5	27	93
Marion: McDowell Technical Community College	20	20	16.7	21	95
Morehead City: Carteret Community College	20	20	20.0	20	85
New Bern: Craven Community College	19	19	20.0	20	85
Pinehurst: Sandhills Community College	20	20	39.1	19	100
PNE/LPN Programs	**Entry PNE**	**Total Grads**			
Polkton: South Piedmont Community College	5	5	80.0	5	80
Rocky Mount: NEWH Nursing Consortium	45	45	46.8	72	97
Shelby: Cleveland Community College	11	11	50.0	10	100
Spindale: Isothermal Community College	23	23	23.3	28	96
Supply: Brunswick Community College	23	23	14.8	22	100
Sylva: Southwestern Community College	0	0	N/A	0	N/A
Troy: Montgomery Community College	26	26	21.4	25	96
Washington: Beaufort County Community College	16	16	26.3	15	100
Wentworth: Rockingham Community College	21	21	16.0	21	81
Whiteville: Southeastern Community College	8	8	64.3	8	100
Wilmington: Cape Fear Community College	20	20	20.8	18	100
Winston-Salem: Forsyth Technical Community College	45	45	30.4	43	100
LPN Program Totals	***636***	***636***		***681***	

Note: This information comes from the NC Board of Nursing Annual Reports filed by each prelicensure nursing program as of November 1 each year.

* Number of graduates reported appears small because the program had just begun. This low number is an artifact for 2003 only.

** The attrition rate is the percent of students that did not progress on time with their entry cohort according to the curriculum plan for full-time students. It is not necessarily an indication of the percent of students who have left the program, but also includes students who are attending part-time, or who may have gotten off-progress due to academic weaknesses. It is also important to realize that the majority of RN-BSN students are part-time students and so this strict definition of attrition may give a distorted view of the actual number of RN-BSN students who ultimately complete their program.

Appendix 3.3 Recent Trends in the Capacity and Production of New Nurses by Program Type, 2002-2004

	2000	2001	2002	2003	1/1/2004
PNE PROGRAMS					
Approved Capacity	905	934	944	1082	1102
Prelicense Graduates	454	484	522	636	N/A
Total NCLEX Passers	487	508	515	672	N/A
ADN Programs					
Approved Capacity	5425	5585	5654	6090	6250
Prelicense Graduates	1522	1524	1530	1799	N/A
Total NCLEX Passers	1455	1508	1497	1740	N/A
Diploma Programs					
Approved Capacity	600	600	600	615	615
Prelicense Graduates	121	119	148	135	N/A
Total NCLEX Passers	119	120	144	138	N/A
BSN Programs					
Approved Capacity	2549	2549	2549	2684	2704
Prelicense Graduates	775	720	789	682	N/A
Total NCLEX Passers	749	723	766	719	N/A

Sources: Approved capacity is from the records of the North Carolina Board of Nursing. Years 2000 - 2003 report capacity at year's end. 2004 capacity figures are as of January 1, 2004. It is important to remember that approved capacity refers to the total number of prelicensure students enrolled in a program. Graduate numbers are from the annual school report to the NC BON, and include only prelicensure students. The time frame for counting graduates is not a calendar year—it is: October 1 to September 30. The number of students passing the NCLEX contains both first-time test takers in a calendar year and the number of repeat takers. The number is the total number of students who passed the exam that year and were educated in that program at some point in time—not necessarily that calendar year.

Chapter Four
Nursing Workforce Environment

In the last several decades, many changes have occurred in the US healthcare system, which affect the work environment for nurses and nurse aides and the ways in which they provide care.[1] Advances in technology and greater emphasis on cost-effectiveness have resulted in changes in the structure, organization, and delivery of healthcare services. Many of the traditional roles of the hospital have been shifted to ambulatory clinics, community-based settings, or home healthcare settings. Meanwhile the overall acuity of patients seen in hospital settings has increased and the average length of stay has decreased. This means that today's nurses and nurse aides, particularly those in hospital and/or long-term care settings, have more stressful work environments because they are caring for patients who are sicker and turn over faster than nurses who practiced in earlier decades.[2] The increased acuity of patients creates physical demands of nurses and nurse aides, who are constantly on their feet and moving from patient-to-patient, and often require help to lift or move patients.

Nurses report lower job satisfaction than other professionals, which is problematic because job satisfaction is strongly correlated with turnover and retention. More than four-fifths of all workers (85%) who responded to the General Social Survey conducted by the NC Center for Nursing were satisfied in their current positions and 90% of professional workers were satisfied with their job.[3] In contrast, in North Carolina, only about half of all nurses reported being "happy" with their jobs; close to one-fifth of all nurses reported being "unhappy" with their jobs (19.9% of staff RNs and 17.7% of staff LPNs), and the rest were neutral (Table 4.1). Different aspects of job satisfaction vary among work

Table 4.1.
Job and Career Satisfaction by Setting Type (2001)

	Staff RNs				LPNs			
Percent that agree or strongly agree with the statement:	**Total**	**Hospital In-Patient**	**Long Term Care**	**Comm. Setting**	**Total**	**Hospital In-Patient**	**Long Term Care**	**Comm. Setting**
Job aspects:								
I am happy with my current work environment.	**47.9**	42.6	12.5	57.9	**47.7**	30.2	41.1	57.9
I am satisfied with the quality of care I am currently able to provide	**54.6**	47.0	12.5	68.3	**53.4**	43.2	44.4	62.7
I would encourage other nurses to apply for a job with my employer	**47.0**	41.5	25.0	56.5	**46.8**	386	47.2	49.3
My employer places a high value on the work I do	**47.3**	39.4	50.0	58.7	**57.3**	45.5	53.9	63.4
Career aspects:								
Overall, I am satisfied with my choice of nursing as a career	**62.7**	57.9	50.0	70.4	**70.0**	70.5	67.4	71.6
I like being a nurse	**76.3**	73.2	75.0	81.0	**82.8**	77.3	84.4	83.6
I would encourage others to become a nurse	**46.1**	40.4	62.5	53.2	**58.6**	50.0	62.2	59.0

Source: Lacey LM, Shaver K. Staff Nurse Satisfaction, Patient Loads, and Short Staffing Effects in North Carolina. Findings from the 2001 Survey of Staff Nurses in North Carolina. The NC Center for Nursing. July 2002. Tables 9, 10, 11

settings, with nurses in hospitals and long-term care settings being least satisfied with their job; and those in community settings much more satisfied. Job dissatisfaction in nursing often results in low morale, absenteeism, turnover, and poor job performance.[4]

When nurses are dissatisfied at work, they are more likely to change jobs, leading to higher costs to employers and fewer staff who are experienced and familiar with the organization.[5,6] The NC Center for Nursing surveys nursing employers every two years. The most recent survey (2002) collected information on annual turnover rates, or the percentage of employees who left their employer during a fiscal year.[A] NCCN also collected information on the costs spent in recruiting and training new nursing personnel. Employers reported that the average annual turnover rate for RNs varied from 15-57%, for LPNs from 15-41%, and for nurse aides, from 16-58%.

Some North Carolina employers reported significant financial outlays to recruit and train new nursing staff. Hospitals had the highest reported costs among employers who reported and were able to calculate their recruitment and orientation costs. For example, some hospitals reported spending millions of dollars annually on new hire orientation, advertising, referral bonuses, and sign-on bonuses (see Table 4.3). Other employers reported smaller recruitment and training expenses, but still these expenses were significant. Typically, the costs of new hire orientation programs were the most expensive across employers, with some long-term care facilities, home health and hospice and public health departments reporting spending $50,000 or more annually. North Carolina employers reported total costs, rather than costs per employee. However, a recent study suggested that the cost of turnover of one hospital nurse ranges between $62,000-$68,000.[7]

Table 4.2.
Turnover Rates by Type of Employer (2002)

	RN			LPN			Nurse Aide		
	Mean	Median	Range	Mean	Median	Range	Mean	Median	Range
Hospital	15%	15%	0-60%	15%	14%	0-60%	31%	28%	0-82%
LTC Facilities	57%	33%	0-1000%	41%	33%	0-240%	58%	42%	0-385%
Home Health & Hospice	26%	18%	0-207%	18%	0%	0-200%	26%	14%	0-400%
Public Health	17%	10%	0-200%	21%	0%	0-100%	30%	0%	0-400%
Mental Health	21%	11%	0-133%	24%	5%	0-100%	16%	6%	0-67%

Source: NC Center for Nursing. Quick Facts. Turnover and Recruitment Spending in North Carolina Hospitals, September 2003; Turnover and Recruitment Spending in North Caroling Long-Term Care Facilities, September 2003; Turnover and Recruitment Spending in Home Health and Hospice Agencies, September 2003; Turnover and Recruitment Spending in NC Public Health Departments, September 2003; Turnover and Recruitment Spending in NC Mental Health Agencies, September 2003.

Not only does job satisfaction affect turnover and performance in a particular job, but it also can affect satisfaction with nursing as a career. North Carolina nurses are, in general, slightly more satisfied with their choice of nursing as a career than they are with their current jobs (Table 4.1). However, nurses, especially those working in inpatient hospital settings, were less willing to recommend nursing as a career to other people. Only 40.4% of hospital inpatient RNs, and 50% of inpatient LPNs reported that they would encourage others to become a nurse.

Job satisfaction is influenced by a variety of different factors, including management support and in particular, the quality of nurse management, treatment by physicians and other coworkers, autonomy and control of nursing practice, the physical demands of the job, stress, adequate staffing, reasonable hours, flexible scheduling, adequate pay and benefits, career ladder and advancement opportunities, paperwork,

[A] Turnover is defined as the percentage of employees who leave an employer during a fiscal year. The NC Center for Nursing calculated turnover rates by dividing the number of RNs, LPNs and Nurse Aides who left by the average number employed during the fiscal year.

Table 4.3.
Recruitment Spending

	Relocation expenses paid for new hires		Sign-on bonuses paid in cash or other forms		Referral bonuses paid to established employees		Advertising		New hire orientation programs (including preceptor expenses)	
	Avg $	Range	Avg $	Range	Avg $	Range	Avg $	Range	Avg $	Range
Hospital	$38,399	$0-$789,484	$66,498	$0-$1,267,000	$42,775	$0-$1,800,000	$126,249	$500-$1,328,614	$486,604	$0-$4,198,000
LTC facilities	$32	$0-$1,000	$1844	$0-$20,000	$1126	$0-$50,000	$3,460	$0-$18,000	$9,681	$0-$60,000
Home health & hospice	$0	N/A	$615	$0-	$272 $10,000	$0-	$3,580 $15,000	$0-	$5,921 $50,000	$0-
Public health	$2,000	N/A	$3500	$1,000-$6,000	N/A	N/A	$737	$14-$3000	$8,650	$200-$50,000
Mental health	$57	$0-$2500	$0	$0	$0	$0	$785	$0-$5,000	$1,237	$0-$30,000

Source: NC Center for Nursing. Quick Facts. Turnover and Recruitment Spending in NC Hospitals, September 2003; Turnover and Recruitment Spending in North Caroling Long-Term Care Facilities, September 2003; Turnover and Recruitment Spending in Home Health and Hospice Agencies, September 2003; Turnover and Recruitment Spending in NC Public Health Departments, September 2003; Turnover and Recruitment Spending in NC Mental Health Agencies, September 2003.

ergonomics and use of technology, workplace safety, and whether the culture of the workplace embraces staff diversity.[8] North Carolina nurses who recently left their jobs or who were thinking about leaving were most likely to report leaving to pursue a career that was less stressful and physically demanding, that had regular hours and schedules, or with better advancement opportunities.[9] However, three-quarters of these nurses reported that they might be willing to return to their jobs or professions if the workplace environment improved. Both current and former nurses said that increased staffing levels and less paperwork and administrative duties would do the most to improve the profession. In addition, higher wages, more say in decision-making, and more flexible scheduling also topped the list. Staff nurses (RNs and LPNs) who stayed with the same employer for five or more years reported some of the same factors in their decision to remain with their employer. They reported that good pay and benefits, positive relations with doctors, good mentors and colleagues, and management that accommodated their schedules were primary reasons for staying with the same employer for five or more years. [10]

There has already been a lot of work done to identify organizational attributes in hospitals that have been successful in recruiting and retaining nurses. In the early 1980s, when this country was in the midst of another nursing shortage, the American Academy of Nursing (AAN) conducted a study to identify hospitals that were considered good places for nurses to practice.[11,12] From this study, 41 hospitals were identified as "magnet" hospitals because of their commitment to professional nursing practice. These hospitals shared certain organizational features that promoted and sustained professional nursing practice, including: a flat organizational structure, decentralized decision making, nurse executives who were formal members of the highest decision making body in the hospital, an emphasis on staff education, good communication between physicians and nurses, high patient satisfaction, high registered nurse-to-patient ratios, better patient outcomes, and very low nurse turnover.

Based on the shared features of the 41 original "magnet" hospitals, the American Nurses Credentialing Center developed the Magnet Recognition Program in 1994.[13] This program is designed to recognize hospitals that have worked hard to achieve and maintain a positive work environment for nurses. The process involves the development of an organizational system that distinguishes itself in terms of quality patient care, nurse autonomy, nurse recruitment and retention, education, and its overall quest for excellence. While every healthcare organization and/or institution does not need to seek magnet status, and in fact, many healthcare organizations cannot seek magnet status as it is currently limited to hospitals and some nursing facilities; healthcare employers can nonetheless learn

from and adopt similar workplace strategies. The Task Force studied these magnet principles to identify principles and organizational strategies that can be used across nursing work environments, as well as those strategies that are more appropriate to specific workplace settings.

The evidence strongly shows that when job satisfaction is increased, nurses are less likely to leave their current position, less likely to leave nursing, less likely to burn out, and are more likely to encourage others to enter into a career in nursing.[14] Increases in job satisfaction could do a lot to alleviate current and future nurse shortages in the US.[15] Changes to improve job satisfaction are usually not as expensive as the costs organizations incur in having to train new nurses because of high turnover rates.[16] Many changes such as decreasing verbal abuse among physicians, increasing nurses' autonomy and involvement in decision-making, and increasing the flexibility of schedules can drastically improve the work environment for nurses. Magnet hospitals that have implemented many environmental changes to improve the work environment for nurses have seen increases in job satisfaction.[17] When implemented, these positive changes can not only increase the number of nurses who choose to stay in the profession and with their current job, but it can also help bring new nurses into the profession.[18]

Many of the same factors that affect job satisfaction have also been shown to affect patient safety. The national Institute of Medicine, National Academy of Sciences, recently completed a study examining the impact of the nursing work environment on patient safety. The report *Keeping Patients Safe: Transforming the Work Environment of Nurses* (2004)[19] found that certain nursing work conditions contribute to patient errors, and that improving the work environment could lead to increased patient safety. Specifically, the Institute of Medicine identified key areas which could improve patient safety, including: educating management on the link between the work environment and patient safety, setting reasonable work loads and work hours, improving the capacity and skills of nursing managers to support patient care staff, involving direct-care nurses in policy development and work processes and work flow, improving orientation programs for newly hired nurses and providing ongoing educational opportunities for existing staff, creating an interdisciplinary team environment, and reducing paperwork. Environmental changes to improve the work environment should be considered as a primary strategy for decreasing the nursing shortage and improving patient safety in the years to come.

Critical Elements for a Successful Workplace Environment

The Task Force recognized that the primary goal of the healthcare system is meeting the needs of patients. Thus, priority should be placed on developing patient-focused work environments. Focusing on the needs of patients will also help improve the work environment for staff.

After reviewing the literature and North Carolina-specific research, the Task Force determined that there were a number of elements necessary to create positive patient-focused work environments that will encourage nurses, nurse aides and other health professionals to remain in the workplace. These include: management support and skilled nurse managers; an environment that promotes positive team relationships with coworkers; orientation and mentoring programs; involving nurses and nurse aides in policy and decision-making at both the institutional and unit level; competitive salaries and benefits; reasonable staff loads; a safe working environment; career ladders and opportunities for advancement; minimizing paperwork and administrative burdens; flexible scheduling; supporting nurses in their role as patient care integrators; and professionalism and process standards in all departments with accountability.

Management support

The overall key to creating a successful workplace environment is to have an institutional culture that values employees. Supportive and skilled management is critical to create a positive work environment and high job satisfaction. Support must come from all levels of the institution, including the CEO, Board, management, and the nursing leaders and managers at the institutional and unit level. In governmental institutions (federal, state or county), management support must also come from policy makers who have control over the institutional budget. Lack of appreciation from management and lack of fairness in decision-making has been shown to decrease occupational commitment among nurses.[20]

The national Institute of Medicine noted that clinical nurse leadership has been reduced in many hospitals

as a result of the restructuring efforts of the last two decades.[19] There has been a decrease in the numbers of nurse managers, and an increase in the responsibilities of the remaining nurse managers to care for more than one patient care unit as well as other non-nursing staff. This has lead to a decrease in the ability of the nurse supervisors to provide needed support to patient care staff.

The relationship between a staff nurse and his or her immediate nurse supervisor is critical to overall job satisfaction. One way to improve this relationship is to ensure sufficient numbers of nurse managers, with the skills to focus on the needs of the patient care staff. Nurse managers often get promoted to these positions because of their good clinical skills; not necessarily because of their strong management skills. Nurse managers should serve as retention officers, focusing more of their attention on the needs of their nursing staff and nurse aides to help them provide better care for their patients. Nurse managers should be taught to coach and nurture nursing staff, identify turnover risks, build teams, and involve staff nurses in unit decision making. Nurse managers, as well as the executive managers, must have the commitment and skills to support the needs of their employees.

Positive team relationship with co-workers (including doctors, nurses, other health professionals and unlicensed assistive personnel)

Positive workplace environments foster respect and open communications among all professionals/staff. Creating a climate that promotes positive team relations with co-workers is critical in all work settings. For example, the interaction that nurses have with doctors plays an important role in the overall satisfaction of staff nurses in hospitals. Maltreatment of nurses by physicians has long been noted anecdotally, but a recent national survey shows that this disrespect occurs more frequently than once suspected. Of the 1,200 nurses that responded to the survey, nearly one-third said that they knew of a nurse that had left a job because of physician abuse.[21] In addition, 90% of nurses had witnessed public berating of nurses, yelling, and abusive language by doctors. Further, this survey also showed that the work environment and the treatment nurses receive on the job is a bigger predictor of job satisfaction than compensation.

The Task Force recognized that establishing positive relationships with co-workers is important across all job settings. However, the team of coworkers will differ across healthcare settings. Negative doctor-nurse interactions have been cited as major problems in hospital settings; whereas, negative nurse-nurse aide interactions are greater problems in nursing facilities. Regardless of work setting, it is important to create a work environment in which the skills and contributions of all of workers are respected and valued; and in which each person is considered part of the patient-care team.

Employers must establish clear communications standards that are required of all health professionals and staff. This policy must be explained to all staff (including medical staff) during orientation and reinforced throughout the year. Further, managers must enforce these standards of conduct, ensuring a "zero tolerance" policy for disruptive staff. There should be some visible evidence that the process is working to ensure that staff know that their concerns are being addressed. In addition, medical and nursing staff may need skills training in team-building, communication and conflict resolution, in order to ensure that the workplace fosters respect and open communication among all staff.

To the extent possible and appropriate, different health professionals (i.e., doctors, nurses, nurse aides, social workers, etc.) should work collaboratively on patient care and be involved in helping develop care plans. The national Institute of Medicine found that all healthcare professionals, including both doctors and nurses, need training and organizational practices that promote interdisciplinary collaboration.[19] Positive team relations enhance staff satisfaction; therefore, employers should have a vested interest in promoting policies that encourage better team relations, such as offering interdisciplinary rounds or creating interdisciplinary treatment teams. In addition, employers should consider the medical, nursing and other staff members' abilities to work with others as part of their overall job performance evaluations.

Have a process to orient and mentor new staff

An adequate orientation is critical to help new employees understand their new job responsibilities. This is particularly important for new graduates, but is also important for employees who have new job responsibilities. In 2001, the National Council of State Boards of Nursing surveyed new nursing graduates and nurse employers to assess the adequacy of the

nurses' preparation on 14 separate tasks.[22] Both recent RNs and the employers identified problem areas in which the gap between education and practice was greatest. This included: recognition of abnormal findings, assessing the effectiveness of treatments, supervising care provided by LPNs and assistive personnel, and documenting care. Similar but slightly different problem areas were identified for recent PN graduates, including: recognizing abnormal findings, guiding care provided by others, working with machinery used for patient care, and teaching patients. These findings confirm the importance of providing an adequate school-to-work transition to help new nurses attain the skills to provide competent care on the job.

In the past, many new nursing graduates had opportunities for more structured supervision. Nurses, who graduated and were qualified to sit for the NCLEX exam, were given a temporary license to practice. They were able to work with direct supervision until the NC Board of Nursing obtained the results of the license exam (generally about four months after they were qualified to sit for the exam). This acted as a type of internship period, in which nurses were able to gain more clinical experience. However, the Board eliminated the temporary license category once the NCLEX exam changed to computerized testing (because of the rapid turnaround time). As a result, new nurses lost this informal "internship" period of direct supervision. Now, new nurses' post-graduate transition to work is dependent on the nursing employer and the resources they devote to this purpose.

Ideally, nursing students would be given a more intensive clinical experience while still in school, followed by a more intensive orientation or internship opportunity once the new nurse begins practice. Employers should provide orientation to all new staff (doctors, nurses, other health professionals, and other health professional staff). The orientation should help the staff understand the organization and individual unit's procedures and work expectations. In addition, new staff—particularly those who are recent graduates—should have a structured period of time to provide supervised skills training, along with a system of peer support, including mentoring programs or preceptors.

Different job environments provide varying levels of support for inexperienced nursing staff. Hospitals typically provide longer, more intensive orientation periods for new staff (including both nurses who recently finished nursing school and those who are moving from different jobs). Nursing facilities (i.e., nursing homes) typically provide shorter orientation periods. In addition, nurses employed in hospitals usually have doctors and/or more experienced nurses (or clinical nurse specialists) as resources when questions arise; whereas doctors and clinical nurse specialists are rarely present in nursing facilities. Back-up support may be even more limited in other work environments, such as home health or assisted living. Nurses and/or nurse aides working in these jobs have very little immediate backup when working with frail patients. Providing orientation and peer support is critical and cannot be shortchanged. Adequate orientation takes time; the length of the orientation makes a difference in how well prepared new nurses feel in meeting the requirements of their job.

Employers should also consider hiring clinical nurse specialists and/or promoting experienced staff to provide the support needed for new staff. Management should provide support (time and pay) to experienced staff to enable them to serve as mentors and/or preceptors. Additionally, hospitals may want to consider residency programs for new nursing graduates, beginning in areas that are (or have been) experiencing the greatest or more rapid turnover.

Competitive salaries and benefits

Another factor that influences job satisfaction is salary and benefits. While this factor is seldom listed as the top reason that people go into nursing, it consistently ranks among the top few factors that influence job satisfaction among nurses. According to the Bureau of Labor Statistics, the mean annual earnings in 2002 for an RN nationally was $49,840. North Carolina had slightly lower mean annual salaries at $46,370. For LPNs, the national average was $32,300 and $31,200 in North Carolina.[23,24] Another survey, conducted annually by the journal *Nursing*, found slightly lower national salaries levels (Table 4.4).[25,26] In that study, hospital nurses earned the highest salaries in 2001, however the salary gap between hospitals and other settings is narrowing.[27] The study also showed regional variations in salaries, with nurses in the South Atlantic region (DE, FL, GA, MD, NC, SC, VA, and WV) earning slightly less ($44,800) than the national average ($45,500).

A report by the US Department of Health and Human Services found that low pay can help explain the shortage of nurses. The National Sample Survey of

Table 4.4.
National Average Annual Earnings for Nurses (1999 – 2003)

	2003	2002	2001	2000	1999
Average (all degrees)	$49,634	$45,498	$45,500	$42,000	$38,000
LPN	$32,764	$29,422	$29,400	$29,100	$27,174
ADN	$48,258	$43,363	$43,400	$40,700	$43,382
Diploma*	$51,154	$46,959	$47,000	$44,000	$37,178
BSN	$51,983	$46,828	$46,800	$44,300	$39,848
MSN	$60,892	$57,691	$57,700	$53,200	$42,059

Sources: Nursing, 33(10); Nursing, 32(4); Nursing, 31(3)

* The study noted that the relatively high salary of Diploma RNs reflects the length of time many of them have been in nursing.

Registered Nurses found that the salaries for hospital staff nurses increased by only 2% annually between 1996 and 2000.[28] The report noted that "demand for a high level of skills in staff nurse hospital service is not being compensated at a rate that even meets the CPI [Consumer Price Index]."[29] These increases can be compared to those for other hospital employees. According to the Hay Group's 10th Annual Compensation & Salary Guide, while the average cash compensation for hospital CEO increased by 6.8% in 2000 (from 1999), and other executives got a 5.1% increase, nurses only received a 3.2% increase.[30]

Offering competitive salaries and benefits is a necessary precursor, but not sufficient in itself, to address workforce issues. However, providing competitive salaries and benefits is a primary retention strategy—as nurses listed this as one of the primary reasons for staying with their employer for five or more years. Not only must employers examine their salary and benefit structure when recruiting new employees; they must also examine pay equity issues to ensure that salaries paid to new staff are not excessive compared to those paid to experienced staff, thus creating morale issues among more experienced staff. Further, the benefit package is also important. In the 2000 Survey of Employers, most employers reported that they offered other benefits, such as health insurance and paid vacation time; but that they required a contribution for certain benefits (such as health insurance coverage). Employers should examine the adequacy and affordability of the benefits offered as part of the overall compensation package. Providing employees with some flexibility in covered benefits may also be attractive to certain employees, without necessarily raising the overall costs of the benefit package.

The Task Force recognizes that the ability to offer competitive pay and benefits is directly related to the institution or agencies' revenues. The costs of nurses' salaries and benefits are often the single largest expenses in a healthcare organization's budget; thus the collective impact of changes in nursing salaries and/or benefits can be staggering. While the Task Force recognizes the difficulty of addressing this recommendation in a time of declining revenues, this issue must be addressed. Providing a competitive salary is one key strategy that has been identified in many nursing surveys to improve job satisfaction and retention. To some extent, healthcare facilities are already paying these expenses—in the costs of recruiting new nursing staff, paying for traveling nurses or overtime to existing staff. Some of these expenses could be offset by improving the nursing environment (including offering competitive compensation packages), in order to decrease turnover.

Reasonable staff loads

Job satisfaction among nurses is also related to the quantity and quality of patient care given. Having inadequate numbers of nursing staff leads to worse patient outcomes. In its recent study of the nursing work environment, the national Institute of Medicine reported:

> "In reviewing evidence on acute hospital nurse staffing published from 1990 to 2001, the AHRQ report Making Health Care Safer: A Critical Analysis of Patient Safety Practices (Seago, 2001:430) concluded that 'leaner nurse staffing is associated with increased length of stay, nosocomial infection (urinary tract infection, postoperative infection, and pneumonia), and pressure ulcers...These studies...taken together, provide substantial evidence that richer nurse staffing is associated with better

patient outcomes.' Subsequent studies have added to this evidence base and substantiate the observation that greater numbers of patient deaths are associated with fewer nurses to provide care (Aiken et al., 2002), and less nursing time provided to patients is associated with higher rates of infection, gastrointestinal bleeding, pneumonia, cardiac arrest, and death from these and other causes (Needleman et al., 2002). In caring for us all, nurses are indispensable to our safety." [31]

A national report on nurses noted that the biggest problem identified by nurses was understaffing.[32] Stress and the physical demands of the job were reported as the second biggest workplace problem. A report by the Robert Wood Johnson Foundation found that among nurses participating in focus groups the number one concern of nurses was their increased daily workload. The increase in work intensity was noted to be physically demanding and emotionally exhausting and caused concern among nurses for the quality of care they were providing to patients.[33] Nurses are often dissatisfied when they are unable to provide enough bedside nursing care to their patients.[34] Conversely, meeting patient needs, finishing all work activities, and providing good patient care were related to job satisfaction among nurses.[35]

A study by the NC Center for Nursing showed similar results. Job satisfaction varied by the number of patients and how often short staffing affected the nurse's ability to care for their patients.[36] One quarter of the hospital nurses who were responsible for six or more patients on an average day said that short staffing interfered with their ability to care for their patients on a daily basis, one third said short staffing affected them and their patients at least once a week[37] (Table 4.5). The frequency of short staffing events was found to be the most influential factor on job satisfaction when also controlling for the size of the patient loads, employment setting, job commitment, job tenure, and years until retirement.[38] That study also noted that among nurses who have been in their current job five or more years, one of the top reasons they stayed was because of adequate staffing levels (22.8% of RNs and 12.0% of LPNs).[39]

Employers must set reasonable workloads for nurses and other staff. Employers should conduct workload studies that focus on the staff needed to promote and maintain positive patient outcomes, and should incorporate information about staff mix (staff skills and experience, inclusive of all staff), numbers of patients, acuity level, patient mix and physical layout of the unit. Workload estimates should include an analysis of patient volume, including admissions, discharges and patients who are treated on an outpatient basis (or less than a full-day); as well as some capacity for variations in acuity and patient volume (for example, the patient census in a small hospital may vary considerably from day-to-day or hour-to-hour). The workload studies should also include input from existing staff to determine if there are sufficient staff to address patient needs, and to determine if there are better ways to address workflow issues.

Health care facilities that reduce "support personnel" to save money should examine the impact on

Table 4.5.
Short staffing affected ability to meet patient needs (2001)

Frequency that short staff affected ability to meet patient needs	All staff RNs (hospital inpatient RNs)	All staff LPNs (hospital inpatient LPNs)
Never	15.4% (11.0%)	19.6% (4.8%)
1-2 times	21.6% (21.4%)	22.6% (19.1%)
3-5 times	16.7% (17.6%)	16.0% (21.4%)
Weekly	27.5% (33.0%)	22.9% (42.9%)
Daily	16.1% (17.0%)	14.2% (11.9%)

Source: Lacey L, Shaver K. Findings from the 2001 survey of staff nurses in North Carolina. Staff nurses satisfaction, patient loads and short staffing effects in North Carolina. July 2002.

existing nursing staff (e.g., increased paperwork and administrative burdens that will reduce direct clinical care). Nurses and, in some settings, nurse aides have the most continuous contact with patients. Reductions in non-nursing staff and/or the failure of other departments to provide necessary services often fall to nurses to remedy. Not only are nurses then forced to assume non-nursing responsibilities, but they also bear the brunt of patient dissatisfaction when services are not being provided.

Setting Reasonable Work Hours

Closely related to the issue of reasonable staffing is the issue of work hours. The national Institute of Medicine noted that long hours worked by some nurses pose one of the most serious threats to patient safety.

> While most nurses typically work 8- or 12-hours shifts, some work much longer hours. In one study, 3.5% of scheduled shifts exceeded 12 hours, including "shifts" as long as 22.5 hours (citations omitted here). In another study, 27% of full-time hospital and nursing facility nurses reported working more than 13 hours at a stretch one or more times a week. (citations omitted here). The effects of fatigue on human performance are well known. Prolonged periods of wakefulness (e.g., 17 hours without sleep) can produce performance decrements equivalent to a blood alcohol concentration (BAC) of 0.05%, the BAC level defined as alcohol intoxication in many western industrialized countries (citations omitted here)."[40]

To reduce the likelihood of patient error and improve patient safety, the national Institute of Medicine recommended that state regulatory bodies prohibit nursing staff from providing patient care in any combination of scheduled shifts, mandatory or voluntary overtime, in excess of 12 hours in any given 24-hour period, or 60 hours in any 7-day period.

Involve nurses in policy and decision making at both the institutional and unit level

Employers should actively encourage nurses and nurse aides to participate in policy and governance committees at the unit and institutional level, and should pay their salary and provide time for this participation. Direct care nurses and nurse aides operating within a self-governance structure should help guide the work redesign.

Studies have shown that structures that enhance nurses' autonomy, on a level that is consistent with their expertise, will foster improved patient outcomes.[41] Further, when nurses are allowed and encouraged to participate in the decision making process, they are more likely to be satisfied.[42] One of the hallmarks of hospitals that qualify for Magnet status is high levels of nurse participation in institutional decision-making at the highest levels of hospital management. Nurses and nurse aides should be involved in decision-making at the unit-level (e.g., how to manage the workflow of the unit), as well as at the institutional level (e.g., clinical committees, personnel committees, etc.). Management should pay nurses and nurse aides their regular salary for the time spent in administrative, policy-making work. Requiring staff to participate in these committees "on their own time" shows a lack of support for the value of the nurse or other employee's time and involvement.

Ensuring a safe work environment

The Task Force heard from several presenters about how nurses employed in certain types of jobs have increased fear of physical harm, which is causing major job dissatisfaction. Nurses who work in hospital emergency rooms, state psychiatric institutions, and other healthcare environments are sometimes presented with violent or abusive patients and/or visitors. Last year, for example, WakeMed removed 3,600 weapons from patients or their visitors (most of which were guns). Nurses who conduct home visits can also be placed at risk. Violence is not unique to healthcare settings; there is an increase in violent episodes in all types of workplace settings. However, the opportunity for workplace violence is exacerbated in a hospital setting. The federal Emergency Medical Treatment and Labor Act (EMTALA) mandates that hospitals evaluate and screen everyone who comes to the emergency room—so hospitals cannot automatically exclude people who seek care even if they are being threatening or disruptive.

Some hospitals have installed metal detectors in portions of the hospital; others have created locked units (with slide locks) so that people can't wander through the hospital without an electronic key. Hospitals have also instituted lock-down procedures to exclude visitors from emergency rooms or other

units. Some hospitals have instituted policies to exclude disruptive family members or visitors from the hospital. There are other options that can help improve safety (including hiring security guards, having "greeters" at the door, etc.).

The problem in state psychiatric institutions isn't generally the presence of weapons; rather it is the fear of physical assault from some of the patients suffering from mental illness. State psychiatric institutions use paging systems, and train staff in verbal and physical de-escalation techniques. Nonetheless, violent episodes will still occur occasionally, and the fear of violence has discouraged some staff from continuing to work in these job settings. Health care organizations and institutions must take the steps necessary to ensure the physical safety of their employees.

Career Ladders and Opportunities for Advancement

National studies suggest that nurses' commitment to their jobs is improved when offered opportunities to learn in their work environment.[43] Although not mentioned as often in North Carolina, approximately 10% of nurses who worked for the same employer for five or more years reported that good continuing education and advancement opportunities were reasons they stayed with the same employer.[44] Slightly more than half of all staff nurses in North Carolina reported that they thought about extending their nursing education within the last two years; although only about one quarter of nurses (25% of staff RNs and 29% of LPNs) reported that their employer offered rewards or incentives to increase their level of nursing education.[45]

Management should seek out, recognize, support and reward staff who are particularly caring and compassionate, and those who demonstrate great knowledge and skills, regardless of what position they currently hold. Employers should make special efforts to nurture and promote these staff. More broadly, managers and other hospital staff should help nurses, nurse aides and other healthcare employees create individualized career development plans. These plans should include educational opportunities, career ladders, and/or clinical ladders, as appropriate, building on the resources that professional associations, AHECs, universities, and community colleges currently provide. Career ladders help individuals increase their credentials and move into higher levels of responsibility and positions (for example, LPNs who obtain additional education and receive their RN degrees). Clinical ladders reward and recognize nurses with expertise in direct patient care (for example, by making them preceptors or mentors). Health care institutions and organizations should provide funding and/or time to allow their qualified staff to take classes to improve skills and/or credentials.

The Task Force specifically supported the ongoing efforts of the NC Board of Nursing, NC Department of Health and Human Services, NC Health Care Facilities Association, NC Association of Nonprofit Homes for the Aged, the NC Assisted Living Association, Association for Home and Hospice Care of North Carolina and other partnering organizations to create new job categories for nurse aides, including geriatric nurse aides and medication aides, to create a career ladder for nurse aides and other non-licensed direct care workers. In addition, the Task Force supports the continuation of the Win-A-Step Up project, designed by the NC Department of Health and Human Services and the UNC Institute on Aging. This program provides continuing education to nurse aides working in long term care in areas identified by nurse aides and their supervisors for additional skill development.[B] Participating facilities must commit to teach these courses to a selected number of nurse aides and the nurse aides who participate must commit to remain in the facility for nine months after the completion of the first educational module. The aides receive a stipend for successful completion of each educational module. Facilities are encouraged to give aides who remain employed after the program's completion either a raise in hourly wage or a retention bonus in addition to the course completion bonuses. Facilities who do so can receive an incentive payment to support their efforts.

An employer that is committed to workforce development should partner with educational organizations (public schools, community colleges and universities, AHEC, etc.) to help encourage new people to enter the health professions, to provide clinical training sites for nurses and other health professionals, and to encourage their existing staff to seek more education.

[B] Win-A-Step Up currently provides ten different training modules, including: A More Empathetic You; Advanced Communication Skills; Being Part of a Team; Fecal Impaction and Hydration; Infection Control; Me, Myself and I; Pressure Ulcers; Assistive Technology and Communications; Mobility and the Care of Individuals with Dementia.

Table 4.6.
Racial Composition of Licensed RNs and LPNs in NC Workforce (2001)

	RNs	LPNs
White	87.8%	73.3%
African American	8.7%	23.2%
American Indian	0.6%	1.2%
Asian or Pacific Islander	1.6%	0.4%
Hispanic	0.5%	0.7%
Other	0.5%	0.6%
Unknown	0.3%	0.3%

Source: Lacey, Linda M. and Shaver, Katherine. North Carolina Trends in Nursing: 1982 - 2001 RN and LPN Workforce Demographics. March, 2003. www.nursenc.org/research/Trends2001/workforce_demos.pdf

Minimize "paperwork" and administrative burdens

Charting a patient's progress and tracking medical and nursing interventions has been and continues to be an important part of quality nursing. The scope of that activity has expanded, however, as regulatory agencies, Medicare, Medicaid, and private insurers all require more detailed and thorough documentation. The results of these changes has been a perception in the nursing community that the time staff nurses have available for direct care has been decreasing, in part because of the increased demands for charting and care documentation. In their study of staff nurses in 2001, the NC Center for Nursing asked nurses if the amount of time they had daily to spend in direct patient care had changed in the past two years and what other activities had increased. The results showed that hospital staff RNs experienced an average decline of 5.7% in time spent on patient care (from 48.6% in 1999 to 42.9% in 2001), an average increase of 1.6% devoted to staff supervision (from 4.2% to 5.8%), and an increase of 2.8% in the time devoted to paperwork connected with care documentation (from 20.5% to 23.3%).[46]

While there is a need to maintain healthcare information, much of the paperwork required in healthcare organizations is redundant or could be accomplished in a less time-intensive manner. Integrated computerized patient records can help reduce paperwork, although these systems are often costly to install. Technology and voice recognition systems may also be helpful in reducing paperwork. The costs of incorporating technology into the workplace must be balanced against the lost productivity and increased costs of maintaining paper records.

Professionalism and process standards with accountability in all departments

Employers should set professionalism and process standards for all staff. In other words, staff must have clear expectations of their responsibilities and the institutional procedures that must be followed. This includes interpersonal communications standards as well as standards for patient care. Employers should have policy and procedures manuals that clearly state performance expectations and appropriate standards of conduct. The institution must also have accountability provisions to ensure that the standards are enforced. Further, if the institution delegates certain responsibilities to nurses or nurse managers, the hospital must give the nurse the authority and autonomy to carry out their responsibilities.

In addition to clear job expectations and process standards, employers should support professionalism among nurses and nurse aides by encouraging them to participate in professional organizations, learn best practices, and to seek additional education to maintain high standards of practice.

Nurses as patient care integrators

Nurses play a central role in the coordination of care for patients in most healthcare settings, and are often considered "patient care integrators." Nurses have a responsibility to monitor the patient's condition, to communicate with other providers when patient's needs change or when problems arise, and to intervene to solve problems. Nurses should be recognized for this valuable role and given authority needed to ensure that patient care needs are being met and that resources are deployed to meet these needs. Not only do nurses need the authority to coordinate patient care, but also the time. When healthcare facilities cut staff in other areas (such as food services, laundry, etc.), the nursing staff must often pick up the slack. This takes away from meeting the direct needs of the patients.

Diversify the workforce to broaden the base of potential workers and to provide culturally appropriate care to patients with different cultural or ethnic backgrounds

North Carolina has a diverse population, with 72.1% of the population listed as white, 21.6% of the population listed as African American, 1.2% as American Indian, and 1.4% as Asians in the 2000

Census.[47] Approximately 5% of the population is Latino, many of whom are new immigrants with limited English proficiency. People of different cultural and/or ethnic backgrounds may have healthcare beliefs that can affect healthcare-seeking behaviors; and that may create barriers to the most effective use of healthcare services.

The North Carolina RN workforce does not reflect the state's diversity, with approximately 12% of RNs coming from racial or ethnic minority groups. The LPN workforce more closely reflects the state's diverse population, with approximately 26% of the workforce being from racial or ethnic minorities.[48] Men are less represented in nursing, with only 6.6% of RNs and 5.1% of LPNs being males in 2002. In contrast, 49% of the state's population was estimated to be male in 2002.[49]

Ensuring a diverse workforce, including nurses from different racial, ethnic and cultural backgrounds, can help bridge the cultural gap. Further, reaching out to racial and ethnic minorities could help broaden the pool of potential nurses. Health care employers, trade associations, professional associations should offer cultural sensitivity training to health professionals and other staff in order to encourage a more diverse workforce and to provide culturally appropriate services to the state's diverse population. Further, special outreach efforts should be made to attract men into the profession.

Adopt information, ergonomics, and other technologies designed to improve workflow and safety and reduce risk of error and injury

Employers should invest in informatics and other technology designed to reduce paperwork, improve workflow and safety, and reduce risk of error and injury. Employers should focus both on reducing workplace injuries (for example, back injuries from lifting and moving patients), as well as ensuring safety for employees. Further, trade associations should work with federal and state regulatory agencies and other organizations to advocate for changes in paperwork/administrative burdens that are not directly linked to patient care.

Flexible scheduling

Shortages in staffing create an increased reliance on overtime for current staff. A survey of North Carolina hospitals conducted in 2000 found significant reliance on overtime for staff nurses.[50] A follow-up study in 2002 found that the average annual spending on overtime by North Carolina hospitals was $809,402, and that, not unexpectedly, larger hospitals spent more than smaller hospitals on overtime for nursing staff.[51] Various reports have noted that workload/staffing is one of the primary factors for high nurse turnover rates.[52,53] Nurses who work night or variable shifts are much less satisfied than those who worked days (52% very/fairly satisfied verses 67% of those who work day shifts).[54] Nurses also feel more dissatisfied when they feel overloaded and are forced to work longer hours and cannot get off when desired.[55] One way to address this issue is to offer greater flexibility in scheduling.[56] In North Carolina, 41.5% of RNs and 33.8% of LPNs reported that management being willing to accommodate scheduling requests was listed as one of the reasons they stayed with their employer for five or more years.[57]

Institutions should employ flexible scheduling that meets the needs of the workforce while at the same time meeting patient care needs. Offering flexible schedules can help employees balance work and family commitments, and can help reduce burnout and stress.

Recognition

Nurse managers and other management staff should recognize staff for their professional and personal successes and milestones. Recognition is important to employee morale because it helps them feel like valued employees. Recognition can run the gamut from a simple "thank-you" for positive work to more formal recognition programs, including nominating employees for facility, state or national awards. The NC Nurses Association, for example, recognizes the *Nurse of the Year* in several practice categories, the NC Center for Nursing recognizes 30 staff nurses annually in their Institute of Excellence, and an independent group of nurses in North Carolina recognizes 100 excellent nurses each year. Similarly, the NC Long-Term Care Facilities Association's *Fabulous Fifty* recognizes nurse aides and other direct care workers. Many other professional and trade associations offer similar recognition programs.

Involve existing staff nurses in addressing nurse shortages and recruitment efforts

It is important to involve existing staff when creating strategies to address nurse shortages. Existing staff

may have many solutions other than employing traveling nurses or requiring mandatory overtime. Seeking input from existing staff prior to implementing specific recruitment efforts can help ensure some level of staff buy-in to the strategy. It can also alert management to specific strategies that are likely to cause resentment and create morale problems among existing staff. Existing staff are important reservoirs of information that can help an institution understand reasons for high turnover rates.

Improve the image of the work setting and the job of nurses and nurse aides

The Task Force recognized the importance of the role that a public relations campaign could play in improving the image of nurses, nurse aides and specific work environments. This is a particularly important issue to address to attract nurses and nurse aides to long-term care facilities; however, the image of nurses cuts across all job settings. The Task Force recognized that improving the workplace environment so that individuals recruited into nursing or as nurse aides will have a long-term commitment to their jobs and profession is a necessary precursor to any public relations campaign.

Priority Steps to Improve the Workplace

The Task Force considered the role of nurses in different workplace settings in North Carolina, including institutional settings (e.g., hospitals, psychiatric institutions), long-term care facilities (nursing facilities and assisted living facilities) and community-based settings (home health and hospice, public health and school nursing). While not an exhaustive examination of nursing practice, this analysis gave the Task Force the opportunity to examine a range of nursing and nurse aide workplace environments. Task Force members recognized that all nursing work environments could be improved with greater attention to the strategies discussed previously. However, there are certain strategies that are more critical in certain types of workplace environments (for example, the challenges facing nurses working independently in schools and home health may not be the same as those working in large hospitals). Therefore, the Task Force identified a set of priority strategies for different types of work environments that, if improved, would have the most immediate impact on enhancing the workplace for nurses and nurse aides in North Carolina. Some of these factors were similar across job settings, while others were unique to specific types of healthcare settings. The priority issues are listed in Table 4.7, by type of healthcare employment setting. Additional strategies to implement these issues are listed in Appendix 4.1 at the end of this chapter.

As just noted, some workplace issues are unique to specific types of institutions or employers. For example, employers have different requirements for nursing staff, both in terms of overall numbers of nurses needed, skills and educational levels. The capacity to hire nurse managers or clinical nurse specialists to provide support to other nursing staff may vary across healthcare institutions. Hospitals typically have different layers of nurse management (including an Executive Nurse Manager, as well as unit nurse managers), whereas other healthcare providers may have a more flat organizational structure. Some hospitals across the state have successfully changed the role of nurse managers to include a responsibility to serve as retention officers, focusing on the needs of the nurses as well as the clinical needs of patients. Although the Task Force feels strongly that all nurse managers should incorporate the duties of retention officers into their jobs, this may be easier in some institutions than in others. Large hospitals may also be able to hire clinical nurse specialists who can help provide assistance to more inexperienced nurses. In contrast, smaller hospitals and other healthcare employers may have fewer resources to hire clinical nurse specialists.

Different job environments provide varying levels of support for inexperienced nursing staff. For example, hospitals typically provide longer, more intensive orientation periods for new staff (including both nurses who recently finished nursing school and those who are moving from different jobs). Nursing facilities typically provide shorter orientation periods. Similarly, the strategies used to support nursing staff will be different depending on whether the nurse works directly with doctors and other nursing staff (as in hospitals or private physician practices), or whether the nurse operates more independently. In nursing facilities, doctors are not always present, although other nursing staff may be available to help with an immediate problem. In home health, assisted living and/or school settings, the nurse may be working independently, with no other healthcare professionals physically accessible. Nurses and/or nurse aides working

in these jobs have little immediate back-up when problems or questions arise. The strategies used to ensure proper back-up support must vary to accommodate these different workplace realities.

Different types of healthcare institutions also operate under different regulatory environments that may affect their ability to change the workplace environment. Certain healthcare institutions, such as nursing facilities, are more strictly regulated by the federal government than are other healthcare settings. For example, RNs working in Medicare-certified nursing facilities are required to conduct the resident assessments,[c] which may leave little time for direct patient care. As a result, in many nursing facilities, LPNs and nurse aides provide direct patient care. Similarly, nurses in the home health environment must deal with complex regulations and are also required to conduct comprehensive assessments.[58] However, unlike in nursing facilities, LPNs working in home health have very limited roles in the delivery of

Table 4.7.
Priority Workplace Elements Necessary to Create a Positive Work Environment

Elements of Successful Workplace Environments	Hospital	Nursing Facility	State Institution	Assisted Living	Health Health	Public Health	School Nurse
Management support, including nurse managers	✓	✓	✓	✓	✓	✓	✓
Positive team relations with co-workers	✓	✓	✓	✓	✓	✓	✓
Employers offer adequate orientation and mentoring programs	✓	✓	✓	✓	✓	✓	✓
Employers offer competitive salaries and benefits	✓	✓	✓	✓	✓	✓	✓
Nurses and nurse aides have reasonable staff loads	✓	✓	✓	✓	✓	✓	✓
Work hours limited to reasonable levels	✓	✓	✓	✓	✓	✓	✓
Nurses involved in policy and decision making at institutional and unit levels	✓	✓		✓	✓	✓	✓
Employer ensures a safe workplace	✓		✓		✓	✓	
Employer offers opportunities for advancement	✓	✓	✓	✓	✓	✓	✓
Paperwork and administrative burdens minimized	✓	✓	✓	✓	✓	✓	
Employers set clear professionalism and process expectations	✓						✓
Nurses supported in role as patient care integrators	✓						
Diversity in the workforce broadens base of workers and provides more culturally-appropriate care to patients	✓	✓	✓	✓	✓	✓	✓
Information, ergonomics, and other technologies designed to improve workflow and safety and reduce risk of errors and injuries are adopted	✓	✓	✓				

[c] Under federal Medicare law, nursing facilities must employ RNs to conduct resident assessments, which typically take 2-4 hours per patient. New assessments must be conducted yearly, or more frequently if there is a change in the resident's condition. In addition, parts of the assessment need to be updated at least quarterly. This leaves little time for RNs employed in nursing facilities to provide direct patient care.

healthcare; therefore, the majority of nursing care is delivered by RNs.

Over the last two years, hospitals appear to have made more of a financial commitment to implement some of these strategies in order to retain nurses; whereas other healthcare providers have employed fewer of these strategies.[59] The experience of North Carolina hospitals over the last two years after implementing many of these workplace changes, suggests that implementing workplace improvements can make a positive impact on the retention of nurses. Analysis of the 2002 survey of hospitals reveals that hospitals using certain retention strategies experienced a decrease in their RN turnover rate. The strongest associations occurred when hospitals assigned mentors or preceptors to new hires; put staff RNs on policy making committees; allowed nurses to self-schedule, provided permanent shift placements, or offered weekend-only work options. Slightly weaker, but still significant, associations with decreased turnover occurred in hospitals that conduct public recognition programs for nursing personnel; ensure competitive compensation; pay for continuing education; and encourage a supportive atmosphere between physicians and nurses.[60] Many of these retention strategies have little or no financial costs (for example, including nurses on the policy committee, scheduling flexibility, public recognition programs, and encouraging a collegial atmosphere between nurses and physicians). Other retention strategies may have more of a cost, but many of these costs would be offset with reduced turnover.

The Task Force recognizes that other recommended retention strategies (including paying competitive wages) are more costly; and that different types of healthcare organizations have different financial resources and abilities to raise revenues necessary to make certain workplace changes. Certain types of healthcare industries or organizations are more reliant on single revenue sources, and may have less ability to raise revenues needed to hire new staff or offer more competitive salaries and benefits. For example, on average, more than half (52%) of the revenues of nursing facilities come from Medicaid; whereas hospitals typically have a more mixed revenue stream (Medicare, Medicaid, and multiple insurers). Facilities that have mixed revenue sources (including private payers) may have more flexibility in negotiating reimbursement increases to invest in workplace enhancements.

Just as the types of strategies needed to improve the workplace environment varies across employers and job settings, those strategies needed to retain employees should be targeted to the needs of specific staff. The strategies that may work for baby-boomers, may not work for staff that are part of Generation X or Y.

Recommendations

The Task Force developed a set of recommendations that would, if implemented, improve nursing workplace environments and lead to a more highly trained workforce. Health care employers have primary responsibility to implement these changes; but there are other organizations and institutions (including educational institutions, trade and professional organizations, foundations and the NC General Assembly) that can help facilitate these changes. The recommendations are grouped into the following categories: employer-initiated changes; educational opportunities and skills training; development of best practices; dissemination of best practices; and funding.

These recommendations must be viewed as long-term commitments. Similar changes have been proposed and implemented in the past, only to be abandoned when national attention to nursing shortages waned. That is why the Task Force focused on the work of Magnet hospitals, which have made a long-term fiscal commitment to nursing, and have seen higher nurse satisfaction and lower nurse turnover as a result. Not only will these strategies improve the working environment for nurses, nurse aides and other health professionals; but equally importantly, it will improve the quality of care provided to patients.

Employer-initiated changes:

4.1 Health care employers (including but not limited to hospitals, nursing facilities, home health and hospice, state institutions, assisted living, public health, mental health, schools, and private practitioners) must:

a. Create a job environment that promotes positive team relationships, including physician-nurse relationships, nurse-nurse aides and more broadly among all healthcare professionals;

b. Create orientation, mentoring and peer support programs that help orient and support new and existing staff;

c. Ensure a reasonable workload that is tied to ensuring positive patient outcomes;

d. Develop policies to prevent nurses who provide direct patient care from working longer than 12 hours in a 24 hour period, or 60 hours in a 7-day period, under normal working conditions;[D]

e. Offer competitive salary and benefits;

f. Develop clear job expectations, communications and process standards and hold all staff accountable for these standards;

g. Involve nurses and nurse aides in policy making and governance decisions, and ensure that nursing is represented at the highest level of institutional decision making;

h. Ensure a safe working environment to protect staff from threats of violence;

i. Provide career and clinical ladders and opportunities for advancement; and

j. Utilize ergonomics, information technology and other technologies to reduce paperwork, improve the workflow, and reduce the risk of injury to patients and workers.

Educational opportunities and skills training:

4.2 AHEC, medical, nursing and other health professional schools, trade associations (including, but not limited to, the NC Hospital Association, NC Health Care Facilities Association, NC Association of Nonprofit Homes for the Aged, Association for Home and Hospice Care of North Carolina), professional associations (including, but not limited to, the NC Nurses Association, NC LPN Association, NC Organization of Nurse Leaders, NC Medical Society, and NC Direct Care Workers Association) and other organizations should help develop educational opportunities for management, nurses, nurse aides and other healthcare professionals. The educational opportunities should focus on:

k. Leadership development and management training;

l. Conflict resolution and communication skills;

m. Interdisciplinary team building;

n. Health care informatics; and

o. Preceptor training.

Employers should support these training opportunities by encouraging and helping to pay staff or management to attend these sessions or to pursue advanced education to obtain these skills. Further, the trainings, courses and advanced educational opportunities should be made as accessible as possible, for example, through online courses, evening hours, or locations that are accessible throughout the state.

4.3 The NC Board of Nursing should convene a work group to study options to improve school-to-work transitions. The work group should include, but not be limited to representatives of: nursing education programs (e.g., NC community colleges, public and private university nursing programs, and hospital diploma programs), nursing employers (e.g., NC Hospital Association, NC Health Care Facilities Association, NC Association of Nonprofit Homes for the Aged), NC Center for Nursing, AHEC, NC Nurses Association and the NC Organization of Nursing Leaders. The work group shall explore and recommend

[D] The Task Force recognized that there may be emergency situations in which a nurse, or other health professional, may be needed to work longer than 12 hours in a 24 hour period (for example, hospitals may require health professionals to stay at the hospital during an ice or snow storm, as replacement health professionals may be unable to access the facility). Special allowances should be made in these emergency situations.

options to ensure that newly licensed nurses are adequately prepared to assume independent clinical responsibilities. These options to consider shall include, but not be limited to, methods to:

a. Ensure that nursing students have a concentrated/intensive clinical experience of direct patient care in the final semester; and

b. Provide a supervised clinical internship experience in which new nursing graduates are assessed to determine clinical competence and opportunities provided to address areas of identified weaknesses.

Development of Best Practices:

4.4 The NC Organization of Nursing Leaders, NCNA, NCHA, NCHCFA and other trade associations should help develop model programs for shared governance, growth and development of nurse managers, respectful communication, conflict resolution and other key workplace policies among all levels of staff, drawing from magnet principles. The CEOs and CNOs of magnet hospitals and other model healthcare organizations should be integrally involved in this effort. Model strategies should be tied to the differences in various work settings.

4.5 The Nursing Workforce Task Force supports the efforts of the NC Department of Health and Human Services to:

a. Create a special designation for licensed healthcare organizations that provide long-term care services (including nursing facilities, home health and home care, and assisted living) that voluntarily choose to meet/enhance workplace and quality assurance standards.

b. Continue the Win-A-Step Up program which provides additional training to nurse aides.

The NC Department of Health and Human Services is working with a broad-based Partner Team (including the NC Health Care Facilities Association, NC Association of Nonprofit Homes for the Aged, Association of Long-Term Care Facilities, NC Assisted Living Association, and the Association for Home and Hospice Care of North Carolina), to develop a special licensure designation for long-term care providers who voluntarily improve the workplace for nurse aides and other direct care workers. This effort is being funded through a Better Jobs/Better Care grant funded by the Robert Wood Johnson Foundation and Atlantic Philanthropies. To obtain the special licensure designation, long-term care providers will have to meet specified workplace expectations in the areas of workplace culture, effective care teams, staff empowerment, effective coaching supervision, staff development and career ladder opportunities, and peer mentoring. Initially, institutions that meet these enhanced standards will be able to use the special designation in marketing and promotion materials; but the Department would also like to tie any future labor enhancement effort to this special licensure designation effort (see Recommendation 4.9). If this effort is successful, the Department should consider similar efforts for other types of healthcare institutions, including, but not limited to: hospitals, state psychiatric institutions, and public health.

Dissemination:

4.6 Trade and professional organizations, AHEC, and private philanthropies should take the lead in disseminating best practices and encourage board members, CEOs, nurse executives, management staff, physicians and other nursing leaders to invest in strategies to help create a positive workplace culture.

Dissemination can include educational forums, articles in trade journals as well as other training opportunities. The NC IOM report can help highlight the importance of creating a culture that values employees. AHEC, trade and professional associations should help publicize and disseminate the report among nursing employers, policy makers and the public at large. Further, AHEC can help disseminate best practices through the AHEC digital library. The Duke Endowment can also help facilitate training opportunities and best practices by encouraging hospital Board members and executives to model successful workplace environments.

4.7 The NC IOM Nursing Workforce Task Force supports the efforts of the NC Nurses Association to work with consumer advocacy organizations to develop a group of consumers that can help advocate for institutional change. Consumers should be educated about the importance of having a well-educated, adequately staffed workforce in overall quality of care.

Consumers can be strong advocates for institutional change, if educated about the connection between successful workplace environments and improved patient outcomes.

Funding:

4.8 Philanthropic organizations should help provide technical assistance and otherwise assist healthcare organizations make the changes necessary to improve the nursing workplace environment and enhance patient care. Financial assistance should be targeted to those institutions that would be unable to make the necessary changes without financial support.

4.9 The NC General Assembly should appropriate funds as a wage pass-through to enhance nurse aide salaries and/or increase the number of staff in nursing facilities and other organizations heavily reliant on Medicaid. The funds should be targeted to institutions that have voluntarily achieved the special designation for LTC organizations that meet enhanced workplace and quality assurance standards.

Regulatory changes:

4.10 The NC Board of Nursing and the NC Division of Facility Services within the NC Department of Human Services should implement regulations to prohibit nursing staff from providing patient care in any combination of scheduled shifts, mandatory or voluntary overtime in excess of 12 hours in any given 24-hour period or in excess of 60 hours per 7-day period under normal working conditions. Special allowances should be made for emergency situations.

Health care executives, nurses, educational institutions, trade and professional associations, foundations, and policy makers all have a roll to play in improving the work setting. A list of implementation strategies is included in Appendix 4.1.

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Appendix 4.1 Successful Work Environments for Nurses and Nurse Aides Strategy Grid

Elements of Successful Workplace Environments	Hospital	State Psych Hospital	Nursing Home	Assisted Living	Home Health	Public Health	School Nursing	Implementation Strategies
Management support, including the necessary support from CEOs and the organization management team (COO, CFO, Chief Nurse Executive), as well as institutional and unit nurse managers (Note: management also includes state and local officials for state psych. Institutions; public health and school nurses.)	✓	✓	✓	✓	✓	✓	✓	***Educational Opportunities.*** ■ Trade associations (NCHA, NCHCFA, Home and Hospice of NC, etc.) should create forums to encourage board members, CEO and/or other management staff to invest in strategies that help create a positive workplace culture. ■ Trade associations should develop educational opportunities for management to learn about successful workplace strategies, and create forums where Nurse Executives and other nursing leaders can work with board members and CEOs to develop a positive workplace culture. ■ AHEC should convene health care leaders to develop specific regional strategies to create a positive workforce environment. AHEC is working with NC Nurses Association, NCHA, NCCN, magnet hospitals, and other organizations to host a meeting in the fall on "magnetizing your nursing organization". ■ Universities and Community Colleges should include more management, communications, conflict resolution, and interdisciplinary team building training into core curriculum. ■ Health care managers can take advantage of training opportunities already offered by national organizations, such as the Nursing Leadership Academy of the Health Care Advisory Board. ***Duke Endowment:*** ■ The Duke Endowment is a major funding source for many North Carolina hospitals. The Endowment may be able to facilitate training opportunities to encourage Board members and the executives to learn about successful workplace environments. ***Publications:*** ■ Another way to reach Hospital Trustees about the importance of focusing on workforce issues is to encourage the Trustee magazine to have Trustees, CEOs and nurse executives write appropriate articles that highlight the importance of this issue, as well as strategies that Trustees can use to support development of a culture that values workers.

Elements of Successful Workplace Environments	Hospital	State Psych Hospital	Nursing Home	Assisted Living	Home Health	Public Health	School Nursing	Implementation Strategies
								■ The NC IOM report can help highlight the importance of creating a culture that values employees. AHEC, trade and professional associations should help publicize and disseminate the report among nursing employers, policy makers and the public at large. ***Incentives:*** ■ North Carolina should develop special licensure or other recognition for positive workplace environments, and should tie enhanced reimbursement to those institutions that achieve this special designation. ***Consumers:*** ■ NCNA should continue to develop consumer advocates so that consumers could be educated about the importance of having a well-educated, adequately staffed workforce in overall quality of care. Consumers should be educated about how to evaluate quality of care and staffing adequacy so they can help push institutional change.
Positive team relations with co-workers	✓	✓			✓	✓		■ ***Best practices:*** The NC Organization of Nursing Leaders, NCNA, NCHA, NCHCFA and other trade associations should help develop model programs for shared governance, growth and development of nurse managers, respectful communication, conflict resolution and other key workplace policies among all levels of staff, drawing from magnet principles. The CEOs and CNOs of magnet hospitals and other model healthcare organizations should be integrally involved in this effort. Model strategies should be tied to the differences in various work settings. AHEC will disseminate information about documented best practices through the AHEC Digital Library. ■ ***Professionalism and process standards:*** Employers should have established professionalism and process standards that include policies on acceptable conduct and communications, with systems to enforce these standards (e.g., accountability). ■ ***Skills training.*** Training opportunities should be provided to help nurse managers, physicians and other key staff learn conflict resolution, team building, interdisciplinary training, and leadership skills. These educational opportunities should be offered in medical, nursing and other health professional schools, as well as in the workplace. AHEC should continue to provide accessible, cost-effective continuing education programs on these topics using a variety of formats, including distance-learning technology. ■ AHEC and other organizations currently provide numerous CE activities throughout the state; however, attendance is often low. Employers need to take advantage of the opportunities as well as provide input into the planning of CE activities.

Elements of Successful Workplace Environments	Hospital	State Psych Hospital	Nursing Home	Assisted Living	Home Health	Public Health	School Nursing	Implementation Strategies
								■ ***Interdisciplinary teams:*** To the extent possible and appropriate, different health professionals (i.e., doctors, nurses, nurse aides, social workers, etc.) should be involved in helping develop care plans and work collaboratively on patient care. This can also include interdisciplinary rounds. ■ ***Team incentives:*** Positive team relations enhance nurse satisfaction; therefore, employers should create incentives to encourage positive team relations (e.g., performance evaluations based on the work of interdisciplinary teams, not just on individual performance).
Orientation and mentoring	✓		✓	✓	✓	✓	✓	■ ***Adequate time and resources must be devoted to the orientation process:*** An adequate orientation is critical to help new employees understand their new job responsibilities. (This is particularly important for new graduates, but is also important for employees who have new job responsibilities). Hospitals may want to consider residency programs for new nursing graduates, beginning in areas that are (or have been) experiencing the greatest or more rapid turnover. ■ ***Management support for mentors and preceptors:*** Support should be provided (time and pay) to experienced staff to enable them to serve as mentors and/or preceptors. This support should come through Human Resources, senior leadership and unit level leadership. ■ ***Clinical nurse specialists or other peer support:*** Employers should consider hiring and/or promoting experienced staff to serve as mentors to provide the support needed for new staff; and should help encourage experienced staff to seek certification as clinical nurse specialists. ■ ***Training for preceptors:*** AHEC should continue to offer continuing education courses for preceptors, as well as assist health care agencies to develop preceptor and mentor programs. Employing agencies should support/require preceptor attendance at these courses. ■ ***School to work transition models:*** The NC Board of Nursing should convene a work group to study options to improve the school-to-work transition. The work group should include, but not be limited to representatives of: nursing education programs (e.g., NC Community Colleges, public and private university nursing programs, and hospital diploma programs), nursing employers (e.g., NC Hospital Association, NC Health Care Facilities Association, NC Association of Nonprofit Homes for the Aged), NC Center for Nursing, AHEC and the NC Organization of Nursing Leaders. The work group shall explore and recommend options to ensure that newly licensed nurses are adequately prepared to assume independent clinical responsibilities.

Elements of Successful Workplace Environments	Hospital	State Psych Hospital	Nursing Home	Assisted Living	Home Health	Public Health	School Nursing	Implementation Strategies
								■ ***Research:*** Academicians and other health services researchers should help evaluate and quantify the impact of dedicated orientation time in employee retention, and the role that clinical nurse specialists play in providing clinical support to newer staff.
Ensure Workplace Safety	✓	✓			✓	✓		■ ***Employer strategies to ensure workplace safety:*** Employers should take the steps necessary needed to ensure workplace safety, including but not limited to: hiring security guards, creating locked wards, installing alert systems, and training staff in appropriate physical and verbal de-escalation techniques.
Involve nurses in policy and decision making at institutional and unit level	✓		✓	✓	✓	✓	✓	■ ***Leadership support:*** Employers should actively encourage nurses and nurse aides to participate in policy and governance committees at unit and institutional level, and should pay their salary and provide time for this participation. ■ ***Best practices:*** The NC Organization of Nursing Leaders, NCNA, NCHA, NCHCFA and other trade associations should help develop model programs for shared governance, growth and development of nurse managers and respectful communication among all levels of staff, drawing from magnet principles. The CEOs and CNOs of magnet hospitals should be integrally involved in this effort. Other trade associations should also be involved in this effort, while tailoring the strategies to the differences in their workplaces. The AHEC Digital Library should disseminate documented information about these best practice management models.
Competitive salaries and benefits	✓	✓	✓	✓	✓	✓	✓	■ ***Competitive salaries and benefits:*** It will be difficult to attract qualified nurses and nurse aides without competitive salaries and benefits, but these are not sufficient to create a successful workplace. ■ ***Wage equity:*** Employers must be careful to examine how changes in the salary structure effects wage equities (i.e., bonuses for new hires may create frustration and resentment among existing staff). ■ ***Wage enhancements:*** North Carolina General Assembly should appropriate funds as wage pass-through to enhance nursing and nurse aide salaries and/or number of staff in nursing facilities and other organizations heavily reliant on Medicaid, or should otherwise modify the Medicaid reimbursement system to reward institutions that hire more nursing staff and/or increase salaries/ benefits. ■ ***Health insurance:*** Employers should examine the adequacy and affordability of the health insurance offered.

Elements of Successful Workplace Environments	Hospital	State Psych Hospital	Nursing Home	Assisted Living	Home Health	Public Health	School Nursing	Implementation Strategies
								■ ***Creative benefit packages:*** Employers may want to consider offering flexible benefit packages to address the needs of employees (i.e., some employees may need help with dependent care, others with pay instead of benefits).
Reasonable staff loads	✓	✓	✓	✓	✓	✓	✓	■ ***Workload studies:*** Employers should conduct workload studies that incorporate information about staff mix (staff skills and experience, inclusive of all staff), numbers of patients, acuity level and patient mix. ■ ***Activity Ratios:*** Employers should consider using activity ratios, developed by the American Nurses Association, to measure the impact of multiple admissions, discharges and transfers on activity on a specific nursing unit. ■ ***Solicit input from existing staff:*** The workload studies should also include input from existing staff to determine if the organization has sufficient staff to address patient needs. Staff input should be solicited to determine if there are better ways to address workflow issues. ■ ***Slack capacity:*** Reasonable staff loads should include some capacity to address swings in demand for nursing (for example, the patient census in small hospitals may vary considerably from hour to hour or day to day). ■ ***Management support:*** Research has shown that higher RN nurse staffing ratios, in particular the RN hours per patient day, lead to decreased patient errors in hospitals and better outcomes in nursing facilities.
Limiting work hours to reasonable levels	✓	✓	✓	✓	✓	✓	✓	■ ***Employers should limit the number of hours that nurses can work:*** Institutional leaders should develop policies to prevent nurses who provide direct patient care from working longer than 12 hours in a 24 hour period, or 60 hours in a 7-day period. ■ ***Regulatory changes:*** The NC Board of Nursing and the NC Division of Facility Services within the NC Department of Human Services should implement regulations to prohibit nursing staff from providing patient care in any combination of scheduled shifts, mandatory or voluntary overtime in excess of 12 hours in any given 24-hour period or in excess of 60 hours per 7-day period.
Opportunities for advancement		✓	✓	✓	✓	✓	✓	■ ***Career and clinical ladders:*** Health care institutions/organizations should help create career and clinical ladders for nursing staff and nurse aides. ■ ***Recognize and promote internal staff:*** Leadership at all levels should seek out, recognize and support staff that are particularly caring and compassionate, and those who demonstrate great knowledge and skills, regardless of what position they currently hold. Employers should make special efforts to nurture and promote these staff.

Elements of Successful Workplace Environments	Hospital	State Psych Hospital	Nursing Home	Assisted Living	Home Health	Public Health	School Nursing	Implementation Strategies
								■ ***Accessible courses:*** University, community college and AHEC degree programs and continuing education courses/classes should be made as accessible as possible (e.g. online courses, evening hours, locations that are accessible throughout the state). ■ ***Support for ongoing skills training and/or educational advancement should be provided at the unit and institutional level:*** Health care institutions and organizations should provide funding and/or time to allow nurses and nurse aides to take classes to improve skills and/or credentials.
Minimize paperwork and administrative burdens		✓	✓	✓	✓	✓		■ ***Advocate for changes with regulatory agencies:*** Trade associations should work with federal and state regulatory agencies and other organizations to advocate for changes in paperwork/administrative burdens that are not directly linked to patient care. ■ ***Support staff:*** Health care facilities that reduce "support personnel" to save money should examine the impact on existing nursing staff (e.g., increased paperwork and administrative burdens that will reduce direct clinical care). ■ ***Involve nurses and nurse aides in work redesign:*** Meaningful work redesign should be one of the focuses of nurses and nurse aides operating within a self-governance structure.
Nurse as patient care integrators	✓							■ ***Authority and responsibility:*** Institutional leadership, from the senior level to the unit level, must give nurses the authority to address resource issues and to ensure that care plans are followed. ■ ***Training:*** Universities, Community Colleges and AHEC should provide accessible, affordable classes and continuing education courses in facilitation, conflict resolution and the appropriate responsibilities of an "integrator".
Professionalism and process standards	✓						✓	■ ***Professionalism and process standards:*** Employers should have established professionalism and process standards that include policies on acceptable conduct and communications, with systems to enforce these standards (e.g., accountability). These requirements should be included in personnel manuals. ■ ***Encourage participation in professional associations***: Employers should encourage nurses and other health care professionals to participate in professional associations, and take advantage of continuing education opportunities.
Diversify the workforce to broaden the base of potential workers	✓	✓	✓	✓	✓	✓	✓	■ ***Recruitment efforts:*** Trade and professional associations, AHEC and other partners should provide health careers activities for NC school age children, especially minority and disadvantaged students, including shadowing and mentoring,

Elements of Successful Workplace Environments	Hospital	State Psych Hospital	Nursing Home	Assisted Living	Home Health	Public Health	School Nursing	Implementation Strategies
								summer health careers camps, health careers fairs, and programs that offer math and science enrichment. AHEC should continue to produce and distribute the NC Health Careers Manual to middle and high school students. ■ ***Cultural sensitivity training:*** Health care employers, trade associations, professional associations should offer cultural sensitivity training to health professionals and other staff in order to encourage a more diverse workforce and to provide culturally appropriate services to the state's diverse population. The University, Community Colleges and AHEC should offer classes and continuing education that addresses cultural competence and strategies for diversity in the workplace.
Flexible scheduling								■ ***Flexible scheduling:*** Employers should offer a variety of scheduling options to meet the needs of their workers, including but not limited to: allowing employees to self-schedule, work weekend only hours, be assigned to permanent shifts, or part-time positions.
Recognition of personal and professional achievements								■ ***Workplace recognition programs:*** Nurse managers and other management staff should recognize staff for their professional and personal successes and milestones. Health care providers should create systematic, objective reward programs to reinforce core values and behaviors and accomplishments. ■ ***Nominate staff for state and national recognition awards:*** Employers should seek opportunities to recognize staff through state and national professional and trade associations.
Involve existing nurses and nurse aides in addressing nursing shortages and recruitment								■ ***Staff participation:*** Health care facilities should use a variety of incentives to encourage nursing staff to participate in community-based events that foster public appreciation of nursing as a career. ■ ***Recruitment Events:*** Health care institutions and volunteers should take advantage of prepackaged resources available from the NCCN, AHEC and NCNA for use in recruitment events and in elementary and middle schools. ■ ***Refresher Programs:*** Health care institutions, regional AHECs and trade associations should actively promote refresher programs, which include both classroom based and self-study options.
Adopt information, ergonomics, and other technologies designed to improve workflow and safety and reduce risk of errors and injuries	✓	✓	✓					■ ***Use of technology:*** Employers should pay for information, ergonomics, and other technologies designed to reduce paperwork, improve workflow and safety and reduce risk of error and injury.

Elements of Successful Workplace Environments	Hospital	State Psych Hospital	Nursing Home	Assisted Living	Home Health	Public Health	School Nursing	Implementation Strategies
								■ ***Philanthropic financing:*** Philanthropic organizations should help provide technical assistance and otherwise assist healthcare organizations make the changes necessary to improve the nursing workplace environment and enhance patient care. Financial assistance should be targeted to those institutions that would be unable to make the necessary changes without financial support.
Improve public relations —view of work place and job of nurses/nurse aides								■ ***Public relations campaigns:*** Philanthropic and/or state funding should be made available to help promote image of nurses and nurse aides, and to improve the image of nursing in certain job settings (e.g., hospitals and/or long-term care). ■ ***Outreach efforts:*** The state, health care employers and health professionals should continue and expand outreach efforts to encourage people to become nurses and nurse aides. This includes work in elementary and middle schools to encourage students to consider careers in nursing and as nurse aides.

Chapter Five
Advanced Practice Registered Nurses

There are four types of advanced practice registered nurses (APRNs) practicing in North Carolina: nurse practitioners (NPs), certified nurse midwives (CNMs), clinical nurse specialists (CNSs), and certified registered nurse anesthetists (CRNAs). All APRNs are licensed as registered nurses, have advanced academic preparation and are nationally certified. The regulation of APRN practice differs across these specialty groups, and is described more fully below.

Nurse Practitioners: NPs are the largest group of advanced practice nurses in North Carolina. There were 2,125 NP approved to practice in the state in 2003.[1] There are currently eight nurse practitioner education programs in the state, producing approximately 180-249 nurse practitioners annually. The eight programs include: East Carolina University, Duke University, Western Carolina University, Winston-Salem State University, University of North Carolina at Chapel Hill, University of North Carolina at Charlotte, University of North Carolina at Greensboro, and the University of North Carolina at Wilmington. Each program may offer a variety of NP specialty areas, including family nurse practitioner (FNP), geriatric nurse practitioner (GNP), pediatric nurse practitioner (PNP), pediatric acute care (PCNP), adult nurse practitioner (ANP), adult acute care (ACNP), neonatal nurse practitioner (NNP), and women's health nurse practitioner (WHNP). All NP education programs in North Carolina are at the master's degree or post-master's certification level and all are nationally accredited. To qualify to practice as an NP, nurses must have completed an approved education program, have a master's degree and national certification in their area of education (i.e., PNP, FNP, ANP, etc). They could also complete a post master's certificate in an approved program.

In addition to professional skills and acts authorized by an RN license,[2] nurse practitioners are authorized to perform medical acts that include diagnosing and prescribing medical treatment regimens and medications with physician supervision.[3] The supervising physician must provide written instructions about ordering medications, tests and treatment, and must review the orders of the NP within a reasonable time.[4] The prescriptions and/or orders given by a nurse practitioner are deemed, under state law, to be authorized by the supervising physician.[5]

Nurse practitioners are regulated by a Joint Subcommittee of the NC Board of Nursing and the NC Medical Board.[6] The Joint Subcommittee promulgates rules to regulate the practice of nurse practitioners, which then must be adopted by both Boards before completing the rulemaking process and becoming effective. North Carolina's regulatory oversight of NPs was more stringent than most states in 2002; however, prescriptive authority was generally broader.[7]

Oversight:

- In 25 states and the District of Columbia, NPs practice without a requirement for MD supervision. Practice is regulated solely by the Board of Nursing: AK, AR, AZ, CO, DC, HI, IA, KS, KY, ME, MI, MT, ND, NH, NJ, NM, OK, OR, RI, TN, UT, WA, WI, WV, WY.
- In 14 states, NP practice is regulated by the Board of Nursing and there is a requirement for physician collaboration (not supervision): CT, DE, IL, IN, LA, MD, MN, MO, NE, NV, NY, OH, PA, VT.
- In 6 states, the Board of Nursing regulates NP practice, but NPs are required to have physician supervision: CA, FL, GA, ID, MA, SC.
- In 5 states, including North Carolina, NP practice is regulated by the Board of Nursing and Medical Board jointly, with a requirement for physician supervision/ collaboration: AL, MS, NC, SD, VA.

Prescriptive Authority:

- In 12 states and the District of Columbia, NPs can prescribe medications (including controlled substances) without physician involvement in prescriptive authority: AK, AZ, DC, IA, ME, MT, NH, NM, OR, UT, WA, WI, WY.
- In 33 states, including North Carolina, NPs can prescribe medications (including controlled substances), but must have some degree of physician involvement or delegation of prescription writing: AR, CA, CO, CT, DE, GA, HI, ID, IL, IN, KS, LA, MA, MD, MI, MN, MS, NC, ND, NE, NJ, NV, NY,

OH, OK, PA, RI, SC, SD, TN, VA, VT, WV.

- In 5 states, an NP can prescribe medications with some degree of physician involvement or delegation of prescription writing, but may not prescribe a controlled substance: AL, FL, KY, MO, TX.

Nurse practitioners are somewhat less likely to practice in rural areas than primary care physicians, although this trend appears to be changing over time.[8] Since a collaborative practice agreement and physician supervision are required, the supply and distribution of NPs is dependent on both the supply of physicians and physicians' willingness to enter into collaborative practice arrangements. Between 1990 and 2001, the number of nurse practitioners per 100 physicians increased by 183% across the state.[9] This suggests that physicians are more likely to enter into collaborative practice with nurse practitioners now than in prior years. This increase is also noticeable in persistent health professional shortage areas and in rural areas. Half (50) of North Carolina counties are considered persistent health professional shortage areas (PHPSAs), which means they have been "designated as whole or part county health professional shortage areas each year between 1996 and 2001 or in six of the last seven releases of designation."[9] There are 22 North Carolina counties that are considered whole-county PHPSAs. In 1990, there were seven NPs per 100 physicians in PHPSAs. By 2001, there were 18 NPs per 100 physicians—more than a 157% increase.[9] Similarly, there were six NPs per 100 physicians practicing in non-metropolitan counties in 1990 which increased to 13 NPs per 100 physicians by 2001.

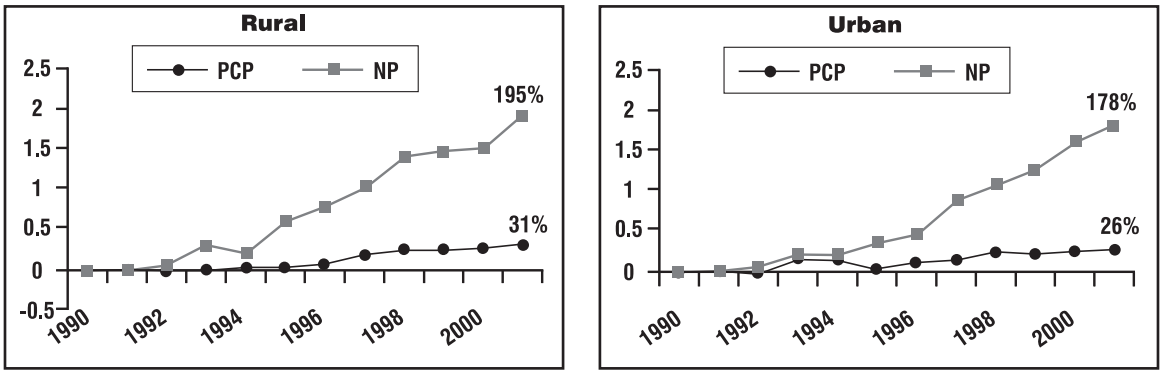
Looking at the growth in NPs per population shows an even higher growth rate, particularly in rural areas. Between 1990 and 2001, there was a 195% growth in NPs practicing in rural areas per 10,000 population, with a slightly lower growth rate of 178% in urban areas (Figures 5.1 and 5.2).[10] The supply of primary care physicians per 10,000 population also increased during the same time period, but not nearly as dramatically: 31% growth in rural areas, and 26% in urban areas. These numbers show that the absolute number of NPs are growing at a much faster rate than primary care physicians, and suggest that patients are increasingly relying on these practitioners for their care.

Certified Nurse Midwives: In 1983, the NC General Assembly passed the Midwifery Practice Act. This act formally recognized CNMs, and discontinued the historical recognition of lay midwives.[11] To practice as a certified nurse midwife, a registered nurse must graduate from a midwifery education program accredited by the American College of Nurse Midwives Division of Accreditation, pass a national certification exam administered by the ACNM Certification Council, Inc., and be approved to practice by the Midwifery Joint Committee. There are currently 201 CNMs approved to practice in North Carolina.

CNM are educated and authorized by state law to provide prenatal, intrapartum, postpartum, newborn and interconceptional care, and prescribe medications.[12]

Figures 5.1 and 5.2.

Cumulative Rate of Growth in Primary Care Providers and Nurse Practitioners per 10,000 Population Ratio Since 1990



Source: NC Health Professions Data System, 2004. Cecil G. Sheps Center for Health Services Research, UNC-Chapel Hill.

Like nurse practitioners, CNMs are required to have physician supervision.[13] CNMs are regulated by the Midwifery Joint Committee, whose members include the six Joint Subcommittee members plus two practicing CNMs and two MDs in obstetrical practice. The rules promulgated by the Midwifery Joint Committee do not require the approval of either the Board of Nursing or the Medical Board.

North Carolina's one CNM education program was opened at East Carolina University in 1991. The school graduates six to eight CNMs annually. CNMs are slightly more likely to practice in rural areas than in urban areas.[14] More than half (52%) of the North Carolina women cared for by CNMs live in rural areas.[15] The remainder come from urban locations (20%), inner-city areas (4%) and suburban communities (24%). Among North Carolina women in their childbearing years (ages 15-44), 67.2% are non-Hispanic white, 23.9% are African American, 4.9% are Hispanic, 1.3% are American Indian, 1.8% are Asian, and 3.6% are another race or two or more races.[16] CNMs care for a disproportionately large minority population: 55% of the CNM patient population is white, 27% African American, 11% Hispanic, 4% American Indian, and 3% Asian.[15] CNMs are also more likely to care for low-income women. As a group, CNMs are an important point of access into the healthcare system for those who have trouble finding a healthcare provider. Further, the services of CNMs may become increasingly critical in years to come, due to a five-year decline in the proportion of newly licensed physicians in the state who choose to perform deliveries.[17] There is also some anecdotal data to suggest that some physicians have stopped performing deliveries because of the associated high costs of liability insurance.[18] Task Force members heard testimony about many factors which make it difficult for CNMs to practice midwifery: including increasing costs of liability insurance, low reimbursement rates from some insurers, and the requirement that CNMs have a supervising physician. Because of these barriers to practice, particularly the physician supervision requirement, there are many CNMs in North Carolina who are not practicing as nurse midwives. Some choose to leave the state and relocate where CNM practice is less restrictive. Those who remain typically practice as labor and delivery nurses.

In some communities, the Task Force heard that it is difficult to find a physician willing to supervise CNMs. While data do not exist to fully explain this phenomenon, some Task Force members suggested that physicians may fear that they may be held liable for a bad birth outcome attended by a CNM if they are the supervising physician of record.

On October 1, 2002, the American College of Obstetricians and Gynecologists (ACOG) and the American College of Nurse Midwives (ACNM) issued a joint statement which called for a collaborative, but not supervisory, relationship between physicians and nurse midwives.[19]

> "The American College of Obstetricians and Gynecologists (ACOG) and the American College of Nurse Midwives (ACNM) recognize that in those circumstances in which obstetrician-gynecologists and certified nurse-midwives/certified midwives collaborate in the care of women, the quality of those practices is enhanced by a working relationship characterized by mutual respect and trust as well as professional responsibility and accountability. When obstetrician-gynecologists and certified midwives/certified midwives collaborate, they should concur on a clear mechanism for consultation, collaboration and referral based on the individual needs of each patient.
>
> Recognizing the high level of responsibility that obstetrician-gynecologists and certified nurse-midwives assume when providing care to women, ACOG and ACNM affirm their commitment to promote appropriate standards for education and certification of their respective members, to support appropriate practice guidelines, and to facilitate communication and collegial relationships between obstetricians-gynecologists and certified nurse-midwives/certified midwives."

Certified Registered Nurse Anesthetists: Aside from NPs, CRNAs are the second largest group of advanced practice registered nurses in the state. In 2002, there were 1,896 CRNAs practicing in North Carolina.[20] There are five nurse anesthesia programs, all of which offer master's degrees.[21] In 2003, there were 80 graduates from the state's CRNA programs. These programs are expanding, and it is projected that there will be 100 graduates by 2005. Eighty percent of

North Carolina's CRNA program graduates remain in the state to practice. To practice as a nurse anesthetist, a registered nurse must complete an academic CRNA program and pass a national certification exam offered by the American Association of Nurse Anesthetists (AANA) Council on Accreditation.

Unlike nurse practitioners and certified nurse midwives, CRNA practice is regulated solely by the NC Board of Nursing. Board of Nursing regulations authorize CRNAs to practice without direct physician supervision. CRNAs practice in hospital or outpatient settings (for example, ambulatory surgical centers and physicians' offices). In hospitals, CRNAs often practice in collaboration with anesthesiologists; however, in rural hospitals the CRNA may be the only anesthesia provider. CRNAs administer anesthesia, but they do not prescribe and do not have prescriptive authority.

Regulations by the Board of Nursing authorize CRNAs to administer anesthesia in collaboration with physicians. In July, 2003, the NC Medical Board issued a Position Statement on Office-based Procedures. This position statement stipulated that anesthesia could be administered by CRNAs in an office-based setting, but only if under the supervision of a physician.[22]

Clinical Nurse Specialists: CNSs are registered nurses with a master's degree in a specialized area of nursing practice and national certification in that area of practice. CNSs practice includes such specialties as geriatrics, critical care and pediatrics. Psychiatric mental health CNSs are the largest group of CNSs practicing in North Carolina.

The Board of Nursing regulates the practice of CNSs who practice independently as nurses without prescriptive authority. Psychiatric mental health clinical nurse specialists, for example, can practice psychotherapy independently and typically collaborate with a psychiatrist or other provider when a client needs medication as an adjunct to therapy.

CNSs face different problems than other APRNs. Because the term clinical nurse specialist has not been given statutory "title protection," some nurses with clinical expertise hold themselves out to be CNSs, although they lack the required advanced education and/or national certification. As a result, it is difficult to know exactly how many CNSs are licensed to practice in North Carolina, as other nurses without the requisite training or national certification may self-designate as a CNS in the Board of Nursing's licensure database. To ensure title protection and more accurately count these APRNs, the NC General Assembly would need to enact specific legislation to that effect.

Limitations on the Practice of APRNs

The Task Force heard testimony that advanced practice registered nurses in North Carolina are not currently permitted to practice to the full extent of their educational preparation. Although the education and certification requirements for each APRN group is similar across the country, their scope of practice varies depending on the state in which they practice. For example, APRNs in many states practice and prescribe medications (including controlled substances); in other states, their practice must be supervised by a physician and/or their prescriptive authority is more limited. Three primary issues were identified as creating practice limitations:

1. Joint regulation of nurse practitioner practice versus sole regulation by the Board of Nursing. This issue is different for CNMs, because the Midwifery Joint Committee has authority to promulgate rules regulating CNM practice without subsequent approval by both Boards.
2. Requirement for physician supervision for NP and CNM practice. The geographic location of physicians and their willingness to supervise NPs and CNMs limit how and where these APRNs can practice.
3. Reimbursement issues. Under state law, state regulated insurance companies or HMOs may not deny payment or reimbursement for any service that is within the scope of practice of an advanced practice nurse, if the insurer normally covers these services. However, insurers are not required to reimburse APRNs if they are regular employees in a physician's office or nursing facility.[23] Further, insurers need not reimburse providers the same amount, and can vary payments based on the practitioner's licensure, educational background or for other reasons. Thus, insurers may reimburse some providers more than others for performing the same services. While not unique to APRNs, this business practice presents additional hurdles to their ability to practice. Another reimbursement issue that hinders practice relates to Medicare. Medicare will not pay for the services of a geriatric nurse practitioner

employed by a nursing facility. This makes it difficult for nursing facilities to hire geriatric nurse practitioners to care for their frail elderly.

Many on the Task Force perceived these factors to create unnecessary restrictions for the full utilization of APRNs; others felt that these issues were less clear. Specifically, some viewed joint regulatory oversight and physician involvement as necessary when nurses engage in what has been traditionally viewed as "the practice of medicine" or the performance of "medical acts," including the diagnosis of disease, ordering a nd interpreting tests, prescribing medications, and instituting treatment. The legal responsibility for oversight of the practice of medicine has been assigned to the NC Medical Board. To some on the Task Force, to carve out a subset of functions from medical practice and declare that APRNs can perform such functions without medical oversight would require that this subset be precisely defined and limited. Some view this course as more limiting to APRN utilization than the current system, in that it would require constant review, constant debate, and constant renegotiation as medical practice evolves in the future. A more productive path might be to reframe "supervision" as a more collaborative and interactive relationship between APRNs and physicians.

The Task Force realized that it did not have time, nor was it appropriately constituted with representation by all stakeholder groups, to thoroughly explore the issues surrounding fuller utilization of APRNs in meeting healthcare needs. Therefore the Task Force recommended that:

5.1 The NC Institute of Medicine should convene a workgroup comprised of representatives of the NC Board of Nursing, NC Medical Board, Midwifery Joint Committee, Joint Sub-committee of the Board of Nursing and Medical Board, nursing and physician professional associations to study the issues facing APRN practice. Specifically, this work group should examine:

a. How current systems of regulation of APRN practice do and do not allow full utilization of this part of the nursing workforce, including but not limited to:

i. Physician supervision requirements for NP and CNM practice.
ii. Regulation of NP and CNM practice by two separate bodies vs. sole regulation by the Board of Nursing.
iii. Authorizing APRN practice to the full extent of educational preparation and national certification.
iv. CNM supervision requirements as a barrier to home births.
v. Title protection for all APRNs.

b. Model APRN Compact Act, including minimum uniform education/certification requirements.

To address reimbursement barriers, the Task Force recommended that:

5.2 Trade and professional associations in North Carolina should initiate an aggressive statewide effort to effect changes in federal and state legislation and regulations that affect Medicare, Medicaid and commercial managed care reimbursement in order to promote the full utilization of APRNs in long-term care and in other health care arenas.

REFERENCES

[1] Testimony of Polly Johnson to the NC IOM Nursing Task Force. November 12, 2003.
[2] G.S. § 90-171.20(7). , 90-18.2(b),(d), 90-18.3.
[3] G.S. §§ 90-18.2(b),(d), 90-18.3. Physician Assistants (PAs) can also perform these medical acts under physician supervision. G.S. §§ 90-18(c)(13), 90-18.1, 90-18.3.
[4] G.S. §90-18.2(b)(4), (d)(3).
[5] G.S. § 90-18.2(e), 90-18.1(e).
[6] G.S. § 90-18(c)(14); G.S. § 90-171.23(b)(14). Physicians Assistants, in contrast, are only regulated by the Board of Medicine.
[7] A Nurse Practitioner Exclusive: The Fifteenth Annual Legislative Update Including a Full State by State Listing. The Nurse Practitioner: The American Journal of Primary Health Care. Jan 2003;28(1):1-75. Summary of Advanced Practice Nurse (APN) Legislation: Legal Authority for Scope of Practice. Summary of Advanced Practice Nurse (APN) Legislation: Prescriptive Authority.
[8] Fraher E. Testimony to NC IOM Nursing Task Force. February 12, 2003. Data from Health Professional Data System.
[9] Fraher E., Shadle, J. and Smith. L. Trends in the Supply of Nurse Practitioners and Physicians Assistants in North Carolina, 1990-2001. Available at: http://www.shepscenter.unc.edu/data/nchpds/NPSupply.pdf. Accessed December 2003.
[10] Cecil G. Sheps Center for Health Services Research. Data from the Health Professional Data System: 1990-2001 for Nurse Practitioners, Physicians Assistants and Primary Care physicians.
[11] Lay midwives who had been practicing for 10 years prior to the effective date were “grandfathered” under the statute, and allowed to continue to practice midwifery as lay midwives. Only one lay midwife met this statutory requirement.
[12] G.S. § 90-178.2. G.S. § 90-178.3(b).
[13] G.S.§ 90-178.3(b).
[14] Fraher E. Testimony to NC IOM Nursing Task Force. February 12, 2003. Data from North Carolina Board of Nursing; Midwifery Joint Committee 2001; North Carolina Office of State Planning.
[15] Lacey, L. and Schmid, L. Nurse Midwives in North Carolina. May 1999. NC Center for Nursing. Available at: http://www.nursenc.org/research/midwives.pdf. Accessed December 2003.
[16] US Census. Census 2000 Summary File (SF-1) 100-Percent Data. Sex by Age by Race and Ethnicity. P12A-P12I. Data from the NC Health Professional Data Systems, Cecil G. Sheps Center for Health Services Research. University of North Carolina at Chapel Hill.
[17] Ricketts TC, Kaplan R. Recent Trends in Physician Supply in North Carolina. Data from the NC Health Professional Data Systems 1998-2002, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.
[18] Jenkins J. Finding the Truth: The Medical Malpractice Crisis in North Carolina. NC Medical Journal. July/August 2003;64(4):169-175.
[19] Joint Statement of Practice Relations between Obstetrician-Gynecologists and Certified Nurse Midwives/Certified Midwives. Approved by the American College of Nurse-Midwives, American College of Obstetricians and Gynecologists. October 1, 2002.
[20] A Nurse Practitioner Exclusive: The Fifteenth Annual Legislative Update Including a Full State by State Listing. The Nurse Practitioner: The American Journal of Primary Health Care. Jan 2003;28(1):1-75. this is listed twice.
[21] In North Carolina, the following schools offer CRNA programs: East Carolina University School of Nursing Nurse Anesthesia Program, Raleigh School of Nurse Anesthesia/UNCG, Duke University School of Nursing Nurse Anesthesia Program, Wake Forest Baptist Medical Center Nurse Anesthesia Program/UNCG, Carolinas Health Care System Nurse Anesthesia Program/UNCC.
[22] Avery S. Nurses Lose Anesthesia Ruling. The News and Observer. January 6, 2004, at 3B. The BON sued the NC Medical Board for issuing this rule requiring physician supervision as a violation of a 1994 consent order between the two boards. In 1994, both Boards entered into a consent agreement that enabled CRNAs to work collaboratively with physicians. The NC Superior Court recently issued a ruling that upheld the NC Medical Board’s new rules.
[23] G.S. §§ 58-50-30, 135-40.6(10).

Chapter Six
Summary of Recommendations and a Blueprint for Action

Nursing is a dynamic field of professional practice. People enter nursing through a variety of nursing educational programs. Graduates are employed in a complex variety of practice organizations and settings, and have many pathways through which their careers may unfold. Hence, it is difficult to draw conclusions about the present circumstances in which nursing is practiced, the future demand for numbers of nurses, the mix of their various educational levels or experiences, or about the intellectual or technological demands on those who practice in particular settings. Despite these uncertainties, the Task Force on the North Carolina Nursing Workforce attempted to formulate a set of recommendations to ensure an adequate supply of appropriately trained nurses for the state.

The Task Force met for 14 months to examine the need for nurses, their requisite skills and qualifications, the capacity of the state's educational institutions to produce adequate numbers of qualified nurses, barriers to career advancement, and the workplace environments within which nursing is practiced. On the basis of these deliberations, the Task Force has concluded that, without some intervention, North Carolina is likely to experience a severe shortage of nursing personnel (in addition to the current shortage of nursing assistants—especially in long-term care) in the coming decade due to the combination of an aging population and an aging nursing workforce. The long-range forecasts of a shortage of anywhere from 9,000 RNs in 2015 to almost 18,000 RNs by 2020 give reason for concern and add salience to the steps recommended in this report to offset the trends identified.[1]

The Task Force's work focused on four primary areas: 1) nursing faculty recruitment and retention; 2) the capacity, quality, and accessibility of nursing education programs, 3) transitions from school-to-work, and 4) the work environments within which North Carolina nurses practice. While much of the Task Force's effort focused on workforce issues related to Registered Nurses (RNs), the Task Force also examined issues specific to Licensed Practical Nurses (LPNs), and Nursing Assistants. Additional attention was given to the special circumstances surrounding the practice of Advanced Practice Registered Nurses (APRNs).

Principal Findings and Observations

The Task Force made a number of key findings or observations about nursing education and practice. These findings formed the basis of the recommendations presented in the previous chapters of the report. Among the key findings are:

Nursing Faculty Recruitment and Retention

- The average age of faculty in all of North Carolina's nursing education programs is becoming older; a high proportion of faculty in all types of programs has retirement plans within the next 10 years.
- Faculty salaries in community college nursing education programs (both ADN and LPN) are low by national standards; the graduates of many of these programs in their first jobs make more than their full-time nursing school faculty.
- Faculty salaries in UNC System nursing education programs are comparable to national average salaries in nursing schools, but most UNC System nursing schools have experienced significant budget cuts in recent years which have led to losses of faculty positions (for both classroom and clinical faculty), and this has necessitated a reduction in nursing school class sizes in these UNC System programs.
- It has been hard to recruit MSN-level faculty in community college programs, especially in rural counties, although the proportion of faculty in these programs with MSN or other advanced degrees has risen from 50% to 78% since 1990.

Nursing Education Programs

- North Carolina has an abundance of nursing education programs (more than any Southern Regional Education Board state except Texas), yet some of these programs are very small (with fewer than 20 graduates sitting for the NCLEX-RN examination each year).
- Attrition (failure-to-complete) rates are about 50% in ADN and LPN programs operated by the state's Community College System, with considerable variation among individual campuses in this System.

- Only 12 of 45 ADN nursing education programs and no LPN programs are nationally accredited. All other nursing education programs in the state are nationally accredited.
- Task Force members agreed that all categories of nursing education programs need to produce more graduates, reduce attrition (especially ADN programs), and maintain current high pass rates on the NCLEX-RN and NCLEX-PN exams.
- At the same time, there is a need to increase the number of practicing nurses who hold the BSN, MSN and other advanced degrees. The Task Force embraces the idea of moving from the present ratio of 60:40 (ADN/diploma nurses-to-BSN) to a ratio of 40:60 through enabling more ADN and diploma graduates licensed as RNs to extend their educational credentials through RN-to-BSN programs, as well as through expansion of prelicensure BSN programs and accelerated BSN options.
- The overall goals for nursing education are therefore: (1) producing the numbers of nurses needed to meet the state's needs; (2) creating opportunities for every practicing nurse to advance her/his education credentials; thereby (3) elevating the overall level of education of the entire North Carolina nursing workforce.

Transitions from Nursing School-to-Work

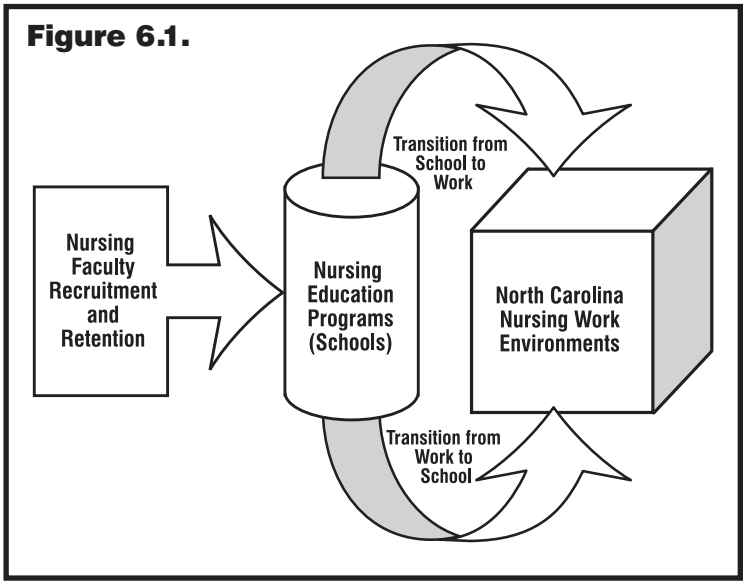
- Many recent graduates from nursing schools report difficulties in assuming full-time clinical responsibilities upon graduation from nursing school. This view has been expressed by nursing employers and supervisors as well. There appears to be a need for some kind of supervised transitional work experience, much like a clinical internship, for newly graduated nurses.

Nursing Work Environments

- Only about half of North Carolina nurses report being satisfied with their jobs. Turnover rates for nurses in North Carolina range from 15 to 57% for RNs, and from 15 to 41% for LPNs, and from 16 to 58% for nurse assistants. Some nursing homes report turnover rates greater than 100% for nursing assistants.
- Only 40% of RNs and 50% of LPNs would recommend nursing as a career to others.
- Those working in community settings report higher levels of satisfaction than those working in hospitals and long-term care facilities. The stress and patterns of work in the latter types of facilities are major reasons many nurses give for either shortening their working careers, or for finding other nursing work situations outside of these types of facilities.
- Hospitals and other nursing employers report spending significant sums in the recruitment and training of new nursing staff.
- The racial and ethnic or gender-specific composition of North Carolina's nursing workforce does not reflect the diversity of the state's population. Only 6% of RNs and 5% of LPNs are males. Twelve percent of RNs and 26% of LPNs represent racial and ethnic minorities whereas 28% of the state's total population are from these minority groups.
- Factors that nurses report would encourage them to remain in the workforce are:
  - management support and skilled nurse managers;
  - an environment that promotes positive team relationships with coworkers;
  - orientation and mentoring programs;
  - competitive salaries and benefits (North Carolina offers slightly lower salaries than the national average for both RNs and LPNs);
  - reasonable staff loads (a factor found to correlate with patient care outcomes and patient safety; over 50% of North Carolina hospital nurses report short staffing affecting their ability to render patient care weekly or daily);
  - safe working environments;
  - career ladders and opportunities for advancement;
  - minimizing paperwork and administrative burdens; and
  - professionalism and process standards in all departments with accountability.

Recommendations for Action

The Task Force built upon these findings to formulate a series of recommendations to address the nursing workforce issues facing the state. Despite the observation that the state is not presently experiencing what might be called a "crisis" with regard to its nursing workforce, there are present shortages and evident trends that predict the likelihood of such shortages in the future. Therefore, Task Force members agreed that it was important to take action in the near term to avoid a future nursing workforce crisis.



In organizing this summary of the recommendations, we have grouped recommendations under four principal rubrics, depicted in Figure 6.1, which may be thought of as major segments in the approach to understanding the current nursing workforce situation in North Carolina. Action steps recommended in regard to one of these four broad segments of the overall nursing workforce situation has important implications for actions taken with regard to the other three. Visualizing the flow of these segments, from left-to-right in the diagram, and in the way the recommendations are presented in the following table, is intended to make their overall impact easier to follow.

In recognition of the complexities of budgetary, organizational and political decision making that might be associated with so broad a set of recommendations, the Task Force chose to segment this summary in a format that would allow readers to identify those priority recommendations that need more immediate action separate from those that may take longer to implement. The highest priority recommendations are shaded in the grid below. We also identified those recommendations that require legislative action separately from those that can be addressed through educational institutions, employers, foundations, the Board of Nursing or other organizations. Recommendations are identified by chapter number so that the corresponding text for each can be located in the body of the report. We hope that segmenting the Task Force recommendations in this way will facilitate the more systematic response to the findings and recommended actions discussed throughout this report.

	ACTION TO BE TAKEN BY ORGANIZATION, INSTITUTION OR GROUP						
RECOMMENDATIONS	**Legislature**	**Educational Institutions or AHEC**	**Employers**	**Nursing Community**	**Foundations**	**Board of Nursing**	**Other**
Nursing Faculty Recruitment/Retention							
Priority Recommendation:							
The Faculty Fellows Program (as proposed in House Bill 808 in last session of NC General Assembly) be enacted and funded to support the effort of BSN nurses who wish to pursue MSN degrees in preparation for nursing faculty careers. (Rec. # 3.25)	✓				✓		
Other Recommendations:							
The NC General Assembly should increase funding to the NC AHEC to offer off-campus RN-to-BSN and MSN nursing programs using a competitive grant approach which is available to both public and private institutions statewide. (Rec. # 3.20)	✓	✓			✓		
Nursing doctoral programs should be expanded. (Rec. # 3.21)	✓	✓			✓		

	ACTION TO BE TAKEN BY ORGANIZATION, INSTITUTION OR GROUP						
RECOMMENDATIONS	**Legislature**	**Educational Institutions or AHEC**	**Employers**	**Nursing Community**	**Foundations**	**Board of Nursing**	**Other**
RN Education Programs							
Priority Recommendations:							
Production of prelicensure RNs should be increased by 25% from the 2002-2003 graduation levels by 2007-08. The NC Community College System (NCCCS), UNC System, private colleges and universities, and hospital-based programs affected by these goals should develop a plan for how they will meet this increased production need and report to the NC General Assembly in the 2005 session. Greater priority should be placed on increasing production of BSN-educated nurses in order to achieve the overall Task Force goal of developing a nursing workforce with a ratio of 60% BSN: 40% ADN/hospital diploma graduates. (Rec. # 3.1a-c)	✓	✓				✓	
Nursing education programs in the community colleges should be reclassified as "high cost" (therefore increasing per capita funding of these programs). (Rec. # 3.6)	✓						
The NC General Assembly and/or private philanthropies should invest funds to enable NC community colleges to employ student support counselors specifically for nursing students and to provide emergency funds to reduce the risk of attrition for students in ADN and PNE programs. (Rec. # 3.8)	✓				✓		
The NC General Assembly should restore and increase appropriations to enable UNC System institutions to expand enrollments in their prelicensure BSN programs above current levels. These funds should be earmarked for nursing program support and funneled to university programs through the Office of the President of the UNC System. Funds should be allocated on the basis of performance standards related to graduation rates, faculty resources, and NCLEX-RN exam pass rates. (Rec. # 3.15)	✓						
The NC General Assembly and private foundations are encouraged to explore new scholarship support for nursing students in NC's schools of nursing. (Rec. # 3.19)	✓				✓		
Nurse Scholars Program should be expanded, per-student loans increased and new categories of eligible students added (as specified in Chapter 3). (Rec. # 3.24a-f)	✓						
Private institutions offering the BSN degree should be encouraged to expand their enrollments. (Rec. # 3.17)		✓		✓			
NC residents with a baccalaureate degree who enroll in an accelerated BSN or MSN program at a NC private college of nursing should be eligible for state tuition support equivalent to students in these institutions pursuing the initial undergraduate degree. (Rec. # 3.18)	✓						
The Comprehensive Articulation Agreement between community colleges and UNC System campuses should be further refined and implemented fully. a. Associate Degree nursing curricula should include non-nursing courses that are part of the Comprehensive Articulation Agreement (CAA) between the NCCCS and the UNC System. b. The UNC System and Independent Colleges and Universities offering the BSN degree should establish (and accept for admission purposes, UNC System-wide) General Education and Nursing Education Core Requirements for the RN-to-BSN students who completed their nursing education in a NC community college or hospital-based program after 1999. (Rec. # 3.28a-b)		✓					

	ACTION TO BE TAKEN BY ORGANIZATION, INSTITUTION OR GROUP						
RECOMMENDATIONS	**Legislature**	**Educational Institutions or AHEC**	**Employers**	**Nursing Community**	**Foundations**	**Board of Nursing**	**Other**
Other recommendations:							
Approval for (and funding to support) enrollment growth should be limited to those nursing education programs where attrition (failure to complete) rates are lower than the three-year average attrition rate for that category of education program (BSN, ADN, or PNE) and the pass rates on the NCLEX-RN or NCLEX-PN examination exceed 80%.) (Rec. # 3.2)		✓			✓	✓	
NC BON-approved "slots" should be realigned with current enrollment in NC nursing education programs by 2006. (Rec. # 3.3)		✓				✓	
Clinical facilities, in collaboration with local/regional nursing education programs, should identify and make available more clinical training sites for nursing education. (Rec. # 3.4)		✓	✓				
Nursing education programs and clinical agencies should work together to develop creative partnerships to enhance/expand nursing education programs and help ensure the availability and accessibility of sufficient clinical sites: a. AHEC should convene regional meetings of nursing educational programs and clinical agencies to develop creative educational opportunities for *clinical* nursing experiences. b. Nursing education programs of all types at every level should work together to develop creative educational collaborations with clinical facilities and programs that promote educational quality, efficiency and effectiveness. (Rec. # 3.5)		✓	✓				
An alternative method of financing the expansion of community college-based nursing programs should be considered by the NC General Assembly (instead of the dependence on external resources for such expansions). (Rec. # 3.7)	✓						
Funding should be made available to enable every nursing education program to apply for and attain national accreditation by 2015. (Rec. # 3.9)	✓	✓					
The Community College System should include in the comprehensive data and information system being developed data on nursing student applications, admissions, retention and graduation. (Rec. # 3.10)	✓	✓					
A consistent definition of “retention” (or “attrition”) should be developed by the Community College System and used in every community college. (Rec. # 3.11)		✓				✓	
A consistent standard should be developed and used within the Community College System for the evaluation of retention-specific performance criteria for each nursing education program. (Rec. # 3.12)		✓				✓	
The NC General Assembly or private philanthropies should fund the Community College System to undertake a systematic study of the relationship between competitive, merit-based admission policies and graduation/attrition rates. (Rec. # 3.13)	✓	✓					
Admission criteria in community college nursing programs should be coupled with competitive, merit-based admission procedures in all community college-based nursing education programs. (Rec. # 3.14)		✓					
The UNC Office of the President, utilizing data provided by the NC Board of Nursing, should examine the percentage of first-time takers of the NCLEX-RN exam who are BSN, ADN and hospital-based school of nursing graduates. If necessary, the UNC Office of the President should convene the UNC System deans/directors of nursing for baccalaureate and higher degree programs to plan for increases in funding to support enrollment that will assure, at a minimum, a 40% or greater ratio of BSN prelicensure graduates (in relation to		✓					

RECOMMENDATIONS	ACTION TO BE TAKEN BY ORGANIZATION, INSTITUTION OR GROUP						
	Legislature	Educational Institutions or AHEC	Employers	Nursing Community	Foundations	Board of Nursing	Other
ADN and hospital graduates) and, where possible, a gradual increase in the BSN ratio over the next decade. These ratio increases should take into consideration increases in prelicensure BSN program enrollment, as well as ADN-to-BSN and accelerated BSN program productivity. (Rec. # 3.16)							
Hospitals and other nursing employers are encouraged to consider tuition remission programs to encourage their nursing employees to pursue LPN-RN, RN-BSN, MSN or PhD degrees. (Rec. # 3.27)			✓				
An RN-to-BSN statewide consortium should be established to promote accessibility, cost-effectiveness and consistency for these programs. (Rec. # 3.29)		✓					
PN Education Programs							
Priority recommendation:							
Production of prelicensure LPNs should be increased by 8% from the 2002-2003 graduation levels by 2007-08. NCCCS and private institutions affected by this goal should develop a plan for how they will meet these increases. NCCCS should convene this planning group, including representatives of private institutions offering these nursing programs, and a plan should be reported to the NC General Assembly in the 2005 session. Each year thereafter, the PNE programs should provide a status report to the NC General Assembly showing the extent to which they are meeting these goals; and whether production needs should be modified based on job availability for new graduates, changes in in-migration, retention or overall changes in demand for nurses in NC. (Rec. # 3.1d-e)	✓	✓				✓	
Other recommendations:		✓					
All NC BSN and ADN nursing education programs should explore creative LPN-to-ADN and LPN-to-BSN pathways to facilitate career advancement and avoid unnecessary duplication of content in these curricula. (Rec. # 3.30)	✓	✓				✓	
The State Board of Education and the NCCCS should promote dual enrollment programs for PNE programs in high schools. (Rec. # 3.31)	✓	✓					
All PNE programs in NC should seek and attain national accreditation by 2015 with adequate funding provided for faculty resources, student support services, and NLN accreditation application fees. (Rec. # 3.32)							
Nursing Assistant (Nurse Aide) Education Programs							
NC DHHS should develop special designation for licensed healthcare organizations providing LTC services that choose to meet enhanced workplace environmental and quality assurance standards. (Rec. # 4.5)			✓				✓ NC DHHS
The NC General Assembly should appropriate funds to be used as a wage pass-through to enhance the salaries of nursing assistants, especially within LTC facilities that have chosen to enhance workplace and quality assurance standards. (Rec. # 4.9)	✓		✓				
Efforts of NC DHHS, NC BON and NCCCS to create "medication aide" and "geriatric aide" classifications should be encouraged and supported. (Rec. # 3.33)				✓			✓ NC DHHS
NC Division of Facility Services in conjunction with the NC BON should develop a standardized Nurse Aide I competency evaluation program, to include a standardized exam and skills demonstration process. (Rec. # 3.34)		✓					✓ NC DHHS

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Transitions from Nursing School to Nursing Practice							
Priority recommendation:							
NC BON should convene a group to study options to improve school-to-work transitions, including: ■ intensive clinical experience in direct patient care during the final semester of study for nursing students, and ■ a supervised/mentored clinical internship experience either pre- or post-licensure. (Rec. # 4.3)		✓	✓	✓		✓	✓
Nursing Work Environments							
Priority recommendations:							
Employers should take steps to create "positive work environments" (meeting several defining criteria). (Rec. # 4.1)			✓		✓		
AHEC and the professional nursing schools should offer educational opportunities for leadership development, conflict resolution and communication skills training, interdisciplinary team building, and preceptor training. (Rec. # 4.2)		✓	✓				
NC BON and Division of Facility Services should implement regulations to prohibit nurses from providing direct patient care more than 12 hours in a 24 hour time period, or 60 hours in a 7 day time period. (Rec. # 4.10)						✓	✓ NC DHHS
Other recommendations:							
NC nursing organization leaders and healthcare trade associations should develop model programs and best practices (e.g., Magnet Hospital principles) for statewide dissemination. (Rec. # 4.4)			✓	✓	✓		✓
Trade associations, AHEC and private philanthropies should take the lead in disseminating best practices that help create a positive workplace culture for nursing personnel. (Rec. # 4.6)		✓	✓		✓		✓
NC Nurses Association should promote consumer advocacy efforts toward a well-educated, adequately staffed healthcare system in the interest of higher quality of care. (Rec. # 4.7)				✓			✓
Philanthropic organizations should support the provision of technical assistance to healthcare organizations as they attempt to make the changes necessary to improve the nursing workforce environment and enhance the quality of patient care. Financial assistance should be targeted to those facilities that would be unable to make these changes without financial assistance. (Rec. # 4.8)					✓		
Advanced Practice Registered Nurses							
The NC IOM should convene a workgroup to study issues specific to the practice of APRNs. (Rec. # 5.1)				✓		✓	✓ NC IOM
Trade and professional associations in NC should initiate an aggressive statewide effort to effect changes in federal and state legislation and regulations that affect Medicare, Medicaid and commercial managed care reimbursement in order to promote the full utilization of APRNs in long-term care and in other health care arenas. (Rec. # 5.2)			✓	✓			✓

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Building an Interest in Nursing as a Career							
Priority recommendation:							
Existing programs via AHEC, the health science programs in community colleges, universities and colleges, the NC Center for Nursing, and employers that target a diverse mix of middle and high school students to encourage them to consider health careers and prepare them for entry into programs of higher learning need to be strengthened and expanded. (Rec. # 3.22a-d)	✓	✓	✓	✓	✓		
Other recommendation:							
High school and college-level guidance counselors should receive additional training in the requirements of NC's nursing education programs, with counselors designated to provide nursing-specific advice to interested students. (Rec. # 3.23)		✓					
Additional Cross-Cutting Recommendations							
Employers of nurses (RN and LPN) who hold licenses in compact states other than NC should be required to report annually the names, states in which licensed, and period of employment of these nurses working in their facilities and programs. (Rec. # 2.1)	✓		✓				✓
Any NC resident enrolled in a public or private nursing education program should receive a state income tax credit to offset their nursing education expenses. (Rec. # 3.26)	✓						

Summary

As the work of the Task Force unfolded, it became clear that North Carolina is indeed fortunate to have avoided many of the extreme shortages of nurses reported in other states. Yet, even as this was noted, there were important developments on the horizon which had the potential to cause such shortages even here.

The Task Force brought together a large and diverse group of stakeholders, all with strong commitments to their respective interests in the state's nursing workforce. Each voiced strongly held points of view with regard to aspects of nursing and nursing practice that needed attention if the Task Force was to adequately address the many issues of relevance to the future of nursing in North Carolina. The fact that there are so many pathways into this field and throughout an individual nurse's career made it necessary to organize our deliberations in a way that enabled the Task Force to deal with the special (often unique) situations faced by one form of nursing education, or one venue of nursing practice, then to synthesize these findings and recommendations in a format that offered a potential framework for future policy decisions affecting the profession of nursing as a whole. It is a tribute to both the process and the participants that the way these discussions unfolded may have identified ways in which seemingly disjointed elements of North Carolina nursing might begin to see opportunities for collaboration, coordination, and ultimately greater levels of accomplishment in relation to the broad goals of this effort as a whole.

In this report, as one would expect, there are identifiable needs for additional financial support for nursing education (through support to our public and private institutions and their faculties offering different types of nursing credentials, as well as for the scholarship support of those who choose to enter this field), for programs and initiatives to enable recent nursing school graduates to enter the field of practice better able to render the professional services for which they were employed, and needs for concrete improvements in the work environments within which nurses practice. The fact that nursing, especially nursing at the bedside in hospitals and in long-term care, requires increasingly sophisticated technical skills and continues

to demand both intellectual, physical and emotional energy beyond what would be required in many other professions and occupations, the recruitment and retention of well-prepared and motivated nurses remains a challenge now and in the future. But, as these discussions and the interactions with Task Force members have demonstrated over and over again, nursing is both a dynamic and exciting field of professional practice. And North Carolina is considered by most to be one of the very best states within which to be a nurse.

It is hoped that the recommendations offered here will serve as a template for a deliberate policy agenda through which the nursing workforce for North Carolina can continue to be the vibrant example of the highest standards of practice for which its reputation has been well-earned.

REFERENCES

[1] Lacey, L.M. and Shaver, K. North Carolina Trends in Nursing: 1982 - 2001 RN and LPN Supply Trends. March, 2003. Available at: http://www.nursenc.org/research/Trends2001/supply.pdf