

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.

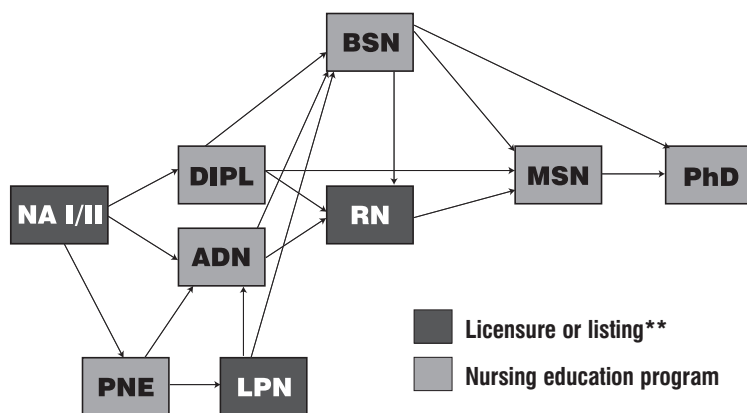
In recognition of this complexity, the Task Force decided to focus its attention sequentially on various categories of licensure or certification, and for Registered Nurses, the various educational pathways to licensure and post-licensure opportunities for educational advancement.

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



* The Task Force gratefully acknowledges the expert assistance of Barbara Knopp, RN, MSN, Education Consultant, NC Board of Nursing, and Linda Lacey, MA, BBA, Director of Research, NC Center for Nursing, for their extraordinary efforts in compiling the data presented in this chapter.

**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

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

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.

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

UNC System BSN Programs	Private College & Univ BSN Programs	Community College Associate Degree in Nursing (ADN) Programs	Hosp ADN Prog (2)	Hosp Dipl Progs	RN Licensure By NC BON Graduates of 64 Total Programs
(9)	(4)	(45)	Indep Coll ADN (1)	(3)	

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 health-care 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.

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.

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.

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

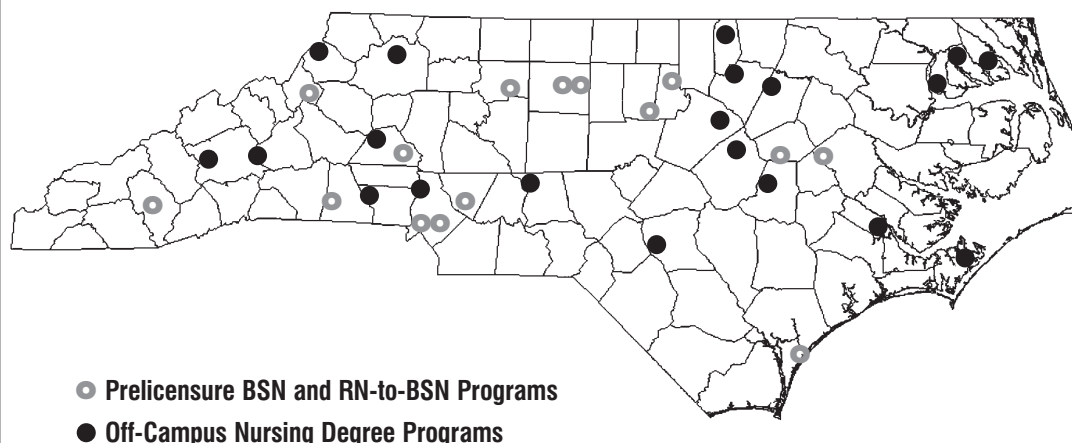
Collegiate nursing education programs offering the BSN, MSN and PhD degrees in North Carolina's public universities do not have a major problem with salary levels compared to other academic disciplines, however, if salary levels continue to remain flat, recruitment as well as retention of quality faculty 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 exit 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 force¹⁹ 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 Cont. Educ.	NAII Cont. Educ.	CEP* Cont. Educ.	NAI/II Curriculum	Total Enrolled	Total Listed	Programs
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 months 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 serious 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 enrollment⁶ 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.

⁶ 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.

REFERENCES

- ¹ Institute of Medicine (2003). Health professions education: a bridge to quality. National Academy of Sciences. Washington, DC: Academy Press.
- ² Cathcart EB (2003) Using the NCLEX-RN to argue for BSN preparation: barking up the wrong tree. *Journal of Professional Nursing*, 19, 3 (May-June):121-122.
- ³ Needleman J, Buerhaus P, Mattke S, Stewart M, Zelevinsky K (2002) Nurse-staffing levels and the quality of care in hospitals. *New England Journal of Medicine* 346, 22:1715-1722.
- ⁴ Steinbrook R (2002) Nursing in the crossfire. *New England Journal of Medicine* 346, 22:1757-1766.
- ⁵ Aiken LH, Clarke SP, Sloane DM, Sochalski J, Silber JH (2002) Hospital nurse staffing and patient mobility, nurse burnout, and job dissatisfaction. *Journal of the American Medical Association*. 288, 16:1987-1993.
- ⁶ Fagin CM (2001). When care becomes a burden. New York: Milbank Memorial Fund.
- ⁷ Delgado C. (2002). A profile of disciplined registered nurses. *Nurse Educator* 27:159-161.
- ⁸ Aiken LH, Clarke SP, Cheung RB, Sloane DM, Silber JH (2003). Educational levels of hospital nurses and surgical patient mortality. *Journal of the American Medical Association*. 290, 12:1617-1632.
- ⁹ Long KA (2003) Licensure matters: Better patient care requires change in regulation as well as education. *Journal of Professional Nursing*, 19, 3 (May-June):123-125.
- ¹⁰ Aiken LH, Clarke SP, Cheung RB, Sloane DM, Silber JH (2003). Educational levels of hospital nurses and surgical patient mortality. *Journal of the American Medical Association*. 290, 12:1617-1632.
- 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.
- ¹⁶ Harmuth S (2002). The direct care workforce crisis in long-term care. *North Carolina Medical Journal* 63, 2 (March/April): 87-94.
- ¹⁷ Ibid.
- ¹⁸ *North Carolina Medical Journal* (2002). Critical Shortage of Direct Care Workers in Long-Term Care. 63, 2 (March/April).
- ¹⁹ North Carolina Institute of Medicine (2002). A Long-Term Care Plan for North Carolina: Final Report. Durham, North Carolina. March.

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:	Durham Technical 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
				Pre-license RN	RN-BSN			Pre-license RN	RN-BSN	
		Entry-level BSN Programs								
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								
	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 in 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
				Generic RN	LPN Advanced			Generic RN	LPN Advanced	
		ADN Programs								
	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: Durham Technical 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
				Generic RN	LPN Advanced			Generic RN	LPN Advanced	
		ADN Programs								
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 in 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
NLNAC	1	Boiling Springs: Gardner Webb University	N/A	6	2	0	N/A	43
CCNE	1	Concord: Cabarrus College of Health Sciences	N/A	3	1	3	N/A	19
CCNE	1	Southeastern North Carolina Nursing Consortium (Fayetteville State University and UNC-Pembroke)	N/A	3	8	1	N/A	112
	4	TOTAL			12	5		208
	16	Total RN-BSN Programs						846

National Nursing Accreditation	#	Program Location/Name	NC BON Approved Enrollment as of Jan 1 2004	Length of Program in Semesters in 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						
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
	Prelicensure RNs	RN-BSN	Total Grads	Prelicensure RNs	RN-BSN		
BSN Programs - Prelicensure							
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							
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
	Prelicensure RNs	LPN Advanced	Total Grads	Prelicensure RNs	LPN Advanced		
ADN Programs							
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
Harnett: 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
Jamesstown: *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
	Prelicensure RNs	LPN Advanced	Total Grads	Prelicensure RNs	LPN Advanced		
ADN Programs							
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	Prelicensure 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
	Entry PNE	Total Grads			
HPNE/LPN Programs					
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.

