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Nursing Education in North
Carolina, 1975-1980



**THE UNIVERSITY OF NORTH CAROLINA
BOARD OF GOVERNORS**

**NURSING EDUCATION
IN NORTH CAROLINA
1975 - 1980**

**The University of North Carolina
General Administration
Chapel Hill, North Carolina
November 1975**

William A. Dees, *Chairman*
Board of Governors

William Friday
President

The University of North Carolina
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**NURSING EDUCATION IN NORTH CAROLINA
1975 - 1980**

Planning Publication 1-75

UNIVERSITY OF NORTH CAROLINA

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PREFACE

The Board of Governors of The University of North Carolina is directed by statute to "plan and develop a coordinated system of higher education in North Carolina." This report on nursing education is a part of the long-range plan that will be completed by the Board of Governors in 1976. The scope of this study recognizes that nursing education is a responsibility shared by The University, by the community colleges and technical institutes, and by private institutions in North Carolina.

The study was prepared with the cooperation and support of many institutions and individuals who generously contributed their time and expertise. The work of the Joint Advisory Committee on Nursing Education is supported in continued statewide planning to meet the projected nurse manpower needs of North Carolina.

Based on this report, the Board of Governors adopted the general policies that (1) there will be no additional baccalaureate nursing programs authorized in the institutions of The University of North Carolina at least until 1980, and (2) priority will be given to strengthening and improving existing nursing programs in The University and to the development of additional master's programs designed primarily to prepare qualified faculty for nursing education programs in the State.

This study was directed by Dr. Jeanne Margaret McNally, Assistant Vice President for Academic Affairs.

William Friday
President
The University of North Carolina

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ACKNOWLEDGMENTS

This report could not have been completed without the cooperation and advice of many individuals and groups.

Joseph Barnes, Vercie Eller, Barbara Gatton, Dr. Isa Grant, Juanita Hall, Willa Hatcher, Dr. Gerald B. James, Dr. Marinell Jernigan, Georgia Jones, Dr. Eloise R. Lewis, Dr. J. P. Tyndall, Anne P. White, and Dr. Ruby L. Wilson of the Joint Advisory Committee on Nursing Education are commended for their many contributions during all phases of the study.

Special thanks are given to the deans and directors and to their faculties and staff of each of the nursing education programs in North Carolina for furnishing responses to questionnaires and interviews, and to the administrators and staff of health care facilities across the State for their assistance in supplying essential data.

The North Carolina Board of Nursing admirably and patiently provided major sources of data.

The Area Health Education Centers and the staff of the Health Services Research Center of The University of North Carolina at Chapel Hill gave invaluable assistance in the study of clinical facilities.

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INTRODUCTION AND SUMMARY

The University of North Carolina is deeply involved in the undergraduate, graduate, and continuing education of nurses in the State. Nine undergraduate nursing programs in The University make a significant contribution to the number of professional nurses in the State and to the quality of their educational preparation. Requests for five additional baccalaureate nursing education programs and four graduate nursing programs received by the Board of Governors make it necessary, at this time, to study the needs of the State and the resources available to meet these needs.

A recent Southern Regional Education Board project summarized the planning objectives of nursing education:

Human and financial resources are already overtaxed by the number of programs we now have. This is true of the nation as a whole, but especially so in the SREB states, where program productivity is less and where financial limitations are greater.

While there is a real need for additional nurse manpower in the south, plans for development of any new educational programs to prepare for entry into the field or for graduate preparation should be assessed very carefully in terms of the alternatives available. Attention should be directed to providing adequate support to strengthen programs already in existence and toward increasing coordination and collaboration among programs to improve utilization of personnel and resources.

To make the best use of resources we have to insure development of a nursing workforce adequate to the tasks being set before it. This will require planning, restructuring and collaboration. Only through a cooperative effort to build on strengths and minimize weaknesses can we expect to achieve a system of nursing education equal to the challenge.¹

The purpose of this study is to provide quantitative information about needs and trends in nursing education in North Carolina and to

¹Patricia T. Haase and Mary Howard Smith, Nursing Education in the South 1973 (Atlanta: Southern Regional Education Board, 1973), p. 24.

facilitate the development of a long-range plan for nursing as part of the five-year plan of The University of North Carolina.

Currently The University of North Carolina has eight baccalaureate nursing programs at the following constituent institutions: East Carolina University, North Carolina Agricultural and Technical State University, North Carolina Central University, the University of North Carolina at Chapel Hill, the University of North Carolina at Charlotte, the University of North Carolina at Greensboro, Western Carolina University, and Winston-Salem State University. The University of North Carolina at Wilmington conducts a two-year associate degree nursing program.

The University of North Carolina at Chapel Hill has a master's program in nursing with concentrations in pediatric, maternal-new born, medical-surgical, psychiatric and public health nursing. The School of Public Health, the University of North Carolina at Chapel Hill, has a master's program in the Department of Public Health Nursing which provides graduate study in public health nursing or occupational health nursing with the option to choose an area of concentration in advanced practice, supervision, administration, teaching or mental health.

Enrollment in The University's baccalaureate nursing programs has increased steadily. Enrollment growth, in large part, reflects the impact of Federal support¹ provided through construction grants, special project grants for improvement in nurse training, institutional grants, traineeships and other assistance to students. It is assumed that there will be a steady increase in admissions at least until 1980. A review of

¹U.S. Department of Health, Education, and Welfare, Public Health Service, "Progress Report on Nurse Training, 1970: Report to the President and Congress," U.S. Government Printing Office.

the increased enrollment and graduation pattern of the nursing programs within The University, together with the continued increase in enrollment in other institutions of higher learning in North Carolina (Figure 1), when compared with various projections of the number of nurses that would be employed in 1980 in the State, leads to the conclusion that the present number of nursing programs in the State can meet the effective demand for registered nurses. It must be noted, however, that these projections do not represent needs or goals of the number and kinds of nurses required to meet changing health care needs.

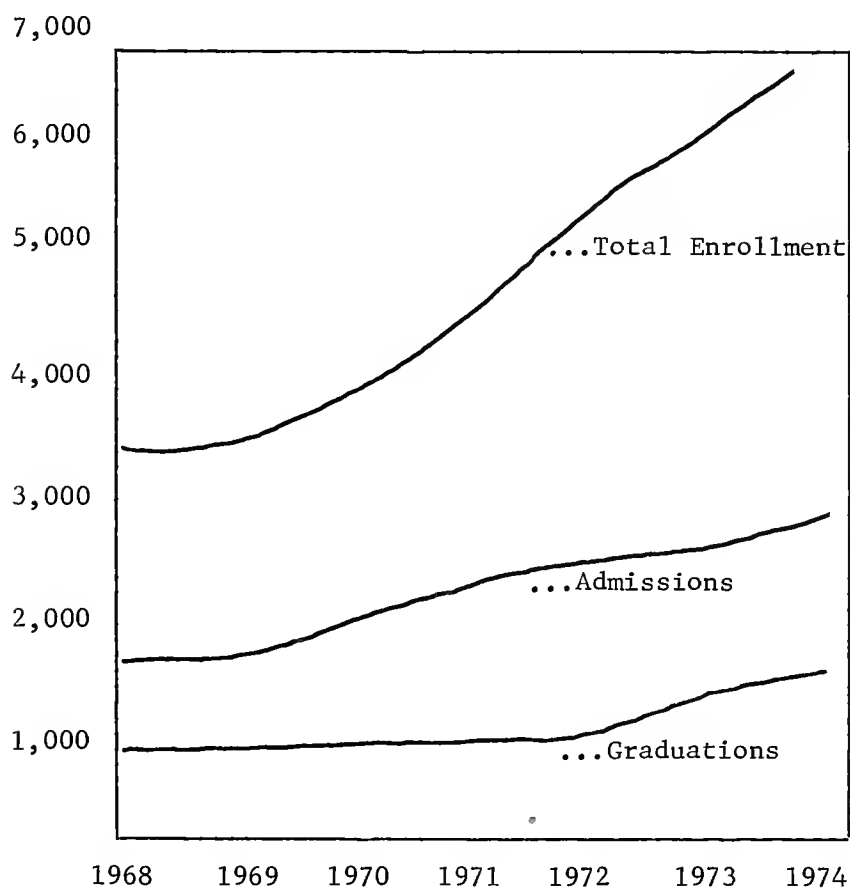


Figure 1.--Enrollment, Admissions, and Graduations in Nursing Programs in North Carolina, 1968-1974.

There has been a continued movement in nursing for registered nurses, graduates of associate degree and diploma programs, to submit evidence of academic and clinical achievement to satisfy requirements for a degree. In nursing education the evaluation of performance, professional role achievement, appreciations and values remains an issue and an unsolved problem. The American Nurses' Association and the National League for Nursing continue to express concern regarding programs for registered nurses at both the baccalaureate and master's levels at those institutions that do not offer a nursing major and that have no qualified nurse faculty but which grant degrees in related areas. The present baccalaureate nursing programs in The University are admitting many more students with previous experience in nursing based on evaluation by testing knowledge and by demonstrated competence in practice. Further study is needed to facilitate the articulation (transfer) of the registered nurse, while assuring the development of policies that support the position of professional nursing associations and accrediting bodies which state that nursing education programs admitting registered nurses should qualify as generic baccalaureate programs.

The results of licensure examinations of graduates of The University's nursing programs differ considerably by program. Three programs have had consistently poor results, i.e., over fifty percent failure rate. In order to improve this performance rate these programs need to be studied in depth and whatever deficiencies that exist be remedied. Licensure examination results may not be the only criterion of the quality of a program, but it is one indication of quality, and as such cannot be overlooked.

Since only half the full-time employed nurse faculty in North Carolina hold a master's or higher degree, it seems evident that a major problem in nursing and nursing education is the overwhelming need for educationally qualified persons prepared in nursing at the graduate level. The highest priority of need at this time is for qualified faculties for the schools of nursing since it is the educational programs in nursing that prepare the most qualified practitioners. A second important need is for nurses with graduate preparation in nursing for service agencies that provide direct health care to the public. North Carolina is not alone in these needs; the problem is a national one.¹

Over the years the scope and variety of extension, adult, or continuing education courses and educative experiences have expanded enormously. The concept of continuing education is well established. The providers of continuing education for nurses in North Carolina are primarily educational institutions, hospitals, nursing homes, Area Health Education Centers and professional nursing organizations. The major responsibility for continuing education devolves upon institutions of higher learning. As demonstrated in this study, The University of North Carolina is the prime provider of continuing education to the health professions.

Problems of program duplication and competition in the State persist. Each institution needs to define its individual role or mission in continuing education. Continuing education to maintain and update knowledge and skills beyond initial preparation at all levels of practice must be increased and expanded.

¹Dorothy Ozimek, The Future of Nursing Education (New York: The National League for Nursing, 1975), pp. 13-16.

Continuing education should be viewed as a component of nursing education in The University. The financial support of these programs needs to be reviewed and studied. Certain programs in The University, on an area basis, should be providers of continuing education for nursing. It is further recommended that continuing education for nursing be within the framework of the Area Health Education Center program.

Clinical learning experiences are an essential part of nursing education. A statewide study of the use of clinical facilities by nursing education programs in North Carolina showed that the situation of overuse is serious, indeed critical, in some geographic areas. Several hospitals accept nursing students from not less than five different schools. While there are some additional places for students in clinical settings in the State, every clinical setting cannot be used for learning experiences.

Based on anticipated enrollment increases, more than 800 additional nursing students will need clinical experiences in five years. The present clinical facilities--with anticipated expansion--will minimally support these needs.

Further study of the kinds of learning experiences needed for the baccalaureate student and how these can be met are needed. New ways of offering learning experiences within present clinical settings and in newly developing ones should be explored.

The need for nurse manpower is difficult to project without a study of the distribution of nursing personnel and services, trends in graduations and admissions to evaluate the extent to which the output of schools of nursing tend to fill unmet needs, data on employment status for registered nurses and labor force participation rates by age and level

of education, and by the determination of a goal for health care delivery. While national studies¹ currently in progress will design "nurse manpower models" that should influence nursing resources and requirements at state, regional and national levels, an in-depth study should be made on the need for and the optimum use of nurses on a geographic basis in North Carolina. These studies would provide recommendations for the number and kinds of nursing education programs that would meet best the needs of the State.

The Carnegie Commission on Higher Education was asked to study the factors that influence education and to make recommendations for the year 2000. The Commission cited the following external factors that any educator should consider. "The American society is becoming more meritocratic in the search for talent, more egalitarian in distribution of economic income, more humane in its concern for health and education and a chance for the development of all citizens, and more pluralistic in acceptance of diverse cultures and life-styles. . . ." The Carnegie Commission also spoke to the need for health care personnel. Health care demands have risen at an accelerated rate as have health costs. A shortage of quality health care personnel has become increasingly evident. Higher education is the main source for training such personnel. Consequently the need to place and to expand the education of the nurse within the

¹Two major studies referred to are: the American Nurses' Association "Registered Nurse Manpower Maldistribution Proposal" (1975) and the Western Interstate Commission on Higher Education (WICHE) "Analysis and Planning for Improved Distribution of Nursing Personnel and Services," (1975). The latter project intends to identify and develop new ways of analyzing needed nursing manpower requirements and to promote use of this information and technology to aid nursing manpower policy making at state, regional and national levels.

system of higher education in the country continues to be supported.¹

Accordingly, the continued cooperation of The University of North Carolina, the Department of Community Colleges and private institutions of higher learning should be supported in the development of a statewide long-range plan for nursing education based on the need for nursing services and the type of practitioner required for these services. In North Carolina cooperative efforts are enhanced by the work of the Joint Advisory Committee on Nursing Education.

Consistent with the findings of the study of nursing education in the constituent institutions of The University of North Carolina and of related issues the following general policies have been approved by the Board of Governors.

1. It appears that the eight baccalaureate programs in nursing conducted by The University of North Carolina are adequate at least until 1980. The future status of the one associate degree program in nursing in The University will be determined in 1978.

Further, programs designed especially for registered nurses, which do not qualify as generic baccalaureate nursing programs, will not be authorized.

2. First priority will be given to the remedying of deficiencies in existing programs in preference to the establishment of new programs.
3. Graduate education to prepare qualified nurse faculty for nursing education programs in the State will be given priority.
4. The University will study the problems of articulation in nursing education and prepare guidelines and policies to allow graduates from associate degree and diploma programs reasonable opportunity to receive appropriate credit for previous learning and to advance their education to obtain a baccalaureate degree in nursing.

¹Carnegie Commission on Higher Education, Priorities for Action: Final Report of the Carnegie Commission on Higher Education (Berkeley, California: The Commission, 1973).

In accordance with these general policies, the following actions are taken by the Board of Governors:

1. The University of North Carolina at Asheville is supported and approved to develop a cooperative arrangement with Western Carolina's nursing education program.

The needs of the Asheville area for nurses prepared at the baccalaureate level are valid, though limited. It would appear feasible to utilize the resources of UNC-A in general education, basic sciences, and space in conjunction and cooperation with the WCU nursing program, thereby: (a) providing the administration, faculty, and support services of a nationally accredited nursing program; (b) meeting the needs of this geographic area without program duplication and competition; (c) utilizing the academic offerings of UNC-A and WCU; (d) not over-utilizing area clinical facilities to the detriment of all nursing programs; (e) probably increasing UNC-A enrollment for the first two years; (f) giving WCU a much needed academic base in Asheville.

This type of cooperative arrangement would serve as an experimental model. A five-year evaluation contingency would allow for a program change, if deemed appropriate. This would also include the time frame for renewal of WCU's National League for Nursing accreditation providing some assurance of program quality.

The Mountain Area Health Education Center based in Asheville will add further support to this arrangement, particularly with a Family Nurse Practitioner Program.

2. The University of North Carolina at Wilmington is supported in its effort to conduct a feasibility study to determine a change of status from an associate degree program to a baccalaureate program in nursing. If a change of status is warranted by UNC-W, the program proposal should be submitted in 1978 to the Board of Governors for action.
3. East Carolina University is authorized to plan a graduate program in nursing which will give priority to the preparation of qualified nursing faculty in the clinical fields of Community Mental Health, Maternal-Child Health and Medical-Surgical Nursing.

4. The University of North Carolina at Greensboro is authorized to plan a graduate program in nursing which will give priority to the preparation of nursing faculty for the baccalaureate, community college and technical institutes' nursing education programs, and to prepare administrators of nursing services in health care agencies.

PERSPECTIVES ON NURSING EDUCATION

There have been three major studies of nursing education in North Carolina published since 1950. Some of the recommendations were implemented; some are no longer timely; others continue to be relevant. One of the six recommendations of the 1950 study, Nursing and Nursing Education in North Carolina, sponsored by the N.C. Medical Care Commission and the University of North Carolina at Chapel Hill, was that nursing programs in the State provide 600 baccalaureate prepared nurses, 600 diploma prepared nurses, and 600 practical nurses annually to meet the needs of the State. Twenty-four years later (1974) there were 574 baccalaureate, 869 diploma and associate degree, and 1,035 practical nurses graduated in North Carolina.

The Report of Survey of Nursing Education in North Carolina (1964), sponsored by the N.C. Board of Higher Education, the N.C. Medical Care Commission, and the N.C. State Board of Education, made eight recommendations. One recommendation was that action be taken to bring all North Carolina schools of nursing up to the minimum national approval standards for basic nursing schools. Ten years later, in 1974, less than half the programs preparing registered nurses were accredited by the National League for Nursing.

Nursing Education in North Carolina Today and Tomorrow (1967) recommended six actions and five minimum standards. Included in these were recommendations which spoke to the upgrading of inadequate programs; the expansion of continuing education and graduate programs; the phasing out of programs in which 50 percent of the graduates fail licensure examinations over a period of three years; the educational qualification of a faculty member at least one level more advanced than the level of nursing she teachers, but not less than a baccalaureate degree. These recommendations have not been fully implemented.

The Role of the North
Carolina Board of Nursing

The North Carolina Board of Nursing is charged with authority and responsibility to administer the N.C. Nurse Practice Act (Article 9, Chapter 90, of the N.C. General Statutes), including the licensing of persons qualified to practice nursing in North Carolina.

The law does not prohibit unlicensed persons from performing "such duties as specified mechanical acts in the physical care of a patient when such care and activities do not require the knowledge and skill required of a Registered Nurse or Licensed Practical Nurse, or when such care and activities are performed under orders or directions of a licensed physician, licensed dentist, or Registered Nurse." (N.C. General Statutes 90-167)¹

In addition, the Board of Nursing has accreditation responsibilities for nursing education programs. Legal requirements and related Board Standards serve as the foundation for the development and maintenance, as well as revisions, of education programs in nursing to the end that: (1) the public is assured of nursing care from those who pass the licensing examination; and (2) students' rights to sound educational achievement are assured.

Nursing Education Programs

Nursing education programs are of the following types:

1. Baccalaureate and higher degree programs in public and private colleges and universities.
2. Associate degree programs in technical institutes and community colleges.
3. Diploma programs in hospital schools of nursing.

¹Policies Regulating Licensure of Registered Nurses and Licensed Practical Nurses in accord with General Statutes of North Carolina, Chapter 90, Article 9 (North Carolina Board of Nursing, 1972), p. 4.

4. Practical nurse programs in technical institutes and community colleges.
5. Continuing education programs in and through several institutions.

Currently The University of North Carolina has eight baccalaureate nursing programs at the following constituent institutions: East Carolina University (ECU), North Carolina Agricultural and Technical State University (NC A & T), North Carolina Central University (NCCU), the University of North Carolina at Chapel Hill (UNC-CH), the University of North Carolina at Charlotte (UNC-C), the University of North Carolina at Greensboro (UNC-G), Western Carolina University (WCU), and Winston-Salem State University (WSSU).

Professional programs in nursing conducted in institutions of higher education are four years in length and lead to a baccalaureate degree. The National League for Nursing has stated that the baccalaureate program provides students with the opportunity to acquire: (1) knowledge and techniques of the nursing profession; (2) knowledge of the broad function the profession is expected to perform in society; (3) competency in selecting and applying relevant information from various disciplines; (4) competency in communicating with members of other disciplines and with the general public; (5) the ability to assess and to provide for nursing care needs; (6) the ability and motivation to evaluate current practices and try new approaches; (7) an adequate foundation for graduate study in nursing.

A baccalaureate program in nursing corresponds to the general pattern of other baccalaureate programs that are offered by an institution of higher education. The structure of the baccalaureate degree is usually characterized by two divisions of knowledge: the lower division and the upper division. The lower division provides required courses

in the liberal arts and sciences that contribute to the goals of general education and serve as a base for the development of the major in nursing. The upper division is reserved for concentration of study within the selected subject area, professional nursing.

The National League for Nursing states that: "Nurses prepared at the baccalaureate level are progressing toward the acceptance of a greater share of responsibility in the provision of health care services, toward development of more productive methods of working interdependently with other health care professionals, toward realizing a broadened scope of practice, toward greater independence as practitioners, and toward acceptance of the advocacy role in relation to clients. They practice in a variety of health care settings and emphasize comprehensive health care, including preventive and rehabilitative services, health counseling and education, and care in acute and long-term illness, in culturally acceptable ways."¹

The University of North Carolina at Wilmington (UNC-W) conducts a two-year associate degree nursing program. The National League for Nursing ascribes the following characteristics to associate degree programs in nursing: (1) the program is approximately two years in length; (2) the majority of programs are conducted and controlled by public junior or community colleges; (3) the course of study combines nursing theory and practice with college level general education courses in liberal arts and sciences; (4) students must meet the requirements of the college and nursing program for admission, continuation of study and graduation; and (5) the costs and living

¹"Characteristics of Baccalaureate Education in Nursing" (New York: National League for Nursing, 1974), pamphlet.

arrangements for nursing students are comparable to those for students in other curricula of the college and usually are minimal.¹

At the present time The University of North Carolina has one graduate program in nursing at Chapel Hill and a graduate Department of Public Health Nursing in the School of Public Health at Chapel Hill. Graduate education in nursing includes programs, primarily at the master's degree level, offered through an organized program in an institution of higher education. Emphasis is placed on advanced nursing practice or clinical specialization, in addition to the functional areas of administration, teaching and supervision.

Continuing education in nursing consists of planned learning experiences beyond a basic nursing educational program. These experiences are designed to promote the development of knowledge, skills, and attitudes for the enhancement of nursing practice, thus improving health care to the public.²

Table 1 shows the total number of nursing education programs in North Carolina, 1971-1975. It will be noted that eight new programs were established between 1971-1974, and that eight programs were phased out or changed in 1974-1975. From 1971-1975 the number of baccalaureate programs available has remained the same, almost half the diploma programs have closed, and the number of associate degree programs has more than doubled. There were six fewer practical nurse programs in 1975 than

¹Department of A-D Programs, A-D/Associate Degree Education for Nursing (NLN, 1967), pp. 1-2.

²Standards for Continuing Education in Nursing (Kansas City: American Nurses' Association, 1974), p. 2.

TABLE 1

PROGRAMS IN NURSING ACCREDITED BY THE NORTH CAROLINA BOARD OF NURSING, 1971-1975

Year	Total	Baccalaureate Programs		Associate Degree Programs		Diploma Programs		Practical Nurse Programs	
		Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
1971	85	11	12.9	12	14.1	19	22.4	43	50.6
1972	87	11	12.6	18	20.8	15	17.2	43	49.4
1973	91	11	12.1	21	23.0	14	15.4	45	49.5
1974	93	11	11.9	27 ¹	29.0	12	12.9	43	46.2
1975	85	11	12.9	27 ^{1,3}	31.8	10 ²	11.7	37	43.6

Source: North Carolina Board of Nursing (January 1975)

¹Four programs are designed: (1) Certificate in Practical Nursing requires completion of 1st level (year) of curriculum; (2) ADN requires completion of 2nd level (year) of curriculum.

²Two programs closing 1975.

³One new ADN program will open 1975.

in 1971. It is noted that four of the associate degree programs are designed to provide: (1) a certificate in practical nursing at the completion of the first level (year) of the curriculum, (2) an ADN at completion of the second level (year) of the curriculum.

Currently there are forty-eight programs preparing registered nurses in North Carolina. Eleven or 13 percent are baccalaureate programs and twenty-seven or 32 percent are associate degree nursing programs. Nationally baccalaureate programs represented 22 percent and associate degree programs represented 43 percent of the total number of registered nurse programs in 1974.

All nursing education programs in North Carolina are approved by the North Carolina Board of Nursing. All of the baccalaureate programs are accredited by the National League for Nursing. Two associate degree programs and seven hospital diploma programs are accredited by the National League for Nursing.

Admissions, Enrollment
and Graduations

The total enrollment in R.N. programs in North Carolina increased 98 percent over the past six years. Enrollment in the baccalaureate programs increased 27 percent. The rate of increase in enrollments in these programs varied. The smallest increase in five years occurred in the academic year 1973-1974 (Table 2).

TABLE 2
ENROLLMENT IN NORTH CAROLINA DIPLOMA AND DEGREE
PROGRAMS IN NURSING, 1968-1974

Year of Enrollment	Total	Diploma		Associate Degree		Baccalaureate	
		Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
1974	6,769	943	13.9	2,328	34.4	3,498	51.7
1973	6,084	1,088	17.9	1,729	28.4	3,267	53.7
1972	5,456	1,269	23.3	1,519	27.8	2,668	48.9
1971	4,646	1,418	30.5	1,155	24.9	2,073	44.6
1970	3,924	1,486	37.8	803	20.5	1,635	41.7
1969	3,468	1,496	43.1	586	16.9	1,386	39.9
1968	3,408	1,610	47.2	518	15.2	1,280	37.6

Source: North Carolina Board of Nursing (January 1975)

TABLE 3
ADMISSIONS TO NORTH CAROLINA DIPLOMA AND DEGREE
PROGRAMS IN NURSING, 1968-1974

Year of Admissions	Total	Diploma		Associate Degree		Baccalaureate	
		Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
1974	2,723	353	12.9	1,349	49.6	1,021	37.5
1973	2,580	354	13.7	1,177	45.6	1,049	40.7
1972	2,388	481	20.1	995	41.7	912	38.2
1971	2,206	637	28.9	842	38.2	727	32.9
1970	1,935	624	32.2	690	35.7	621	32.1
1969	1,586	616	38.8	398	25.1	572	36.1
1968	1,562	706	45.2	367	23.5	489	31.3

Source: North Carolina Board of Nursing (January 1975)

Admissions to associate degree nursing programs had the most significant rate of increase (267 percent) between 1968 and 1974 (Table 3). Admissions to baccalaureate nursing programs increased 108 percent during this same time. Nationally, the admission rate to baccalaureate nursing programs increased 104 percent and admissions to associate degree programs increased 157 percent. The total admissions to all R.N. programs in North Carolina increased 74 percent, while the national rate of admissions to all R.N. programs increased 69 percent.

There has been an increase of 70 percent in the number of graduates from programs preparing registered nurses over the past five years. The most significant increase occurred in the associate degree (344%) and in the baccalaureate programs (142%). The number of hospital diploma graduates declined by 40 percent during this time period. This is a national trend. The largest increase of graduates occurred 1972-1973 in both baccalaureate and associate degree programs. The number of graduates from baccalaureate programs showed a significant increase (21%) from 1973-1974, while graduations from associate degree programs showed its least increase (14%) in five years (Table 4).

TABLE 4
GRADUATIONS FROM NORTH CAROLINA DIPLOMA AND
DEGREE PROGRAMS IN NURSING, 1969-1974

Year of Graduations	Total	Diploma		Associate Degree		Baccalaureate	
		Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
1974	1,410	282	20.0	587	41.6	541	38.4
1973	1,286	352	27.4	515	40.0	419	32.6
1972	961	386	40.2	295	30.7	280	29.1
1971	884	398	45.0	227	25.7	259	29.3
1970	864	414	47.9	159	18.4	291	33.7
1969	827	472	57.1	132	15.9	223	26.9

Source: North Carolina Board of Nursing (January 1975)

Assuming that the nursing major is in the upper division of the curriculum, Table 5 illustrates the enrollment in The University nursing programs over a five-year period.

TABLE 5
THIRD AND FOURTH YEAR ENROLLMENT IN NURSING EDUCATION PROGRAMS,
THE UNIVERSITY OF NORTH CAROLINA, 1969-1974

School	Enrollment 10/1/69 - 9/30/70		Enrollment 10/1/70 - 9/30/71		Enrollment 10/1/71 - 9/30/72		Enrollment 10/1/72 - 9/30/73		Enrollment 10/1/73 - 9/30/74	
	3rd Yr.	4th Yr.	3rd Yr.	4th Yr.	3rd Yr.	4th Yr.	3rd Yr.	4th Yr.	3rd Yr.	4th Yr.
East Carolina	42	42	53	34	56	54	86	58	130	80
N.C. A & T	23	22	53	19	52	29	68	44	84	56
NCCU	9*	12*	27	--	27	15	62	30	50	34
UNC-CH	66	55	104	54	140	82	155	177	148	122
UNC-C	35	15	61	66	71	35	104	57	102	77
UNC-G	40	26	56	35	82	48	128	70	126	113
WCU	--	--	58	--	27	15	36	20	41	35
WSSU	21	16	14	21	27	16	34	26	42	35
TOTAL	236	188	426	229	482	294	673	482	723	552
* Basic RN Program Only	3rd Yr.	4th Yr.	3rd Yr.	4th Yr.	3rd Yr.	4th Yr.	3rd Yr.	4th Yr.	3rd Yr.	4th Yr.
UNC-W	18	14	34	18	30	20	51	20	59	24

Source: Figures taken from Annual Reports, North Carolina Board of Nursing

Attrition, Transfer and Articulation

A consideration of enrollment and admissions must include a re-view of retention rates, particularly if one is interested in the number of nurses that education programs are expected to provide over a given period of time. According to the Bureau of Health Resources Development,¹

¹The Supply of Health Manpower 1970 Profiles and Projections to 1980 (Washington, D.C.: U.S. Department of Health, Education, and Welfare, Public Health Service, Health Resource Administration, Bureau of Health Resources Development, 1974), p. 127.

recent trends indicate that the average completion rates by types of nursing programs are 65 percent for baccalaureate, 74 percent for diploma, and 65 percent for associate degree students.

Attrition and transfer rates of The University's eight baccalaureate nursing programs were reviewed (Appendix). Interpretation of this data requires considerable caution since records were not maintained in this format by some schools and were therefore difficult to compile retrospectively.

The most prevalent reason students gave for leaving a nursing program was "personal." Available data do not explain the meaning of "personal" and assumptions were not made. These students may or may not have been lost to the nursing profession, as a certain percent transfer to other baccalaureate, associate degree, and diploma programs. Transfer to an associate degree or hospital program usually indicates the student's inability to achieve in the baccalaureate program and/or dissatisfaction with a baccalaureate program.

Some important questions must be raised regarding admissions policies and the students' ability to complete a baccalaureate nursing program when one compares (1) the small number of applicants who were not admitted because they failed to meet entrance requirements with (2) the number of students who failed to maintain academic and/or clinical practice criteria with (3) performance on licensure examinations in the same educational program.

Table 6 reports the number of transfer nursing students and registered nurses admitted to The University's baccalaureate nursing programs. Between 1969 and 1974 at least 424 registered nurses were

admitted to the eight baccalaureate nursing programs. Of these R.N.'s, 392 were graduates of diploma programs and 32 graduated from associate degree programs. This trend will probably change as the number of graduates from diploma programs continues to decrease and those from associate degree programs increase. The number of registered nurses continuing their education in baccalaureate nursing programs in North Carolina has been increasing at a steady but not significant rate over five years. The programs which apparently admitted the larger number of registered nurses during this time were East Carolina University, the University of North Carolina at Chapel Hill, the University of North Carolina at Charlotte, and North Carolina Central University.

The problem of articulation has been identified as an emergent force in nursing education. The National Commission for the Study of Nursing and Nursing Education stated that the nursing profession should develop a clearer policy and a better set of tools to ensure that students are given reasonable opportunity to demonstrate their knowledge and competence and are afforded proper credit and placement in nursing education programs. The intent is, while protecting public interest and welfare, to provide qualified individuals greater opportunities to move up a career ladder into more advanced educational programs without necessitating repeating previous learning and experience when they can demonstrate competencies in these areas.¹ The University baccalaureate

¹Jerome P. Lysaught, An Abstract for Action (New York: McGraw-Hill Book Company, 1970).

TABLE 6

NUMBER OF GRADUATE NURSES AND NURSING TRANSFER STUDENTS ADMITTED TO THE UNIVERSITY OF
NORTH CAROLINA BACCALAUREATE NURSING PROGRAMS, 1969-1974

Year and Type of Transfer	Total	Program											
		N.C. A & T	East Carolina	N.C. Central	UNC-GH	UNC-C	UNC-G	Western Carolina	Winston- Salem State				
<u>1974</u>													
Diploma graduate	81	6	17	25	12	15	3	1	2				
ADN graduate	14	2	--	4	4	3	1	--	--				
From other BSN programs	8	--	5	--	1	NA	1	--	1				
<u>1973</u>													
Diploma graduate	74	1	6	30	5	18	6	5	3				
ADN graduate	8	1	2	2	--	NA	3	--	--				
From other BSN programs	6	1	2	--	2	NA	--	--	1				
<u>1972</u>													
Diploma graduate	64	--	5	27	8	13	7	3	1				
ADN graduate	3	1	--	--	--	NA	--	--	--				
From other BSN programs	--	--	--	--	--	NA	--	--	--				
<u>1971</u>													
Diploma graduate	55	--	4	33	NA	14	4	--	--				
ADN graduate	3	1	--	2	NA	NA	--	--	--				
From other BSN programs	2	--	--	2	NA	NA	--	--	--				
<u>1970</u>													
Diploma graduate	56	--	5	35	NA	11	5	--	--				
ADN graduate	3	--	--	3	NA	NA	--	--	--				
From other BSN programs	1	--	--	1	NA	NA	--	--	--				
<u>1969</u>													
Diploma graduate	62	1	12	40	NA	8	1	--	--				
ADN graduate	1	1	--	--	NA	NA	--	--	--				
From other BSN programs	5	--	--	5	NA	NA	--	--	--				

nursing programs attempt to provide entry to registered nurses desiring to continue their education in the most effective manner possible thus supporting the recommendation of the SREB Curriculum Project that: Programs of nursing education at all levels ". . . endeavor to incorporate flexibility in offerings, requirements, and time-and-place options for study to provide for multiple points of entry into and exit from a system of education planned for both vertical and horizontal mobility; evaluate and award appropriate credit for all previous learning; provide options to meet individual needs and interests; prepare nurses for new roles and services to correct existing gaps in health care; open educational opportunities to those who are currently employed and/or those who wish to pursue part-time study; make it more easily possible to modify programs and guard against obsolescence in programming."¹

Support of the National Commission for the Study of Nursing and Nursing Education's statement as well as the SREB recommendation implies the facilitation of transfer between and among nursing education programs in which career mobility occurs.

The value of advanced education and personal enrichment cannot be overlooked. It is essential, however, that one be cognizant of the position of the nursing profession toward types of degree programs which recruit registered nurses but do not offer additional preparation in nursing or qualify as professional or generic baccalaureate nursing programs.

¹Recommendation 2 of Nursing Curriculum Project, Southern Regional Education Board, October 25, 1974.

The National League for Nursing (1971) expressed concern over the growth in the number of collegiate programs that have no major in nursing but which are designed to appeal specifically to registered nurses. The NLN stated that these programs usually lead to associate or baccalaureate degrees in such fields as applied science, health science, etc., in which large blocks of credit are promised the student for nursing courses obtained outside the college. This type program may offer the student increased knowledge in the specified area of the major, but it does not offer additional preparation in nursing. The NLN does not support these programs because they: (1) imply that a major in another field is the equal of the major in nursing or preparation for nursing practice, when it is not; (2) imply that they are acceptable as a base for further education in nursing, when they are not; (3) imply that they lead to advancement in employment, when in many instances, they do not; and (4) imply that because only graduates of NLN accredited nursing programs are awarded credit, the degree programs are therefore approved by NLN, which they are not.

The American Nurses' Association supports only those nursing programs which transmit nursing science and prepare nurses with competencies of professional nursing. This definition is extraordinarily important in relation to health legislation.

Many schools are establishing programs designed specifically to attract registered nurses. These programs give "blanket credit" for a diploma or associate degree, and on this basis, grant a minor in nursing. Schools which have no nursing courses at an advanced level or have no qualified nurse faculty cannot offer a major in nursing. These

programs are not supported professionally. The points to consider in evaluating such programs are: the minimum requirement for teaching in schools of nursing is a master's degree; to enroll in most master's programs in nursing, a baccalaureate degree in nursing is required; many positions in nursing, e.g., supervision, inservice, public health require as a minimum a baccalaureate degree in nursing; and many hospitals recognize only a baccalaureate degree in nursing when considering promotion or salary increases.

Licensure

The North Carolina licensing examinations for initial certification of qualified individuals as an R.N. or L.P.N. are national examinations, entitled "State Board Test Pool Examination for Registered Nurse Licensure" and "State Board Test Pool Examination for Practical Nurse Licensure."

Both examinations are used by every Board of Nursing in the nation for licensing of new graduates of state accredited programs in nursing. The primary purposes of the licensure examinations are:

- (1) to determine which graduates have minimal safe knowledge and judgmental ability to apply this knowledge safely in nursing situations;
- (2) to facilitate interstate endorsement of nurses for licensure;
- (3) to provide bases common to all Boards of Nursing in developing and promoting acceptable Standards for approving programs in nursing.

The examinations are developed by collaboration of all Boards of Nursing through membership in the Council of State Boards of Nursing, together with the Test Construction and Evaluation Service of the

National League for Nursing. Each Board of Nursing contracts with the Evaluation Service for use of the examinations under established conditions and security provisions. The Board of Nursing in each state determines the minimum passing score acceptable for licensure in that jurisdiction. Currently, no state requires less than a 350 standard score on each of five tests comprising the registered nurse licensure examination. One state requires standard scores higher than 350 for licensure.

Graduates of nursing programs may write their licensure examinations in the state of their choice. Over 90 percent of the graduates of North Carolina schools write their licensure examinations in North Carolina.

In North Carolina there has been no limit on the number of times one may write the licensure exam. It was recommended that the candidate have additional study in the area failed three or more times. Effective January 1, 1976, however, a candidate who has failed previously to pass the licensing examination after three or more writings must provide evidence of satisfactorily completing additional learning experiences to be eligible to rewrite any subsequent examination.

Table 7 gives a five-year summary of R.N. licensure results in the State by type of program. These data do not differentiate the level of performance scores nor do they illustrate the variance between and among programs and individual examinations.

TABLE 7

FIVE YEAR SUMMARY OF R.N. LICENSURE EXAMINATION
 RESULTS IN NORTH CAROLINA CLASSIFIED
 BY TYPE OF PROGRAM

Year and Type of Program	Number of Candidates	Passed	Percent	Failed	Percent
<u>1974</u>					
Diploma	395	341	86	54	14
Associate Degree	585	437	75	148	25
Baccalaureate	422	339	80	83	20
<u>1973</u>					
Diploma	375	335	89	40	11
Associate Degree	495	376	76	119	24
Baccalaureate	324	269	83	55	17
<u>1972</u>					
Diploma	379	341	90	38	10
Associate Degree	280	210	75	70	25
Baccalaureate	218	183	84	35	16
<u>1971</u>					
Diploma	436	376	86	60	14
Associate Degree	221	143	65	78	35
Baccalaureate	192	166	86	26	14
<u>1970</u>					
Diploma	398	354	89	44	11
Associate Degree	161	94	58	67	42
Baccalaureate	200	166	83	34	17

Source: North Carolina Board of Nursing

According to passing percentages graduates of diploma programs seem to do as well as, or better than, graduates of other type programs on licensure examinations. Graduates of baccalaureate programs have not shown a marked change in performance during this time. Since 1972 associate degree graduates have shown improvement in that at least 75 percent of the candidates from these programs passed the licensure examinations. For the past two years more associate degree graduates wrote licensure examinations than graduates of other programs. Enrollment data indicate that this trend should continue for a time.

Table 8 demonstrates the results of licensing examinations over five years according to individual educational programs. During this time period one baccalaureate program had over 50 percent failure for five consecutive years; one program had over 50 percent failure for four years; one had over 50 percent failure for two years. These programs need to be studied further and strengthened as needed. Each of these programs was at a constituent institution of The University of North Carolina. On the other hand, five UNC programs consistently have more than 75 percent of their candidates pass and three of these have more than 92 percent of their graduates regularly pass.

Table 9 shows the number of graduates from the UNC nursing education programs who passed R.N. licensure examinations in North Carolina or in a state other than North Carolina (termed out-of-state writers) on first or second writings. These data were obtained directly from the respective nursing programs and reflect the records of the individual schools. An attempt was made to identify the location of out-of-state writers. Most schools did not report these states which led to the possibility of introducing a degree of error in this table.

TABLE 8
 REPORT OF NORTH CAROLINA LICENSING EXAMINATIONS WRITTEN BY IN-STATE
 GRADUATES--FIRST TIME CANDIDATES FOR R.N. LICENSURE
 1970-1974

Name School	1970			1971			1972			1973			1974											
	Total	Passed		Total	Passed		Total	Passed		Total	Passed		Total	Passed		Total								
		Num-ber	Per-cent		Num-ber	Per-cent		Num-ber	Per-cent		Num-ber	Per-cent		Num-ber	Per-cent		Num-ber	Per-cent						
<u>Diploma</u>																								
Cabarrus Mem.	22	100	--	27	26	96	1	4	22	21	95	1	5	27	27	100	--	38	37	97	1	3		
Davis Hosp.	13	11	85	2	15	11	100	--	8	8	100	--	--	13	12	92	1	13	13	100	--	--		
Forsyth Mem.	39	36	92	3	8	55	96	2	4	68	54	80	14	20	50	43	86	7	35	28	80	7	20	
Hamlet Hosp.	5	4	80	1	20	17	10	59	7	41	8	7	88	1	12	16	14	2	22	10	45	12	55	
High Point Mem.	27	27	100	--	18	18	100	--	--	20	20	100	--	--	14	13	93	1	14	13	93	1	7	
Lenoir Mem.	14	13	93	1	7	15	11	73	4	27	17	17	100	--	--	12	11	92	1	15	14	93	1	7
Mercy Mt. San. & Hosp.	19	17	89	2	11	34	29	85	5	15	22	17	77	5	23	29	79	6	20	18	90	2	10	
N.C. Baptist Presbyterian	15	12	80	3	20	9	5	56	4	44	15	14	93	1	7	6	5	83	15	15	9	60	6	40
Rex Hospital	33	31	94	2	6	44	41	93	3	7	59	57	97	2	3	64	60	94	87	79	90	8	10	
Watts Hosp.	39	36	92	2	8	49	42	86	7	14	55	50	91	5	9	46	40	87	65	58	89	7	11	
Wilson Mem.	26	24	92	2	8	23	23	100	--	--	14	14	100	--	--	26	25	96	33	29	88	4	12	
	36	32	89	4	11	32	26	81	6	19	34	29	85	5	15	35	31	89	38	33	87	5	13	
	26	23	88	3	12	20	17	85	3	15	20	20	100	--	--	23	19	83	--	--	--	--	--	--
<u>Baccalaureate</u>																								
Atlantic Christian	--	--	100	--	--	36	34	97	1	3	--	--	--	--	--	--	--	--	21	15	71	6	29	
Duke East Car.	26	26	100	--	35	34	97	1	3	34	32	94	2	6	48	43	90	5	52	49	94	3	6	
Lenoir Rhyne	39	38	97	1	3	35	34	97	1	3	30	28	93	2	7	49	45	92	42	41	98	1	2	
N.C. A & T	12	12	100	--	16	15	94	1	6	12	9	75	3	25	20	16	80	4	17	14	80	3	20	
N.C. Central	23	11	44	14	56	12	3	25	9	75	13	7	54	6	46	22	9	41	29	11	38	18	62	
UNG-GR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25	6	24	19	76	26	5	19	21
UNG-C	46	44	96	2	4	44	43	98	1	2	49	46	94	3	6	69	69	100	95	91	96	4	4	
UNG-G	20	11	55	9	45	11	8	73	3	27	28	22	79	6	21	27	26	96	47	41	87	6	13	
Western Carolina	17	17	100	--	23	23	100	--	--	33	31	94	2	6	41	41	100	--	57	53	93	4	7	
Winston-Salem	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13	11	85	16	12	75	4	25	
	15	7	47	8	53	16	6	38	10	62	19	8	42	11	58	10	3	30	20	7	35	13	65	
<u>ADN</u>																								
Albemarle Asheville	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	10	50	24	10	42	14	58	
Buncombe Beaufort	--	--	--	--	--	--	--	--	--	--	17	13	77	4	23	26	25	96	35	28	80	7	20	
Central Piedmont	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23	14	61	39	26	13	50	13	50	
	30	26	87	4	13	49	40	82	12	18	55	44	80	11	20	66	47	71	78	66	85	12	15	

TABLE 8 --- (Continued)

Name School	1970						1971						1972						1973						1974					
	Passed			Failed			Passed			Failed			Passed			Failed			Passed			Failed			Passed			Failed		
	Num- ber	Per- cent	Total	Num- ber	Per- cent	Total	Num- ber	Per- cent	Total	Num- ber	Per- cent	Total	Num- ber	Per- cent	Total	Num- ber	Per- cent	Total	Num- ber	Per- cent	Total	Num- ber	Per- cent	Total	Num- ber	Per- cent	Total			
Chowan Col.	7	54	13	6	46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6	50	12	6	50		
Davidson	--	--	--	--	--	--	--	--	20	14	70	6	30	23	19	83	4	17	24	22	92	2	8	22	92	2	8			
Fayette- Comm. Col.	7	54	13	6	46	15	73	4	27	16	12	75	4	25	18	16	89	2	11	23	19	83	4	17	24	22	92			
Hille T.I.	--	--	--	--	--	25	16	17	11	65	6	35	19	--	--	--	--	--	--	--	--	--	--	20	83	4	17			
Forsyth T.I.	6	35	17	11	65	16	84	9	36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	83	4	17			
Gardner-Webb	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	22	100	0	0			
Gaston	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	22	100	0	0			
Guilford T.I.	13	65	20	7	35	22	11	50	11	50	12	6	32	27	84	5	16	29	23	79	6	21	22	79	6	21				
Rockingham	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	72	7	28			
Rowan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	72	7	28			
Sampson T.I.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	14	82	3	18		
Sandhills	24	67	31	8	33	31	21	68	10	32	31	22	71	9	29	50	43	71	14	32	21	66	11	34	11	34				
Southeastern	22	4	18	18	82	33	15	45	18	55	25	16	64	9	36	29	13	45	16	55	36	22	61	14	39	22	61			
James Sprunt	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6	12	8	67			
Surry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19	9	47	10	53		
UNC-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5	33	10	67			
Wilmington	12	6	50	6	50	11	6	55	5	45	15	14	93	1	7	15	14	93	1	7	22	19	85	3	15					
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19	73	7	27			
Western- Piedmont	10	9	90	1	10	22	16	73	6	27	26	18	69	8	31	51	45	88	6	12	45	37	82	8	18					

Source: North Carolina Board of Nursing

NUMBER OF GRADUATES PASSING R.N. LICENSURE EXAMINATIONS,
SCHOOL OF NURSING, THE UNIVERSITY OF NORTH CAROLINA
1970-1974

School	1970					1971					1972					1973					1974									
	Total Graduates	RN*	N.C.		Out of State		Total Graduates	RN	N.C.		Out of State		Total Graduates	RN	N.C.		Out of State		Total Graduates	RN	N.C.		Out of State							
			1st Writing	2nd Writing	1st Writing	2nd Writing			1st Writing	2nd Writing	1st Writing	2nd Writing			1st Writing	2nd Writing	1st Writing	2nd Writing			1st Writing	2nd Writing	1st Writing	2nd Writing						
East Carolina	45	7	36	--	1	--	48	11	34	1	2	--	35	2	27	--	3	--	57	7	47	1	2	--	56	8	41	1	5	--
NC A & T	34	2	11	7	8	--	22	--	3	2	7	--	18	--	7	2	7	--	30	1	9	5	10	--	39	--	11	9	11	--
NC Central	67	2	44	--	15	--	54	--	43	--	11	--	51	2	46	--	1	--	32	16	6	5	1	--	39	5	8	7	1	--
UNC-CH	21	--	11	--	--	--	17	5	8	--	--	--	29	2	22	--	--	--	35	7	26	--	1	--	51	3	41	--	--	--
UNC-G	18	1	17	--	--	--	24	1	22	--	1	--	34	--	31	1	2	--	44	2	41	--	1	--	70	3	53	3	9	1
WC																														
WSSU	15	--	7	--	1	--	15	--	6	--	--	--	20	1	8	--	--	--	15	3	3	--	1	1	23	2	7	--	--	--
UNC-W	11	--	6	4	--	--	13	--	6	5	1	--	15	--	14	--	1	--	15	--	14	1	--	--	22	--	20	2	--	--

* RN graduates are licensed prior to entering the program and they do not repeat licensure examinations at completion of degree requirements.

Note: Columns headed N.C. and Out-of-State refer to the number of graduates who wrote licensure examinations in N.C. for an N.C. license. Those who took the examination in a state other than N.C. are out-of-state writers.

Note that the total number of writers and R.N.'s may not equal the sum total of graduates for a given year. Candidates for licensure may choose to write licensure examinations in a year different from the year of graduation or they may choose not to take the licensure examination at all.

These data differ from that reported by the N.C. Board of Nursing (Table 8) in that out-of-state writers are included. The inclusion of these graduates improves the performance statistics of each school and is a more valid criterion of success than the North Carolina data alone.

ECU, UNC-CH and UNC-G have maintained consistently high performance records on licensure over the past five years. UNC-C has a mean passing rate of 75% over 5 years. WCU has a mean passing rate of 81 percent over 2 years. The mean passing rate of N.C. A & T is 61 percent, and WSSU is 39 percent over five years. NCCU has an average of 35 percent over two years. The associate degree program at UNC-W has an average passing rate of 79 percent over the five years reported.

Graduates of each of these programs, with the exception of UNC-W, have baccalaureate degrees which are not affected by their licensure performances.

It may be assumed that North Carolina is the primary beneficiary of the additional nurse manpower N.C. licensed nurses provide. Based on this assumption, counting first and second time successful licensure examination writers, North Carolina received approximately a total of 1,000 graduate nurses in the last five years from the following schools of The University of North Carolina.

	<u>Total</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
ECU	188	36	35	27	48	42
N.C. A & T	66	18	5	9	14	20
N.C. Central	26	--	--	--	11	15
UNC-CH	293	44	43	46	69	91
UNC-C	108	11	8	22	26	41
UNC-G	168	17	22	32	41	56
WCU	29	--	--	--	12	17
WSSU	46	7	21	8	3	7
UNC-W	76	10	15	14	15	22
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	1,000	143	149	158	239	311

N. C. A & T University and UNC-CH reported significantly more out-of-state writers of R.N. licensure examinations than did other UNC programs. There is a marked difference between these two programs. Over the past five years 12 percent of the UNC-CH graduates wrote licensure examinations out-of-state; 31 percent of N.C. A & T graduates wrote licensure examinations out-of-state.

Information on the graduates who chose not to write the licensure examinations, or who wrote them after the year of their graduation, was not available.

While licensure examination results may not be the exclusive indication of program quality, responsibility and accountability to both the public and the student cannot be avoided. The law governing nursing in every state requires a license to practice nursing.

Faculty

A survey of all nursing programs in the State (December, 1974) showed a total of 843 nurse faculty preparing students in R.N. and L.P.N. programs. Of the total faculty employed in R.N. programs, 44 percent were employed in baccalaureate or higher degree programs; 36 percent in associate degree programs; and 20 percent in diploma programs.

The baccalaureate and higher degree programs had a larger proportion of full-time faculty than did other programs. The associate degree and practical nurse programs employed the highest percentage of part-time faculty. The overall distribution of faculty correlated with program enrollments in the sense that the largest number of faculty were in baccalaureate and higher degree programs and the least number of faculty in diploma programs.

Tables 10 and 11 illustrate the educational credentials of full-time and part-time nurse faculty in North Carolina. In the baccalaureate and higher degree programs 72.7 percent of full-time faculty held a master's degree and 8.7 percent a doctorate; 42.1 percent of the part-time faculty had a master's degree and 57.9 percent had a baccalaureate degree. This high percentage of baccalaureate prepared part-time faculty apparently was necessitated by the problem of having to use many different institutions for clinical experience, thus requiring additional faculty. It is assumed some of these faculty would not be needed if adequate clinical facilities were available in the immediate vicinity of the educational program.

The associate degree programs rely predominantly on baccalaureate prepared nurses for both full-time and part-time faculty. More than half the faculty in these programs were prepared at this level. These programs also employed a significant number of diploma-prepared nurses, particularly as part-time faculty. The percentage of full-time faculty holding a master's degree was 29.8. Only 5 associate degree prepared nurses were reported holding full-time faculty positions in the State and three of these were in diploma programs.

There were 11.5 unfilled budgeted faculty positions in registered nurse programs and 1 unfilled position in practical nurse programs reported Fall 1974. A total of 58 additional budgeted positions for Fall 1975 was proposed and four of these positions were in practical nurse programs. The greatest need for new faculty comes from the baccalaureate and higher degree programs which have the largest enrollments. The associate degree programs reported a need for 21.5 additional faculty by Fall 1975.

TABLE 10
 HIGHEST EARNED CREDENTIAL OF FULL-TIME NURSE FACULTY
 IN NURSING EDUCATION PROGRAMS IN NORTH CAROLINA,
 FALL 1974

Type of Program	Total		Highest Earned Credential									
			Diploma		Associate Degree		Baccalau- reate		Masters		Doctorate	
	Num- ber	Per- cent	Num- ber	Per- cent	Num- ber	Per- cent	Num- ber	Per- cent	Num- ber	Per- cent	Num- ber	Per- cent
Total Programs--RN	569	100.0	47	8.2	5	.9	232	40.8	262	46.1	23	4.0
Diploma	110	100.0	21	19.1	3	2.7	74	67.3	12	10.9	--	--
Associate Degree	195	100.0	26	13.3	2	1.0	109	55.9	58	29.8	--	--
Baccalaureate and Higher Degree	264	100.0	--	--	--	--	49	18.6	192	72.7	23	8.7
Practical Nursing Programs	115	100.0	41	35.7	1	.9	64	55.6	9	7.8	--	--

TABLE 11
 HIGHEST EARNED CREDENTIAL OF PART-TIME NURSE FACULTY
 IN NURSING EDUCATION PROGRAMS IN NORTH CAROLINA,
 FALL 1974

Type of Program	Total		Highest Earned Credential									
			Diploma		Associate Degree		Baccalau- reate		Masters		Doctorate	
	Num- ber	Per- cent	Num- ber	Per- cent	Num- ber	Per- cent	Num- ber	Per- cent	Num- ber	Per- cent	Num- ber	Per- cent
Total Programs--RN	120	100.0	31	25.8	2	1.7	68	56.7	19	15.8	--	--
Diploma	27	100.0	11	40.7	--	--	15	55.5	1	3.8	--	--
Associate Degree	55	100.0	20	36.4	2	3.6	31	56.4	2	3.6	--	--
Baccalaureate and Higher Degree	38	100.0	--	--	--	--	22	57.9	16	42.1	--	--
Practical Nursing Programs	39	100.0	24	61.5	--	--	15	38.5	--	--	--	--

The National League for Nursing and the American Nurses' Association consider the master's degree as a necessary requirement for teaching in nursing programs. Of the total number of full-time nurse faculty employed in North Carolina only half hold a master's or higher degree. North Carolina has a serious need for master and doctoral prepared faculty for baccalaureate and higher degree programs and for master prepared faculty for associate degree programs.

Graduate Education

The University of North Carolina at Chapel Hill graduate program admits students for the degrees of Master of Science in Nursing and Master of Science. The two-year program is so designed that students can develop increased competence in clinical nursing in areas of choice consisting of nursing of children, maternal-new born, medical-surgical, psychiatric and public health nursing. The number of students enrolled in and graduated from this program is shown on Table 12.

The School of Public Health, the University of North Carolina at Chapel Hill, has a program in the Department of Public Health Nursing which provides graduate study in public health nursing or occupational health nursing with the option to choose an area of concentration in such areas as advanced practice, supervision, administration, teaching, or mental health. The curricula offered lead to the Master of Public Health degree or the Master of Science degree. The total enrollment and graduations in this program is shown on Table 13.

As further noted in the sections discussing faculty and nurse manpower, North Carolina is in need of nurses with expertise to provide

TABLE 12

ENROLLMENT AND GRADUATIONS, UNC-CH GRADUATE
NURSING PROGRAM, 1971-1974

Program	Academic Year	Enrollment			Graduations
		Total	Number		
			FT	PT	
UNC-CH	1974	59 ¹	46	13	22
	1973	58	49	9	28
	1972	57	54	3	39
	1971	65	36	29	22

¹Four of these students are enrolled in the Graduate Outreach Program with UNC-Charlotte funded by the AHEC. In this program students are enrolled for courses on both campuses by inter-institutional registration. Students reside in Charlotte and take courses at UNC-Charlotte and courses (one day per week) at Chapel Hill. This is a two-year program leading to a M.S.N. in Medical-Surgical Nursing.

TABLE 13

ENROLLMENT AND GRADUATIONS, DEPARTMENT OF PUBLIC
HEALTH NURSING, SCHOOL OF PUBLIC HEALTH,
UNC-CH, 1971-1974

Academic Year	Enrollment	Graduations
1974	49	24
1973	38	32
1972	47	26
1971	43	N.A.

faculty, administrators, supervisors, and clinical specialists. A 1973 SREB report takes note of this manpower need throughout the South:

Educational programs may graduate superb products and send them into beginning practice, but the contribution these new nurses could make to the health care system cannot be realized if those in leadership positions are not knowledgeable and skillful in their jobs, if expert clinical specialists are not present to provide role models and on-the-job learning; and if nursing knowledge cannot be brought to bear on research into health and health care problems.¹

Continuing Education

The magnitude of the continuing education needs in nursing is readily apparent when one reviews the implication of: changing re-licensure laws; the emergence of new methods for the delivery of health care; and new and expanded roles in nursing.

In higher education settings continuing education programs must reflect the philosophy of the school and department of which they are a part. Courses may vary in length. These courses may be taken for university credit toward a degree, certification, extension of credit, continuing education units, or for no credit, depending on the ranking of the institution. Funding arrangements also vary. Faculty positions are budgeted in some institutions; however, in a great many instances the faculty position is funded by a grant and is dependent upon grant renewal or the subsidizing of new proposals.

Six of The University baccalaureate nursing programs² reported a total of 71 continuing education courses conducted between July 1, 1973, and August 31, 1974. These courses involved 3,227 participants and 2,647 instructional hours which generated 43,324.5 student contact hours. Courses

¹Haase, et al., Nursing Education in the South - 1973, p. 21.

²UNC-CH, UNC-G, ECU, WCU, N.C. A & T, UNC-C.

were predominantly in clinical nursing, the nursing process and leadership.

During this same time period the School of Public Health at UNC-CH, conducted 6 continuing education courses for nurses. The total number of participants were 183. Two hundred sixteen instructional hours generated 6,336 student contact hours.

In addition to these continuing education programs reported there are special short-term continuing education programs for registered nurses. These programs are designed to prepare practitioners for extended and expanded roles in developing health care systems. The extended role refers to adding functions in selected and clearly defined aspects of providing patient care services. Role expansion is based on the assumption of functions that are delegated, transferred or relinquished by an agency and/or a physician. Table 14 shows the type of program, location and enrollment of these special nurse practitioner programs as reported. Continuing education of

TABLE 14
SPECIAL NURSING PROGRAMS IN NORTH CAROLINA, 1974-1975

Program	Location	Enrollment	Length of Program	Credential
Family Nurse Practitioner	UNC-CH	Limited	12 months	Non-Degree Certificate
Cardiovascular Nurse Specialist (1975)	UNC-CH	Limited	6 months	Non-Degree Certificate
Advanced Maternity Nursing (January 1975)	ECU	Approx. 10	10 weeks	None
Ambulatory Child Care II (Spring 1975)	ECU	Approx. 10	10 weeks	None
Youth Practitioner Program (January 1975)	UNC-G	8-10	1 semester 1 day per week	9.6 CEU
Pediatric Practitioner	UNC-G	8-10	1 semester 1 day per week	9.6 CEU
Maternity Practitioner	UNC-G	8-10	1 semester 1 day per week	9.6 CEU
Child Health Care	UNC-C	Limited	10 weeks	Non-Degree
OB-GYN Expanded Role	UNC-C	Limited	10 weeks	Non-Degree

Source: Survey of Schools of Nursing

nurses is also provided by other colleges and universities, the Department of Community Colleges, hospital In-Service Education Departments, professional organizations, and most importantly, the Area Health Education Centers. Nevertheless, all information available on continuing education indicates the need for significant support of continuing education of nurses in a manner that is educationally sound and economically feasible--to bring continuing education to nurses where and when it is needed.

Basically, the need for continuing education emerges from the phenomenon of change: change in what is known about man and how he functions in health and illness; change in the ways in which people meet challenges to survive in a dynamic age; and change in the objectives, organization and financing of health services. Professional roles are altered as society changes and as new knowledge and technologies emerge. The individual who wishes to avoid obsolescence cannot leave to chance his acquisition of new knowledge or his ability to adapt to changing demands. He must meet the challenge of change actively or the world will pass him by.¹

The Area Health Education Center (AHEC)

The AHEC program provides unprecedented opportunities for the education of nursing personnel throughout the State particularly in the preparation of practitioners for expanded and extended roles, as well as updating and upgrading practicing nurses through continuing education programs. Examples of AHEC nursing activities include: Family Nurse Practitioner Training Programs; an outreach Graduate Program in Medical-Surgical nursing between the University of North Carolina at Chapel Hill and the University of North Carolina at Charlotte; individualized short-term clinical preceptorships and continuing education courses.

¹Frieda S. Curtin, et al., Continuing Education in Nursing (Boulder: Western Interstate Commission for Higher Education, 1969), p. 1.

Geographic Distribution

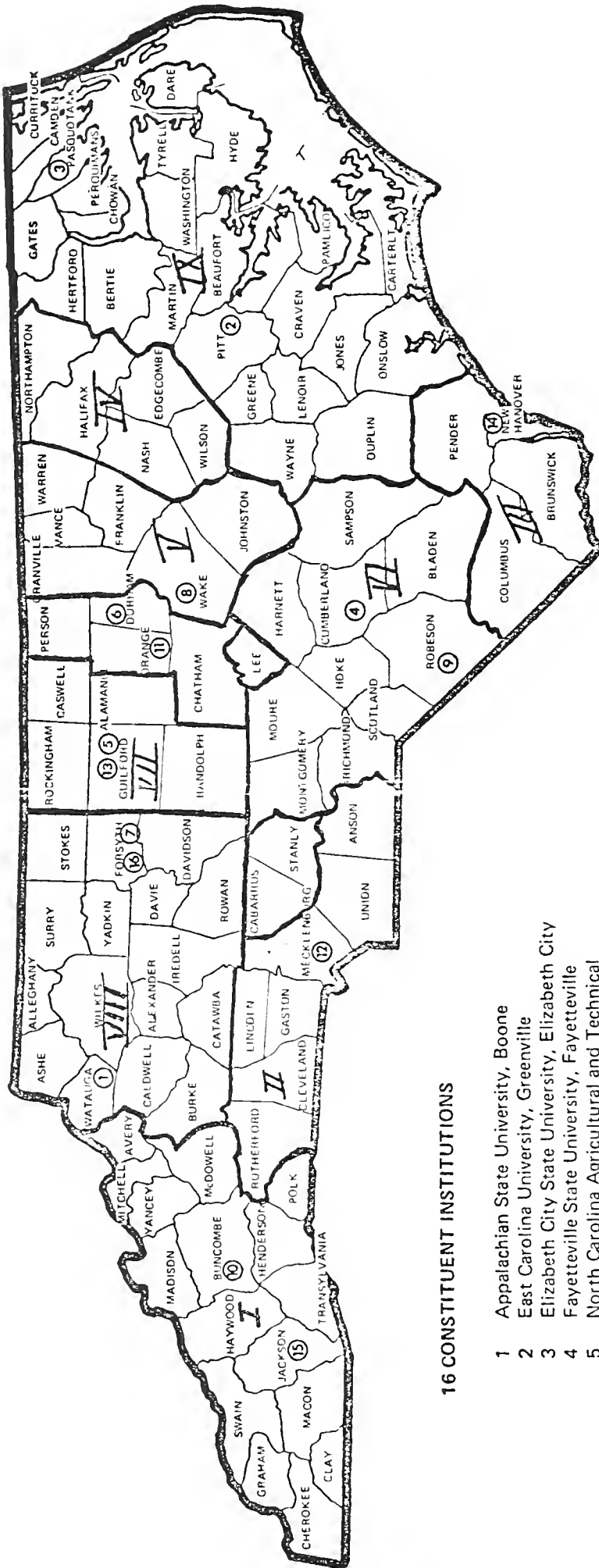
Figure 2 shows the geographic distribution of The University of North Carolina nursing education programs and the North Carolina Area Health Education Center Programs.

Area I has one UNC baccalaureate nursing program, two associate degree programs, one diploma program and four practical nurse programs. Area II has one UNC baccalaureate, three associate degree, three diploma and six practical nurse programs. Area III has two associate degree and two practical nurse programs. One of the associate degree programs is a UNC program. Area IV has one private baccalaureate, five associate degree and three practical nurse programs. Area V has one associate degree, one diploma and three practical nurse programs. Area VI has three associate degree, one diploma, and five practical nurse programs. Area VII has two UNC baccalaureate, two associate degree, one diploma and three practical nurse programs. Area VIII has one UNC baccalaureate, one private baccalaureate, six associate degree, one diploma and five practical nurse programs. Area IX has one UNC baccalaureate, seven associate degree, one diploma and eight practical nurse programs. The undesignated area of Person, Orange, Durham and Chatham counties has two UNC graduate, one private graduate, two UNC baccalaureate, one private baccalaureate, one diploma, and two practical nurse programs.

Charlotte, Greensboro, Winston-Salem, Raleigh, Durham, and Chapel Hill provide more educational programs than other areas in the State. These cities also represent the majority of the State's population and most of the larger health care facilities.

FIGURE 2

THE UNIVERSITY OF NORTH CAROLINA AND AREA HEALTH EDUCATION CENTERS



- 16 CONSTITUENT INSTITUTIONS
- 1 Appalachian State University, Boone
 - 2 East Carolina University, Greenville
 - 3 Elizabeth City State University, Elizabeth City
 - 4 Fayetteville State University, Fayetteville
 - 5 North Carolina Agricultural and Technical State University, Greensboro
 - 6 North Carolina Central University, Durham
 - 7 North Carolina School for the Arts, Winston-Salem
 - 8 North Carolina State University, Raleigh
 - 9 Pembroke State University, Pembroke
 - 10 University of North Carolina at Asheville
 - 11 University of North Carolina at Chapel Hill
 - 12 University of North Carolina at Charlotte
 - 13 University of North Carolina at Greensboro
 - 14 University of North Carolina at Wilmington
 - 15 Western Carolina University, Cullowhee
 - 16 Winston-Salem State University, Winston-Salem

AREA HEALTH EDUCATION CENTERS PROGRAM, NOV. 1974

- I. Asheville
- II. Charlotte
- III. Wilmington
- IV. Area I
- V. Raleigh
- VI. Fayetteville
- VII. Greensboro
- VIII. Northwest
- IX. East

CLINICAL FACILITIES

Clinical practice is a critical component of nursing education, so an assessment of clinical facilities and the quality of clinical institutions must be one determinant in gauging the quality of a nursing education program. Expansion in nursing programs inevitably produces competition for and overuse of clinical facilities for nursing education. Serious competition of this nature will affect not only the quality of learning, but also the quality of patient care and nursing service.

As part of this planning report, a statewide study of the utilization of clinical facilities was initiated in cooperation and with the assistance of the Area Health Education Center and the Health Services Research Center. At the time of this writing, the study has not been completed except for the initial survey of all the nursing education programs, the 160 hospitals, 152 nursing and convalescent homes, and 77 health departments in the State.

In an attempt to determine the extent to which clinical resources were used by nursing education programs, questionnaires were sent to each of these institutions. The total response rate from the educational programs was 90 percent; hospitals 88 percent; nursing and convalescent homes 75 percent; and health departments 79 percent. A survey questionnaire carries some innate weaknesses and non-respondents may introduce bias into the findings. Nevertheless, an analysis of this initial survey does speak to the ability of North Carolina to provide clinical learning experiences for nursing students.

On the average, baccalaureate programs use 10 different clinical facilities per school. Associate degree programs average 4

facilities per school, diploma programs 4 facilities per school, and practical nurse programs average 2 facilities. The percentage of hospitals used for clinical experience varies somewhat by types of educational program. Baccalaureate programs utilize health departments, nursery schools, mental health centers, and physicians' offices more often than do the other types of educational programs.

For the most part, the farthest clinical facilities used were less than 25 miles from the schools, on the average. It may be deduced then that the travel time from school to the most distant clinical facilities averages under an hour and may be closer to half an hour. With the exception of practical nurse students, students appear to have to travel farthest to obtain hospital based psychiatric nursing experience. In general, diploma and practical nurse students do not have to travel nearly as far as baccalaureate and associate degree students to reach their most distant clinical experience settings.

Students from most associate degree and practical nurse programs obtain clinical experience during the summer. Students from six of the ten diploma programs and five of the eleven baccalaureate programs also obtain summer clinical experience.

With the exception of diploma students, students are supervised by their school's faculty (sometimes sharing this supervision with staff) in most clinical facilities. There is an association between this predominance of faculty supervision and the almost complete lack of use of clinical experience settings on weekends, evenings, and nights. Faculty may not be available to supervise students at these times. Nor should it be expected that students be in clinical settings at night and in

class during the day.

Schools of nursing in the State reported that there was a general expectation to increase their enrollment during the next five years. Based on the anticipated increase, about 10 percent more nursing students will be enrolled during the academic year 1979-1980 than at the present time. If the respondents' projections are realized, more than 800 additional nursing students will be seeking clinical experience in five years.

Approximately two-thirds of North Carolina's hospitals provide clinical experience to nursing students. The hospitals which do not have nursing students are generally quite small, with an average bed capacity of 62 beds. Some officials of the few hospitals which did not have students expressed an interest in affiliating with nursing schools to provide students with clinical experience. All but three of these hospitals had fewer than one hundred beds. Most hospitals that accept nursing students are affiliated with from one to three programs of nursing.

Of all the hospital settings used by nursing students for clinical experience over one-third are utilized by associate degree students. Baccalaureate, diploma, and practical nurse students each utilized about one-fifth of all hospital settings.

In terms of type of student preferred, administrators and directors of nursing services were more interested in adding baccalaureate and graduate students. Respondents were least interested in adding diploma students.

Some hospital officials indicated that they would prefer fewer nursing students than they now accept for clinical experience.

About one-fifth of the State's nursing homes were utilized by nursing programs. These facilities seem to be used predominantly by practical nurse students for clinical experience. Baccalaureate students from six of the State's eleven schools used nursing homes for clinical experience.

Administrators of nursing homes with nursing school affiliations indicated interest in increasing the number of nursing students in their facilities. These facilities would be available at all times of the year and, in general, to the same type of student (baccalaureate, associate, diploma, practical) now affiliating. Most of the nursing homes indicated a preference for students on the day shift; a few indicated evenings. This decision appeared to be related to the level of student, and to the availability of instructors from the schools of nursing for supervision of the students.

An inventory of clinical experiences available to baccalaureate and graduate students in health departments indicated that additional baccalaureate and masters' students could be accommodated in certain geographic areas to meet increased enrollments in existing schools of nursing.

In general, it appears that the present clinical facilities in the State, with anticipated expansion, can minimally support the nursing programs need for clinical experience for their students over the next five years. The second phase of the study of the utilization of clinical facilities in the State will address the issue of the quality and desirability of clinical settings for educational experiences.

COST OF NURSING EDUCATION

Obviously administrators of nursing education programs need accurate cost studies to make decisions on establishing new education programs and to avoid the proliferation of expensive programs. Cost information is also needed to determine: the optimum size of a nursing education program, the feasibility of pooling education resources, the appropriate level of state support, and other factors.¹

The most recent national cost analysis data available state that the net average annual cost per student of nursing is: baccalaureate nursing education programs, \$2,504; associate degree students, \$1,665; diploma students, \$3,301.²

A cost study which will include indirect cost for different types of nursing education programs in the nation will be conducted by the National League for Nursing. It is expected that this study which will use a different methodology will better reflect program cost.

In reference to capitation funding, North Carolina diploma programs receive \$850 from the State, per full-time student. Associate degree and baccalaureate programs do not receive State capitation funds. Federal capitation funds are granted to all three types of programs which meet

¹ Report of the National League for Nursing Task Force To Analyze Cost of Education in the Health Professions, A Study of the Institute of Medicine, National Academy of Sciences, Passed by the NLN Board of Directors, October 7, 1974.

² Report of a study Costs of Education in the Health Professions, Parts I and II (Washington, D.C.: Institute of Medicine, National Academy of Sciences, DHEW, 1974).

the established criteria, e.g., increased enrollment and the filing of an application. The amount of Federal capitation is determined by the Division of Nursing and is not granted per student. Federal capitation may be reduced on a percentage basis according to the money available and is always dependent upon active legislation as part of the Nurse Training Act.

The Nurse Training Act of 1975 (P.L. 94-63) authorized \$400 for each undergraduate full-time student enrolled in the last two years in collegiate nursing schools, \$250 for each full-time student in diploma schools, and \$275 for each full-time student enrolled in the last year of associate degree schools and half that amount for each full-time student enrolled in the first year.

To receive capitation, schools must assure that they will maintain the level of first-year enrollment and non-Federal funding. Schools must also assure that they will increase first-year enrollment or carry out at least two of four options: 1) a nurse practitioner program in the case of a collegiate school; 2) a program providing a significant part of clinical training in community health centers, long-term facilities and ambulatory care facilities remote from main teaching facilities; 3) a program of continuing education; and 4) a program for recruiting and retaining disadvantaged students.

Traineeships are available for nurse practitioners and collegiate nursing schools for advanced training of professional nurses to be teachers, nursing specialists, or administrators.

At least 10 percent of the funds appropriated for special projects must be used to aid individuals from disadvantaged backgrounds.

The new law requires the DHEW Secretary to determine on a continuing basis the supply and distribution of and requirements for nursing personnel.

NURSE MANPOWER

Discussions about the supply of a particular kind of labor should be deliberate and careful, for there are many ways to define "supply." For example, the nurse supply can be defined to include only full-time employed registered nurses at a particular point in time. Nurse supply could also include all nurses (R.N.'s and L.P.N.'s) in the labor force, i.e., those either working or looking for work. Alternatively, nurse supply can be defined to include those nurses in and out of the labor force. Nurses not in the labor force include those licensed nurses not employed or seeking employment.

It is known from reports and studies¹ that although a greater percentage of nurses are employed than other female workers, only about 55 percent of all U.S. nurses are in the labor force. That is, about one out of every two licensed nurses is either not employed or seeking employment. While many of the licensed nurses not in the labor force are undoubtedly older, have family responsibilities or need to update their preparation, it remains true that, as in the field of teaching, there are many potential nurses not working.

¹Stuart H. Altman, Present and Future Supply of Registered Nurses (Bethesda, Md.: U.S. Department of Health, Education, and Welfare, NIH, Division of Nursing, 1972), p. 102; and Donald Yett, "An Economic Analysis of the Hospital Nursing Shortage," unpublished Ph.D. dissertation, University of California, Berkeley, California, 1968.

Various factors related to nurse manpower, such as estimates of "need," nurse-population ratios and forecasts of demands for nurses should be reviewed.

The "Need" for Nurses

Although economists are careful to note the difference between "need" and "demand," the distinction is sometimes overlooked by others. Need refers to the number of qualified persons required to provide a specific standard of care, regardless of ability to pay. In general terms, (effective) demand refers to the number of people that the economy will afford, or stated differently the number of nurses that will be hired given the economic resources available. Thus, need refers to an ideal level of nursing services or a goal, while demand implies a realistic confrontation with the available resources to pay for nursing services.

The report of the Surgeon General's Consultant Group on Nursing 1963¹ identified the national need of registered nurses at 1,000,000 R.N.'s by 1975--about 445 to 465 nurses per 100,000 people.

The national goals were revised in a Public Health Service appraisal of health manpower needs when it was realized that the goal was impossible of achievement by 1975. The modification envisioned 850,000 registered nurses for 1975 which would provide about 377 to 395 nurses per 100,000 persons.

There is something disquieting about the modified goal for 1975. The Surgeon General's Consultant Group reported that 850,000 R.N.'s would

¹Public Health Service, Report of the Surgeon General's Consultant Group on Nursing, "Toward Quality in Nursing: Needs and Goals" (Washington, D.C.: U.S. Department of Health, Education, and Welfare, 1963).

be needed as early as 1970 in order ". . . to give the people of the United States safe, therapeutically effective, and efficient nursing service." Obviously, something less in a qualitative sense must now exist and can be anticipated for the future at the national level.

Based on the Surgeon General's Report a follow-up study¹ recommended as a desirable national average that the proportion of nursing personnel for giving direct patient care be as follows:

Staffing in Hospitals: Recommended Reasonable Goals

Registered Nurses	38%
Licensed Practical Nurses	30%
Nursing Assistants	32%
	Total
	100%

These proportions were recommended following studies which employed national surveys to determine staffing patterns that would yield the highest rate of patient and personnel satisfaction with nursing care. They have been generally accepted as a nationwide goal. The current distribution of employed nurses for the U.S. is as follows:

Actual Distribution of Employed Nurses, U.S., 1974²

Registered Nurses	44%
Licensed Practical Nurses	21%
Nursing Assistants	35%
	Total
	100%

The actual distribution of nursing personnel in 1974 showed that the rate of R.N.'s employed in hospitals was higher than the recommendation

¹Faye G. Abdellah and Eugene Levine, "Developing a Measure of Patient and Personnel Satisfaction with Nursing Care," Nursing Research, V, No. 3 (February 1967), 100-108.

²"ANA Research Capsule No. 12," Hospitals, 48 (August 16, 1974), 95-98.

and the rate of L.P.N.'s was considerably lower than the suggested rate.

Nurse-Population Ratios

Ratios of a particular type of labor to the population are often more misleading than useful. They are universal indices since they obscure certain patterns while clarifying others. Specifically, any nurse-population ratio, as an average figure, would not reveal the problems of maldistribution between geographic regions; population composition; economic (income, employment) variances between areas; and other factors.

Table 15 depicts recent trends in the North Carolina and national registered nurse-population ratio. The ratios refer to employed R.N.'s.

TABLE 15

NORTH CAROLINA AND U.S. NURSE-POPULATION RATIOS
PER 100,000 POPULATION, 1970-1974

Year	North Carolina ¹			U.S. ²		
	Employed Nurses [*]	Population ³	Nurse Population Ratio ^{**}	Employed Nurses	Population	Nurse Population Ratio ^{**}
1970	14,485	5,082,059	285	722,000	202,617,000	356
1971	15,119	5,158,000	293	750,000	205,056,000	366
1972	15,698	5,214,000	301	780,000	207,304,000	376
1973	16,577	5,302,000	313	815,000	209,118,000	390
1974	21,624	5,363,000	403	857,000	210,647,000	407

* Refers to the number of employed nurses in North Carolina.

** This ratio is defined as nurses employed per 100,000 people.

¹ Source: North Carolina Board of Nursing.

² Source: Interagency Conference on Nursing Statistics, Division of Nursing, PHS, DHEW, 1974.

³ Source: Current Population Surveys, U.S. Dept. of Commerce, Series P-26, P-25, various editions.

As can be seen from the preceding table, the number of employed R.N.'s in North Carolina has risen from 14,485 in 1970 to 21,624 in 1974, an increase of 49 percent in four years. During this time period, the North Carolina population has increased only 5.5 percent (from 5.082 million in 1970 to 5.363 million in 1974). Therefore, the ratio of employed R.N.'s per 100,000 population has increased by 41 percent, from 285 R.N.'s per 100,000 people in 1970 to 403 in 1974. The national ratio has increased 14 percent during these years, from 356 in 1970 to 407 in 1974. Comparatively to the nation, North Carolina's employed R.N.'s per 100,000 population has improved markedly. Both the State and national total figures are somewhat deceptive as a significant number of employed nurses work part-time. Nationally nearly a quarter million of the nurses are estimated to work part-time. In terms of full-time workers, therefore, the actual national nurse-population ratio is 357 per 100,000 people.

It should be remembered that there are many (the exact number is not known) previously educated, licensed nurses not currently employed, so the total nurse-population ratio (which would include all nurses) is much higher than the ratio of employed R.N.'s-population. Further study and research is needed in this area to attempt to quantify the actual number of nurses potentially qualified and able to work and to ascertain the causes for their not working. This is important because professionally inactive nurses constitute a large and relatively inexpensive short-run supply source which should be utilized efficiently.

Characteristics of R.N.'s
in North Carolina¹

Ninety-nine percent of the currently registered nurses in North Carolina are female; the majority are married. About 34 percent of the R.N.'s in active practice are over fifty years of age. Of the total number of practicing registered nurses, 82 percent are diploma graduates. The following table shows certain pertinent characteristics of R.N.'s in North Carolina.

TABLE 16

BIOGRAPHICAL CHARACTERISTICS OF R.N.'S IN NORTH CAROLINA,
CLASSIFIED BY SELECTED EMPLOYMENT ACTIVITY, 1974

Characteristic	Type of Selected Employment Activities				Total Inactive, Not Practicing
	Hospitals	Office Nsg.	Public Health	Nursing Homes	
TOTAL	13,292	1,824	1,416	898	4,514
Average Age	40	42	45	47	45
Percent Married	72	85	81	73	81
Percent of Male Nurses Employed	1	.4	.3	3	.6
Basic Education Percent of:					
Diploma	80	90	81	92	88
Associate Degree	11	6	3	4	4
Baccalaureate	9	4	16	4	8

Source: North Carolina Board of Nursing

Hospitals are the largest employers of nurses in North Carolina. Young nurses (20-29 years of age) from all educational programs tend to work in hospitals. Almost half the graduates of baccalaureate and hospital diploma programs and three-fourths of the graduates of associate degree

¹Source: "Facts About Registered Nurses and Licensed Practical Nurses to Whom 1973-1975 Licenses Were Issued," North Carolina Board of Nursing (April 1974).

programs are employed in hospitals.

Nationally, hospitals continue to be the predominant employers of registered nurses. The second largest employer of nurses nationally is nursing homes. In North Carolina nursing homes ranked as the fourth largest field of employment for R.N.'s.

Approximately one-fifth of the registered nurses employed by hospitals and over one-third of those employed by nursing homes work part-time. Of the total number of nurses employed full-time in hospitals, 33 percent were licensed practical nurses and 51 percent of full-time employed nurses in nursing homes were licensed practical nurses. A comparison of these figures with recommendations of the Surgeon General's Consultant Group on Nursing shows that, in North Carolina both hospitals and nursing homes have a higher percentage of practical nurses than recommended.

In 1972, the average age of all registered nurses in the U.S. was 40 years; the average age for employed nurses was 39 years; and for those not working, 42 years.¹ In North Carolina in 1974 the average age of employed nurses and nurses not working was somewhat higher.

Numerically, no valid comparisons can be drawn between men and women nurses due to the paucity of male nurses. It is interesting, however, to inspect the relative percentages of men and women according to employment situations. In 1974 the North Carolina Board of Nursing reported a total of 230 employed male registered nurses. Seventy-four percent of this total were employed in hospitals and 3 percent in nursing homes. The same year the total number of employed female registered nurses was

¹Facts About Nursing 72-73 (Kansas City: American Nurses' Association, 1974), p. 7.

25,908. Fifty-one percent were employed in hospitals and 34 percent in nursing homes.

In 1974, 17 percent of R.N.'s licensed and residing in North Carolina were not nursing. Most inactive nurses are married. The largest group of inactive nurses are between 50-59 years of age; the second largest group are between 30-39 years. Those inactive nurses 60 years old or older suggest many who are permanently retired. On the other hand, it is likely that many of the young, married inactive nurses may return to nursing after raising their children.

As mentioned above, the N.C. Board of Nursing data show that not all of the 26,138 currently registered nurses were employed. About 500 were "inactive" (inactive nurses are those who notified the Board of Nursing that they did not wish to renew their license at the time of re-application), and about 4,500 were registered but not practicing. Thus, some 21,600 R.N.'s, or about 83 percent of the total number of R.N.'s licensed in North Carolina were working in 1974. This figure of 83 percent, however, is misleading.

The Board of Nursing does not keep statistics on nurses previously licensed who do not inform the Board of their intentions not to renew their license at the time of renewal or re-application. Thus, all registered nurses choosing not to pay the \$8.00 fee for renewal and also choosing not to inform the Board in writing of this decision are not counted in the Board's statistics. A conservative estimate of the number of these nurses (called "delinquents" by the Board of Nursing) is about 10,000. To be sure, some of these previously registered nurses may be deceased, some may be residing in other states. The existence of such

a large pool of "delinquents" lends credence to the previously mentioned Bureau of Census statistic that about 55 percent of all nurses are in the labor market.¹ Given the paucity of data on "delinquent" nurses, it is virtually impossible to analyze the characteristics of this large group of nurses.

Salaries for Registered Nurses

In recent years relative salaries for R.N.'s in North Carolina have improved as they have for nurses in the nation.² For example, since 1956, at the national level salaries of nurses as a percentage of teachers' salaries have risen from 60 percent to nearly 85 percent, and as a percentage of secretaries' salaries from 85 percent to 121 percent.³ This shows, inter alia, the strong demand for nurses during the 1950's and 1960's. But despite these rapid relative increases in R.N.'s salaries, professional nurses continue to compare unfavorably with teachers, at least when monthly salaries are viewed. Also, despite gains during the 1960's, the rate of increase in nurses' salaries slowed in the early 1970's.⁴ And if one considers the fact that elementary and secondary

¹If one adds the 10,000 "delinquent" pool to the 26,000 total, one obtains a grand total of 36,000 currently and previously registered nurses. Since there are some 21,000 registered working nurses, it follows that the labor force participation rate for nurses in N.C. is around 58%.

²Stuart Altman, Present and Future Supply of Registered Nurses (Bethesda: U.S. Department of Health, Education, and Welfare, Pub. No. (NIH) 73-134, 1972), p. 80.

³Ibid.

⁴Carnegie Commission on Higher Education, College Graduates and Jobs (New York: McGraw-Hill Book Co., 1973), p. 86.

teaching may generally be a profession with less demanding working conditions than nursing, the advantage of teaching over nursing becomes more apparent.

The Carnegie Commission warns that "simple comparisons of average salaries, for example, of teachers and nurses can obscure the fact that young women entering teaching can look forward to relatively greater salary increases with advancing age than can women choosing nursing as a career."¹ Thus, there is strong reason to suspect that age-earning profiles of "professional nurses are considerably more compressed than those for teachers,"² and may help explain why nurses tend to stay out of the labor force after age 45 at a larger rate than other female professionals.

In March 1975, the North Carolina State Nurses' Association recommended as minimum starting salaries for R.N.'s the following schedule:

<u>Type of Employer</u>	<u>Recommended Minima</u>
Health Care Institution	\$ 9,000/year
Nursing Education	10,800/year
Community Health Nursing	10,200/year
Private Duty	45.00/shift

It is assumed that differentials are paid for shift, education, experience and position.

Forecasts of Demand for Nurses

Forecasts of any type are subject, as history will attest, to considerable chance for error. This is because there are many more factors

¹Ibid., p. 87.

²Ibid.

involved in projections of the future than the human mind can foresee with precision. Subject to these caveats, the projections of the number of active registered nurses are presented below.

According to several published reports, including the N.C. Employment Security Commission's North Carolina Interim Manpower Projections to 1980, and the Research Triangle Institute's North Carolina Educational Policy Plan for the 1970's,¹ the number of registered nurses that will be employed in 1980 in North Carolina will be approximately 25,000. This number represents an increase of about 4,000 (16%) over the 1974 figure of 21,600 and an increase of about 8,400 (50%) over the 1970 Census count of 16,626.

In order to attain an employment level of 25,000 by 1980, according to these reports, some 16,000 registered nurses will have to be produced by the State's baccalaureate, associate degree, and diploma nursing programs between 1970 and 1980. This follows because many of the nurses employed in 1970 will have died, retired, or otherwise left the nursing labor force by 1980. Thus the figure of 16,000 takes into account the replacement requirements created by deaths and other separations from the work force, as well as the expansion requirements created by the expected population and income growth of the State between 1970 and 1980. Finally, the figure of 16,000 also accounts for (1) the net estimate of previously prepared R.N.'s re-entering the nursing work force and (2) the fact that not all recently graduated

¹Bureau of Employment Security Research, Employment Security Commission, North Carolina Interim Manpower Projections to 1980, and Final Report, North Carolina Educational Policy Plan for the 1970's, Center for Development and Resource Planning, Research Triangle Institute, April 1974.

nurses enter the labor market immediately after receiving their degrees. Because nursing is a profession (like elementary and secondary teaching) characterized by a high turnover rate, requirements to replace R.N.'s who retire or otherwise leave the labor force are forecast to outnumber the expansion requirements during the 1970's. This is true for North Carolina as well as for the nation.¹

Between 1970-1974 North Carolina has graduated 5,405 nurses--1,790 baccalaureate; 1,783 associate degree; 1,832 diploma nurses. This leaves some 10,600 (or 16,000 - 5,400) nurses to be produced between 1975 and 1980 or about 1,800 a year (Table 17).

TABLE 17

TREND IN NUMBER OF PROGRAMS, ENROLLMENTS, ADMISSIONS,
AND GRADUATES FOR R.N. NURSING PROGRAMS, N.C.,
1970-1974

Academic Year	Number of Programs	Total Enrollment	Admissions	Graduates
1974	93	6,769	2,723	1,410
1973	91	6,078	2,580	1,286
1972	87	5,456	2,388	961
1971	85	4,646	2,200	884
1970	85	3,924	1,935	864

Source: North Carolina Board of Nursing

Estimates of graduates are computed by applying completion rates for each type of program (baccalaureate, associate degree, diploma) to total admissions for that program. Ordinarily the lag time for completion is two years for the associate degree program, three years for the diploma program, and four years for the baccalaureate program. As with most groups

¹Ibid.

of health professionals, the future supply of registered nurses is largely a reflection of the course of enrollment in schools of nursing. Assuming the steady increase in total admissions among the three types of nursing programs with a leveling off after 1980¹ the present number of nursing programs in the State should be able to meet this number.

These figures will meet the effective demand; they are projections of what the economy is likely to demand and do not represent defined needs or goals. The 25,000 employment level expected in 1980 will provide a nurse-population ratio of 433 per 100,000 population, as compared to 407/100,000 in 1974.

Prior to setting a goal, two major factors should be considered: (1) the health care needs of the State, and (2) the number and kinds of health care personnel needed to provide adequate and proper nursing services for the existing population within the health care delivery system.

A demographic overview of the State² shows a high rural population--almost half of whom live in cities with a population under 10,000. Seventy-six percent of the population are white; 23 percent black; and 1 percent other. One-third of the population (households and individuals) had an annual income under \$5,000 in 1974. Almost three-fourths of the population is under 45 years of age. Sixty percent are under 35 years of age. Slightly more than half the population are female. The largest group of the population, both male and female, are between 5-24 years of

¹The Supply of Health Manpower - 1970 Profiles and Projections to 1990 (Washington, D.C.: U.S. Department of Health, Education, and Welfare, Public Health Service, Health Resources Administration, Bureau of Health Resources Development, 1974), pp. 121-131.

²Bureau of Health Resources Administration, DHEW (October 30, 1974).

age. Eight percent of the population is over 65 years of age; of these, the majority are women. More than one-fourth the total population are children under 14 years of age. The general mortality rate is 867/100,000 population. Infant mortality is 2.6/100 live births. These data influence both health manpower and health care needs.

A rural population requires more community health and primary care services. Maternal-Child Health and Pediatric care is needed for the large, younger population, especially the number of females of child-bearing age. The occurrence of chronic illness, so increased in our society, places demands on long-term care facilities. In-patient hospital admissions are relatively low for children, relatively high for the 18-34 year old range (including pregnancy admissions), drop off in utilization in the middle years of life, and have the highest rate among the older age group. The number of admissions to nursing homes exceeds one million a year nationally.

In sum, it is obvious that there are serious problems in health care, especially for some population groups. There are problems in the distribution and the productivity of many of our health care resources; there is the problem of extensive but widely varying utilization of health care services; and there is the problem of an enormous and rapidly escalating investment in the health care industry.¹

In a discussion of nurse manpower, a final caveat is the relevant placement of nursing and nursing education within the health care system. Attention is needed to some aspects of the future of nursing.

¹Report of the NLN Committee on Perspectives, Perspectives for Nursing (New York: National League for Nursing, 1975), pp. 6-7.

The National League for Nursing has summarized some of these changes in its statement:

The changing health care system is a part of an increasingly complex society. Within our changing culture we find a client with more complex problems. Stress is more evident as the concept of family is redefined, as the environment is altered, and as the distribution and control of resources become more intricate. The occurrence of chronic illness, so increased in our society, demands more educational, psycho-social, medical, and nursing care for both family and client. As our knowledge increases year by year, multiple client problems come into focus. New illnesses and poorly defined etiologies demand more expert observation, assessment and planning . . . the advances that have taken place in health care and technology require that the nurse assist clients in acquiring new methods of coping and adapting (for example, with man-made body parts). For these reasons, and for many more that are similarly complex, the client will demand an accountability from nursing for the services it provides throughout the health care delivery system.¹

The Report continues to identify those changes that will have to occur in the current system of nursing education in order for its graduates to be able to adapt to a totally different health care delivery system.

Nursing will put more emphasis on the leadership and decision-making qualities of its graduates. Programs will produce more nurse specialists to resolve health problems and facilitate resolution of these difficulties through deliberation and decision making with clients.

A decline of job opportunities in other areas will bring more students of a higher caliber to nursing. To adapt, the system of nursing education will be restructured, and not merely expanded. More stress will be put on accountability of the educational system. Clinical learning experiences will be supplemented through increased use of educational technology. Clinical learning experiences outside the hospital will be expanded.

Growth will occur in the number of baccalaureate and higher degree programs, and there will be a restructuring of those systems. Hospital-based programs will continue to decrease. There will be a stabilizing in the growth of associate degree nursing programs and practical nursing programs.

. . . Faculties will be upgraded so that more instructors will have expertise in specific subject areas.

¹Ibid., pp. 10-11.

Nursing education will give credit to students for life experiences, offering opportunities for changes in career goals, or career alternatives. Continuing education will expand, since . . . quality practice is dependent upon lifelong education. More educational institutions will offer to hospitals and other agencies packaged in-service education that is descriptive rather than prescriptive.

Because of growing costs for personnel and the general economics of education, there will be increased emphasis on regionalization and/or consortia in nursing education.

Along with changes in economics will come changes in nursing education. In order to meet the needs of the projected health delivery system, additional financial support will be needed for education at the baccalaureate and higher degree levels. More nursing education will be carried out in state-supported institutions rather than in private schools, and these changes will be reflected in the policies and procedures of the educational institutions.

The influence of specialized accreditation agencies will continue through the next decade as a means of providing quality education for students in nursing and providing clients an assurance of the caliber of graduates of accredited programs.¹

¹Ibid., pp. 17-18.

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Reasons for Attrition	1969				1970				1971				1972				1973				1974							
	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.				
<u>UNC-CH</u>																												
Transfer to other BSN program . . . . .	..	..	..	..	1.5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Transfer to other type of nursing program: ADN . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diploma . . . . .	..	..	..	..	1.5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Transfer to degree program other than nursing	12.5	..	..	..	9	1.8	..	..	3.8	..	..	..	4.2	..	..	..	6.1	.8	..	..	..	..	..	..	1	..	..	..
Failure to achieve entrance criteria in the nsg. major . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Failure to maintain academic/clinical practice criteria . . . . .	..	..	..	..	..	..	..	..	3.8	..	..	..	2.8	..	..	..	2.4	1.7	..	..	..	..	..	..	..	..	..	..
Personal reasons	4	..	..	..	3	..	..	..	4.7	1.9	..	..	4.2	2.4	..	..	4.2	..	..	..	..	..	..	..	2.7	..	..	..
Other . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
<u>UNC-C</u>																												
Transfer to other BSN program . . . . .	..	..	..	..	1.9	2.8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Transfer to other type of nursing program: ADN . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diploma . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Transfer to degree program other than nursing . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Failure to achieve entrance criteria in the nsg. major . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Failure to maintain academic/clinical practice criteria	1.9	..	..	..	2.8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Personal Reasons	5.8	..	..	..	..	..	..	..	2.7	2.9	..	..	3.6	..	..	..	1.5	5.0	2.8	..	1.5	..	0.9	..	..	..	..	..
Other . . . . .	..	..	..	..	..	..	..	..	2.9	..	..	..	1.4	2.8	..	..	1.5	..	0.9	..	..	..	..	..	..	..	..	..
<u>UNC-G</u>																												
Transfer to other BSN program . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Transfer to other type of nursing program:1 ADN . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diploma . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Transfer to degree program other than nursing . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Failure to achieve entrance criteria in the nsg. major . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Failure to maintain academic/clinical practice criteria
Personal reasons
Other

¹Transfer to type of program not available



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