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POST-GRADUATE NURSING EDUCATION IN THE UNITED STATES

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Overview of Undergraduate Education

To have a better understanding of post-graduate nursing education in the United States, a brief overview of undergraduate will be provided. This is necessary because students can pursue multiple types of programs to become a professional registered nurse (R.N.). Although the American Nurses Association has lobbied for years to make the baccalaureate degree the educational requirement for entry into nursing practice, this has not become a reality. Each of the 50 states can establish their own educational requirements. Only one state, North Dakota, requires a baccalaureate degree for basic entry.

Many nurses receive their education to become registered professional nurses in a two year associate degree program. Approximately 64.8% of new nursing graduates in 1991 were prepared in two year associate degree programs. A number of options exist to allow graduates of two year associate degree programs to pursue a baccalaureate degree. In Minnesota we have baccalaureate schools of nursing who only admit nurses who have an associate degree; these are termed "RN completion" programs. Students are registered nurses and require less supervision in clinical areas. The majority of the clinical experiences is in the community and in agencies in which the student has not previous experience. Considerable attention is also given to research, nursing theory, and health promotion.

Whereas 25 years ago most nurses in the United States received their basic preparation in three year, hospital-based diploma programs, few of these pro-

grams now exist. In my state, Minnesota, we have not had diploma schools of nursing since the early 1980s. Only about 8.5% of new graduates are now prepared in diploma programs. A number of nurses who have a diploma education pursue a baccalaureate degree. Because their education was not in an academic institution, many of their credits do not transfer and hence they must spend more time pursuing their baccalaureate degree than do graduates of the two year associate degree programs. Some diploma graduates seek a baccalaureate degree in a discipline other than nursing.

Approximately 26.7% of new graduates in 1991 graduated from four year baccalaureate programs. Many clinical agencies try to only hire baccalaureate graduates as they are more versatile and have a broader knowledge base than do graduates of associate degree or diploma programs. The salaries of graduates of baccalaureate programs are not significantly higher than are those for graduates of the other programs. This is discouraging for nurses who have pursued a baccalaureate degree.



Master's Education in Nursing

Over 236 graduate programs in nursing exist in the United States. Many of these programs evolved in the late 1960s and early 1970s when government monies were available for construction of new buildings, support for new programs, and for traineeships for students. Traineeships provide stipends for students to pursue graduate education. Emphasis in graduate education shifted from preparation for education and administration roles to the preparation of clinical nurse specialists and nurse practitioners. The rationale for this shift was that leaders recognized the need to have nurses who were expert practitioners provide direct care to patients or work with less prepared nursing staff to plan, implement, and evaluate care. Today, less federal and state monies are available to begin new graduate nursing programs.

Two major types of preparation are found in masters' programs: functional preparation and clinical specialization. Functional preparation is for administration, education, and clinical practice. Many areas of clinical specialization can be pursued: oncology, nephrology, critical care, pediatrics, maternal-child, gerontology, adolescent health, public health, medical-surgical, neuroscience, orthopedics, obstetrics, midwifery, women's health, home health, and hospice are some of the more common specialty areas. As can be noted, the way in which these areas are conceptualized varies. Some are for a medical entity such as oncology or orthopedics. Other specialty areas focus on a developmental level: pediatrics and gerontology are examples. Settings or sites in which care is delivered comprise another type of specialization: home health and critical care. These many ways in which specialization is conceptualized creates problems for the development of nursing knowledge as phenomena of concern to nursing transcend specialty areas. For example, pain is a concern of nurses in all specialties. However, if a school of nursing offers several areas of study, each specialty area presents content on pain and comfort. This makes education more

costly.

Traditionally, nurses pursuing clinical specialization at the masters' level have sought to become either clinical nurse specialists or nurse practitioners. A clinical nurse specialist (CNS) is defined by the American Nurses Association as a registered nurse who, through study and supervised practice at the graduate level (master's or doctorate), has become expert in a defined area of knowledge and practice in a selected clinical area of nursing. Four key functions have been identified for the CNS: patient care, education, consultation, and research. The amount of time spent on each of these functions varies for each CNS and from year to year. The CNS has traditionally worked in hospitals. Although some CNSs provide direct care to patients, the majority of CNSs have become involved in patient and staff education, serve as project directors for innovation the hospital is making, or coordinate quality improvement or assurance projects. Renewed emphasis in the health care system on cost-effective quality care is making it more imperative that clinical nurse specialists be integrally involved in direct patient care.

Nurse practitioners are defined as registered nurses, prepared at the graduate level in nursing, who assume an advanced practice role in providing primary health care to patients and their families in a variety of settings and process in-depth knowledge of health problems affecting the population they serve. This role evolved in the late 1960s when a shortage of physicians existed. Nurse practitioners were primary health care providers, often in rural areas or inner cities where it was difficult to obtain physicians. In recent years the settings where nurse practitioners work has changed. More and more nurse practitioners are being employed by hospitals and nursing homes. This has occurred because fewer physicians are pursuing these specialty areas. Nurse practitioners are assuming some of the functions of physicians. Initially, many nurse practitioners attended special programs that were 12-15 months in length. They were awarded a certificate rather than a degree. A few practitioners

were prepared in master's programs in nursing. Beginning in 1992 all nurse practitioners must receive their education within masters' nursing programs. Areas of specialization for nurse practitioners are in gerontology, adult health, pediatrics, and family. The latter care for clients across the life span.

After nurses complete their master's program they take certification examinations that are offered by the American Nurses Credentialing Center. All nurse practitioners must be certified to receive direct reimbursement for the services they provide. It is currently not mandatory for clinical nurse specialists to be certified. Nurses take the initial licensure examination to become registered professional nurses. Certification indicates that a nurse has pursued additional courses or studies in a particular area and thus is better prepared to provide care to patients with a particular problem.

Nurse practitioners are beginning to work in hospitals and nursing homes. Conversely, clinical nurse specialists are functioning in clinics and other primary care settings. Hence, merger of these two roles into one advanced practice role has been initiated. Such a merger seems feasible as all CNSs and NPs are now prepared in master's programs. The gerontological nursing area of study at the University of Minnesota School of Nursing has a combined curriculum for NPs and CNSs.

In addition to the NP and CNS, two other types of advanced practice nurse are prepared at the master's level : nurse midwives and nurse anesthetists. Both of these post baccalaureate specialties have a long history. However, it was only recently that nurses in these specialties began to receive their education within masters' programs. Prior to this they pursued post baccalaureate education that led to a certificate. Organizations for each of these specialties provide certification examinations that graduates need to pass to be certified to practice.

No common curriculum exists for masters' programs in nursing. The length of time to complete a master's degree varies from 12 months to 24 months. Nurse practitioners, nurse anesthetists,

and nurse midwifery programs typically require many more credits for completion than do programs preparing clinical nurse specialists. Students pursuing the clinical nurse specialist track in our gerontological area of study take 48 credits while the nurse practitioner students take 54 credits.

The course of study for the gerontological nursing area of study at the University of Minnesota is found in Figure 1. Students take the nursing core courses : two nursing theory courses, a moral and ethical position course, and two research courses. One of the research courses is a four credit independent study course in which the student completes a small research project. A statistics course is a prerequisite for the research course. The graduate school requires that all students take eight course credits of elective courses outside of nursing. Students may take the statistics course as an outside of nursing elective. Gerontology students often take courses related to gerontology such as biology of aging or multidisciplinary perspectives of aging.

The gerontology courses students take include five didactic courses and four that include clinical experiences. The five didactic courses are :

Care of the elderly I : Physiological concepts
Care of the elderly II : Psychosocial concepts
Nursing assessment of the elderly : Assessment & management

Professional issues in advanced gerontological nursing practice role

Pharmacotherapeutics for the elderly

The four courses with a clinical experience are :

Nursing assessment of the elderly
Nursing care of the elderly I
Nursing care of the elderly II
Advanced practice roles

Students engage in three hours of clinical experience to obtain one credit. For example, in the Advanced Practice Roles course nurse practitioner students have 6 credits of clinical ; this translates into 18 hours at the clinical site per week.

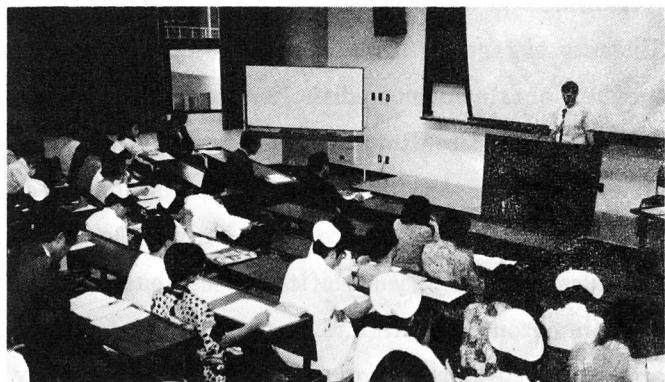
While we have very specific courses that the students in gerontological nursing must complete, other areas of study have more flexibility in courses they

need to complete. For example, students pursuing the medical-surgical area of study take the core nursing courses and then are required to take an eight credit course entitled "Nursing Intervention Models" and a six credit "Advanced Practice Roles" course. They can select other courses that best fit their needs.

At the University of Minnesota students may do a thesis or a Plan B Project. The latter option places emphasis on students taking a larger number of course credits. The Plan B project reflects four credits of work. Students doing the Plan B track are required to take at least 40 course credits in addition to the Plan B project. Students doing a thesis register for 16 credits for the thesis. Students doing thesis are required to take 28 course credits in addition to the 16 thesis credits. About 75% of our students select the Plan B Project track. Some schools of nursing in the United States only offer the thesis option.

The majority of students pursuing a master's degree attend school on a part-time basis. Students usually take either one or two courses a quarter. It takes part-time students about three years to complete their master's program while it would take a full-time student two years. One reason for part-time study is that financial assistance (scholarships and fellowships) is available to only a small percentage of students. Federal traineeships are available to full-time students in nurse practitioner or nurse midwifery programs.

The description of master's education indicates that great diversity exists. Many areas of clinical specialization exist in addition to functional preparation for administration, education, and practice.



Currently, the National League for Nursing accredits master's programs. However, no plans exist to establish a common curriculum for master's programs.

Doctoral Nursing Education

The number of doctoral programs in nursing in the United States have grown at an almost exponential rate. In the past ten years the number of programs has expanded from 20 to over 60 programs. Two major types of program exist: doctor of philosophy (Ph.D.) and professional doctorate (DNSc.). The emphasis in Ph.D. programs is on coursework and experiences that will prepare students to conduct research. Although research is a critical element in the professional doctorate, courses on advanced clinical content are also included. Although theoretically differences should exist between the curriculum and outcomes of the two programs, in essence few distinctions exist. DNSc programs are often established when a graduate school at an academic institution will not give approval for a Ph.D. in nursing.

The course requirements vary across doctoral programs. Many schools require students to take courses about nursing theory, research, and cognate courses. The latter are courses about specific areas of content related to the student's research interest. These courses may be in nursing and other fields. For example, a student interested in conducting research on coping might take courses on stress, physiology of stress responses, human emotions, and personality.

A typical program of study for a student at the University of Minnesota is found in Figure 2. Students take courses in nursing theory, research, moral and ethical positions, and a selected cognate area. The areas of study available at the University of Minnesota are phenomenon of health, development and modification of health-related behaviors, responses to events disruptive of health, systems for delivery of health care, and systems for delivery of nursing knowledge. In addition, students are

required to obtain a minor in another discipline. The minor provides the student with additional knowledge about their research area. Examples of minors students have selected include gerontology, anthropology, educational psychology, psychology, public health, and family social science. Eighteen or 21 course credits are required in a minor discipline.

The time taken to complete the doctoral program varies for each student. A full-time student could complete all requirements in three years. However, most students take four or more years to complete their studies and research project. After students have completed their course work they write examinations in nursing theory, research, and moral and ethical positions ; these are termed "preliminary written examinations." This is followed by oral preliminary examination in which a five member committee examines the student ; three members are from nursing and two are from disciplines outside of nursing. After completing their research, students then "defend" their dissertation at the final oral examination. Again, a five member examining committee questions the student.

Since the goal of doctoral studies is to prepare researchers, students are encouraged to serve as research assistants for faculty members' research. In these research positions students learn many aspects of research : developing a research proposal, initiating and conducting research, writing reports and manuscripts, and presenting findings at research conferences. These are valuable experiences for students. Since not all students have the experience of serving as research assistant, we are considering implementing a requirement that all doctoral students participate in the research of faculty members who have funded research. Several doctoral programs currently require this experience. This experience helps students to gain a broader perspective about research.

In addition to serving as research assistants, students are encouraged to submit applications to the National Institute of Nursing Research for a pre-doctoral fellowship award. These awards are made on a competitive basis. Award provide reimburse-

ment for tuition, attendance at conferences, and a stipend. Most institutions also have scholarships available for students. Many small grants, such as from the American Nurses Foundation, also may be used to support students research.

No nursing organization accredits doctoral programs in nursing. However, several organizations hold yearly conferences related to doctoral education. The National Forum on Doctoral Nursing Education is one of these organizations. The Forum provides opportunities for faculty to explore issues related to doctoral education. This Forum is helpful to schools initiating a doctoral program. Minnesota hosted this conference in 1993.

Post-Doctoral Education

Post-doctoral studies are common in the United States in the basic sciences. Many of the agencies in the National Institutes of Health provide grants that support post-doctoral studies. After completing their doctoral studies students apply for a post-doctoral award and are active participants in a faculty member's research. Their role on the project provides them with additional preparation as researchers. In some instances, additional courses are taken to provide the post-doctoral student with preparation in special techniques related to research. For instance, a graduate specializing in stress research may want to gain expertise in psychoneuroimmunological assays so that these can be used to measure stress. The post-doctorate experience allows persons to work with additional researchers and thus broadens their perspective on research.

The number of nurses pursuing post-doctorate studies is increasing. However, doctoral graduates pursuing post-doctorates remains small. This may be partially due to the fact that faculty positions and other research opportunities are readily available to nurses. Another factor may be that most doctoral students in nursing are older when they seek their doctorates and hence do not wish to extend their education for another two or more years.

Although a post-doctorate does not have to be done immediately following the completion of a doctoral degree, this is usually the time when it is completed. Some faculty members entering a new area of study will use a post-doctorate fellowship to obtain the new knowledge and expertise needed. A number of universities have obtained funding for post-doctorates in a particular area such as in gerontology, public health, or administration. These schools of nursing have a core of nursing faculty who have expertise in the post-doctorate area. Interested nurses apply to the specific post-doctoral program and if accepted, receive funding from the school of nursing to support their post-doctoral studies.

Post-doctoral awards provide nurses with the opportunity to author articles, to be socialized into the research community, and to write their own research proposals to be submitted for external funding. Nurses who complete a post-doctorate are better prepared as researchers and often experience less pressure as they pursue their professional careers than do nurses who have not had the opportunity to do a post-doctorate. However, post-doctorates in nursing are still the exception rather than the usual path for nurse researchers.

Future Trends

Master's programs are placing increasing emphasis on the preparation of nurses who can provide direct care to patients and are thus primary care providers. The roles of the clinical nurse specialist and nurse practitioner are merging into one advanced practice role. Although no formal discussions have been initiated at the national level about common advanced preparation that would encompass nurse anesthetists and nurse midwives, I believe that such discussions will occur in the near future. Having one advanced practice role will increase the political clout of nursing. A key characteristic of all advanced practice nurses will be that they review and incorporate research findings into their practice.

The number of doctoral programs will remain fairly stable with few new programs being developed. Within existing doctoral programs I see more specialization occurring. This specialization will be in relation to the research being conducted by faculty members at each institution. For instance, one school will be noted for stress research and students wishing to pursue doctoral studies related to stress will seek admission at this school and work with faculty members on their research. Another school may be known for research about families while another may be characterized by faculty doing research on nursing interventions. Students will seek the school that fits with their interests. Currently, geographical location proximity is the primary factor for enrolling at a particular school.

Nurses will pursue doctoral studies soon after completion of their baccalaureate degrees. Some nurses will seek graduate education to specialize in advanced clinical practice at the master's level while others will pursue a doctoral degree to become researchers and teachers. Some of the advanced practice nurses who have a master's degree will also serve be on faculties and teach students. This change will all occur over a period of years.

Post-baccalaureate education in nursing is becoming more focused. This may be a reflection of nursing knowledge becoming more developed and hence provide direction for nursing research. Nursing programs now more truly reflect nursing and nursing knowledge rather than medical science or other disciplines. Changes in graduate nursing education will continue, but giant strides have been made during the past quarter to advance nursing.