The Encyclopedia of Education

The ENCYCLOPEDIA of EDUCATION

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(continued)

NURSING EDUCATION

1. PROFESSIONAL NURSING

The first three schools of nursing in the United States were established in 1873. They were the Bellevue Training School in New York; the Connecticut Training School in New Haven, Conn.; and the Boston Training School (later the Massachusetts General Hospital Training School) in Boston. The schools were started as experiments, for hospital authorities were neither anxious to do more than provide facilities for the education of nurses nor willing to accept the premise that schools established to train nurses would provide better care for the sick than previous methods.

The Civil War had focused attention on the deplorable condition of the sick in hospitals. The experimental schools of nursing were one phase of the social reform movements which followed the Civil War and which sought to improve the conditions of those unfortunate enough to be hospitalized. Generally, hospitalization at this time was limited to the indigent and to seriously infectious cases or was considered a last resort in illness. Women employed to care for patients were untrained and classified as servants. Frequently the services of women prisoners were employed to supplement the staff. During the Civil War, women, with and without experience in caring for the sick, had volunteered for service. A group of these women continued to call the attention of the public to the necessity of hospital reform through an organized system of nursing education.

In the Bellevue Training School a few wards were set aside for teaching purposes. The servant nurses were dismissed, their wages reverting to the Women's Visiting Committee sponsoring the school. The school staffed the wards, and the students assumed responsibility for the housekeeping duties in addition to the nursing care of patients. Each of these early schools was patterned after the Nightingale system and contracted to provide nursing services in exchange for educational services (Stewart 1948).

The originators of the first three schools of nursing in the United States sought the assistance and advice of Florence Nightingale. The first school of nursing, based upon the Nightingale system, had been founded in 1860 at St. Thomas's Hospital in London. It was carefully planned and organized as a separately endowed school. The principle of financial independence was one of many principles outlined by Miss Nightingale as essential requirements for an independent school of nursing; this principle ensured that emphasis would be placed upon the education of students rather than on nursing service. However, from the inception of hospital schools of nursing in the United States, the schools were organized within hospitals and controlled and financed by hospitals. As early as 1876, nursing leaders stressed the need for nursing to be an educated and honorable profession and recommended that nursing school committees seek funds for an educational institution, such as a college, that would ensure the necessary quality of instruction.

Issues. The major issues confronting the leaders in nursing in the early period are still of concern: (1) Who should organize, administer, and finance professional schools of nursing?; and (2) What is the best system of nursing education in terms of the needs of society (Lambertsen 1958)?

In 1948 publication of *Nursing for the Future*, known as the Brown Report, triggered a series of reactions among nurses and others interested in, or concerned with, nursing. The report in many respects echoed the studies, reports, and writings of leaders in nursing for the preceding half century; yet, some of the reactions to the report indicated how strange the recommendations seemed to many workers in nursing as well as in other vested interest groups. The Brown Report recommended many educational reforms and distinguished between the expected performance of a nurse educated in a hospital school of nursing and a nurse educated in a collegiate or university school of nursing. Brown found that hospital schools offered only apprenticeship training in spite of the improvements in most schools over the years. The study clarified the role of the nurse as a professional practitioner and recommended that this preparation be provided within institutions of higher education rather than in a service agency, the hospital. A broader interpretation of leadership was implied through the differentiation between technical competence and professional competence.

The Brown Report served as a blueprint for action for nursing organizations and leaders in nursing education. Social legislative programs in support of nursing education were activated. In 1956, Congress passed the professional nurse traineeship program under Title II of the Health Amendments Act of 1956, providing financial support for teachers, supervisors, and administrators. In 1964, following the report of the Surgeon General's Consultant Group on Nursing, the Nurse Training Act was signed. (The Consultant Group on Nursing had been appointed in 1961 by the Surgeon General of the U.S. Public Health Service to advise him on nursing needs and to identify the appropriate role of the federal government in assuring adequate nursing services in the United States.) The report, *Toward Quality in Nursing: Needs and Goals* (U.S. Department of Health . . . 1963), elaborated upon the lack of order and coherence in the educational structure for the training of nurses and recommended that the baccalaureate program be the minimum requirement for nurses assuming leadership positions. The report also recommended that a study be made of the system of nursing education in relation to the responsibilities and skill levels required for high-quality patient care. The professional organization, the American Nurses' Association (ANA), initiated action following the publication of the report.

A committee on education was appointed in 1963 to study and make recommendations for meeting the ANA's specific responsibilities in nursing education, to formulate basic principles of the education essential for effective nursing practice, and to study the effect of and make appropriate recommendations for federal and state legislation for nursing education. The report, *Educational Preparation for Nurse Practitioners and Assistants to Nurses* (ANA Committee on Education 1965), enunciated the position that nursing education should take place in institutions of learning within the general system of education, that minimum preparation for beginning professional nursing practice should be a baccalaureate degree in nursing, that minimum preparation for beginning technical nursing practice should be an associate degree in nursing, and that education for assistants in the health service occupations should be short, intensive, preservice programs in vocational education institutions rather than on-the-job training programs. The report implied an orderly movement of nursing education toward institutions of higher learning in such a way that the supply of nurses would not be interrupted.

The basic problem confronting the profession has always been that of increasing the supply of nurses to meet the increasing needs for services. Increasing the supply of graduate nurses available each year from the various systems of nursing education has been more important than instituting changes in the educational system which would enable graduates to keep pace with the phenomenal advances in medical and scientific research and in technology. Numerous statements by physicians, hospital administrators, and others were published in opposition to the educational position of the ANA, for hospital schools of nursing have been considered the primary source of registered nurses.

The need for a study of nursing and nursing education, recommended by the Surgeon General's Consultant Group, was endorsed by the two major organizations in nursing, the ANA and the National League for Nursing (NLN). Funds were appropriated by these two organizations, and a joint committee was appointed to study the ways to conduct and finance the study. Funds were secured from the Avalon Foundation, the W. K.

Kellogg Foundation, and an anonymous donor to establish an independent agency to conduct the study. The report of this agency, the National Commission for the Study of Nursing and Nursing Education, organized in 1967, was published in 1970. This study, *An Abstract for Action,* is similar to previous studies and recognizes the advantages of nursing education centered in educational institutions. However, the emphasis is upon state master-planning committees that will take nursing education under their purview and ensure an orderly transfer of functions and facilities for the preparation of qualified nurses.

Basic educational programs. The three types of basic educational programs which prepare for beginning practice as a registered nurse are the college and university programs leading to the baccalaureate degree, the community or junior college programs leading to an associate degree, and the hospital programs leading to a diploma. The common denominator of the three types of initial programs is the emphasis upon preparation for nursing care, but there are significant differences in the nature of the three programs.

Baccalaureate programs. Baccalaureate programs in nursing have become recognized as the minimal requirement for nurses who are to assume leadership positions in nursing practice. Baccalaureate programs are offered by a department, division, school, or college of nursing within a senior college or university and are similar in nature to all other programs offered by the institution. An applicant to a baccalaureate program in nursing is expected to meet the admission, promotion, and graduation requirements required of all students.

The course of study combines special education in the theory and practice of nursing with general education in the humanities and the behavioral, biological, and physical sciences. Courses in nursing theory and practice build upon preceding and concurrent courses in the sciences and humanities.

Programs vary in length (from four to five years) and in their organization of the nursing and general education courses. In some programs, one or two years of general education is a prerequisite for admission to a college program in nursing; in others, general education courses and nursing courses are integrated throughout the course of study. A wide variety of health facilities are utilized as clinical laboratories for selected learning experiences in nursing practice, for the objective of these programs is to prepare a professional practitioner who is capable of planning, providing, and evaluating nursing care for individuals, families, and special population groups in the home and in health care facilities. Only graduates of baccalaureate programs are qualified for public health nursing and community nursing and may begin their careers as staff nurses in public health agencies and hospitals. These graduates also have the educational background necessary for graduate study, which prepares them for clinical specialization, supervision, consultation, teaching, administration, and research.

There has been a slow but steady growth in the development of baccalaureate programs in nursing. From 1960 to 1968 the number of programs increased from 172 to 235. In 1968 the student enrollment in these programs was over 40,000, or 27.7 percent of the total enrollment in schools of nursing. Seventeen percent of the graduates in 1968 were from baccalaureate programs (American Nurses' Association 1969*a*).

Associate degree programs. Associate degree programs in nursing were established as part of the system of nursing education in 1952. The growth of these programs is indicative of trends in general education throughout the United States. By 1968 there were 330 state-approved programs in 45 states, Puerto Rico, Guam, and the American Virgin Islands, representing an increase of over 300 programs in a 12-year period. These programs enrolled 18.9 percent of the students in basic nursing programs and produced 15 percent of the graduates (American Nurses' Association 1969*a*).

Many characteristics of the associate degree program are similar to those of the baccalaureate program, for both are conducted and controlled by an educational institution. However, the objectives of the programs differ, and the associate degree program in nursing is not equivalent to the first two years of baccalaureate study.

The majority of associate degree programs are located in community and junior colleges, although a few are located in senior colleges and universities or private institutions. An applicant is expected to meet the admission, promotion, and graduation requirements for all students. The course of study may be two academic years or two calendar years and combines nursing theory and practice with college-level general education courses in the liberal arts and sciences. Health

facilities are utilized to provide selected learning experiences in medical-surgical nursing, mother and child nursing, and psychiatric nursing. The program is designed to prepare the graduates to give patient-centered care, usually as general duty nurses in hospitals. The graduates have technical nursing competence based upon an understanding of the scientific principles of nursing care. The focus of the program is on the relationship between theory and practice.

Diploma programs. Programs leading to a diploma in nursing are centered in single-purpose schools conducted and controlled by hospitals, although a few programs are independently incorporated. The school of nursing may have cooperative arrangements with other institutions for courses in the biological, physical, and behavioral sciences and for courses in the humanities. These courses may be general college offerings available to all students, or they may be special courses applicable to nursing and limited to nursing students.

Diploma programs are generally three years in length, although some programs have been shortened to 30 months and others to two calendar years.

In most diploma programs, students have the major portion of their clinical experience in the home hospital, with psychiatry, pediatrics, and obstetrics offered in affiliated institutions, if these services are not adequate in the home hospital. The program is focused primarily on the sick and disabled in hospitals and similar community agencies. Nursing courses include theory and practice in medical-surgical nursing, mother and child nursing, and psychiatric nursing. The program is designed to prepare the graduate for a beginning position as a general duty nurse, usually in a hospital. The graduates have technical competence, and the emphasis of the program is on learning through the practical application of knowledge.

Since the mid-1940's there has been a steady decline in the number of diploma programs reported each year, but the rate of annual decrease accelerated during the late 1960's with the expansion of the number of associate degree programs. In 1960 there were 908 programs, and in 1968 there were 728 programs. Diploma programs still constitute the largest source of registered nurses, with 53 percent of the entire student enrollment in 1968 in these programs, producing about 68 percent of the graduates (American Nurses' Association 1969*a*).

Baccalaureate programs for registered nurses. Graduates of diploma programs and associate degree nursing programs, seeking opportunities for career mobility, are increasingly recognizing that a baccalaureate degree is essential for beginning leadership positions and for advanced study. These nurses are taking a prolonged program to complete what is essentially basic education. In 1968 there were 7,849 registered nurses previously graduated from diploma and associate degree programs enrolled in programs leading to a baccalaureate degree. For the approximately 45 percent enrolled on a part-time basis, the program extends over a number of years.

Until relatively recently, graduates of associate degree and diploma programs received blanket credit for a set number of transfer credits in the nursing major, and special upper-division courses in nursing were provided for these students. Currently the student is admitted into the regularly established baccalaureate program. The registered nurses in these programs receive a limited amount of college credit for the diploma program, whereas, in general, associate degree graduates receive full credit for completed liberal arts courses. Both groups, however, are subject to a variety of practices with respect to advanced standing in nursing courses. Some baccalaureate programs administer examinations to determine whether the graduate nurse applicant has the proficiencies required for all students and can be exempted from particular nursing courses. The graduate nurse may or may not receive college credit even though exempted from nursing courses, for credit is awarded at the option of the college or university offering the baccalaureate program.

Graduate programs. Graduate education in nursing is patterned after the leadership preparation in all disciplines. The characteristics of the programs are derived from their purpose, which is the preparation of leaders who will influence the practice and study of nursing and will guide, direct, and investigate professional practice and education. To be eligible for admission to graduate study, nurses must fulfill a university's baccalaureate degree requirements.

Prior to 1952 specialization in teaching, supervision, and administration was generally offered on the baccalaureate degree level; *those who enrolled in master's programs sought preparation in*

another functional area. For example, a graduate of a baccalaureate degree program leading to preparation as a teacher of nursing would enroll on the master's level for preparation as an administrator of a school of nursing. In 1952 a conference of nursing educators, sponsored by the NLN's Division of Nursing Education, agreed that within five years the baccalaureate program would prepare nurses for general professional nursing and the master's program would prepare them for specialization. Currently, the emphasis of the master's program is upon advanced nursing practice, which gives meaning, foundation, and direction to teaching, administrative, consultative, and investigative functions. Accredited master's programs offer 27 different areas of specialization in advanced nursing practice and clinical work, such as cardiovascular nursing, child psychiatry, geriatric nursing, and chronic and long-term illnesses.

The length of master's programs varies from one to two years, allowing the graduate to gain advanced knowledge and proficiency in a clinical field as well as in a functional area, such as teaching or supervision.

In 1968 there were 66 master's programs, 48 of which were accredited by the NLN. The total number of graduates is still small, having increased from about 1,300 in 1964 to about 1,600 in 1968 (American Nurses' Association 1969*a*).

It is clearly evident that today's practitioners in nursing need more than the mastery of a particular body of professional information or a cluster of skills. They need intellectual leverage for continued learning, for modifying practice, and for understanding the social changes in which they participate. Since the master's program cannot offer training of the requisite breadth and depth, an increasing number of institutions no longer consider it as the terminal step in graduate education. In 1960 there were only two institutions that offered doctoral programs in nursing; by 1970 there were six. In 1968, 258 students were enrolled in these programs; 23 received their doctorates (American Nurses' Association 1969*a*). Complete data are not available, as nurses enrolled in doctoral programs in other disciplines are not reported in NLN statistics.

Traditionally the doctor of philosophy is viewed as the degree leading to preparation for research. In 1970 the nurse-scientist program leading to the Ph.D. was offered by nine schools. The purpose of these programs is to provide opportunities for qualified nurses to study an additional discipline, such as biology, psychology, or sociology, as well as research design and methodology. Proponents of these programs claim that nursing is an applied science and that the graduates of these programs, who are both nurses and scientists, will advance nursing knowledge through research, will relate a basic discipline to problems in nursing, or will develop nursing as a field of inquiry in its own right.

Financial assistance. Scholarships and loans are available from private sources, the federal government, and some state and local governments. Each year the NLN publishes a comprehensive list of available scholarships and loans; individual schools of nursing generally list their specific scholarships, awards, and grants in their school bulletins or catalogs. The major source of assistance is the federal government through agencies within the Department of Health, Education, and Welfare, such as the U.S. Public Health Service, the National Institute of Mental Health, and the Social and Rehabilitation Service (which includes the Children's Bureau).

Licensure for practice. The ANA supports the principle that all those who are engaged in the practice of nursing for compensation should be licensed in order to protect the public. Licensure as a registered nurse is evidence that the nurse, through examination, has met the minimum standards to practice nursing. The examination consists of one or more tests in medical nursing, surgical nursing, psychiatric nursing, obstetric nursing, and the nursing of children. Each test is integrated and includes questions in such areas as the natural and social sciences, nutrition and diet therapy, and pharmacology as they relate to the particular clinical subject.

Nursing is one of the few professions that has national standardized examinations; these are developed and administered by the state boards of nursing in cooperation with the ANA's Council of State Boards of Nursing and the NLN's Test Construction and Evaluation Service. The requirements for licensure in every state are (1) high school graduation or the equivalent, (2) good moral character, (3) graduation from an approved school of nursing, and (4) passing a licensing examination as determined by the board of nursing. Nurses from other countries are expected to meet the same qualifications for licensure as grad-

uates of U.S. schools of nursing. Specific information about requirements for licensure may be obtained directly from the board of nursing in the state in which the nurse wishes to be licensed.

Careers. A career in nursing offers limitless opportunities for anyone interested in providing health services for people of all ages in a variety of settings throughout the world. Nurses serve in the army, navy, and air force and are employed by the federal government for such organizations as the U.S. Public Health Service, the World Health Organization, and the Veterans Administration and by the Red Cross and philanthropic foundations. In 1969 there were 680,000 employed registered nurses; approximately one-fourth were estimated to hold part-time positions; and 98.8 percent were women (American Nurses' Association 1969*a*). More people were engaged in nursing and nursing-related services than in any other group of health occupations.

Unlike many other occupational groups, nursing offers a multiplicity of career choices, each of which has its own special requirements (including educational requirements). Each has its own opportunities, salary scale, and personal satisfactions. However, the variety of opportunities is such that individuals with varied interests can find lifelong careers.

The nurse is a therapist who provides direct nursing care services to people in hospitals, nursing homes, and other extended-care facilities and in clinics, industry, schools, doctors' offices, and the home. The nurse cares for those who are ill and disabled as well as those who might become ill or disabled if deprived of essential nursing care services.

In addition to preparation for beginning practice in nursing, career opportunities are now increasingly available for clinical specialists in nursing through education programs following the baccalaureate degree. The master's degree program prepares (1) pediatric nurses, specializing in care of children; (2) obstetric nurses, specializing in caring for mothers and the newborn; (3) psychiatric and mental health nurses, caring for the disturbed or mentally ill; (4) rehabilitation nurses, caring for patients with chronic and disabling conditions; and (5) nurses in medical-surgical specialties such as cardiovascular diseases, cancer, pulmonary diseases, and neuromuscular disorders.

Graduate education in nursing, in addition to preparing the nurse for clinical specialization, offers a variety of other career opportunities. The nurse may prepare to be a teacher who will instruct nursing students in undergraduate or graduate programs, nursing service personnel in employment situations, and individuals, families, and community groups. The nurse may prepare to be an administrator of a school of nursing, a public health agency, a hospital, a nursing home, or a clinic. The nurse may also prepare to be a supervisor of a clinical service in a health agency or a consultant to a health agency, school, or community group. Finally, the nurse may prepare to be a researcher in nursing or nursing education or in a multidisciplinary research program.

Registered nurses acting through their respective state nurses' associations establish minimum standards for economic conditions of work. Salary information is published each year by the ANA in *Facts About Nursing: A Statistical Summary.* A professional counseling and placement service is provided by the ANA and some state nurses' associations. The states providing this service are listed in the "Official Directory" published in the January and July issues of the *American Journal of Nursing.*

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ELEANOR C. LAMBERTSEN

2. PRACTICAL NURSING

Of the million nurses in active practice as of 1970 in the United States, between 325,000 and 350,000 were licensed practical nurses, or licensed vocational nurses (which is the legal title in California and Texas). These nurses are frequently referred to as LPN's (LVN's). LPN's give nursing care under the direction of a registered nurse, a licensed physician, or a licensed dentist in a variety of settings. About two-thirds of all LPN's are employed in hospitals. The remaining one-third work in nursing homes and other long-term care facilities, public health nursing services and other community health care agencies, physicians' offices, industrial health services, and as self-employed practitioners in patients' homes.

The importance of LPN's in hospitals is well recognized; they constitute about one-third of all the nurses in these institutions, and without their services many wards and even entire hospitals would be forced to close. It is anticipated that as the number of nursing homes continues to mount and the community health movement expands, more and more LPN's will be needed in long-term care and community-based settings. The chief of the Manpower Analysis and Resources Branch, Division of Nursing, U.S. Public Health Service, has estimated that by 1980 there will be a demand for over half a million LPN's (Levine 1969).

Often the role of the LPN is summarized as giving bedside care, but this description is a narrow one since the role also encompasses work with ambulatory patients and participation in the health education of well persons. The functions which an LPN may legally perform are indicated in state practical nursing practice acts or in regulations established under these acts. Within this framework the employing institution or agency usually outlines these functions in detail. Thus, the functions may vary somewhat from state to state and among institutions within a state. Generally, the functions include:

(1) participating in planning nursing care, in implementing the plans, and in evaluating the results of the care given;
(2) observing and reporting to the appropriate person significant symptoms, reactions, and changes in the condition of the patient and recording pertinent information about the patient;
(3) performing, or assisting in the performance of, diagnostic and therapeutic procedures;
(4) administering oral medications and hypodermic injections;
(5) providing emotional support to the patient and his family; and
(6) teaching appropriate self-care measures and health-maintenance and disease-prevention practices.

The performance of these functions obviously requires a considerable amount of knowledge, skill, and judgment. LPN's acquire the needed background and develop the required abilities in basic educational programs in practical nursing. After experience or further education, an LPN can progress to positions involving more complex responsibilities of either a clinical or a managerial nature. The growing need for LPN's in such positions emphasizes the importance of programs of continuing education.

Basic education. Basic education for LPN's is vocational in type—that is, it is directly related

to the practice of nursing. In 1969 there were about 1,250 such programs approved by the official state agencies. In the 1968–1969 academic year slightly over 49,000 students were admitted to these programs, which produced almost 35,000 graduates that year (National League for Nursing 1970).

The programs are conducted by a variety of institutions. In 1969 slightly over half of them (53 percent) were conducted by trade, technical, or vocational schools; 20 percent by hospitals; 16 percent by junior or community colleges; 2 percent by government agencies other than hospitals; 1 percent by senior colleges or universities; and 1 percent by independent agencies. All of the above programs (93 percent) were at the adult education (postsecondary) level. The remaining 7 percent were conducted by secondary schools for high school students (National League for Nursing 1969).

State regulation. In addition to meeting the general educational standards of the controlling institution, a program must meet the standards of the state agency which approves programs of practical nursing so that its students will be eligible to take the practical nursing licensing examination. Although in most states the school-approving agency is the state board of nursing (which regulates the practice of both professional and practical nursing) or the state board of practical nursing, a few states have transferred this function to the state department of education.

Within the framework of the state law pertaining to practical nursing education, the state board (or department of education) establishes criteria for approval and determines whether these criteria are being met through reports from the school and periodic site visits. These official criteria tend to be very specific, in most instances stating the minimum length of the curriculum, the minimum amount of time scheduled for learning experiences, the academic prerequisites, and the faculty qualifications. The criteria also may specify the minimum amount of time allotted to the various subject areas and to the different types of learning experiences.

Although the official requirements for school approval vary from state to state, practical nursing programs generally aim to prepare their graduates for practice in any locality in the United States. This nationwide focus is demonstrated by the fact that all states use the same licensing examination in practical nursing (although each state sets its own passing score). From the point of view of nursing service, this use of a common yardstick facilitates licensure by endorsement in states other than the one in which the original license was obtained, thus facilitating mobility of personnel; from the point of view of nursing education, the common yardstick establishes a common core of curriculum content.

Curriculum. Almost all postsecondary programs in practical nursing are 12 months in length, and the school day is usually seven or eight hours, with time allotted for study periods.

The curriculum covers two general areas: nursing and subject areas foundational to nursing. Included in the latter category is material in anatomy and physiology, pharmacology, microbiology, and nutrition and selected content from the behavioral sciences that will enable the student to understand the process of growth and development, the emotional problems of patients, the organization of community health services, and the ways in which LPN's fit into the health care team and interact with the other members of the team.

The nursing courses are directed toward providing students with the knowledge and skills (both technical and interpersonal) that they will need to care for patients suffering from medical and surgical conditions, mothers and infants, children, the aged, and the chronically ill. An increasing number of programs also provide preparation for functioning in psychiatric settings.

The nursing courses involve not only instruction in the classroom, such as lectures, demonstrations, and discussions, but also instruction and supervised practice in the clinical laboratory, followed by conferences about the patients. Frequently as much as two-thirds of the curriculum is allotted to clinical laboratory experiences—that is, in the wards of a hospital or hospitals and, occasionally, in the patient areas of nursing homes or other health care facilities.

Instruction in the preparation of patients' food and in housekeeping tasks was once frequently included in the curriculum; however, as the care of patients became more institutionalized and as nursing services in health care facilities were relieved of dietary and housekeeping responsibilities, these subjects disappeared from most curricula.

Students. Almost all programs in practical nursing are open to both men and women; how-

ever, as is the case in registered nursing, a large majority of practical nursing students are women.

In most instances the minimum age for admission to the program is 17. In many programs there is no maximum age limit, but others do establish a maximum at 50, 55, or 65. During the early 1940's, when practical nursing programs first began to attract a fairly large number of students, a sizable proportion of the students were over 35, the maximum age established for admission to most professional schools of nursing. However, the trend has been toward younger student bodies in practical nursing schools. Data collected on 33,176 students enrolled in practical nursing programs in 1965 showed that 35 percent of the students were under 20, 36 percent were between 20 and 34, and only 29 percent were over 35 (National League for Nursing . . . 1966).

With two or three exceptions, the official school-approving agency establishes the minimum academic requirements for admission to practical nursing programs in the state. These requirements range from completion of the eighth grade to graduation from high school or its equivalent. Although in 1969 the most frequent requirement was completion of the tenth grade (28 states), 16 states required completion of the 12th grade or its equivalent, and several other states indicated their intention of following the trend toward requiring high school graduation.

This trend is revealed even more markedly by statistics on student enrollments, since practical nursing schools often establish admission prerequisites higher than the official minimum and many students exceed a school's requirements. The proportion of high school graduates rose from 61 percent in 1959–1960 to 75 percent in 1964–1965, and in all likelihood the figure has since risen still further (National League for Nursing . . . 1966).

Whatever its minimum requirements, a practical nursing program usually selects for admission those applicants who show the greatest potential for success in a practical nursing career. The selection devices usually include a physical examination, a personal interview, the school record, a preentrance qualifying examination or examinations, and personal references.

Finances. Practical nursing education is financed from a variety of sources. Although free in some schools, tuition and other fees for the entire program may exceed $500 in others. Vocational education funds are available to the programs in trade, technical, or vocational schools, in junior or senior colleges, and in universities (all of which are publicly supported). Financial assistance is also available to some of these programs under the Manpower Development and Training Act. Programs operated by hospitals usually receive a large proportion of their support from the controlling institution. Some programs also receive philanthropic donations.

Loans and scholarships are often available to students who cannot meet the full cost of tuition. In addition to funds available to individual schools, both the National Association for Practical Nurse Education and Service (NAPNES) and the National Federation of Licensed Practical Nurses (NFLPN) have scholarship programs, and students accepted or enrolled in programs accredited by agencies officially recognized by the U.S. Office of Education can secure loans guaranteed by the federal government.

Upgrading programs. The programs that have been described are designed for students who can attend school full-time for a year. Because of the shortage of LPN's, various programs have been developed in which persons who cannot spare the time for such full-time study are provided with opportunities to prepare themselves as LPN's.

Some of these programs have been specifically designed for nurses' aides and are so arranged that there is no unnecessary repetition of learning experiences. In California the law provides for shortened "equivalency" programs in which three or more years of experience as a nurse's aide can be substituted for some of the clinical learning experiences provided in a formal program (Wood 1969). In New York City an experimental 14-month, 25-hour-a-week program has been developed in which municipal hospital employees with one year's experience as nurses' aides can be prepared in practical nursing and continue working 20 hours a week at their regular jobs (Engel 1970).

The application of the concept of progressive education to programs for upgrading aides to LPN's was endorsed by NAPNES in 1968. Undoubtedly, more projects of this kind will be undertaken in the future.

Continuing education. Because of the rapid advances in the health sciences, it is imperative that opportunities for continuing education be made available to LPN's as well as to members of the other health disciplines.

Several groups of LPN's have special educational needs. Among these groups are the LPN's who were in practice when the licensing law in their state was passed and who were therefore licensed by waiver under a grandfather clause. To help these LPN's develop their nursing knowledge and skills to the level of the graduates of approved programs, NAPNES developed two courses (one of 64 hours and another of 240 hours) and arranged for them to be taught during the 1940's and 1950's by qualified instructors throughout the United States. More recently, because federal regulations require that only registered nurses (RN's) or LPN's graduated from approved schools serve as charge nurses in extended care facilities and nursing homes dealing with Medicare or Medicaid patients, specially designed state-approved programs have been developed for "waivered" LPN's in these positions (Picucci 1969).

LPN's whose preparation in practical nursing antedated the period when drug administration was emphasized in practical nursing curricula are also in need of supplementary education. Fairly extensive pharmacology courses for these LPN's are being offered by some hospitals and some state LPN associations. A guide for the development and teaching of such courses was published by NAPNES in 1967 (*Practical Nursing Education*, Pamphlet No. 4).

A third group needing special educational opportunities consists of LPN's who wish to function beyond the role for which they have been prepared in the basic program and the usual type of staff development program. Some of these LPN's wish to specialize in a clinical area, such as nursing in cardiac care units or premature nurseries; for this group, courses are offered by various hospitals. Other LPN's are able to climb the career ladder by preparing for RN practice and licensure in educational programs which have been specially designed to exclude the learning experiences in areas they have already mastered ("A Career Ladder . . ." 1968; Mannion 1969).

An even more recent trend is the development of two-year curricula in nursing. The student who completes the first year may take the practical nursing licensing examination or may continue for another year and be eligible for the licensing examination in professional nursing.

Organizations. Three national organizations conduct activities related to basic or continuing practical nursing education.

The National Association for Practical Nurse Education and Service, Inc., located in New York City, was founded in 1941. Membership, which includes LPN's, practical nursing students, practical nursing educators, other RN's, physicians, hospital and nursing home administrators, and interested lay persons, was about 30,000 in 1970. Educational activities are directed both toward the development and improvement of basic practical nursing education and toward the promotion of and provision of continuing education opportunities for LPN's. These activities include an accrediting service, established in 1945, for both basic and postbasic educational programs in practical nursing; the service is officially recognized by the U.S. commissioner of education. Activities also include a consultation service for practical nursing programs; publication, since 1951, of the *Journal of Practical Nursing*; and publication of materials to assist practical nursing educators in such areas as curriculum development, instructional methods, and preparation of tests. Seminars and conferences for both educators and LPN's are offered; recruitment materials for prospective practical nursing students (including an annual directory of practical nursing programs) and a scholarship program for practical nursing students and for graduate LPN's are also available.

The National Federation of Licensed Practical Nurses, Inc., located in New York City, was founded in 1949. Membership, which is limited to LPN's, was about 30,000 in 1970. Educational activities, directed toward the continuing education of LPN's, include seminars for LPN's and the publication, since 1968, of the magazine *The Bedside Nurse*. A scholarship program is also maintained for practical nursing students.

The National League for Nursing, Inc., is also located in New York City. Individual membership is multidisciplinary; also included are agency members. The NLN's Department of Practical Nursing Programs, established in 1961, was reorganized as the Council of Practical Nursing Programs in 1967. Educational activities, directed toward the improvement of basic practical nursing programs, include an accreditation service, established in 1965 and officially recognized by the U.S. commissioner of education; a consultation service for practical nursing programs; the collection and publication of statistical data on practical nursing education; a testing service for practical nursing programs; conferences for prac-

tical nursing educators; and recruitment materials for prospective practical nursing students.

In addition to these national organizations, there is at least one association of LPN's in every state. Some of these associations are affiliated with NAPNES, some are affiliated with NFLPN, and some have no national affiliation. These state associations provide for the continuing education of their members through seminars and workshops, and some provide courses in such areas as drug administration and psychology.

Historical background. Practical nursing education has changed a great deal since 1940. At that time there were only a few recognized training programs in practical nursing, and a large majority of the 100,000 practical nurses who were "helping out" in hospitals and patients' homes had no formal preparation in nursing.

In the 1940's, however, there was a real upsurge in the number of programs preparing "trained practical nurses," and by 1950 there were about 150 recognized programs and almost 3,000 graduates. By 1960 the number of these programs had increased to about 700 and the graduations to 16,000, and in 1968–1969 the programs numbered 1,250 and the graduations about 35,000 (U.S. Public Health Service . . . 1963; National League for Nursing 1970).

This record of growth far exceeds that of professional nursing programs, which in the ten-year period ending in 1968–1969 increased their number of annual graduations by less than 40 percent, while the number of graduations from practical nursing programs more than doubled. In 1968–1969 graduations from practical nursing programs accounted for 45 percent of all graduations preparing for beginning practice in nursing (National League for Nursing 1970).

During the 1940's and 1950's great strides were made in securing legislation for the licensure of practical nurses. By 1960 such legislation had been enacted in all states, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam.

Much of this progress can be attributed to the efforts of NAPNES, which was founded to promote the sound development of practical nursing education for both students in basic programs and LPN's. The critical shortage of nurses during World War II also contributed to the movement. Growth was further stimulated by the availability of federal and state vocational education funds for practical nursing programs conducted under the auspices of public education. Also, during the 1940's and 1950's the Kress Foundation and the W. K. Kellogg Foundation provided the finances for establishing schools of practical nursing in several states.

By far the greatest impetus to the growth of the movement, however, was the LPN's themselves. They quickly proved their competence in a variety of settings, and, as their value became recognized, the scope of their functions expanded. Whereas in the 1940's and early 1950's, LPN's were largely limited to such activities as bathing and feeding patients, taking and recording vital signs, and maintaining a comfortable environment, since the mid-1950's LPN's have been entrusted with such functions as administering oral and hypodermic medications, observing and reporting on the conditions of patients whose state is likely to undergo rapid change, and assisting in the teaching of both patients and such auxiliary nursing personnel as orderlies and nurses' aides. Not only has this increase in functions resulted in changes in the curriculum content of basic programs, but it also has emphasized the importance of programs directed toward the continuing education of LPN's.

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3. CONTINUING EDUCATION

Education in nursing begins with the formal basic program and continues throughout the nurse's professional career. The purpose of continuing education is to help the practitioner keep individual nursing skills and competencies current with the growth of knowledge and the expansion of technologies in the health sciences, thus bringing about change within the patient-care setting.

The practice of nursing has been affected by the rapid changes in medical science, the new technologies, and social legislation. Responsibilities which formerly were considered the doctors' have been delegated to nurses without adequate educational preparation for performing these functions. Medicaid and Medicare have added to the problems of already overburdened community and hospital nursing staffs. The shortage of professional nurses has necessitated a proliferation of health workers to assist the nurses in giving patient care. Consequently, registered nurses find themselves supervising and teaching other nurses, practical nurses, nursing assistants, clerks, and aides without having had the necessary educational preparation.

In 1967, 640,000 registered nurses were employed in nursing, and of that number, 556,400, or 85 percent, held diplomas or associate degrees —the minimum professional standard for technical practice (U.S. Public Health Service . . . 1967). It is apparent that the diversity of learning needs is overwhelming, and the problems are too great to be solved through in-service education alone.

The milieu in which nursing is practiced is a maze of new and conflicting developments, and professional satisfaction is often sacrificed to the overwhelming necessity of merely keeping pace with the times. The gap between the explosion of knowledge in health care and the delivery of improved health services may be closed by sustained or ongoing education. Welter (1964) defines this process as a method of communication to meet the basic intellectual needs of scholars as they function in the community.

Professional status. The question has been raised as to whether or not continuing education has yet reached professional status. Blakely and Lappin state that "as a practice, continuing education is spreading. As a movement, it is quickening. As an idea, it is catching on. It is an idea whose time has come—almost but not quite" (1970, p. 77). The first course in adult education was developed in 1920 at Columbia University, and the first degree was granted in 1935 at Teachers College, Columbia University. Today there are over 70 institutions in the United States with continuing education programs and 20 with graduate programs offering a doctorate in continuing education. Programs, however, are still fragmented, and ideas as to how adults learn are borrowed from other disciplines, such as psychology, sociology, and anthropology. There has been comparatively little basic research and what has been done has been based on the English-speaking countries.

Concepts of learning. Eugene I. Johnson reported at the First National Conference for Directors of Continuing Education in Nursing at Williamsburg, Va., in 1969 that although the adult can learn, how well he will learn, what he will learn, and how much he retains depend on many factors: the amount of previous education the individual has had, his attitude toward the institution and his job, socioeconomic factors, the physical setting, the physical condition of the individual, the nature of the task to be learned, and the anxieties and tensions the individual experiences. Analysis of IQ test results indicates that there is no loss in learning power until senility and that nutritional and vitamin deficiencies affect learning. Adults learn better but more slowly than children and must see the relevance of their learning to their performance.

According to Bergevin (1967), there are two major classifications of adult education: systematically organized programs and random experimental learning. Systematically organized programs lend themselves to purposeful learning and consist of activities conducted in schools of various kinds. The student may be engaged in independent study or in individual activity in a group context. Random experimental learning is unintentional; it may be acquired outside the classroom and without the guidance of a professional educator. These random learning experiences are unorganized and may come about through television, newspapers, conversations, and recreation. Whatever the nature of the experience may be, the desired goal is that it will aid the individual in developing solutions to problems in his practice setting.

It is important to consider both kinds of education in planning programs for nurses because nursing is an applied science. Whether the program is of a formal academic nature or is a short-term continuing education course, the student is engaged in the process of discovering ways and means to improve care of patients.

Malcolm Knowles presented his theory of adult learning, which he called andragogy, at the 1969 Williamsburg conference. The word comes from the Greek *aner,* adult, and means the act and science of teaching adults. He differentiated the teaching of adults from the teaching of children, pedagogy, with three concepts. The self-concept in pedagogy is one of dependency; in andragogy it is one of self-direction and individualization. Learning needs for youths are subject-centered, and the application of learning is not seen until a later date. For adults the learning needs are problem-centered, programs must be individualized, and the application of program content must be immediate. The child's readiness to learn depends on his biological development and the social pressures affecting him, while for the adult readiness results from his social roles.

Program development. Knowles' concepts of andragogy provide the techniques for planning adult nursing education programs. The graduate nursing student is a mature, self-directing individual who knows the needs of clinical practice and should participate in designing and planning the curriculum. A problem-solving approach should be used to find solutions for immediate application. On the ward, in the clinic, or in the intensive care unit, there are opportunities to use problem-solving methods in meeting the patients' needs. There is the opportunity for immediate assessment of the care given. The nurse becomes aware of her areas of weakness or of the gaps in her knowledge in her everyday practice of new therapies and changing technologies and in her involvement with ongoing research. In practice the individual is able to assess her level of competency. Motivation for continued learning is stimulated by this process.

Research is needed to find better ways of identifying the continuing learners in nursing so that appropriate programs may be devised.

Student problems and needs. The University of Wisconsin conducted a study (Cooper & Hornback 1966) of 314 participants in institutes and workshops and identified a number of characteristics. The study suggested a need for examining ways of learning and for determining which nurses are not attending continuing education programs. The traditional methods may not be practical for nurses with heavy home and family responsibilities; their needs probably are being met only through in-service education in the employing agency. Planning meaningful continuing education programs in nursing requires an understanding of current nursing practice and a knowledge of the nature of the learner. The resources of higher education for in-service education have not been explored or utilized.

The nurse should be involved in formulating the objectives, planning the program, and designing the content of the course so that the knowledge acquired will have direct application to the practice setting. Upon completion of the program, the nurse may make a change in the practice setting, or may receive or may take a leave of absence for formal study toward a degree.

Course design. During an informal program —a short-term course or a workshop—students will want to know how well they are doing and what their deficiencies are. At the beginning of the course the student may be asked to indicate her expectations and then to evaluate herself along the way. The use of a pretest and a follow-up test is one method of evaluation, and rating scales and questionnaires are others. At the close of the program the student will analyze the changes experienced and take time for a reassessment of accomplishments.

No basic program of education could possibly