

A Survey of Nurse Associate Training Programs

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EXPANSION OF THE ROLE of the nurse has been stimulated by the demonstration that many medical responsibilities can be successfully assumed by persons having less than the comprehensive training of physicians. This role expansion is viewed as a promising means of both efficiently increasing the supply of health services and improving their distribution. To prepare nurses for such a role, many training programs have been established—particularly since 1970. These programs train nurses to provide some of the services which lie within what previously had been considered to be the exclusive domain of the licensed physician.

In referring to the training programs we surveyed, we use the generic term 'nurse associate.' Titles of the graduates of these programs included pediatric nurse practitioner, nurse midwife, family nurse practitioner-associate, medical nurse practitioner, adult nurse associate, school nurse practitioner, primary care nurse, certified nurse practitioner, family health practitioner, ophthalmic assistant-technician, health nurse clinician, and nurse specialist.

To obtain information about the nurse associate training programs, InterStudy—a private, nonprofit, health services research organization—undertook a comprehensive survey for the Bureau of Health Resources, National Institutes of Health, in 1972. Specifically, we

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sought to identify the programs and affiliated institutions offering clinical or didactic training and to provide data on degrees or credentials granted; entrance requirements; curriculum; tasks that graduates are trained to perform; financial costs; student employment opportunities; sources of financial support; numbers of applicants, students enrolled, and graduates; and certain legal and licensure issues.

In this paper, we describe the salient characteristics of the training programs surveyed and important trends. More complete summaries and detailed information on each program have been prepared by the Bureau of Health Resources.

Survey Design

The survey was intended to cover all nurse associate programs in operation (students enrolled) or being planned in the United States and its territories as of February 1973, the cutoff date for accepting responses to the survey questionnaire. Programs potentially suitable for inclusion were identified from records of the American Nurses Association, the American Academy of Pediatrics, the Division of Manpower Intelligence of NIH, several regional medical programs, and various newsletters and journals. In addition, each program director contacted was asked to identify other programs in the planning stage in the same State.

To be selected for the survey a program had to meet two criteria:

1. The program had to offer or plan to offer formal training designed to expand the clinical skills of professional nurses. Programs that offered advanced training aimed at improving only administrative, teaching, or supervisory skills were not included.
2. Each training program had to offer a separate curriculum for each type of nurse associate. In a few instances, several programs which met this criterion were located at a single training site. However, if a program offered a basic core curriculum and then

offered graduates a choice of limited additional clinical training in a specialty, it was treated as a single program.

A total of 127 programs initially appeared to meet these criteria. The survey questionnaire, including an explanation of the purpose of the survey and other documents, was mailed to the directors of these programs in November 1972. About two-thirds of those responding were asked by mail and telephone 3 and 6 weeks later to clarify inconsistencies or to correct significant omissions in their replies.

Of the 127 programs, 24 were ineligible for inclusion, 13 had been discontinued, and 11 were not independent—they were components of other nurse associate programs.

These deletions left 103 nurse associate programs from which we might have expected a response. Of these, 69 returned completed questionnaires—a response rate of 67 percent. In a survey such as this it is important to learn the reason for nonresponse and to consider the potential biases nonrespondents introduce. We therefore obtained information by telephone from 17 of the 34 nonrespondents to determine the reasons for not responding, and we learned that another 8 programs were ineligible because they had been discontinued or were components of other programs. Extrapolating this ratio (8 : 17) to all 34 nonrespondents, we estimated that 16 of these were ineligible for the survey. A more accurate estimate of the response rate would therefore be 79 percent.

The information obtained by telephone from the 17 nonrespondents indicated that, for the most part, these programs did not differ from the responding programs in ways that would seriously bias our findings. In the presentation of survey results that follows, we point out the few instances in which the accuracy of our findings may be influenced by the failure of some programs to answer our questionnaire.

Of the 69 programs for which we obtained data, 60 were in operation and 9 were being planned. This report deals primarily with the 60 operating programs, although supplementary data on the programs in the planning stage are given in a few instances. The 60 operating programs included 35 for pediatric nurse practitioners, 4 for nurse midwives, and 21 for other types of nurse associates. Except for one ophthalmic assistant-technician program, all the programs in the "other" category were designed to train primary care nurses. Seven programs were for family nurse practitioner-associates; two each for medical nurse practitioners, adult nurse associates, school nurse practitioners, and one each for family health practitioners, primary care nurses, and certified nurse practitioners; health nurse clinicians, and obstetrics-gynecology nurse specialists.

Program Characteristics

Data in this section provide an overview of the general

characteristics of the nurse associate training programs. Prospective students may be particularly interested in our findings dealing with settings in which programs are located, entrance requirements, length of training, and credentials awarded.

Program sponsorship. The types of institutions most frequently mentioned as sponsors of nurse associate training were as follows:

<i>Sponsor</i>	<i>Number of programs</i>	<i>Percent of total</i>
University or 4-year college -----	34	57
Hospital or medical school hospital ---	12	20
Medical school -----	9	15
Outpatient medical center or clinic ----	5	8
Public Health Service institution -----	3	5

The percentages in the tabulation add to more than 100 because several of the programs are offered jointly by more than one institution. However, universities or 4-year colleges are sole sponsors of the 34 (57 percent) programs ascribed to them. Other institutions mentioned less frequently than those listed included community colleges, military institutions, State health departments, and nonprofit corporations.

Entrance requirements. As shown in table 1, all programs require professional licensure for entrance. In addition, 80 percent of the programs require previous nursing experience, and 57 percent require that students have an employment commitment before entry. One or two of the 60 programs also set one or more of the following requirements: age limit, previous military service, and master's degree.

Three of the 60 programs in operation reported offering equivalency examinations or challenge tests to enable students to meet entrance requirements. Eleven programs admit students with advanced standing if the students have completed training requirements at another institution.

Length of training. Fifty-four (90 percent) of all the programs require 12 months of training or less (table 2). The largest number, 26 (43 percent), require 4 to 6 months.

Credentials awarded. The majority of the programs (47) award graduates a certificate only; 1 gives a certificate plus a bachelor's degree, and 2 give a certificate plus a master's degree. A master's degree alone is awarded by four programs, and a diploma alone, by two. One program does not give any credential, and for the remaining three, this question was not answered.

Characteristics of trainees and graduates. More than 99 percent of the students enrolled in nurse associate training programs in 1971 and 1972 and all graduates to date are women. The number of students in minority groups (American Indians, blacks, Chicanos, and

orientals) increased from 7 percent in 1970 to 13 percent in 1972, and 9 percent of all graduates are in these groups.

Age of programs. Nurse associate training programs are almost invariably young. Fifty-four (90 percent) of the programs in operation began instruction in 1968 or later, and more than half began during 1971 (14)

or 1972 (23). Among the programs in the survey, the first to begin was the nurse-midwife program at the State University of New York, which was established in 1931. The nurse midwife and family nursing program at the Frontier Nursing Service in Kentucky was established in 1939. All nine of the programs still being planned at the time of the survey were to start instruction in 1973.

Table 1. Entrance requirements

Requirement	Pediatric nurse practitioner (N=35)		Nurse midwife (N=4)		Other programs (N=21)		All programs (N=60)	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Professional licensure (RN)	35	100	4	100	21	100	60	100
Previous nursing experience	29	83	4	100	15	71	48	80
Employment commitment	18	51	1	25	15	71	34	57
Restricted to a particular institution's employees	6	17	0	...	2	10	8	13
State residency	3	9	0	...	3	14	6	10

NOTE: Percentages add to more than 100 because programs could have more than one type of entrance requirement.

Table 2. Length of program

Length of program (months)	Pediatric nurse practitioner (N=35)		Nurse midwife (N=4)		Other programs (N=21)		All programs (N=60)	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1-3	2	6	0	...	4	19	6	10
4-6	20	57	0	...	6	29	26	43
7-9	3	9	2	50	3	14	8	13
10-12	7	20	2	50	5	24	14	23
13-15	1	3	0	...	0	..	1	2
16-18	2	6	0	...	2	10	4	7
Not stated	0	..	0	...	1	5	1	2

Table 3. Type of practice of physicians with whom graduates are expected to work

Type of practice	Pediatric nurse practitioner (N=35)		Nurse midwife (N=4)		Other (N=21)		All programs (N=60)	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Pediatrics	35	100	2	50	83	38	45	75
General practice	16	46	1	25	13	62	30	50
Family practice	6	17	0	...	5	24	11	18
Internal medicine	2	8	0	...	11	52	13	22
Obstetrics-gynecology	2	8	4	100	7	33	13	22
Other specialties ¹	3	9	0	...	9	43	12	20

¹ Allergy, cardiovascular disease, general surgery, pediatric allergy, pediatric cardiology, psychiatry, and pulmonary diseases.

NOTE: Percentages do not add to 100 because more than one type of practice could be indicated.

Table 4. Tasks graduates are trained to perform

Tasks	Pediatric nurse practitioner (N=35)		Nurse midwife (N=4)		Other programs (N=21)		All programs (N=60)	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Take medical histories	30	86	4	100	18	86	52	87
Administer hearing and vision tests	31	89	0	...	15	71	46	77
Perform physical examination on adults	1	3	2	50	18	86	21	35
Perform physical examination on children	34	97	3	75	11	52	48	80
Perform physical examination on pregnant women	6	17	4	100	10	48	20	33
Perform pelvic examination	5	14	4	100	18	86	27	45
Order tests	24	69	4	100	17	81	45	75
Patient instruction and counseling	30	86	4	100	21	100	55	92
Suture wounds	4	11	2	50	6	29	12	20
Perform irrigations	4	11	0	...	7	33	11	18
Make home visits	26	74	3	75	13	62	42	70
Order medication (standing order)	24	69	3	75	13	62	40	67
Monitor patients	13	37	3	75	13	62	29	48
Disease management	27	77	0	...	15	71	42	70

Work Expectations

Program directors were asked to answer questions about the work they expect graduates of the programs to perform: that is, to indicate the type, or types, of practice of physicians with whom graduates are expected to work, the tasks and activities students are trained to perform, and the settings in which they are expected to carry out their duties.

Types of practice. As shown in table 3, three-fourths of the programs were training nurses to work in pediatrics, but nearly half of the pediatric programs and more than half of the "other" category indicated general practice as an area in which graduates might work.

Tasks. The list of tasks and activities contained in the survey questionnaire and the numbers and percentages of programs for each are given in table 4. These data reveal that nurse associates are trained to perform a relatively wide range of tasks requiring considerable independent judgment and action.

Work settings. Graduates are most frequently expected to work in clinics or other ambulatory care facilities or in private offices (table 5). Hospitals, the traditional work setting for nurses, fall in the middle of the distribution. Note that eight of the nine programs being planned expected to train students to work in a rural or remote area.

Financial Support

The sources of funds which the nurse associate training programs in operation used during various stages of

their development were as follows (some programs received funds from more than one source, and for one program this question was not answered) :

Source	Number of programs		
	Program planning	Initiating training	Program operation
Sponsoring institution	23	24	21
Local government	2	3	3
State government	4	7	6
Federal Government:			
National Institutes of Health	15	21	23
Office of Education	2	3	4
Department of Defense	1	1	1
Department of Labor	2	1	0
Other	17	15	17
Private source	12	13	10
Other source	2	1	1

Table 5. Settings in which graduates are expected to work

Work setting	Operating programs (N=60)		Planned programs (N=9)	
	Number	Percent	Number	Percent
Clinic or ambulatory care facility	55	92	8	89
Private office	46	77	7	78
Rural or remote area	37	62	8	89
Hospital	23	38	6	67
Emergency room	15	25	4	44
Military	7	12	2	22
Veterans Administration	6	10	1	11
Rehabilitation	4	7	2	22
Other	18	30	3	33

NOTE: Percentages add to more than 100 because more than one type of setting could be indicated.

Predictably, most of the programs had to rely on support from their own institutions. However, note the substantial contribution of the National Institutes of Health. Other survey data (not tabulated in the preceding table) indicate that funds from the institution of which the program is part, as well as National Institutes of Health funds, are the types most frequently used to support practicum experiences and didactic and laboratory instruction. We also learned that the National Institutes of Health have been the major outside source of support for student stipends and tuition. (No attempt was made to determine actual dollar amounts contributed by each source of funds.)

Program Volume

Information concerning the number of applications the nurse associate training programs received, the number of students enrolled, and the number of graduates was obtained for each year from 1970 through 1972 and for all years combined before 1970.

Applications. The following numbers of applications were received for the years specified:

Year	Number of programs reporting	Number of applications	Median number per program
1972 -----	59	3,112	24
1971 -----	34	1,004	20
1970 -----	19	523	18
Before 1970 -----	9	498	—

It appears from these data that demand for training has accelerated in recent years. It is not possible, however, to make a definitive statement about the capacity of the programs in relation to demand as indicated by the number of applications received because many prospective students may have applied to more than one program. It is of interest, nevertheless, that the number of students who can be accommodated in existing programs is somewhat fewer than the number of applications received. Data on yearly capacities of the programs are summarized as follows:

Yearly capacity	Number of programs (N=60)
1- 5 -----	2
6-10 -----	10
11-15 -----	11
16-20 -----	13
21-25 -----	5
26-30 -----	0
31-35 -----	6
More than 35 -----	8
Not reported -----	5

The median yearly program capacity was 16 students, whereas the median number of applications per program in 1972 was 24.

Among the programs for which data on applications were reported, 5 accounted for 1,610 or one-half of the 3,112 applications received in 1972. These were the nurse midwife program, State University of New York, 800; the pediatric nurse associate program, Cornell

University, 300; the family nurse practitioner program, University of California at Davis, 180; the pediatric nurse practitioner program, University of Colorado, 180; and the pediatric nurse associate program, University of Connecticut, 150. The programs of the State University of New York and Cornell offer relatively liberal financial assistance to trainees.

Enrollments. The number of enrollees and number of programs reporting were as follows:

Year	Number of programs reporting	Number of enrollees	Median number per program
1972 -----	60	854	12
1971 -----	36	390	9
1970 -----	23	225	7
Before 1970 -----	11	509	—

The number of students enrolled increased 119 percent from 1971 to 1972 and 73 percent from 1970 to 1971. Note also that both the number of programs and the median number of students per program increased greatly from 1970 to 1972.

Graduates. The numbers of nurse associate graduates classified by type of program are shown in table 6. The four nurse midwife programs for which we received data accounted for nearly half of all graduates. If we consider the age of some of these programs, it is not surprising that more than half of all their graduates at the time of our survey were graduated before 1970. The nurse midwife program of the State University of New York, started in 1931, graduated 476 nurses before 1970, and the midwifery training program, established in 1954 at the University District Hospital in Caparra Heights, Puerto Rico, had 223 graduates before 1970.

Employment Opportunities

Program directors were asked for their impression of current employment opportunities for their graduates, using the following rating scale:

Excellent: Virtually all students find desirable jobs upon graduation; there are not enough graduates to fill vacancies. *Good:* Nearly all students find jobs almost immediately following or shortly after graduation. *Average:* Some students experience considerable difficulty in finding suitable jobs upon graduation. *Fair:* A substantial number of students are still unable to find jobs several months after graduation. *Poor:* Most graduates have difficulty finding jobs. Some are forced to seek jobs unrelated to their training.

Of 50 programs with graduates by the time of the survey, 36 or 72 percent considered employment opportunities excellent, and 12 or 24 percent considered them good; only 2 rated them average or fair, and none rated them poor.

That nurse associates enjoy a favorable labor market is further supported by the following percentages of 1971 graduates with employment commitments at graduation.

Table 6. Numbers of graduates

Year	Pediatric nurse practitioner			Nurse midwife			Other programs			All programs		
	Number programs reporting	Number graduates	Mean number per program	Number programs reporting	Number graduates	Mean number per program	Number programs reporting	Number graduates	Mean number per program	Number programs reporting	Number graduates	Mean number per program
1972	28	285	10.2	4	63	15.8	17	217	12.8	49	565	11.5
1971	14	152	10.9	4	44	11.0	7	50	7.1	25	246	9.8
1970	9	100	11.1	4	49	12.3	2	14	7.0	15	163	10.9
Before 1970	5	129	(¹)	3	785	(¹)	1	87	(¹)	9	1,001	(¹)
Total	...	666	941	368	1,975	...

¹ Total number of graduates over several years.

Percent of graduates with employment commitments	Number of programs	Percent of total ¹	Cumulative percent
100	30	63	63
80-99	12	25	88
60-79	3	6	94
40-59	3	6	100

¹ Based on 48 programs with graduates for which data were supplied.

Thirty-nine or 65 percent of the programs answered this question as follows:

Estimated cost (dollars)	Number of programs
1,500 or less	5
1,501-3,000	12
3,001-4,500	8
4,501-6,000	9
6,001-7,500	1
7,501-9,000	3
More than 9,000	1

Training Costs

To gather information on costs of training nurse associates, the survey questionnaire stated:

Please give an estimate of what it costs to train one student in your program. If possible, include all costs in the estimate (direct costs of salaries, fringe benefits, usable supplies, equipment, travel of staff, space rental, space lease, tuition at institution if part of the didactic training is subcontracted, and indirect costs. Do not include student scholarships/stipends, loans, or salaries.

It is apparent from these data that the cost estimates provided by the program directors vary widely indeed, but we do not know whether this dispersion represents actual differences in training expenditures or whether it might be more appropriately attributed to use of different methods to figure total program costs. Nevertheless, it is interesting that 34 or 88 percent of the programs for which cost estimates were reported have an average cost per trainee of \$6,000 or less. Mean cost per trainee is \$4,078, and the median is \$3,536.

SYNOPSIS

DOBMEYER, THOMAS W. (Walker and Associates, Inc., Minneapolis), LOCKWOOD, LAURIE A., and LOWIN, AARON: *A survey of nurse associate training programs. Public Health Reports, Vol. 91, March-April 1976, pp. 127-132.*

A survey of nurse associate training programs in the United States and its territories was made in 1972. Data were obtained by questionnaires mailed to program directors, with mail and telephone followup, for 60 operating programs and 9 programs being planned. The response rate was 79 percent of an estimated 87 programs in existence.

The survey data indicated that the "typical" nurse associate training program lasts 4 to 6 months, began instruction in 1971, and is sponsored solely by a university or a 4-year college. The most frequently mentioned sources of financial support are the sponsoring institutions or the National Institutes of Health, or both. The typical program receives about 24 trainee applications a year and can accommodate 16 new students annually; 12 students graduate each year at a cost of about \$3,536 per graduate.

Most students in nurse associate training are white women who have either a diploma or bachelor's nurs-

ing degree. In addition to a substantial amount of nursing experience, they also are likely to have a guarantee of employment on graduation. Nurse associates are expected to exercise a significant amount of independent judgment in tasks performed, and they are likely to work with primary care physicians in a wide range of settings, including rural and remote areas. They are likely to perform a variety of tasks and activities, including giving physical examinations, ordering tests and medications (under standing order), instructing, counseling, and monitoring patients, and management of disease.