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ABSTRACT

Presented are an overview of Physicians' Assistant programs in the United States and a study of their applicability to the Washington metropolitan area. The national overview includes information gathered from fourteen respondents to questionnaires sent to 30 physician assistant programs currently in operational or planning stages. Aspects discussed from these data and from a review of the literature include the existing need, recruiting, placement, employment, mobility, legal aspects, admission requirements, evaluation, and task analysis. In exploring the applicability of the physician's assistant program to the metropolitan Washington areas the existing need is discussed in terms of a health care crisis. Statistical tables provide data on various mortality rates of the District of Columbia and other cities, physician distribution, and projection of paramedical personnel needs in Washington area hospitals. Other topics discussed regarding the program in the Washington area include the tasks of the physician's assistant, recruits, education and training, patient acceptance, and legal aspects. Recommendations and conclusions are drawn. The appendix presents a summary of the data received from the responding physicians' assistant program. A 44-item list of references in included. (SC)

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Metropolitan Washington Regional Medical Program
2007 Eye Street, N.W.
Washington, D. C. 20006

Otis L. Anderson, M.D., Director
Physician Continuing Education

S.H.N. Zumbrun, M.Ed., Director
Allied Health Manpower Development

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An overview of Physician's Assistant programs in the United States and a study of their applicability to the Metropolitan Washington Area.

Dorothy E. Mizgerd
Research and Development Specialist

Pamela J. Newton
Editorial Associate

Metropolitan Washington Regional Medical Program
2001 Eye Street, N. W.
Washington, D.C. 20006

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INTRODUCTION

Recently, the Washington Hospital Center submitted a proposal requesting support for expanding its Cardiovascular Technician Program into a Physician's Assistant Program. The proposal has raised many questions about the proper role of the physician's assistant. The purpose of this study is to clarify the issue and to make recommendations about how the application for financial support can be revised.

As presently worded, the Cardiovascular Technician - Physician's Assistant proposal is too vague. It states that the training would be broad enough to produce a general kind of physician assistant; however, it does not describe the function of the physician assistant or the training that would be necessary to produce such a person. In this respect the Catagorical Review Committee of the Metropolitan Washington Regional Medical Program requested in a letter dated October 30, 1969 from Arthur E. Wentz, Program Coordinator to James Bacos, Chief, Cardiology Department, Washington Hospital Center that the proposal be revised to clarify the following points.

1. What will be the degree of continuing need in this region for trained cardiovascular technicians who will find suitable employment?

2. What will be the degree of continuing need in this region of technicians acting as physician's assistants?

3. What educational institutions in the region might undertake this training as a permanent addition to the courses offered? What curricular content would be most appropriate? What career ladder incentives can be devised in conjunction with such institutions?

4. What other community agencies, recognizing the needs for paramedical training will cooperate in such a venture?

After reviewing the available literature, attending conferences, and meeting with area cardiologists, we feel that the CVT Program could be expanded to a Physician's Assistant Program. The graduates of the program would

function as generalists, and their responsibilities would be increased. They would enjoy greater professional status and mobility, while at the same time providing more assistance to the busy physicians of the area.

The following study is in two parts. The first part surveys several physician assistant programs in the United States, showing how they have successfully responded to the need for a new kind of health worker.

The second part attempts to determine the need in the metropolitan area for a physician assistant and suggests developing a pilot experimental physician's assistant program.

PART I - PHYSICIAN'S ASSISTANT - A NATIONAL OVERVIEW

Approximately thirty physician assistant programs are currently in the operational or planning stages in the United States. Fourteen who answered our request for information are reviewed in this study. The following chart gives the titles of these programs, the facilities which sponsor them, and the time required to complete them.

CHART A*

FACILITIES	PROGRAM	LENGTH OF TRAINING
Duke University Medical Center [1,2]	Physician Assistant	2 years
University of Maine [3]	Pediatric Nurse Associate	4 months
Pacific Medical Center, City College, San Francisco [4]	Orthopaedic Assistant	2 years
University of Colorado Medical Center [5]	Nurse Practitioner	4 months
University of Alabama [6]	Surgeon's Assistant	2 years
Wake Forest University [7]	Pediatric Assistant	2 years
University of Washington [8,9,10]	Medex	1 year
Emory University [11]	Anesthesia Assistant	2 years
Grady Memorial Hospital Atlanta, Georgia [12]	Medical Specialty Assistant	2 years
University of Pittsburgh [13,14]	Emergency Medical Technician	1 year
University of Colorado [15]	Child Health Associate	3 years
University of Kentucky [16,17]	Clinical Associate	2 years
Cleveland Clinic Hospital Cuyahoga Community College [18]	Clinical Corpsman	1 year
Brooklyn-Cumberland Medical Center and Long Island Univ. [19]	Medical Services Associate	2 years

*Refer to Appendix for more information on each program.

Names of additional programs and training institutions are listed on p. 16-17 of this report. Many of these programs are not yet operational.

The variety of titles - from the broad Physician Assistant to the specialized Orthopaedic Assistant - reflects the diversity of functions this person will assume. However, most of the literature searched deals with specialty areas.

The following analysis of these 14 programs makes use of literature provided by sponsoring institutions, as well as Regional Medical Program reports of the 1970 International Conference on Physician Support Personnel[20] and the 1970 Regional Medical Program National Allied Health Conference.[21]

THE EXISTING NEED

Experimental programs to produce a new kind of health personnel arose from a universal acknowledgement of a severe shortage of physicians and the apparent inability of the present system to deliver quality health care to all socio-economic levels. According to the National Center for Health Statistics, in 1967 there were 158 physicians per 100,000 population in the United States.[21a] This figure shows an inadequate supply of physicians, but it does not indicate the true extent of the shortage. As pointed out by Mike Michaelson in an article in Today's Health, such statistics do not take into account the very uneven distribution of physicians throughout the population.[22] The South Carolina Hospital Association's Health Care Headlines notes that the physician shortage is most serious when viewed in terms of distribution by geographic area and by type of practice.[23]

CHART B [23]

Geographic Distribution of M.D.'s
1967

Classification	U.S. - Rate per 100,000 pop.
Metropolitan	205.3
Urban	153.0
Rural - adjacent to urban	95.9
Isolated rural	59.1

The highest levels of government have encouraged new programs to fill the gap in health care delivery. President Nixon has told an AMA committee that an imaginative program is needed to bridge this gap.[22] Dr. Roger O. Egeberg, Assistant Secretary for Health and Scientific Affairs, HEW, has stated that:

> "The shortage of manpower is now estimated at 50,000 doctors, 9,000 dentists, 145,000 nurses, and about 200,000 allied health workers. It seems that very little is being done to alleviate the shortage in any of these areas. A medical crisis of staggering proportions is rapidly catching up with the creaking facilities of the present day. The problem will not be solved by cutting back on health expenditures or ducking the solutions that are pressing for acceptance."[24]

More specifically, Dr. Sanazaro, Director of HEW's National Center for Health Services Research and Development, has called for a five-year plan to determine the feasibility of using new kinds of support personnel. He believes there is no real alternative to introducing "physician substitutes."[20]

Some of the programs studied made systematic attempts to determine a need for physician assistants. In a survey conducted by the American Academy of Orthopaedic Surgeons, most respondents felt there was a need for an orthopaedic assistant.[4] A survey of general surgeons conducted by the University of Alabama, elicited a similar response for surgical assistants.[6]

In most cases, however, the planners of these programs seemed to feel that the need was self-evident and did not require further documentation. The following points were brought out in the literature of one or more of these programs.

* The uneven distribution of physicians indicates that the physician shortage is the worst in those areas that have the greatest need. The University of Washington Medex Program was evolved to give aid

to overworked rural doctors. The Brooklyn-Cumberland Medical Center felt the acute lack of health resources in the ghetto area, where there exist the highest rates of premature and prenatal deaths, lead poisoning, drug addiction and alcoholism and the lowest rate of dental care.

* The development of health personnel has not kept pace with advances in technology and research. The Emory University Anesthesia Assistant Program grew out of a need for people who could operate new kinds of equipment. The University of Pittsburgh decided to train Emergency Medical Technicians so that the latest techniques in resuscitation and intensive care could be applied. Their literature estimates that if these known procedures were always used when needed, many of the 700,000 emergencies occu[illegible] annually in the U.S. would not have resulted in death.[13]

* Research and sophisticated concepts of medical care have brought about new specialties and have greatly increased the demand for existing specialties. Orthopaedics and anesthesiology have already been cited as specialties that need to expand their delivery of care. Three of the programs studied felt that a special need exists in pediatrics, where preventive medicine is especially vital. It has been estimated that pediatricians spend from 50-80% of their time caring for the well child or treating minor ailments.[7]

* Population has grown in size and in its demands on the medical profession. Greater utilization of medical personnel by business and industry will create even greater demands on physicians.

* Some medically trained manpower is not being used. The skills of discharged military corpsmen, for example, have gone largely untapped. The Cleveland Clinic Hospital and Cuyahoga Community College developed their joint clinical corpsmen program in response to inquiries from corpsmen who had not found job opportunities commensurate with their level of skill.[18]

* The high cost of medical care must be held down. Participants at the AMA meeting expressed the belief that physician support personnel could cut costs by improving efficiency of service. The patient would thereby get more and improved health care for his money.[20]

It was generally accepted at the AMA Conference on Physician Support Personnel[20] that these needs could not be met by increasing the number of physicians. Medical schools are too small and too few, and medical education too costly to permit the production of enough physicians to solve the manpower shortage. In all cases, the proponents of these programs felt that the only practical solution is a new kind of health assistant. In most cases, they felt they needed a person whose skills would fall somewhere between those of a physician and a nurse. He would differ from a nurse in that his skills would be more technical or specialized; yet he would have more general responsibility than a technician. He would work closely with the physician, with whom final responsibility for patient care would lie.[20] He would, in the words of HEW, Assistant Secretary for Health and Scientific Affairs, Roger Egeberg, M.D., "extend the arm" of the physician.[22]

RECRUITING

The kind of person thought to be best suited for these training programs was a person already experienced in the health field. Because of the lack of mobility in many health careers, it was felt that many motivated, experienced people had not been able to achieve their potential. A great number of the students are military corpsmen who wish to use their medical training. It has also been suggested from many sources that those applicants who have been turned away from medical school due to overcrowding and other reasons would make excellent physician assistants. The percentage of applicants rejected is high, as shown in Chart C.

CHART C

Summary of Medical School Application Activity[26]
1966-1969

First Year Class	No. of Applicants	Accepted Applicants	% of Total Applicants Accepted
1966-1967	18,250	9,123	50.0
1967-1968	18,724	9,702	51.8
1968-1969	21,118	10,092	47.9

The University of Pittsburgh sought highly motivated people who had already had some training in such fields as nursing, inhalation therapy, or other technical areas. The University of Colorado looked for candidates for their Child Health Associate program among persons who had applied to medical schools, but had not been accepted, as well as people already in allied health professions.

The experience acquired by medical corpsmen is highly valued. According to an ad hoc committee on Allied Health Personnel of the National Research

Council, more than 30,000 corpsmen are discharged from the military each year.[27] Dr. Egeberg noted in a memorandum that 60% of these corpsmen are interested in additional education in order to qualify for civilian health positions. Few of these people find jobs with responsibilities comparable to those they held in the military. Many corpsmen have $25,000 invested in their training.[28]

In a time of acute personnel shortage, the medical profession cannot afford to overlook this source of manpower.

Among programs that have made a special effort to recruit corpsmen are the University of Washington Medex Program and the Atlanta Medical Specialty Assistant Program. The Cleveland Clinical Corpsmen Program's method of recruitment was to advertise in army, navy, and air force newspapers, and to send information packets to large military installations in the United States.[18]

The University of Colorado's Program was conceived to expand the responsibility of another source of medical manpower, the registered nurse.

One special approach to recruitment was that undertaken by the University of Kentucky. Names of candidates were submitted to the admission committee by physicians desiring to employ a clinical associate after he had completed the program.[16]

In response to the unique manpower needs of its area, the Brooklyn project sought applicants from the ghetto area. This approach was in keeping with the idea of a community-oriented program.[19]

PLACEMENT--EMPLOYMENT

None of the programs reviewed reported any problems in placing their graduates. At Duke University, requests for physician assistants outnumbered the

graduates of this program by 5 to 1. [1]

The personnel who completed programs reviewed for this report went into various kinds of health facilities, including hospitals, private offices, clinics, and special care units. Some graduates had been trained to move into a specific area. For example, Medical Specialty Assistants (Grady Memorial Hospital, Atlanta, Georgia) were placed in coronary care units.[12]

Others, however, have more flexibility. University of Pittsburgh Emergency Medical Technicians are currently involved in mobile units at the scene of the accident and in transit, and in hospital emergency rooms.[13] Another group of specialists who function in several areas are the Child Health Associates (University of Colorado). They are employed in the private offices of pediatricians, in clinics, and in hospital well-baby nurseries.[15]

Clinics are a frequent place of employment. Both the Nurse Practitioner (University of Colorado) and the Medical Services Associate (Brooklyn) programs emphasize practice in community clinics. The graduates of the latter program, however, also provide other kinds of community services, such as house calls, nursing home care, home care, and emergency room treatment.[19] The Clinical Associate (University of Kentucky) functions primarily as a physician's assistant in clinical practice.[16]

MOBILITY

Several programs have taken steps to help their graduates continue to advance their professional standing. A graduate of a program, such as the Nurse Practitioner at the Univeristy of Colorado Medical Center, holds a degree which

in itself enables career mobility.[5] However, since other programs do not offer academic degrees, they have attempted to make their curriculum count as credit towards a higher degree. Duke University is now establishing means for their Physician Assistant graduates to earn a B.S. level degree.[1] Orthopaedic Assistants graduated from the Pacific Medical Center Program can transfer to San Francisco State College as juniors, earning a bachelor's degree in an additional two years of study.[4]

After one year of training, the Cleveland Clinical Corpsmen may take further clinical training in a more specialized area. They are encouraged to take further college courses leading to an Associate or Baccalaureate degree.[18] Anesthesiology Assistants (Emory University) may apply the credits acquired in their training towards an M.D. or Ph.D.[11]

The government is attempting to formulate standards to provide mobility for physician assistants. Civil Service classifications will ease employment and mobility problems within government itself.[4] The National Academy of Sciences Committee on Emergency Medical Services is submitting to the Public Health Service standards for an advanced training curriculum. Once these standards are established, mobility in general medical practice will be greatly improved.[14]

LEGAL ASPECTS

Although a physician may have a number of professionals, technicians, nurses, and others assisting him in the care of patients, it is the physician who is responsible for all aspects of patient care. There is no legal mechanism

for him to relinquish this responsibility as long as the patient is under his supervision.

In all cases, the physician assistants work only under a physician's supervision. Malpractice insurance is provided under the physician's coverage. The programs which operate in this manner are: Orthopaedic Assistant; Pediatric Assistant; Clinical Associate; and Medical Services Associate. Some special arrangements exist under individual state laws. For example, the Pediatric Assistant's status comes under the North Carolina Master-Servant doctrine.[7]

Child Health Associates may work legally in Colorado, since legislation passed in 1969 clearly defined their role. As of the present time, Colorado is the only state to give independent legal status to physician assistants.[15]

Other states, however, are in the process of investigating legal status for assistant practitioners. The programs involved in this process are the Surgeon's Assistant; Medex; Anesthesia Assistant; and Emergency Medical Technician. In Alabama, the Surgeon's Assistant as yet has no legal sanction as a practicing paramedical person, even though state officials have approved the principles and concepts of this training.[6] The University of Washington is actively seeking a change in the state Medical Practice Act so that the Medex personnel can be legally responsible for tasks assigned to them by physicians. The Medex trainees are currently allowed to practice under a law that permits students to work under a physician's supervision.[8]

Emory University is investigating the status of the Anesthesia Assistant.[11] The University of Pittsburgh has proposed to give education, recognition,

professional status, and quality control to its Emergency Medical Technicians through the formation of a registry for these personnel.[14]

In general, however, separate licensure is not thought to be necessary for this category of paramedical personnel. For example, administrators of the Atlanta, Georgia Medical Specialty Assistant Program feel that a license would be too restrictive and would not allow for flexibility and innovation.[12]

The legal aspects are far from settled. A Wall Street Journal article (April 23, 1970), for example, states the only legal point that is quite clear is that physician assistants cannot make final diagnoses, prescribe drugs, or perform major surgery.[29]

Despite the lack of clarity, though, the legal questions seem to be working themselves out in practice. The AMA reports no lawsuits have been filed against physician assistants.[20] Insurance companies have already agreed to provide malpractice insurance in two ways: either through liability coverage of the assistant at one-half the physician rate, or through a special provision in the physician's insurance.[2]

Some authorities such as Dr. Thomas C. Points, Chairman of the Committee on Emergency Health Manpower of the AMA, think that state Medical Practice Acts will have to be modified to provide for physician assistants. Oklahoma's law already has such a provision.

An opposing view, held by Robert Howard, M.D., of Duke University, contends that eventually, formal legislative changes will be unnecessary.

Custom and usage, he says, are powerful enough forces to change medical law. 28

ADMISSION REQUIREMENTS

All 14 programs require of their applicants a high school degree or its equivalent. Six, or nearly half of the programs, prefer some college work, especially in basic sciences, or a nursing degree. One program requires a B.S. The remaining seven are very flexible about academic background. Five, or a little over one-third of the programs, require previous experience in the health field. Five programs make use of test scores. Admission requirements are given in more detail in the following chart.

CHART D

PROGRAM	LENGTH OF PROGRAM	CERTIFICATE AWARDED	PRIMARY RECRUITS	COLLEGE	WORK EXPERIENCE IN HEALTH FIELD	TESTS REQUIRED
Physician Assistant	2 yr.	yes	all w/training & experience in health field	prefer 2 yr. college work	1 yr. experience esp. extensive patient contact	
Pediatric Nurse Assoc.	16 wk.		Nurses	R.N.		
Orthopedic Assistant	2 yr.	yes and/or assoc.	Not stated	Desirable		
Nurse Practitioner	4 mo.	yes	Baccalaureate Nurses	B.S. Nursing Aver. grade B	1 yr. practice of prof. nursing	Graduate Record Exam.
Medical Service Associate	2 yr.	yes	residents of ghetto	desirable	Not required	
Surgeon Assistant	2 yr.	yes	not stated	2 yr. science or exper. in health field		A.C.T.*
Pediatric Assistant	2 yr.	yes and/or B.S.	Nurses excluded	2 yr. in science	Not required	S.A.T.* and C.E.E.B.* desirable
Medex	1 yr.	yes	Corpsmen	Desirable	Most have 3-20 yrs. exper., no set requirement	
Anesthesia Assistan	2 yr.	none	those with B.S.	B.S.	Not required	Graduate Record Exam.
Medical Specialty Assistant	2 yr.	yes	Corpsmen	Not required	2 yr. exper. in health field	C.E.E.B.*
Emergency Medical Technician	1 yr.	being devel.	Corpsmen, Nurses, Inhal. Therapists	Not required	Exper. in nursing, inhal. therapy or corpsmen	
Child Health Associate	3 yr.	yes licensed	2 yr. in sciences	Not required		
Clinical Associate	2 yr.	yes	Candidates recommended by M.D.'s	Not required	Not required	
Clinical Corpsmen	1 yr.	yes	Candidates recommended by M.D.'s	Not required	Not required	

* A.C.T. - American College Testing
S.A.T. - Scholastic Aptitude Test
C.E.E.B. - College Entrance Examination Board

EVALUATION

In most cases, the full impact of these programs on health care delivery is in the process of evaluation. Nevertheless, several programs have demonstrated that they are working successfully. The literature indicates that reaction both public and professional to the use of physician assistants has generally been excellent.

In the Duke program acceptance by members of the profession has been good.[30] In informal evaluations, physicians employing the Surgeon's Assistant and the Medical Specialty Assistant indicated that they highly valued their assistants' help.[6,12] Nurses have usually had favorable reactions to the physician assistants.[30] Medex is the only program that reports some skepticism and cynicism on the part of physicians.[2] It may be, however, that we have to allow for a bias in the literature of the programs, which understandably would present them in the best light.

Some journal articles have anticipated that patients would show resistance to a "semi-doctor". However, many of the programs surveyed show good patient reaction. Duke is one of these programs; another is the Colorado Nurse Practitioner. In this case, parents of young patients have expressed their satisfaction.[5]

In a survey to determine patient acceptance of the Clinical Associate, 44% of responding physicians rated reaction favorably; 11% thought that the patients' reactions were negative.[16] An article appearing in Hospital Management claims that patients' acceptance of this program has been excellent. Those who

received the services of the Clinical Associate especially appreciated the time and attention given them.[31]

In community health centers, public reaction has been favorable; two centers not previously mentioned in this study are using physician assistants. They are a rual clinic in Estancia, New Mexico and a rural center in King City, California.

The rural clinic in Estancia, New Mexico, is staffed by a specially trained registered nurse, whose role is defined as being "an agent for extending care, bringing physicians' services into areas which otherwise they probably would not be able to reach." Supporting physician Edward Mortimer, M.D., is encouraged by the clinic's appeal to a broad spectrum of society.[22]

Another rural center in King City, California, has a Duke Physician Assistant and a Colorado Nurse Practitioner on its staff. Project Director, Len Hughes Andrus, M.D., attributes part of the project's success to the efforts of these workers to establish rapport with the poor people in the project area.[32]

The valuable indicator of the success of these programs is the demand for their graduates. Requests for future graduates of Medex are already being made and as previously reported, requests for Duke Physician Assistants out-number graduates 5 to 1.

Potentially, the most valuable index of success would be a formal analysis of increased efficiency in providing better patient services. Few formal studies have been made thus far; however, some information suggests such analyses would show substantial improvement in efficient delivery of services. Physicians working with Duke graduates estimate they can see 30-50% more patients per day with the help of physician assistants. An article in the Journal of the American Geriatrics

Society contends that if this statistic is correct, and if half of practicing M.D.'s had such assistants, the impact on health services would be tremendous. Using the lower figure in this range - 30% increase in number of patients seen - the article estimates that three physician assistants would, in effect, equal the services of one physician. Still, one cannot assume that health services would be increased by a full one-third, because extra time may also be used for educational activities or for shortening the workday of the physician.[33]

Efficiency may also result from better use of facilities. Cleveland Clinic Hospital reports that since employing clinical corpsmen, intensive care beds once closed because of shortage of nurses are now open.[18]

It is evident that more controlled studies in this area would yield very useful information.

As stated in the South Carolina Hospital Association Health Care Headlines, there are 400 physician assistants working in the nation today, whereas five years ago there were none.[23] In addition to the programs reviewed in this study additional programs are cited in a study conducted by the National Institutes of Health, Chief Professional Activities Branch of the Division of Physician Assistant Manpower.[34] These additional programs are:

Nurse Physician Associate	Albert Einstein College of Medicine, N.Y.
Triage or Screening Professional	Albert Einstein College of Medicine, N.Y.
Patient Care Expeditor	Albert Einstein College of Medicine, N.Y.
Physician's Assistant Program	Alderson-Broadus College, West Virginia
Physician's Assistant	Foothill College, Dos Altos Hills, Calif.

Additional Programs (continued):

Physician's Assistant ---------- Marshfield Clinic, Marshfield, Wisconsin

in the following specialties:

Diabetic
Oncology
Gastroenterology
Pediatrics
Ophthalmology
Neurosurgery
General Surgery

Purser - Pharmacist Mate ---------- Purser Pharmacist Mate School, Staten Island, New York

Orthopedic Assistant ---------- U.S. Public Health Service Hospital, Staten Island, New York

Social Worker Aide ---------- U.S. Public Health Service Hospital, Staten Island, New York

Clinical Associate ---------- University of Texas Medical Branch

Others:

Medical Care Technician ---------- Oklahoma State University[28]

Physician's Assistant ---------- Massachusetts General Hospital[35]

Ophthalmic Assistant ---------- Baylor University College of Medicine[21]

Nurse Practitioner ---------- University of Arizona College of Medicine[35]

TASK ANALYSIS

A very general definition of a Physician's Assistant which seems to apply to all programs of this nature is stated in Health Care Headlines. "The physician assistant is a new kind of health worker who handles routine, uncomplicated medical tasks which are time-consuming and do not require the physician's high degree of knowledge or skill."[23] The literature further indicates that there is a need to define these "routine" and "uncomplicated medical tasks" in a task analysis.

The importance of a task analysis for the role of a physician assistant is further underlined by George Silver in an article appearing in the Bulletin of the New York Academy of Medicine:

"A primary consideration in future role assignment and allocation of professional resources must be clear-cut job descriptions, with precise qualitative justification of each function, and training for that role."[36]

What a physician's assistant does in any specific program must be clearly outlined, because his duties will extend into areas that are traditionally the domain of other kinds of health workers. For example, graduates of the Duke program will perform duties that used to be reserved for the doctor, the technician, or the nurse. These functions are as follows:

"The physician's assistant is trained to perform responsibly and reliably certain defined skills. In the clinical setting, he learns to take patient histories, do physical examinations, start and regulate intravenous infusions, intubate the G.I. tract, do gastric lavages, biopsies, lumbar punctures, and other procedures classically performed by the doctor. He is trained to monitor vital signs, give medications, and keep progress records as classically performed by nurses. He is also taught to operate certain diagnostic and therapeutic instruments, such as electrocardiographs, respirators, cardiac monitors, and defibrillators, as well as to carry out extensive laboratory studies as commonly done by technicians."[1]

The range of the Duke Physician Assistant's duties is fairly typical of the graduates of these programs. Nine of the programs reviewed train their students to do histories and physicals, or in one case, preliminary screening. Almost all of these physician assistants perform duties traditionally belonging to nurses, technicians, or both. For example, the Nurse Practitioner carries out many nursing functions but can also do urinalyses and hemoglobin determinations.[5] The Orthopaedic Assistant acts as a surgical technician, expecially in care for surgical instruments, and also instructs patients in crutch walking and exercise, usually a function of a rehabilitation therapist.[4] The Surgeon's Assistant does urinary bladder catheterization, wound care and dressings, burn therapy, suction decompression of the stomach, and post operative monitoring of the patient - functions generally divided between the nurse and the technician.[6]

The Medex performs in a variety of ways. He screens patients and takes histories, carrying out those parts of the physical exam that do not require extensive training. He also takes emergency calls, assists in surgery, applies and removes casts, and performs laboratory tests.[8]

The task analysis of the Clinical Associate defines fairly clearly what this professional can and cannot do. He does take histories, perform physical examinations, and give a tentative diagnosis. In carrying out these functions, he establishes a professional relationship with the patient. He prescribes the necessary tests for further investigation of the patient's condition. He does not, however, give a definitive diagnosis. This function is left to the physician.[16]

Another important area to define is how the physician assistant will act in follow-up and preventive care. For example, in line with the importance of preventive medicine in pediatrics, the Pediatric Assistant evaluates the well child,[7] and the Child Health Associate stresses preventive services.[15]

PART II - PHYSICIAN'S ASSISTANT - METROPOLITAN WASHINGTON AREA

THE EXISTING NEED

The current health care crisis in the Washington area is described in the Report of the Mayor's Task Force on Public Health Goals.[37] The report analyzes the present crisis and makes recommendations on how to solve it.

In the twenty-year period from 1950-1970, the metropolitan area's population growth rate of 3.1% exceeded the national average. Population statistics in themselves, however, do not tell the whole story. A more significant fact is that patient days per 1,000 population here is slightly higher than the national figure. The health problems in the District are severe indeed inspite of a high ratio of physicians to population. In 1967, Washington had the highest rate of maternal mortality, the second highest rate of infant mortality and deaths from cirrhosis; the third highest death rate from tuberculosis, and the fifth highest death rate from pneumonia among cities of comparable size (see tables 1-5).

These serious medical problems are largely related to poverty, and are thus most severe in the inner city. Yet, the suburbs do not escape the problems of the city. Statistics received from the Virginia Department of Health show a high infant mortality rate in Alexandria, a rate that, in fact, is close to that of the District of Columbia (Table 6). The table also shows a high maternal death rate in Fairfax County. Cirrhosis and pneumonia mortality rates, however, are considerably lower than those of the District of Columbia, and they tend to drop in proportion to the distance from the inner city.

The city's high death rates in many areas may be partly attributed to the uneven distribution of physicians. Table 7 shows that physicians tend to

concentrate in the Northwest area. Although the metropolitan area has a high ratio of physicians to population, the extremely unequal distribution means that some areas of the city are getting extremely inadequate medical services. The table shows further that the poor, or lower socio-economic quintiles of the population have proportionately the fewest physicians to care for them.

In the paramedical area, the problem is not one of distribution, but of an overall shortage. The metropolitan area Health Facilities Planning Council has made a study of projected manpower needs in the area. Their findings show that in all fields, the shortage of paramedical workers will become more severe in the next 15 years.[38] (See Table 8).

Because of the shortage of physicians, and because they cannot afford private physicians' fees, many inner-city people seek help in neighborhood clinics or hospital emergency rooms. The mayor's task force did a quantitative study of area ER admissions for a 48-hour weekend period. They found that 54% of the cases were non-emergency. In other words, over half of these patients could have been treated at other facilities.

Projected statistics for 1970 estimate that over 30,000 non-emergency cases will go to D.C. General's Emergency Room. The care they receive, according to the Mayor's Task Force Report will be "fragmented" and therefore inadequate. The case load will also hamper the efficiency of ER in caring for real emergencies.

Community health centers are now operating, but they are not presently solving the problems. Staff shortages are severe, and the available staff is not being used efficiently. For example, at one well-baby clinic, every patient sees a physician even though the administrator has said this is unnecessary.

TABLE 1

Maternal mortality for the United States, Washington, D.C., the average of 10 other cities, and D.C. rank among cities.

Year	D.C.	Average of 10 cities*	U.S.	D.C. city rank (of 11)
1960	82.1	41.0	37.1	2nd highest rate
1961	89.0	50.0	36.9	2nd highest rate
1962	85.5	51.0	35.2	2nd highest rate
1963	106.0	44.0	35.8	highest rate
1964	99.9	33.2	33.3	2nd highest rate
1965	58.8	37.4	31.6	3rd highest rate
1966	91.8	44.5	29.1	2nd highest rate
1967	95.0	30.9	28.3	highest rate
1960-1967	+15.7%**	-24.6%	-23.8%	

* St. Louis not reporting

** a minus sign indicates a decrease in the rate
a plus sign indicates an increase in the rate

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TABLE 2

Infant mortality rates per thousand live births for Washington, D.C., the United States, the average of the 11 other cities of similar size, D.C. rank among these cities, and D.C. rank among states.

Year	D.C.	Average of other cities	U.S.	D.C. city rank (of 12)	D.C. state rank (of 51)
1960	35.8	27.0	26.0	highest rate	2nd highest rate
1961	35.2	27.4	25.3	highest rate	2nd highest rate
1962	34.9	27.2	25.3	highest rate	2nd highest rate
1963	33.0	26.8	25.2	highest rate	2nd highest rate
1964	34.0	27.0	24.8	highest rate	2nd highest rate
1965	32.0	27.0	24.7	highest rate	3rd highest rate
1966	34.5	26.8	23.7	highest rate	2nd highest rate
1967	30.3	24.6	22.4	2nd highest rate	----------
1960-1967	change				
	-15.6%	-8.9%	-14.0%		

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TABLE 3

Cirrhosis mortality rates per 100,000 population 1960-1967 for the District of Columbia, ten cities of comparable size (see text), and the United States.

Year	D.C.	Other Cities	U.S.	D.C. City Rank (of 11)*	D.C. State Rank (of 51)
1960	26.9	24.4	11.1	4th highest rate	highest rate
1961	31.3	26.0	11.3	2nd highest rate	highest rate
1962	31.3	24.4	11.7	2nd highest rate	highest rate
1963	32.8	24.7	11.9	2nd highest rate	highest rate
1964	31.4	25.0	12.1	2nd highest rate	highest rate
1965	39.2	26.9	12.8	2nd highest rate	highest rate
1966	43.4	30.0	13.6	2nd highest rate	highest rate
1967	44.6	29.9	13.8	2nd highest rate	----------
1960-1967	change				
	+65.8%	+24.6%	+24.4%		

*Houston not reporting

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TABLE 4

Tuberculosis mortality rates per 100,000 population 1960-1967, for the District of Columbia, eleven cities of comparable size (see text), and the United States

Year	D.C.	Other Cities	U.S.	D.C. city rank (of 12)	D.C. state rank (of 51)
1960	13.5	10.5	6.0	4th highest rate	highest rate
1961	13.4	9.4	5.4	3rd highest rate	highest rate
1962	11.9	8.8	5.1	3rd highest rate	highest rate
1963	12.3	8.8	4.9	2nd highest rate	highest rate
1964	12.0	7.7	4.3	3rd highest rate	highest rate
1965	12.7	7.6	4.1	highest	highest rate
1966	11.5	6.8	3.9	tied for highest	highest rate
1967	10.5	6.5	3.5	3rd highest rate	-------
1960-1967 change					
	-22.5%	-38.1%	-41.7%		

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TABLE 5

Pneumonia mortality rates per 100,000 population, 1960-1967, for the District of Columbia, eleven cities of comparable size (see text), and the United States.

Year	D.C.	Other Cities	U.S.	D.C. city rank (of 12)	D.C. state rank (of 51)
1960	45.4	42.8	30.1	6th highest rate	highest rate
1961	47.2	35.5	29.0	2nd highest rate	highest rate
1962	43.8	39.5	30.4	4th highest rate	3rd highest rate
1963	58.9	42.0	33.9	2nd highest rate	highest rate
1964	55.6	39.2	30.2	2nd highest rate	highest rate
1965	53.9	38.6	30.8	2nd highest rate	highest rate
1966	52.4	39.0	31.0	2nd highest rate	highest rate
1967	39.6	33.8	28.0	5th highest rate	---
1960-1967 change	-12.8%	-21.0%	- 7.0%		

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TABLE 6

CERTAIN VITAL STATISTICS INFORMATION
ALEXANDRIA, FAIRFAX AND ARLINGTON COUNTIES, VIRGINIA
1960-1968

Year	Total Death Rate	Infant Death Rate	Cause of Death Rates				
			Maternal*	Tuber-culosis	Cirrhosis of liver	Pneumonia	Heart Disease
ALEXANDRIA							
1960	6.7	28.0	3.9	1.1	14.3	30.7	221.6
1961	6.6	22.1	-	4.3	15.1	25.9	215.6
1962	7.2	22.5	7.0	1.1	7.6	20.6	250.0
1963	7.4	22.6	-	6.2	14.5	24.9	275.5
1964	7.5	27.6	-	2.0	13.0	21.9	258.3
1965	7.1	21.4	3.4	1.9	21.8	29.4	220.9
1966	7.2	21.5	3.6	0.9	13.8	23.0	245.2
1967	6.7	23.0	-	3.6	16.0	27.6	230.5
1968	7.6	19.3	-	6.2	22.2	28.5	261.5
ARLINGTON COUNTY							
1960	6.1	21.5	2.4	1.8	9.8	19.5	224.3
1961	6.6	21.3	-	2.5	13.6	15.4	232.1
1962	6.8	24.5	-	4.2	13.3	20.0	244.9
1963	6.8	18.7	-	2.3	8.1	21.4	229.0
1964	6.5	20.8	4.8	1.7	7.4	18.8	222.4
1965	6.4	21.4	5.4	1.7	13.5	11.8	252.8
1966	6.6	22.3	-	0.6	18.0	15.7	238.2
1967	6.4	17.7	-	1.1	14.6	17.9	232.3
1968	6.7	16.0	-	1.1	19.5	15.5	226.8
FAIRFAX COUNTY							
1960	3.7	21.8	3.1	1.1	6.1	13.2	116.8
1961**	4.0	20.2	4.7	1.9	5.4	10.1	113.4
1962	4.5	22.0	1.6	1.9	6.4	14.3	139.8
1963	4.1	26.1	1.5	1.0	5.4	10.4	137.4
1964	4.0	19.1	5.7	1.9	6.3	8.8	131.0
1965	4.1	18.0	1.5	0.6	6.4	7.3	142.3
1966	4.1	19.5	2.9	1.4	6.4	11.8	140.7
1967	4.2	17.2	2.9	0.5	5.3	8.7	133.2
1968	4.2	15.4	5.5	1.0	9.8	8.3	131.7

NOTE: Death rates per 1,000 household population
Cause of death rates per 100,000 household population
Infant death rates per 1,000 live births
Maternal death rates per 10,000 live births

* Maternal = deaths due to complications of pregnancy, childbirth, and puerperium

**Estimated because Fairfax City became independent on July 1, 1961. Therefore, Fairfax City figures were deducted from the County figures.

Virginia State Department of Health
Bureau of Vital Records
and Health Statistics

TABLE 7

PHYSICIAN DISTRIBUTION

	% OF D.C. POPULATION	% OF 500 RANDOMLY-SELECTED PHYSICIANS
NORTHWEST	47%	88%
NORTHEAST	26%	6%
SOUTHWEST	2%	2%
SOUTHEAST	25%	4%
QUINTILE 1	17%	14%
QUINTILE 2	17%	45%
QUINTILE 3	25%	25%
QUINTILE 4	23%	8%
QUINTILE 5	18%	8%

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The method used, in order to relate health conditions to socio-economic levels, is that of quintiles.* Each of Washington's 124 census tracts is ranked according to the percentage of poor people it contains. Quintile five consists of the lowest 20%, or the 24 census tracts containing the greatest percentages of poor people. Similarly quintile one, the upper 20%, consists of the 24 census tracts containing the fewest percentages of poor people. The five socio-economic characteristics used to construct the 'poverty index,' by which a person is judged poor or not, are as follows:

1. Percent of families with incomes under $3,000.
2. Percent of children under 18 years old not living with both parents.
3. Percent of males 25 years old and over with less than 8 years

4. Percent of unskilled males in the employed civilian labor force.
5. Percent of housing units dilapidated or lacking some or all plumbing facilities. The city is thus divided into five quintiles, by considering several criteria of poverty, rather than just income, and the quintiles are compared according to their various mortality and morbidity rates.

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TABLE 8

PROJECTION OF PARAMEDICAL PERSONNEL NEEDS
WASHINGTON AREA HOSPITALS
1970 - 1985

	1970	1975	1980	1985
NURSING SERVICE				
RN's	3,787	5,529	7,545	9,833
Licensed Practical & Vocational Nurses	1,674	2,444	3,335	4,347
Surgical Technical Aides	155	227	310	404
Nursing Aide, Orderly, Attendants	2,750	4,016	5,480	7,142
DIAGNOSTIC SERVICES				
Medical Technologists - ASCP	299	436	596	776
Medical Technologists - Other registration	109	160	218	285
Other Medical Technologists	279	407	556	725
Certified Laboratory Assistants - ASCP	20	29	40	52
Other Laboratory Assistants	62	90	123	160
Cytotechnologists - ASCP	6	9	12	16
Other Cytotechnologists	6	9	12	16
Histologic Technicians - ASCP	22	32	44	57
Other Histologic Technicians	26	38	52	67
Electrocardiograph Technicians	54	79	107	140
Electroencephalograph Technicians	26	38	52	67
Nuclear Medicine Technologists - ARRT	12	17	24	31
Other Nuclear Medicine Technologists	16	23	32	41
Nuclear Medicine Assistants	2	3	4	5
THERAPEUTIC SERVICES				
Occupational Therapists - AOTA	30	44	60	78
Other Occupational Therapists	4	6	8	10
Occupational Therapy Assistants - AOTA	1	2	2	3
Other Occupational Therapy Assistants and Aides	6	9	12	16
Physical Therapists - Qualified	92	134	183	238
Other Physical Therapists	4	6	8	10
Physical Therapy Assistants & Aides	40	58	79	104
Social Workers - MA in social work	54	79	107	140
Other Social Workers - Baccalaureate Degree	12	17	24	31
Social Work Assistants & Aides - Non AB or MA	22	32	44	57
Recreation Therapists	14	20	28	36
Inhalation Therapists - AAIT	16	23	32	41
Other Inhalation Therapists	58	84	115	150
Speech Pathologists & Audiologists - ASHA	12	17	24	31
Other Speech Pathologists & Audiologists	2	3	4	5
Orthoptic Technicians	3	6	8	10

Continued next page

dical Personnel for Washington Area Hospitals-A Projection:1970-1985, Health Facilities Planning Council for Metropolitan Washington, 1968, pp. 19-20.

TABLE 8
Continued from preceding page

PROJECTION OF PARAMEDICAL PERSONNEL NEEDS
WASHINGTON AREA HOSPITALS
1970 - 1985

	1970	1975	1980	1985
RADIOLOGY				
Radiologic (X-Ray) Technologists (technicians) - ARRT	169	247	338	440
X-Ray Assistants (including Dark Room Helpers)	48	70	95	124
Radiation Therapy Technologists - ARRT	28	41	56	72
Radiation Therapy Assistants	3	6	8	10
MEDICAL RECORDS & LIBRARY				
Medical Record Librarians - AAMRL	38	55	75	98
Other Medical Record Librarians	10	15	20	26
Medical Record Technicians - AAMRL	8	12	16	21
Other Medical Record Technicians	56	81	111	145
Medical Librarians - MLA	10	15	20	26
Other Medical Librarians	4	6	8	10
DIETARY				
Dietitians Meeting ADA Qualifications	92	134	183	238
Other Dietitians	24	35	48	62
Food Service Managers	22	32	44	57
PHARMACY				
Licensed Pharmacists	86	125	171	223
Pharmacy Assistants	52	76	103	135
All Other Professional & Technical	3,308	4,830	6,592	8,591
All Other Hospital Personnel				
Food Service	1,315	1,921	2,621	3,416
Laundry	478	698	953	1,242
Housekeeping	1,116	1,630	2,224	2,898
Maintenance	658	960	1,310	1,708
All Other: Management	359	524	715	932
Secretarial, Clerical	2,272	3,317	4,527	5,900
TOTAL USED FOR PROJECTION	19,929	29,099	39,708	51,755
TOTAL FIGURE AFTER APPLICATION OF PERCENTAGES	19,873	29,017	39,601	51,607

The quality of care is often poor. Nurses in clinics think that patients should have the benefit of more counseling about pregnancy and care of children. It is not necessary that a physician always provide this service.

Patients have long waits, and when they do see a physician, it is only very briefly. An attempt at efficiency has been to have clerks take histories but it has been reported that patients are apprehensive about giving personal information to these non-medical clerical people.

The clinics do not have the staff and equipment to give more than a few limited services. The Report criticizes the clinic as being able to "do no more than stitch up a wound, bandage a cut, and dole out some aspirins."[37]

Finally, the Mayor's task force believes that the clinics' failure is due partly to lack of involvement of community people as paramedical assistants.

The possibilities for effective use of physician assistants are great. They could effectively take over for the physician in well-patient care; they could save the physician's time in treating sick patients by taking histories and doing physicals. Because of their professional standing, they would not have to deal with the hostility from patients that a clerk encounters. Their expertise could increase the number of services offered by a clinic without an undue increase in the number of physicians. They could spend more time with the patient than a physician can afford, thus giving much-needed personalized care.

The physician assistant is not going to solve all the problems, but he figures very largely in the total solution. The task force sees the physician

assistant as being involved in the political process of changing health care delivery: The Report recommends that "in view of the decentralization process being considered for Washington, a certain number of Public Health Medex could be assigned to each administrative sub-unit...and have access to the local government authorities and agencies, Public Health and Welfare. Thus, the Medex would have authority and be trained in obtaining skills in solving medical emergencies in an urban setting."

The Report recommends a strong emphasis be put on using paramedical personnel. They believe professional societies should support education of allied health people at local hospitals and schools. More specifically, they recommend that the health agencies:

1. "change roles and technologic assignments among health workers so that the organization gets more work done. This would be most effective if a large number of bottom-level, short-term trained people could pick up the simple jobs and if some of these could earn credit to move up if interested and capable of more advanced careers."

2. Establish new professional categories specifically: Maternity Nurse Practitioner, Pediatric Nurse Practitioner, and Physician Assistant or Medex. The last category could be "returning military personnel who qualify through experience as corpsmen to assist the physician in taking histories, making physical examinations, making home calls, and serving as surgical assistants."

3. Create the category of ambulance corpsmen. "These persons should have special qualifications and training so as to be responsible for administration of immediate patient care, and then the transportation of the sick and injured to a hospital."

4. Support programs to produce physician assistants, including the program at the Washington Hospital Center.

NEED - Input from Local Institutions

Two meetings were held at the Metropolitan Washington Regional Medical Program's Center for Continuing Education to discuss the continuation of a rdiovascular Technician training program and the development of a Physician

Assistant Program at the Washington Hospital Center.

A meeting of the Metropolitan Washington Regional Medical Program Faculty, Advisory to the Center for Continuing Education representing Directors of Medical Education in the area hospitals, medical schools and medical societies, was held on May 26, 1970. A second meeting was held on June 23, 1970, to which a representative number of physicians interested and/or specializing in cardiology were invited to attend. Discussed were physician acceptance, utilization and other aspects relative to:

1. Continuing need in this region for training Cardiovascular Technicians who would find suitable employment.
2. The degree of continuing need in this region of technicians acting as physician's assistants.

There was a consensus from both groups that there is a need to continue the Cardiovascular Technician training program. At the second meeting, several cardiologists foresaw a continuing need for trained technicians in their specialty area.

In addition, Dr. James Bacos, Chief, Department of Cardiology, Washington Hospital Center presented statistics on employment of graduates of the Cardiovascular Technician Program. (See Chart E). All but five of the 20 graduates of the first three classes found employment in the metropolitan area. Of the nine Cardiovascular Technicians most recently graduated, all but four are employed in the area. These statistics suggest that graduates of future CVT training programs would continue to find suitable employment in the Metropolitan Washington Area.

Participants at both meetings also encouraged a program to train physician assistants (specialists and generalists) in the Metropolitan Washington Area.

They specified however, that a specific definition and task analysis be developed for the physician's assistant. They felt that the Washington Hospital Center should be encouraged to submit a proposal to develop a pilot program in conjunction with Washington Technical Institute (or similar institutions) to train physician's assistants. The concept of a core curriculum should be used so that the program could produce generalists and could also be expanded to train physician assistants in a number of specialized areas. Finally, participants strongly recommended that provisions of continuous support should be investigated to assure the success of a long range project at the completion of the initial pilot project.

Pilot projects utilizing physician assistants in the Metopolitan Washington Area are already being planned or are operational. They are designed to meet the need for a new type of health worker, the physician's assistant. One such project is presently being conducted at the George Washington University Medical Center,[39] to determine how the physician assistant can assist the physician in the emergency room and clinic. Eight medical corpsmen are currently employed, seven in the emergency room and one in the medical clinic.

The corpsmen have had experience in the military as field medics or in a hospital setting. Each corpsmen receives additional training to perform simple laboratory tests in addition to starting I.V.'s and performing EKG's.

At present the corpsmen in the emergency room are responsible for triage function of patients entering the emergency room and basic hematological tests, urinalyses and EKG's performed as required. All duties relating to patient care are performed under the supervision of a physician.

CHART E

CARDIOVASCULAR TECHNICIANS

Graduates of the first three classes are now working at the following institutions:

HOSPITAL	NUMBER EMPLOYED
Children's Hospital	1
St. Elizabeth's Hospital	1
Fairfax Hospital	1
Cafritz Memorial Hospital	2
Hospital for Sick Children	1
Georgetown University Hospital	1
Freedman's Hospital	1
Mobile Coronary Care Unit (Montgomery County Heart Association)	3
Washington Hospital Center	4
Out of Town	5
Class of 1970	
Cafritz Memorial Hospital	1
Sinai Hospital (Baltimore)	1
George Washington University Hospital	1
D.C. General Hospital	2
Out of Town	4
TOTAL	29

From a subjective point of view it has been reported that patient reactions to the physician assistant has been "highly positive".

There has been no difficulty in recruiting former corpsmen for this project Actually, there are more applications than physician assistant positions available at the George Washington University Medical Center. These positions were not advertised.

TASKS OF PHYSICIAN ASSISTANT

We have already mentioned that the Physician Assistant could perform in two capacities: In clinics, and in emergency care. The physician assistant in the clinic could greatly expand the practice of preventive medicine, including histories, physicials, and immunization on a regular basis. His contribution in handling well-patients would help create adequate time for the physician to treat ill patients. The physician assistant need not be limited to preventive medicine, however; his services could also speed and improve the care of the sick.

In emergency care, the physician assistant could make house calls, give first aid, rapidly refer patients to physicians, and give on-the-spot treatment as an ambulance corpsman.

RECRUITS

Two approaches can be taken towards recruiting. The first is to take advantage of the skills of Air Force, Army and Navy corpsmen. The task force[37] recommends that this be done, and incentives, in the form of supporting their further education, should be offered these corpsmen when they are discharged.

Medical corpsmen can also be recruited through the MEDIHC Program. MEDIHC (Military Experience Directed into Health Careers), is the joint effort of the Departments of Defense and Health, Education, and Welfare. Working through the military counselling program, MEDIHC asks each corpsman to complete an application describing his experience. The information is sent to a regional Health, Education and Welfare office, which forwards it to state MEDIHC agencies. Nine states are now

cooperating in the program. [40]

The task force also recognizes however, that there are not presently enough qualified professionals, even if the source of military personnel is tapped. They conclude, therefore, that "a major function of a health center...will be to train community lay personnel to take over the functions of professionals wherever possible." It was also recommended in a five-year plan proposed under Model Cities by the District Government that "neighborhood residents should be trained as health aides, doctors' assistants, technicians, etc., to perform non-professional functions."

The Report does not outline just how community residents could achieve the professional status of physician assistants. It will probably be necessary to tap this source of manpower, however, since the supply of corpsmen and civilian professionals is limited. It is also desirable for community health centers to have residents working in a professional capacity.

EDUCATION AND TRAINING

Traditionally private schools have trained paramedical employees, but they can no longer carry the whole responsibility. A large part of the job can be taken over by junior colleges and community colleges, and in fact these institutions are already active in educating students for health careers. Many are affiliated with hospitals, and, in effect serve as employment agencies for the hospitals.

In 1969, there were 1,050 junior and community colleges, with about two million students. An enrollment of three million is projected for 1970. Forty different health degrees and programs are offered by about 800 of the colleges.

Educators designing these programs are eager to develop core curriculae.[41] Thus, the graduate of a core program would have professional mobility, both horizontally among the various health fields, and vertically to achieve higher status within one health area. Such promotional paths need to be created in order to correct the present rigid stratification in the allied health professions.

The task force report recommends that professional societies and health organizations promote educational programs at local hospitals and schools. They also think it would be very desirable to establish a National Capital School of Public Health, to be affiliated with local medical schools and colleges.[37]

PATIENT ACCEPTANCE

The task force sees some evidence that patients will accept innovations in health care, including machine-taken histories and examinations by a professional other than a doctor.

The important factor seems to be people's understanding that they will benefit from these changes. The Report says, "consumers responded favorably to ideas such as nursing clinics for well babies, after they understood the reasoning behind such an idea, e.g. physicians then could see more of the sick babies more in need of their services."[37]

LEGAL ASPECTS

Counsel for the American Medical Association has expressed the view that a physician may employ and utilize any individual of his choosing to assist him in patient care, as long as the physician himself remains responsible for actions taken by those under his charge.[20]

Apparently, in the United States, of the various physician assistant programs underway and operational, no physician assistant programs are in conflict with the purpose and intent of the law nor are human rights and property rights being infringed upon. Rather, physician assistant programs are meeting a well-defined need, and are thus furthering human welfare.

In the District of Columbia, however, the laws have not been modified to keep pace with changes in medical practice. The 1923 Healing Arts Act allows only licensed physicians to practice the healing art. Were a physician to delegate his functions to a technician, the technician would face up to $500 fine and imprisonment of up to six months, and the physician could be liable as his accomplice. The physician could presemably be held completely liable for the technician's mistakes or negligence (penalties specified in D.C. Code, Title 2, Section 2-130).[37]

In theory the Healing Arts Act of the District of Columbia does not allow for the physician to delegate any of his functions to a technician. In actual practice, however, the concept of custom and usage may take precedence. For years the physician has been utilizing the services of many types of technicians, including x-ray, laboratory, electrocardiograph, electro-encephalogram, and nurses in the practice of medicine. Nurses, for example, have been doing veni-punctures and administering intravenous fluids in the District for some time, although the law technically does not seem to allow them this function. They attempted to meet the difficulty in an informal way by the issuance of a joint statement by the Medical Society of the District of Columbia, the Hospital Council of the National Capital Area, Inc., and the D. C. Nurses Association.

The statement acknowledges "that it is proper practice and sound procedure for licensed professional nurses to perform venipuncture and administer fluids intravenously" as long as certain stated criteria are met. The joint statement recognizes, however, "that the final decision in any interpretation of the law is the jurisdiction of our courts." [42]

Thus, it is unlikely that any responsible member of the medical profession would suffer the penalties the law prescribes, since medical custom and community sanction weigh heavily in any judicial decision. Furthermore, the AMA is opposed to any premature legislation or amendment to present laws. A recent JAMA editorial says that "care is needed to avoid locking new health occupations into rigid service roles by legislative regulation before sufficient documentation is made of the need for and roles of, such workers in the health services industry as a whole, and of their acceptance by the medical profession and public." [43]

The task force sees two approaches to the problem of delegating physician tasks to an assistant: "(1) to allow the delegation only in the course of a closely supervised experimental program (e.g., in a university hospital), or (2) to specify in the statute itself that all doctors can delegate certain functions to certain technicians. Choice among approaches such as these is best left to doctors..."

In view of the difficulties involved in legislating separate legal status for the physician assistant, the task force recommendations seem wise. We also concur in their opinion that decisions on which legal routes to take are properly the function of the doctors and professionals involved in the training program.

CONCLUSION

The literature search documents the fact that many successful physician assistant programs, both generalist and specialist, are successfully helping to meet the manpower crisis in the United States. Physician and patient acceptance has been good.

A limited study of health needs in the Metropolitan Washington D. C. Area suggests that the physician assistant would be a most desirable addition to present health manpower. As pointed out in Part I, the physician assistant has great potential in emergency and preventative care. His applicability in these areas would make him extremely valuable, especially in health clinics in the urban area.

If a physician assistant training program is undertaken for this area, it will be important to design an adequate core curriculum. This will ensure that each physician assistant produced will have a grasp of the basic sciences he needs for his work. The core curriculum will also give him the broad background he needs to function either as a generalist, or, with further training, a specialist.

It is also recommended that discharged medical corpsmen be recruited for this training program. They are an excellent source of manpower both because of their medical training and because of their availability. At George Washington University Clinic applications from corpsmen are still being received, even though the positions have been filled, and there has been no advertising aimed at the corpsmen.

It is our conclusion, after meeting with the Director of the Allied Health Division of the Association of American Junior Colleges, that the area junior colleges would be the most suitable institutions to carry on a physician's assistant program. These institutions should be contacted and encouraged to cooperate with area hospitals and medical centers in developing and implementing a permanent program.

Other community agencies such as community health centers, neighborhood health centers and local hospitals are recognized as being excellent prospects for these personnel.

In Summary

It is recommended that:

1. The Cardiovascular Technician Training Program be continued, and if required, support be provided by the Metropolitan Washington Regional Medical Program for a period not to exceed three years.
2. The Washington Hospital Center be encouraged to submit a proposal to the Metropolitan Washington Regional Medical Program requesting support for a three year pilot program for the purpose of recruitment, training, and utilization of the "physician's assistant".
   a. PHASE ONE be devoted to a task analysis and developing of a detailed position description for the physician's assistant.
   b. PHASE TWO be devoted to the development of a core curriculum to include both academic and clinical training.
   c. PHASE THREE be devoted to implementing the program.
   d. PHASE FOUR be concerned with evaluation of all aspects of the physician's assistant program.
3. Provisions be made so that, when the Metropolitan Washington Regional Medical Program support is withdrawn, both programs will be continued indefinitely as long as a need is present. For example: the physician's assistant program might be maintained by arranging with a local teaching institution to take over the core curriculum as a permanent program, with clinical experience provided through medical school and hospital affiliations.

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APPENDIX

SUMMARIES OF PROGRAMS

APPENDIX

SUMMARIES OF PROGRAMS

CONTENTS

PROGRAM: Physician Assistant

PROJECT DIRECTOR: D. Robert Howard, M.D.

TRAINING FACILITY: Duke University Medical Center, Durham, North Carolina 27706

LENGTH OF TRAINING: Two Years

GOALS AND OBJECTIVES: The program is designed to develop a new category of personnel within the structure of the health field who will function as allied health professionals under the direct supervision of physicians.

Dr. Eugene A. Stead, founder of the Physician Assistant Program analyzed the reasons for the failure of a postgraduate physician education program and discovered that the practicing physicians had not time which they could reasonably set aside for the purpose of education.

TASK ANALYSIS and/or JOB DESCRIPTION: The sole function will be to assist physicians in their clinical and/or research endeavors.

The physician's assistant is trained to perform responsibly and reliably certain carefully defined skills. In the clinical setting, he learns to take patient histories, do physical examinations, start and regulate intravenous infusions, intubate the G.I. tract, do gastric lavages, biopsies, lumbar punctures, and other procedures classically performed by the doctor. He is trained to monitor vital signs, give medications, and keep progress records as classically performed by nurses. He is also taught to operate certain diagnostic and therapeutic instruments, such as electrocardiographs, respirators, cardiac monitors, and defibrillators, as well as to carry out extensive laboratory studies as commonly done by technicians.

LEGAL ASPECTS: The legal advantages were realized when the attorney general of North Carolina ruled that the physician's assistant could, within the confines of the law, carry out virtually every task assigned by a physician and the only limitation on the assigned functions concerned diagnosis and prescription of care - two functions already ruled out by his dependent role. Beyond these functional limitations, all activity control is under the direction of the physician employer.

CERTIFICATION: Upon completion of the two year program the students are given a certificate of accomplishment by the Medical Center.

EVALUATION: Acceptance of this program by patients, nurses and physicians has been good.[30] The quality of the physician's assistant work has been good and there is a growing demand for their services among physicians.[43]

ADMISSION REQUIREMENTS:

1. High School diploma (or equivalent)
2. Preference given to those with 2 or more years of college course work.
3. Previous experience in health field (at least one year involving extensive direct patient contact).
4. Completion of Scholastic Aptitude Test and the Math Achievement Test, Level 1 of College Entrance Examination Board.

RECRUITMENT: Program is open to all who have received training in the health sciences field and coupled this training with experience in either the civilian or military setting.

EMPLOYMENT and/or SALARY: Available positions outnumber the gradutes by over 5 to 1. Almost daily, requests for physician assistants from all over the country are received.

Salary range: $8,000 to $10,000 annually.

CAREER MOBILITY: Students are given credit for their courses and receive transcripts of their grades from the university, but there is as yet no means of application of these credits toward a degree through Duke University. Efforts are currently in progress toward establishing a B.S. level degree through our own undergraduate college and other colleges in the area.

COST TO STUDENT and/or INSTITUTION: The cost per year for training these assistants is the same as that required for a graduate nurse or physician, the overall expense for their training is less because of the duration of the training program.

PHYSICIAN REACTION: A spectrum of attitudinal and cost benefit analyses have been performed which indicate that these new members to the health team have been accepted by the patient and physician and can effectively augment his services by more than 50 percent.

30. Engles, T. A. "A New Health Worker," American Journal of Nursing, 68:1059-1061, (May) 1968.

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CURRICULUM:

Preclinical Courses

The preclinical curriculum covers an academic period of thirty-six weeks. It includes:

History, Philosophy and Ethics of Medicine
Basic Clinical Laboratory
Medical Terminology
Inorganic Chemistry
Introduction to Animal Experimentation
Bacteriology
Anatomy and Physiology
Essentials of Chemical Biology
Clinical Medicine
Pharmacology
Physical Evaluation
Clinical Chemistry
Diagnostic Procedures
Animal Surgery
Electrocardiography
Introductory Radiology
Community Health
Basic Principles of Data Processing
Patient Evaluation
Medical Instrumentation

Clinical Rotations

1. Required Clinical Rotations:

   Medical Inpatient Service
   Surgical Inpatient Service
   Medical Outpatient Clinic and Emergency Room
   Surgical Outpatient Clinic and Emergency Room
   Pulmonary Function and Inhalation Therapy
   Health Administration
   Faculty Health Clinic
   Library Research
   Outside Physician

2. Elective Clinical Rotations:

   Department of Medicine
   Department of Surgery
   Department of Pediatrics

PROGRAM:	Pediatric Nurse Associate
PROJECT DIRECTOR:	George W. Hallett, Jr., M.D., Chief of Pediatrics
TRAINING FACILITY:	University of Maine, Portland, Maine
LENGTH OF TRAINING:	Sixteen weeks
GOALS AND OBJECTIVES:	Program is designed to develop an expanded role of the nurse in providing total health care to children.
NEED:	Not stated.
TASK ANALYSIS and/or JOB DESCRIPTION:	The nurse will give comprehensive well-child care, to identify and appraise acute and chronic illness, to manage minor problems, and to give temporary aid in emergencies. The student will be trained in observation, counseling, and coordination of resources to meet patient and family needs.
LEGAL ASPECTS:	Not stated.
CERTIFICATION:	Not stated.
EVALUATION:	For the eight-month period following completion of the 16-week course the student will return to the Maine Medical Center for follow-up study. This will allow for a continuous follow-up of the community's response as well as the nurse's response to her expanded role.
ADMISSION REQUIREMENTS:	Not stated.
RECRUITMENT:	Not stated.
EMPLOYMENT and/or SALARY:	Not stated.
CAREER MOBILITY:	Not stated.
COST TO STUDENT and/or INSTITUTION:	Not stated.
PHYSICIAN REACTION:	Not stated.

CURRICULUM:

I. Normal Growth and Development
II. Interviewing and Counseling
III. Special Needs of Children
IV. Common Illnesses of Infancy
V. Common Illnesses of Preschool Children
VI. Common Illnesses of School Age Children
VII. Common Illnesses of Adolescence
VIII. Management of Injury and Trauma
IX. Role Reorientation

PROGRAM: Orthopaedic Assistant

ACADEMIC CO-DIRECTOR: Mr. Jules Fraden

CLINICAL CO-DIRECTOR: F. Richard Schneider, M.D.

TRAINING FACILITY: Pacific Medical Center, City College of San Francisco, San Francisco, California 94115.

GOALS AND OBJECTIVES: Program to train Orthopaedic Assistant is designed not only to give specific technical skills, but also to broaden understanding and permit the assistant to participate in supervised patient care.

NEED: The medical schools and residency training programs in Orthopaedic Surgery do not have the capability of training enough orthopaedic surgeons to meet the need. The surgeon does and will require more assistance in the delivery of medical services. The specialty of Orthopaedic Surgery lends itself well to the team approach as many of the technical skills require a definite performance level; however, they do not require the broad educational background of the orthopaedic surgeon.

Results of a survey of the American Academy of Orthopaedic Surgeons indicates a need for the development of an Orthopaedic Assistant.

TASK ANALYSIS and/or JOB DESCRIPTION:

1. The Orthopaedic Assistant must have close liaison with and be under the supervision of an orthopaedic surgeon. This man is to be a physician assistant in the specialty of orthopaedic surgery.

2. The Orthopaedic Assistant manages equipment and supplies in both the traction and cast areas of the hospital.

3. In the operating room, the Orthopaedic Assistant is able to act as a surgical technician with special knowledge regarding the care of orthopaedic surgical instruments.

4. In the emergency room, the Orthopaedic Assistant understands aseptic technique and is able to set up for minor surgical procedures.

5. He is able to apply simple braces and prosthetics and can carry out minor adjustments as well as minor repairs.

6. The Orthopaedic Assistant, in a small community hospital, would carry out a variety of his technical skills.

Orthopaedic Assistant Program (continued)

7. The Orthopaedic Assistant instructs and assists patients in crutch walking and instructs patients in certain types of active exercises.

LEGAL ASPECTS: Individuals that are trained in accredited educational programs may work as assistants under the direction of qualified orthopaedic surgeons and not independently.

CERTIFICATION: Certification will initially be carried out by the accredited program for the Orthopaedic Assistant until such time as guidelines for the development of a Board of Orthopaedic Assistants have been set. It is proposed that the 2 year program lead to an Associate in Arts degree or equivalent.

EVALUATION: Currently being initiated.

ADMISSION REQUIREMENTS: Candidates must have completed four years of high school or have passed a standard equivalency test. Courses in biology, physics, chemistry, algebra and geometry are recommended. Education beyond the high school at the vocational, nursing or college level is helpful.

RECRUITMENT: Not stated.

EMPLOYMENT and/or SALARY: The Orthopaedic Assistant is expected to earn a salary commensurate with his productivity. Employment will be in hospitals, clinics and private offices. A Civil Service classification is being instituted for employment in government service.

CAREER MOBILITY: Students will receive instruction in appropriate basic sciences to allow vertical and horizontal mobility within the health professions.

Graduates may transfer to San Francisco State College as juniors and earn the bachelor's degree normally in two years.

COST TO STUDENT and/or INSTITUTION: Not stated.

PHYSICIAN REACTION: Not stated.

CURRICULUM:
1. General Education Core
2. Orientation to Patient Care and Staff Relationships
3. Orientation to Physical Therapy
4. Patient Service and Emergency Room Technique.

PROGRAM: Nurse Practitioner

PROJECT DIRECTOR: Henry Silver, M.D.

TRAINING FACILITY: University of Colorado Medical Center
4200 East Ninth Avenue
Denver, Colorado 80220

LENGTH OF TRAINING: Four months

GOALS AND OBJECTIVES: The Pediatric Nurse Practitioner program prepares nurses to assume an expanded role in providing total health care to children in the offices of private pediatricians and in areas with inadequate health services.

NEED: The needs of children in our society have been listed in several sources both government and private. Some speakers at national pediatric and public health programs are pointing up the need for more preventive type care. This suggests that the nurse has responsibility for health care while the doctor concentrates on pathological conditions.

TASK ANALYSIS and/or JOB DESCRIPTION: The Nurse Practitioner has assignments on various wards, clinics, and nurseries. They learn improved interviewing techniques appropriate for their expanded roles and responsibilities so that their assessment can be more perceptive and pertinent, and they become proficient in performing a complete physician examination including the basic skills of inspection, palpation, percussion, and auscultation, as well as the use of such tools as the stethoscope and otoscope, in order to increase their ability to gather data on which to base decisions. In seminars conducted by the medical and nursing faculty and others, the nurses learn about various aspects of parent-child relationships, variations of growth patterns, physical and psychosocial development, the essentials of infant nutrition and immunization procedures and schedules. They review the dynamics of physical, psychosocial, and cultural forces affecting health, discuss salient features of personality development with a child psychiatrist, and develop proficiency in counseling parents in child-rearing practices.

The nurses participate in the evaluation and management of healthy children and those with a variety of acute and chronic disorders including upper respiratory tract infections, ititis media, various skin eruptions, diarrhea, constipation, allergic manifestations, and the common contagious diseases. They evaluate

hearing defects, speech difficulties, visual impairments, and various congenital and acquired orthopedic deformities, and they learn the essentials of good dental care and methods of identifying dental problems. They learn to do urinalyses, hemoglobin determinations, and to obtain various laboratory specimens. They also assist in the management of a number of emergency situations, including poisonings, accidents, hemorrhage, apnea, etc. So that a decision can be made regarding the illnesses which can be managed by the nurse and those that will require counsel from or referral to a physician, competence is developed in assessing the over-all status of the ill child in order to determine the acuteness and severity of disease.

After the four-month training period at the medical center, the pediatric nurse practitioners function in the offices of pediatricians in private practice and in field stations in low income urban and rural areas where they are readily accessible to the people. In the field stations, the nurses have office hours suited to the particular population groups in the adjacent areas.

The child who is ill receives a complete evaluation, including a comprehensive history and physical examination. With a plan of management previously agreed upon, the nurses may handle the problem themselves or refer the child for immediate attention elsewhere. Special emphasis is placed on the importance of follow-up and continuity of care.

LEGAL ASPECTS: The Nurse Practitioners continue to function within Nurse Practice Acts and there are no legal difficulties resulting from this program.

CERTIFICATION: The University of Colorado School of Nursing accredits the program.

EVALUATION: Evaluation surveys of practicing pediatric nurse practitioners has demonstrated that they are highly effective and competent in providing high quality comprehensive health care to a large proportion of well and sick children. The nurses' services were highly satisfactory to parents and resulted in increased time and income to physicians in private practice.

An analysis of the income brought into one office showed that the net income from charges made for the nurse's services exceeded the pediatric nurse practitioner's salary and overhead by several thousand dollars per year.

ADMISSION REQUIREMENTS:

1. Graduation from a National League for Nursing accredited baccalaureate program.
2. An undergraduate grade point average of B or better.
3. Acceptable scores on the Graduate Record examination.
4. 1 year experience in the practice of professional nursing.

Nurse Practitioner Program (continued)

RECRUITMENT: Baccalaureate Nurses

EMPLOYMENT and/or SALARY:
1. Nurses serve in a variety of field stations.
2. Nurses serve as associates of pediatricians in private practice.
3. Salary not stated.

CAREER MOBILITY: The program effectively prepares nurses with baccalaureate or master degrees to assume an expanded role in providing total health care to children.

COST TO STUDENT and/or INSTITUTION: Program costs are $75.00 in books and fees, normal living expenses, and $100.00 a week tuition paid by a grant.

PHYSICIAN REACTION: Favorable.

CURRICULUM: Specific Content Areas

1. Nutrition
2. Immunization
3. Communicable Disease
4. Premature and High Risk Mothers
5. Denver Developmental Screening Test
6. Speech
7. Audiology
8. Dental
9. Dermatology
10. Allergy
11. Mental Retardation
12. Eye Problems
13. Orthopedic
14. Pediatric Gynecology
15. Neurology
16. Adolescence
17. Psycho-Social Development
18. Accidental Poisoning
19. Laboratory
20. Inquiry and Trauma
21. Respiratory System
22. Gastrointestinal System

PROGRAM: Surgeon's Assistant

PROGRAM DIRECTOR: Margaret K. Kirklin, M.D.

TRAINING FACILITY: University of Alabama
1919 Seventh Avenue, South
Birmingham, Alabama 35233

LENGTH OF TRAINING: Two years

GOALS AND OBJECTIVES: Training qualified individuals to become first assistants in the operating room, capable of doing physical examinations and taking histories, capable of helping the surgeon see his patients in the office and in the hospital.

NEED: Recently, a questionnaire to document this need was sent to the board of qualified surgeons in Alabama. Although all the questionnaires have not yet been returned, we have heard from 113 of approximately 200 board surgeons. 82% say that they see a need for this kind of paramedical person and are in support of such a training program. Of these 82%, 33% are ready to hire such a person. 18% are opposed to the training of this type of personnel.

TASK ANALYSIS and/or JOB DESCRIPTION: The trained and qualified surgeon's assistant may carry out the procedures listed below if he is so directed by the surgeon by whom he is employed, and with certain restrictions as noted.

1. Medical history and physical examination and recording of these along with progress notes. The surgeon will be responsible for checking the findings and will sign the medical record written by the surgeon's assistant to indicate that this has been done.

2. Act as surgical assistant to the surgeon.

3. Carry out certain procedures without the direct supervision of the surgeon, but only when the surgeon has so directed, and with the surgeon being responsible for them. Examples are:

   - Suction decompression of the stomach with nasogastic tube
   - Urinary bladder catheterization
   - Wound care and dressings
   - Care of minor lacerations
   - Care of the wounds of thermal injuries
   - Collecting blood samples for laboratory tests
   - Starting and regulating intravenous therapy
   - Care and removal of drains and tubes
   - Monitor the patient post-operatively, reporting complications to the surgeon.

Surgeon's Assistant Program (continued)

LEGAL ASPECTS: Under present laws of Alabama, surgeon's assistants have no legal sanction as a practicing paramedical. The Board of Censors of the Medical Association of the State of Alabama has given its approval to the principles and concepts of our training.

CERTIFICATION: On satisfactory completion of the course the trainee receives a certificate.

EVALUATION: No formal evaluation except for personal evaluation of each trainee by the surgeons for whom he works.

ADMISSION REQUIREMENTS: Educational prerequisites of:

1. High school diploma and completion of courses in chemistry, algebra, and biology

2. Two years of college training with emphasis on the sciences.

In some circumstances experience in the health field, such as medical corpsmen in the Armed Services, may be accepted as a substitute for the latter.

RECRUITMENT: Not known

EMPLOYMENT and/or SALARY: Initial employment salary - $8,000 annually.

CAREER MOBILITY: Not stated.

COST TO STUDENT and/or INSTITUTION: To students: $400 to $600 for books, instruments, tuition. To institution: No cost figures have been tabulated as to institutional costs.

PHYSICIAN REACTION: Surgeons for whom these individuals work indicate that they value their services.

CURRICULUM:

<u>First Year</u>

First Quarter:	Gross Anatomy
	Human Physiology
	Medical Terminology
Second Quarter:	Gross Anatomy
	Pharmacology
	Introduction to Medical Disorders
Third Quarter:	Introduction to Surgical Diseases
	Medical History and Physical Examination
	Sterile Technique

Surgeon's Assistant Program (continued)

Fourth Quarter: Principles of Surgical Patient Care
Surgical Care Techniques
Introduction to Roentgenogram Interpretation
Electrocardiogram Recording Techniques and Interpretation of Arrythmias
Pulmonary Function Tests and Inhalation Therapy
Standard and Advanced First Aid Course

Second Year

One or two month rotation assignments to surgical services.

PROGRAM:	Pediatric Assistant
PROGRAM DIRECTOR:	Lee Powers, M.D.
TRAINING FACILITY:	Bowman Gray School of Medicine, Wake Forest University Winston-Salem, North Carolina 27103
LENGTH OF TRAINING:	Two years
GOALS AND OBJECTIVES:	Program is designed to produce a new category of allied health professional who will function under the direction of and in close association with a child care physician in providing broad health services to children.
NEED:	Projected physician-child population ratio is decreasing alarmingly at a time when the urgency of extending health care to all segments of the population is increasingly evident. It has been shown that the pediatrician in practice spends 50-80 percent of his time caring for well children and minor illness.
TASK ANALYSIS and/or JOB DESCRIPTION:	The Child Health Associate will be trained to perform responsibly and reliably certain defined skills which have traditionally been assumed by the physician. The Associate learns to take histories, do detailed physical examinations, to perform visual, auditory, developmental and laboratory screening tests. Throughout the course the emphasis and experience is in well child evaluation and care, and preventive pediatrics. The Associate becomes competent in management of common behavioral problems and counseling with parents. She learns to evaluate the sick child and decide whether he needs to be seen by the pediatrician for investigation and treatment and what constitutes an emergency requiring the physician's immediate attention.
LEGAL ASPECTS:	There is nothing in the North Carolina Medical Practice Act to prohibit the employment of the physician's assistant anymore than there is for other dependent employees. Under the Master Servant Doctrine, the physician is responsible for negligent actions of any person in his employ. This liability exists regardless of licensure or any other formal arrangement as long as an employment relationship exists.
CERTIFICATION:	Upon successful completion of the program the student will be awarded a certificate. A baccalaureate degree may be awarded if the student has 3 years of college credit.
EVALUATION:	A large proportion (75%) of the pediatricians responding to the nation-wide survey of the American Academy of Pediatrics believed a pediatric assistant would increase the volume of patients a pediatrician could handle or would improve the quality of practice or both.

Pediatric Assistant Program (continued)

ADMISSION REQUIREMENTS:	Two years of college or university liberal arts and science courses in chemistry, biology and mathematics. Individuals with special training and experience in medical and related fields may be given equivalency credits.
RECRUITMENT:	Initially, nurses have been excluded in an effort to recruit new people into the health field. Selection of students is dependent on an evaluation of their character, personality, and motivation for service as well as their scholastic record and performance on various evaluative tests.
EMPLOYMENT and/or SALARY:	It is expected that the Associate will work in well-baby clinics, in hospital settings, in school health clinics and in pediatrician's offices, always in association with and under the supervision of a physician who will assume the legal responsibility involved. Interest in employing the Associate has already been expressed even at this early stage of planning. Starting salaries are estimated to range between $7000 to $9000 annually.
CAREER MOBILITY:	Not stated.
COST TO STUDENT and/or INSTITUTION:	Cost of training: Approximately $2500 to $3000 per year.
PHYSICIAN REACTION:	Refer to Evaluation.
CURRICULUM:	The 24-month program which begins in September is divided into three phases: Phase I is a basic course program in the clinical and bioscience principles. It will be required of all students regardless of specialty interest and will be six months in duration Phase II is a period of intensive training in the specialty tasks of the student's specialty choice. This training will be provided by the staff of the specialty department. Each department involved will have one person who will be responsible for the direction and correlation of the training program. This phase will last approximately six months. Phase III will consist of supervised practice in the hospital clinics and in private practitioners' offices. Phase III will involve the balance of the 24-month program.

PROGRAM: Medex

PROGRAM DIRECTOR: Richard A. Smith, M.D.

TRAINING FACILITY: University of Washington
444 N.E. Ravenna BLVD.
Seattle, Washington 98115

LENGTH OF TRAINING: One year

GOALS AND OBJECTIVES: Medex is designed to (1) relieve the physician of certain tasks that can be performed by a person trained to do them under the physician's direct supervision, thereby freeing the doctor to perform those functions for which he is uniquely qualified, and (2) draw upon a pool of trained personnel whose skills can be enhanced and adapted to serve the civilian population as they have been serving military needs for many years; many military corpsmen, have had as many as nineteen hundred hours of formal medical training.

NEED: The health manpower shortage is being felt in many urban communities and is particularly acute in rural areas, both in Washington state and across the country. Physicians are overworked, many are leaving rural practice, and relatively few young physicians are attracted to practices in this setting.

TASK ANALYSIS and/or JOB DESCRIPTION: At the end of a demonstration program, the preceptor will hire the Medex to aid in his practice, thereby adding a pair of skilled hands that will function under the physician's constant supervision. The Medex will have been training for general practice, but more specifically for each physician's particular setting.

The Medex can be used in a variety of ways: Screening patients to be seen by the doctor, making screening house calls, taking emergency calls, assisting at surgery, applying and removing casts, performing laboratory work, taking histories, performing parts of physical examinations, or aiding in other tasks that do not require a physician's extensive training. All of these activities will be directed toward extending the physician's capacity.

LEGAL ASPECTS: A change in the state of Washington's Medical Practice Act is sought so that physicians may legally delegate tasks to their Medex. In the meantime, Medex trainees can legally perform their functions in Washington state under the present law that permits students to work and learn under the supervision of physicians.

Medex Program (continued)

CERTIFICATION:	A certificate is awarded to each Medex upon completion of the year of preceptorship.
EVALUATION:	An evaluation of functions will take place during the summer of 1970. Requests are coming in for Medex of future classes.
ADMISSION REQUIREMENTS:	Criteria for selection includes the following: Applicant's knowledge of his limitations, judgement under varying circumstances, interpersonal relationships, medical task proficiency and knowledge and satisfaction with the projected role of Medex. Age varies from 22 to 55 years and educationally the range varies from a high school diploma to a bachelor's degree.
RECRUITMENT:	Military corpsmen.
CAREER MOBILITY.	Not stated.
COST TO STUDENT and/or INSTITUTION:	The demonstration program is being funded by the National Center for Health Services Research and Development, Health Services and Mental Health Administration, U.S. Public Health Service, HEW. Medex are paid stipends of $5,400 per year plus dependent's allowances.
PHYSICIAN REACTION:	The preceptors are enthusiastic. Other physicians are sending in requests to have Medex from future classes. There are physician skeptics (and cynics) in the state.
CURRICULUM:	The Medex demonstration program is divided into three phases: 1. A preparatory phase 2. A university training phase 3. A preceptorship phase

PROGRAM: Anesthesia Assistant

PROGRAM CHAIRMAN: John E. Steinhaus, M.D., Ph.D.

TRAINING FACILITY: Emory University
69 Butler Street, S.E.
Atlanta, Georgia 30303

LENGTH OF TRAINING: Two years

GOALS AND OBJECTIVES: Trainee would introduce a new level of assistance for Anesthesiology and would enable anesthesiologists to employ the latest technological advances in their specialty.

NEED: The shortage of physicians in Anesthesiology is generally recognized and has resulted in serious deficiencies in anesthesia care both qualitative and quantitative. Rapid technological advances in biomedicine have created a need for personnel that permit the operation and utilization of new technical developments.

TASK ANALYSIS and/or JOB DESCRIPTION:

1. Simple tasks for which standard procedures have been established. These tasks are performed under immediate or general supervision with little or no latitude for the exercise of independent judgement. Work is light manual or mental, requiring a minor degree of mental application. Task examples are cleaning, checking for supplies, counting, and transporting patients and equipment.

2. Routine tasks performed under immediate or general supervision. Tasks require a minor degree of skill which is easily learned. Tasks may require a moderate degree of mental application with limited latitude for the exercise of independent judgement, such as discrimination between types of drugs and infusions, attaching blood pressure cuff and stethoscope to the patient, and observing and recording blood pressure and pulse rate.

3. Semi-routine tasks performed under general supervision. Tasks require moderate degrees of skill, manual dexterity, and mental application. Independent action may be required within prescribed limits. Such tasks include inserting intravenous needles, administering fluids, and providing suction for mucous.

4. Semi-routine tasks performed under little supervision. Tasks require a high degree of skill and mental application in specific areas. Tasks include the injection of drugs, adjustment of gas flow, insertion of esophageal stethoscope and endotracheal tube, manual assistance of ventilation, recognition of harmful positions for the patient, etc.

Anesthesia Assistant Program (continued)

LEGAL ASPECTS:	Legal status of these assistants will be investigated.
CERTIFICATION:	No type of certification but is ultimately expected.
EVALUATION:	A group of prominent American anesthesiologists were impaneled and charged with identifying the area of medical practice of an anesthesiologist as it now exists, as it should be, and what it might be in years to come. In the light of our present manpower shortage in anesthesia, this group of consultants were asked to evaluate several types of assistants which they would consider ted to increase the effectiveness of the anesthesiologist so that one anesthesiologist can take care of more than one patient at a time. Specific evaluations of proposed training programs and monitoring equipment were also obtained.
ADMISSION REQUIREMENTS:	1. Undergraduate degree in physical or biological science. 2. Acceptable scores on Graduate Record Exam. 3. Approval of application for admission by the Admissions Committee.
RECRUITMENT:	Not known.
EMPLOYMENT and/or SALARY:	Salary support openings and position potential will be defined and discussed at the consultant meetings.
CAREER MOBILITY:	It is anticipated that some individuals from this program may desire additional schooling with the view toward biomedical research or clinical medicine. Individuals who qualify for these programs may elect to take this course of training in the future. It is presumed that courses from the Medical School curriculum taken in this program would be considered for credit toward the M.D. degree.
COST TO STUDENT and/or INSTITUTION:	Cost to student, $1,900 is paid by grant. Institutional costs are not known.
PHYSICIAN REACTION:	Difficult to predict at this time.

Anesthesia Assistant Program (continued)

CURRICULUM:

Subject	Course #	Credit
Anatomy for the Anesthetist	Anesthesiology 312	3
General Physiology	Physiology 351,352	5, 5
Pharmacology of Anesthetic Drugs	Anesthesiology 314	3
Physics of Anesthesia	Anesthesiology 311	3
Chemistry of Acid Base Electrolytes and Fluids	Anesthesiology 313	3
Computer Applications	Biometry 205	3
Electronics and Instrumentation	Anesthesiology 315, 316, 317	3, 4, 4
Anesthesia Seminar	Anesthesiology 391	1,1,1,1
Clinical Anesthesia	Anesthesiology 397	40
Anesthesia Clinical Conference	Anesthesiology 392	1,1,1,1

Elective courses may be taken in other departments of the Graduate School, School of Medicine, or undergraduate departments as judged applicable by the faculty of the Department of Anesthesiology.

PROGRAM:	Medical Specialty Assistant
NURSE COORDINATOR:	Ann Flewelling
TRAINING FACILITY:	Grady Memorial Hospital 80 Butler Street, S.E. Atlanta, Georgia 30303
LENGTH OF TRAINING:	Two years
GOALS AND OBJECTIVES:	Program assists in the delivery of health services by creating individuals highly skilled within the field of Coronary Care.
NEED:	It was observed by physicians that an increasing number of coronary care units were being established in hospitals in the state of Georgia and across the country. It was apparent that frequently these coronary care units suffered from a shortage of adequately trained personnel.
TASK ANALYSIS and/or JOB DESCRIPTION:	Prepared to work in coronary care units.
LEGAL ASPECTS:	There is no licensure in Georgia for physician assistants. Licensure would prove too restrictive and would not allow new and experimental programs the flexibility to make innovations.
CERTIFICATION:	Student receives certification as a Medical Specialty Assistant (Coronary Care).
EVALUATION:	A formal evaluation has not yet been done, but informal evaluations indicate that the program is meeting success.
ADMISSION REQUIREMENTS:	1. Applicants must be between 20-45 years of age 2. Have at least 2 years experience as corpsmen in armed service or similar background in health field 3. Must be a high school graduate with minimum of 16 units of credit 4. Must have made arrangements to take College Entrance Examination Board Scholastic Aptitude Test.
RECRUITMENT:	Discharged military corpsmen.
EMPLOYMENT and/or SALARY:	Program Director will acquaint various employers with the capabilities and limitations of the graduate.
CAREER MOBILITY:	During first year of program, the student classified as MSA-1. One year from the date of his entrance he becomes classified as MSA-II.

Medical Specialty Assistant Program (continued)

COST TO STUDENT and/or INSTITUTION: No tuition is required. A monthly tax-free stipend of $300 during the first year and $350 during the second year will be paid to the student for satisfactory performance.

CURRICULUM:

First and Second Quarter (24 weeks)

Anatomy and Physiology
Chemistry
Medical Terminology
Human Behavior

Third Quarter

Pharmacology
Drug Math
ICU Techniques
Medical Physics
Lab Techniques

Fourth and Fifth Quarters

Cardiovascular Disease
Medical Electronics
Cardiovascular Instrumentation
Cardiac Auscultation
Cardiac Dysrhythmias

Clinical
Cardiac Catheterization Lab
Coronary Care Unit

Sixth Quarter

Clinical
Renal Rotation
Pulmonary Rotation

Cardiovascular Physical Diagnosis

Seventh Quarter

Clinical
Neuro Rotation
Medical Intensive Care Unit

Cardiovascular History and Physical

Eighth Quarter

Clinical
Cardiac Clinic
Medical Emergency Clinic
Coronary Care Unit

PROGRAM: Emergency Medical Technician

TECHNICAL DIRECTOR: Gerald Esposito, B.S.

TRAINING FACILITY: University of Pittsburgh
Pittsburgh, Pennsylvania 15213

LENGTH OF TRAINING: One year

GOALS AND OBJECTIVES: Organization of community-wide emergency care should provide for modern resuscitation and life-supporting measures at the scene, during transportation and in the hospital, with special emphasis on the time factor.

The need is urgent for improving emergency medical services (a) at the scene, (b) during transportation, and (c) in hospitals. Published standards are either inadequate in scope or outdated in concept for the best management of acute life-threatening medical and surgical conditions.

About 700,000 medical and surgical emergencies occur in the United States annually which result in death for the victims. Many of these deaths could be prevented by applying presently known and available techniques in resuscitation and intensive care.

TASK ANALYSIS and/or JOB DESCRIPTION: Ambulance personnel are responsible for all lay emergency care from the time they first see the victim through transportation and delivery to the care of a physician. They must therefore be able not only to appraise the extent of first aid rendered by others, but also to carry out whatever additional measures will make it safe to move the victim and minimize morbidity and mortality. They must operate the emergency vehicle safely and efficiently; maintain communication between the scene of the emergency, traffic authorities, dispatchers, and emergency departments; render necessary additional care en route; and transmit records and reports to medical and other authorities.

Abilities are required also in providing airway care, oxygenation, artificial ventilation, external cardiac compression, control of hemorrhage, immobilization of fractures, and extrication.

LEGAL ASPECTS: It is proposed to give education, recognition, professional status and quality control through the formation of a registry for personnel involved in emergency medical services at the scene, during transportation, and in hospitals.

CERTIFICATION: A Board of Certification is developing objectives and purposes.

Emergency Medical Technician Program (continued)

EVALUATION:	Not applicable (program in planning stage).
ADMISSION REQUIREMENTS:	Not set.
RECRUITMENT:	Use of highly motivated personnel (nurses, practical nurses, inhalation therapists, or former medical corpsmen of the Armed Forces).
EMPLOYMENT and/or SALARY:	Not stated.
CAREER MOBILITY:	The National Academy of Sciences' Committee on Emergency Medical Services is in the process of submitting to the U.S. Public Health Service, standards for an advanced training curriculum.

PROGRAM: Child Health Associate

PROGRAM DIRECTOR: Henry K. Silver, M.D.

TRAINING FACILITY: University of Colorado
4200 East Ninth Avenue
Denver Colorado 80220

LENGTH OF TRAINING: Three years.

GOALS AND OBJECTIVES: To set up a pilot program for training health associates and also to train people in an effort to alleviate the manpower shortage in pediatrics.

Based on the rapidly decreasing number of general practitioners, the slow increase of pediatricians and increasing child population which considered together result in a net decrease in trained workers to care for the child population.

TASK ANALYSIS and/or JOB DESCRIPTION: The Associate will give comprehensive diagnostic, preventive, and therapeutic services to children and will share responsibility for the care of patients with the supervising physicians. His training at the medical center would enable him to evaluate adequately, social and cultural factors as they affect health, and would give him the capacity to interpret and assess the latest developments and research pertaining to health care of children. In addition to the duties described above, the Associate will be qualified and legally able to prescribe various therapeutic measures and write prescriptions (excluding narcotics and some other drugs), but he ordinarily will not have hospital privileges.

No more than one Child Health Associate will be employed at any one time by any one physician. Except as indicated in an emergency, the Associate will practice only in the professional office or clinic of the physician and only when he is personally available. The Associate will render services outside of the office or clinic only in the presence of the physician, or in providing routine follow-up care to newborn infants, or in caring for other patients pursuant to the directions of the physician in relation to that particular patient.

Since hospitalization of pediatric patients is generally limited to those with serious illness or complex problems, hospital care except for routine newborn nursery follow-up care would automatically be considered outside the realm of "normal pediatrics" and would require pediatric consultation and care by the physician.

Physicians will have responsibility for the general supervision and direction of the Child Health Associates and will be called upon for consultation in all serious, complicated, or difficult problems. The presence of the physician will guarantee the quality

Child Health Associate Program (continued)

of service given and insure that high standards will be maintained by the Child Health Associate and that he will practice within the limits established by the program. An association with a physician will also increase patient acceptance.

LEGAL ASPECTS: Colorado is the only state in which Child Health Associates may legally work.

CERTIFICATION: On completion of the prescribed course of study and an internship approved by the University of Colorado, the Child Health Associate will be examined and then certified by the Colorado State Board of Medical Examiners to diagnose and treat children under the direction of a physician. Legislation, defining the role of the Child Health Associates and their job extent and limitations, was passed by the Colorado State Legislature in the Spring of 1969. Governor Love of Colorado signed the Bill on July 17, 1969.

EVALUATION: At the current time a psychologist is evaluating the performance of the Child Health Associate and comparing them on standard tests as well as specific tasks with medical students, residents, etc.

Eventually a large number of Child Health Associates will be required to meet the need for increased health care to children. A survey by the American Academy of Pediatrics showed that 41% of pediatricians would hire an allied health worker full-time; another 22% would hire one part-time.

ADMISSION REQUIREMENTS: Successful completion of a minimum of 60 semester hours or 90 quarter hours of college liberal arts and science courses including general chemistry, biology, sociology, psychology and courses in literature and history. (Courses in philosopy, sociology, history, and organic chemistry are recommended). Substitutes for the above requirements may be made in special circumstances, but, candidates who do not already have a college degree must have 60 semester hours of class credits which are acceptable at the University of Colorado. The biology, chemistry, psychology and at least one year of English Literature are essential for admission.

RECRUITMENT: Candidates should have exhibited an interest in having a career in health professions. Some candidates are apt to be individuals who originally elected to go into medicine or those in various allied health professional training or science oriented women desiring a profession that entails working with children.

CAREER MOBILITY: Not stated.

Child Health Associate Program (continued)

COST TO STUDENT and/or INSTITUTION:

Colorado residents: $462.00 per year
Non-residents: $1,460 per year plus $1,500 per year other expenses.

The program is financed on private and federal grants and approximate estimate is not available.

PHYSICIAN REACTION:

Success with the Pediatric Nurse Practitioner Program indicates that the Child Health Associates will be readily accepted both by physicians as well as by the children and their parents.

CURRICULUM:

First Quarter (Summer)

Gross Anatomy
Microscopic Anatomy
Embryology
Genetics
Pediatric Psychology and Sociology
Physiology
Growth and Development
Community Health, Epidemiology, & Statistics
Introduction to Obstetrics

Second Quarter (Fall)

History of Medicine
Biochemistry
Nutrition
Pediatric Pathology
Interviewing and Examination
Fetal and Newborn Growth & Development
Pediatric Psychology and Sociology
Foreign Language (Spanish)
Art of Pediatrics

Third Quarter (Winter)

Newborn Nursery Experience
Microbiology and Infectious Disease
Nutrition
Child Growth and Development and Neonatal Child Health Practice
Interviewing and Examination
Pediatric Psychology and Sociology
Foreign Language (Spanish)
Community Health, Epidemiology, and Statistics
Art of Pediatrics

Fourth Quarter (Spring)

Outpatient Clinical Experience (Toddlers)
Microbiology and Infectious Disease
Genetics and Birth Defects
Clinical (laboratory) Diagnosis
Preventive Child Health Practice
Interviewing and Examination
Pediatric Psychology and Sociology
Foreign Language (Spanish)
Art of Pediatrics

Fifth Quarter (Summer) (Unstructured)

Electives
Completion of Unfulfilled Requirements
Tutorial Sessions
Summer Work
Extended Travel or Vacation

Sixth Quarter (Fall)

Pediatric Pharmacology and Toxicology
Applied Growth and Development
Child Psychology and Psychiatry
Survey of Medical Specialties
Humanities
Outpatient Practice and Pre-School Problems
Community Child Health Practice
Foreign Language (Spanish)

Seventh Quarter (Winter)

Applied Growth and Development
Child Psychology and Psychiatry
Survey of Medical Specialties
Outpatient Practice (School Age Problems)
Community Child Health Practice
Humanities
Foreign Language (Spanish)

Eighth Quarter (Spring)

Out-patient Practice (Adolescent Problems)
Community Child Health Practice
Survey of Medical Specialties
Electives
Humanities
Foreign Language (Spanish)
Art of Pediatrics

Third Year: Internship - Field experience at Health Centers, Outpatient facilities, doctors' offices, newborn nurseries, etc.

PROGRAM: Clinical Associate

PROGRAM CHAIRMAN: Ralph W. Eichenberger, M.D., M.P.H.

TRAINING FACILITY: University of Kentucky
Lexington, Kentucky 40506

LENGTH OF TRAINING: Two years

GOALS AND OBJECTIVES: To prepare a health worker to function as an assistant to the physician in clinical practice.

NEED: The University of Kentucky Clinical Associate Program was initially instituted in response to the expressed need for, and active interest in a new kind of health professional on the part of a practicing physician. It was recognized by this board certified specialist that his present assistants were associated with him in a limited clinical sense, vis-a-vis his patients, that the site and time of their assistance was limited, and that their academic training and their professional licensure were both limiting factors to his assigning them expanded functions as an agent.

Later, Kentucky Medical Association physicians surveyed, expressed their opinion that there is a "need for some type of new health person such as the Clinical Associate." (61% of a representative sample.)

Referring to a definition of a type of existing "informal" assistant which these physicians might be able to identify, 85% of them said they had such a one or ones in their present practice. These were members of a half dozen or more existing health manpower (mostly womenpower) categories.

TASK ANALYSIS and/or JOB DESCRIPTION:

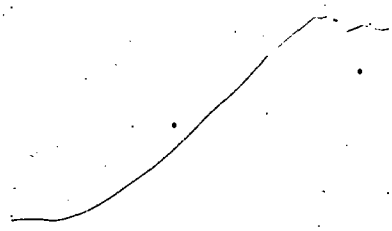
1. Establishes a professional relationship with patient.
2. History taking.
3. Physical examination.
4. Tentative diagnosis
5. Prescribe further investigation (perform certain standardized tests to evaluate health status further).
6. Will not give definitive diagnosis, prescription of treatment or will administer treatment.

The Clinical Associate is a generalist in the sense that he is prepared to serve as an agent of any physician to perform those activities which are general to clinical health care. Specialization may begin in the formal training program.

LEGAL ASPECTS:	The functions and responsibilities are delimited under each activity listed above. Rather than by restrictive or permissive licensure, the functions and responsibilities of the Clinical Associate are defined by his physician who will be regulated by his licensure and by the certification standards of the Clinical Associate profession (see Certification). Quality of care and protection of the public in respect to health thus remain with the physician as these are now entrusted to him by society.
CERTIFICATION:	Satisfactory attainment of the training objectives will be recognized by certification by the University of Kentucky, and receipt of a diploma.
EVALUATION:	14% of physicians in the Kentucky Medical Association survey said they would "definitely" and 22% that they would "possibly" hire such a one as the Clinical Associate, 943 potential employers. A survey of public acceptance was not done, but the physicians were asked to express their opinion of acceptance by their patients, of this new profession. 44% indicated varying degrees on the acceptance side of a value scale, only 11% on the rejection side. 5% of those who said they did not think they could hire such a person also indicated they thought their patients would not accept such a person.
ADMISSION REQUIREMENTS:	The educational requirements are a high school diploma as the minimum for entering the proposed training, and a recommendation from a physician.
RECRUITMENT:	It is proposed that physicians in the state of Kentucky practicing in a variety of delivery systems, who have already expressed a desire to employ such a Clinical Associate might submit candidates.
EMPLOYMENT and/or SALARY:	Individual students and potential physician-employers will have an opportunity to pre-test their personal compatabilities through a short term (1 to 2 weeks) preceptorship during the latter months of the second year. The training facility will assume a certain arbitration role in the placement of their graduates during the pilot phase of the training program.
CAREER MOBILITY:	There is ample opportunity for a Clinical Associate to acquire particular knowledge and skills, and to continually increase his privileges and responsibilities under his physician associate.
COST TO STUDENT and/or INSTITUTION:	The cost per year per student is expected to be as high as for training a medical student. Length of training will only be 2 years instead of 5 for the physician.
PHYSICIAN REACTION:	Refer to Documented Need.

Clinical Associate Program (continued)

CURRICULUM:	Content	Courses
	The Health Profession.....	General Medical History Medical Ethics Ethics for the Clinical Associate
	Communication Theory and Practice	Medical Sociology History Taking Medical Terminology and Records
	The Examination.....	Anatomy Physical Diagnosis
	Diagnosis	Physiology Biochemistry Clinical Lab. X-Ray EEG EKG
	Consultation	The Health Specialties
	Treatment	Medicine and Pharmacology Surgery Nursing P.T. I.T. MSW



PROGRAM:	Clinical Corpsman (Health Team Generalist) (not a Physician's Assistant).
PROGRAM DIRECTOR:	Donald G. Vidt, M.D.
TRAINING FACILITY:	Cleveland Clinic Hospital 2050 East 93rd Street Cleveland, Ohio 44106 Basic Science courses at Cuyahoga Community College
LENGTH OF TRAINING:	One year.
GOALS AND OBJECTIVES:	Training a generalist in a wide variety of technical and patient care activities so as to complement the skills of physicians, nurses and various technicians.
NEED:	Program was started due to severe shortage of nurses and because of frequent inquiries from discharged military corpsmen regarding employment opportunities.
TASK ANALYSIS and/or JOB DESCRIPTION:	Skills complement those of physicians, nurses, and various technicians with emphasis on direct institutional patient care service.
LEGAL ASPECTS:	Assistant Administrator feels that legal implications are very minor.
CERTIFICATION:	Certificate of achievement from Cleveland Clinic Educational Foundation in cooperation with Cleveland Hospital and Cuyahoga Community College.
EVALUATION:	Program operational for only a few months makes evaluation difficult, but intensive care beds which had previously been closed due to a lack of nursing staff are now open.
ADMISSION REQUIREMENTS:	Ex Military Corpsmen or individuals with some experience in the health field and acceptable high school and/or college grade transcripts.
RECRUITMENT:	Advertisements in the Army, Navy, and Air Force Times as one form of recruitment as well as sending information packets to large military installations in the U.S.
EMPLOYMENT and/or SALARY:	A base monthly wage is paid during the year and is adjusted upon the successful completion of each quarter of study. While the training program emphasizes hospital patient care, the trained corpsmen can function in a variety of environments,

Clinical Corpsman Program (continued)

EMPLOYMENT and/or SALARY: (continued)	including hospitals, outpatient clinics, emergency rooms, physicians' offices, and public health agencies. Many challenging positions are available to the individual with sufficient ability and motivation.
CAREER MOBILITY:	The Corpsmen who have finished the one year of training may have the opportunity to complete a second year of clinical training in one or more specialized areas, or they may assume teaching or supervisory responsibilities within the program. In all cases, they are encouraged to pursue further college courses leading to an Associate or Baccalaureate degree.
COST TO STUDENT and/or INSTITUTION:	There is no tuition cost to the student and the direct cost to the institution is approximately $5,700.
PHYSICIAN REACTION:	Not stated.
CURRICULUM:	The course provides the student with a basic knowledge in several pertinent areas; including inhalation therapy, chest physiotherapy, radiology, electrocardiography and medical instrumentation, pharmacy and therapeutics, introduction to medicine and surgery.

PROGRAM: Medical Services Associate

PROGRAM DIRECTOR: Stanley S. Bergen, Jr., M.D.
Chief of Community Medicine

TRAINING FACILITY: Brooklyn-Cumberland Medical Center
121 DeKalb Avenue
Brooklyn, New York 11201

In cooperation with Long Island University, New York

LENGTH OF TRAINING: Two years

GOALS AND OBJECTIVES: The program is designed to recruit residents of the area for this program in the hope that they will remain in the area and aid in upgrading its health resources.

NEED: Both institutions are located in the Fort Greene, Bedford-Stuyvesant area of Brooklyn and are thus acutely aware of the lack of health resources in the ghetto around them. This area has the second highest rate of prematurity and prenatal deaths; the highest rate of lead poisoning; the lowest rate of dental care; high rates of addiction and alcoholism; and an acute lack of neighborhood health care personnel.

TASK ANALYSIS and/or JOB DESCRIPTION: The Medical Services Associate will take routine medical histories and carry out preliminary physical examinations. He will order appropriate laboratory and radiologic studies and be trained to perform basic studies (e.g., CBC, bleeding and coagulation time estimation, urinalysis, biologic smears, etc.) himself. He will have a knowledge of fundamental nursing procedures used in patient care. He will participate in daily rounds with the physician, and also be capable of making his own daily rounds with the physician, and also be capable of making his own daily rounds on patients assigned to his care, and be prepared to report on each patient's current status. He will assemble reports of results of tests and other data, write orders requested by the physician, and write his own properly identified progress notes.

In the maintenance of patient's records he will also record procedures and results, laboratory and x-ray data, special consultant and rounds opinions, and other pertinent observations. He will perform limited procedures as directed: Phlebotomy to obtain blood specimens, administer i.v. fluids, immunizations, debridement, change routine dressings, minor suturing, cutdowns, intubate, gastric gavage and lavage, urinary bladder catheterization, measure venous pressure, and perform spinal taps and bone marrow aspirations.

Medical Services Associate

He will be able to operate major medical equipment, carry out tests for basic metabolism, pulmonary function studies, cystometrics, audiometry and visual field examinations. He will assist at surgical operations.

In emergency situations, he will be qualified to support vital functions on an emergency basis until the physician arrives, administer i.v. fluids, operate the cardiac arrest cart, perform artificial respiration and external cardiac massage.

TASK ANALYSIS and/or JOB DESCRIPTION: He will perform duties on special care units as trained and with proper supervision. He will visit private homes, nursing homes, or see patients in ambulatory care areas to determine the necessity for physician attention. He should maintain contact with other members of the health care team, particularly in areas of environmental, social, economic and psychological need to the patient.

LEGAL ASPECTS: The Associate functions under the protection of the physician's malpractice insurance.

CERTIFICATION: Yes

EVALUATION: Demonstration projects such as the Associate program will allow the medical profession to evaluate the usefulness and capabilities of such personnel functioning in an urban setting.

ADMISSION REQUIREMENTS. Where appropriate school and/or armed forces records will be reviewed but primarily, emphasis is placed on personal interviews, evidence of motivation and psychological adaptability in selecting candidates.

RECRUITMENT: Residents of the ghetto area

EMPLOYMENT and/or SALARY: $7,500 starting salary.

The Associate may be utilized for house calls for patients of all economic levels, work in ambulatory care areas including neighborhood health centers, provide care in nursing homes, home care programs, and screening programs.

He will function as a productive member of specialty health care units, including the rendering of acute care in the emergency room.

CAREER MOBILITY: Program will provide the Associate with great mobility to seek further education as he becomes interested in specific areas of health practice or administration.

Medical Services Associate Program (continued)

COST TO STUDENT and/or INSTITUTION: Not stated.

PHYSICIAN REACTION: Not stated.

CURRICULUM: Curriculum is currently being developed. The Medical Services Associate will undergo a two year program of study including didactic courses in the basic concepts of human anatomy, physiology, pathology, pharmacology, English, mathematics, sociology, psychology, medical ethics, and medical terminology. Each participant will be exposed to approximately one year of clinical experience working in the the medical care areas of the Brookl n-Cumberland Medical Center. They will be taught to take routine parts of medical histories, perform physical examinations, participate in and assist with procedures performed by the physician, assist at operations, review the patients' charts for routine procedures and spotcheck developments in the course of the disease process in each patient.