New Members of the Physician's Health Team:

PHYSICIAN'S ASSISTANTS

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NATIONAL ACADEMY OF SCIENCES

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Report of the Ad Hoc Panel
on New Members of the Physician's
Health Team
of the
Board on Medicine
of the
National Academy of Sciences

1970

NATIONAL ACADEMY OF SCIENCES
2101 CONSTITUTION AVENUE
WASHINGTON, D. C. 20418

BOARD ON MEDICINE

May 13, 1970

Dr. Philip Handler
President
National Academy of Sciences

Dear Dr. Handler:

I am enclosing a report on a study conducted by the Panel of the Board on Medicine entitled, "New Members of the Physician's Health Team: The Physician's Assistant". The Panel was under the Chairmanship of Dr. Eugene A. Stead, Jr. The Board had an opportunity to review the study as it was in progress and has unanimously approved the final report. It should be emphasized that this study, which is planned as one of a series, is focused sharply on only one aspect of the broad subject of paraprofessionals in health services, namely on the so-called physician's assistant.

There are several reasons why the Board believes that there is a need for a statement on this question at this particular point in time: first, it is essential that flexibility be preserved in the development of the various types of physician's assistants, yet already attempts are being made to embody fixed criteria into state licensure procedures; second, despite all the publicity given to the concept of the physician's assistant, it is essential that authoritative groups, speaking from a strong medical base, lend sanction to the development; and, third, considerable interest has been expressed by the Departments of Health, Education, and Welfare and Defense in the subject of new type careers in health care for returning veterans with experience as medical corpsmen. The Board believes that the present report represents an excellent definition of the overall problem and characterization of the broad alternatives.

Sincerely yours,

Walsh McDermott, M.D.
Chairman

Enclosure

BOARD ON MEDICINE
MEMBERSHIP

Dr. Eugene A. Stead, Jr.
Professor of Medicine
Duke University Medical Center
Durham, North Carolina 27706

Dr. Dwight L. Wilbur
655 Sutter Street
San Francisco, California 94102

Dr. Bryan Williams
606 North Washington
Dallas, Texas 75246

Professor Adam Yarmolinsky
Law School
Harvard University
Cambridge, Massachusetts 02138

Dr. Alonzo S. Yerby
Associate Dean for Community Affairs
School of Public Health
Harvard University
55 Shattuck Street
Boston, Massachusetts 02115

Ad Hoc Panel on New Members of the Physician's Health Team

Eugene A. Stead, Jr., M.D.
Professor of Medicine
Duke University Medical Center
Durham, North Carolina 27706

E. Harvey Estes, Jr., M.D.
Professor and Chairman
Department of Community Health Sciences
Duke University Medical Center
Durham, North Carolina 27706

Nathan Hershey
Research Professor of Health Law
Graduate School of Public Health
University of Piittsburgh
Pittsburgh, Pennsylvania 15213

Mrs. Lucile P. Leone
Associate Dean
Dallas Clinical Center
Texas Woman's University
1810 Inwood Road
Dallas, Texas 75235

Bryan Williams, M.D.
606 North Washington
Dallas, Texas 75246

Professor Adam Yarmolinsky
Law School of Harvard University
Cambridge, Massachusetts 02138

Mrs. Martha Ballenger
Executive Secretary for the Panel
Duke Medical Center
c/o Dr. E. H. Estes
Durham, North Carolina 27706

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GENERAL BACKGROUND

The Board on Medicine of the National Academy of Sciences is continually searching for "points of leverage" in the health field at which modest investments of energy and money can result in substantial improvements in the delivery of health care to the American people. Health care involves many professions and institutions, including several different types of delivery systems. One such system, and unquestionably the one most familiar to the public, is the system for the delivery of personal health services. These personal services are given largely by physicians, nurses, and various other personnel, but only the physician is equipped by education and training for certain critical roles.

In recent years and largely as a consequence of developments in biomedical research, the radius over which the physician can exert his influence has been steadily shortened. He can do far more things, but he does them for fewer people. Some means of compensating this situation must be found if the goal of satisfactory medical services for all is to be met.

The Board on Medicine believes that the development of better clinical support systems to help the physician deliver personal health care to deliver more units of personal health services per hour of his working day are now in the offing. In developing such systems, it is important to preserve sufficient flexibility to permit continued innovation and experimentation. One threat to such continued flexibility would be the premature incorporation into licensure laws of the job qualifications of various types of new health workers. One of the purposes of this report, which presumably will be one of a series, is to call attention to this danger. The principal focus of the report is on one of the possible new types of health workers, specifically on those that serve as immediate "extensions" of the physician.

It is anticipated that the new health personnel in general, and the systems they will man, will include various combinations of traditional personnel—physicians, nurses, dietitians, and others; new machines—computers, autoanalyzers, biomedical instrumentation; and new types of assistants, including those working at the physician-patient interface. Assistants of this last type*—the type discussed in the present report—differ from other health-related personnel in that they are selected by physicians, trained by physicians, and report administratively directly to physicians. They serve to extend the arms, legs, and brains of the physician. They interact at the physician-patient interface and are capable, under the direction of the physician, of performing functions now usually performed by physicians.

*Fixed titles for the different categories of assistants described in this report have not been established. There are indications that the Type A assistants described in this report will be called physicians' associates.

Another reason for examining this question at this time is that the armed services are returning to civilian life large numbers of men who have worked effectively in the military medical corps; the Departments of Defense and Health, Education, and Welfare are looking for guidance in determining effective ways to open up careers in the health field for these veterans. One way would appear to be the development of these new assistants. The Board believes that, along with expansion of the functions of other health professions, the use of these new assistants will permit development of new patterns of medical practice, and that the impact of new alignments of functions and newly trained people will be as immediate as that of new institutional forms and new machines. For these several reasons, therefore, the Board formed a panel to examine (1) the factors leading to development of these new assistants, and (2) the relationships between these assistants and the personnel who have traditionally helped the physician. The results of the study, which was reviewed by the full Board at several stages, are presented in this report.

THE NEED FOR NEW PERSONNEL

The current output of medical schools, plus the output of new and expanded schools, will be insufficient to provide personal health services to those segments of society now being served, while extending services to those segments now receiving little or no care.

Even if sufficient expansion of physician output to meet the total need for services could be achieved, it is doubtful that this expansion would be a wise course, since certain tasks do not require the unique talents of the physician and may be effectively performed by personnel with less total training, at less cost to the consumer.

Personnel in the existing manpower categories (such as professional nurses and physical therapists) could assume many health-service functions with added training, but should not be considered as the sole or even primary pool supplying personnel to these new health professions. A new primary pathway into the new class of physician's assistantships would tend to extend the range of health careers and would enhance the potential for recruitment of male as well as female candidates.

TYPES OF PHYSICIAN'S ASSISTANTS

In view of the great variety of functions of physicians' assistants, the variety of circumstances in which these functions might be performed, and the different sorts of skills and knowledge necessary to perform them, it is neces-

sary to describe several types of physician's assistants. These types are distinguished primarily by the nature of the service each is best equipped to render by virtue of the depth and breadth of their medical knowledge and experience. The Type A assistants are new to the American scene. Types B and C assistants have been present in one form or another for a number of years.

CATEGORIES OF PHYSICIAN'S ASSISTANTS

The Type A Assistant

The Type A assistant is capable of approaching the patient, collecting historical and physical data, organizing these data, and presenting them in such a way that the physician can visualize the medical problem and determine appropriate diagnostic or therapeutic steps. He is also capable of assisting the physician by performing diagnostic and therapeutic procedures and coordinating the roles of other, more technical, assistants. While he functions under the general supervision and responsibility of the physician, he might, under special circumstances and under defined rules, perform without the immediate surveillance of the physician. He is, thus, distinguished by his ability to integrate and interpret findings on the basis of general medical knowledge and to exercise a degree of independent judgment.

The Type B Assistant

The Type B assistant, while not equipped with general knowledge and skills relative to the whole range of medical care, possesses exceptional skill in one clinical specialty or, more commonly, in certain procedures within such a specialty. In his area of specialty, he has a degree of skill beyond that normally possessed by a Type A assistant and perhaps beyond that normally possessed by physicians who are not engaged in the specialty. Because his knowledge and skill are limited to a particular specialty, he is less qualified for independent action. An example of this type of assistant might be one who is highly skilled in the physician's functions associated with a renal dialysis unit and who is capable of performing these functions as required.

The Type C Assistant

The Type C assistant is capable of performing a variety of tasks over the whole range of medical care under the supervision of a physician, although he does not possess the level of medical knowledge necessary to integrate and interpret findings. He is similar to a Type A assistant in the number of areas in which he can perform, but he cannot exercise the degree of independent

synthesis and judgment of which Type A is capable. This type of assistant would be to medicine what the practical nurse is to nursing.

Presumably these new health careers would be open to members of either sex. Although practical nursing has in the past been a predominantly female occupation, some medical corpsmen, as they re-enter civilian life and seek careers in the health field, are taking the licensing exam and becoming practical nurses. There is no basis for preference for either sex relative to any of the assistant types described here.

As far as can be foreseen into the future, these assistants should perform as members of a health team under the general supervision and authority of a physician or group of physicians. The provision that they should perform in a dependent relationship with physicians in fact expands the range of functions that are or may come to be within their individual spheres of competence. Of the various independent practitioners in the health field, only the physician is authorized to perform independently over the full range of medical care. The more narrowly defined spheres of activity of other practitioners are likely to influence strongly, if not firmly dictate, the limit of their functions and development – if for no other reason than that they bear so heavily on the nature of the problems that will be presented to them. On the other hand, assisting with the variety of problems that confront physicians over time provides opportunities for continuous learning and encourages the development of new skills that would justify "rising ceilings" on the activities and careers of exceptionally able assistants.

The functions performed by such assistants should be within the scope of medical competence of the physicians under whom they work. For example, it would be inappropriate for a surgeon's assistant to perform a preoperative cardiac evaluation unless the surgeon is competent to review his work critically.

Some assistants may wish to become independent, and they may do so by obtaining an M.D. degree. On the basis of performance and equivalency exams they may demonstrate that they have mastered many of the functions and concepts normally taught medical students in their clinical years. Type A assistants should be able to go through medical school in less than the usual four academic years.

GENERAL RECOMMENDATIONS RELATIVE TO EDUCATION AND TRAINING

The Type A Assistant

For proper performance of the functions outlined for Type A assistants, the student must be able to use written and spoken language in effective communication with patients, physicians, and others. He must also possess

quantification skills to ensure proper calculation and interpretation of tests. He must also meet high ethical and moral standards. Because of the nature of the activities of Type A assistants, large investment of time by physicians is required for their training. Obviously, it would be wasteful to invest this valuable commodity in candidates who do not demonstrate ability to learn rapidly and who do not have exceptional enthusiasm for careers utilizing this knowledge and training. Every effort should be made to ensure that candidates accepted for training possess these abilities and characteristics.

The essential educational requirement for Type A assistants is the equivalent of two years of professional-level training in classroom and clinical work. Many candidates for Type A programs are likely to have completed the first two years of college. It should be emphasized, however, that a college background is not considered necessary for entry into a Type A training program or for the effective performance of the functions of a Type A assistant. The level of general education represented by a high school diploma should be adequate pre-professional education for a Type A, as well as Type B or C, assistant. The Type A assistant will work closely with physicians and other health professionals, most of whom will have a degree of some kind. For this reason, the assistant may feel more comfortable if he has a degree. Provision should be made, where possible, for those completing a Type A program to earn baccalaureate degrees if they so choose, either by applying their professional training toward completion of their previous college work or by completing the pre-professional college courses at a later time.

The critical requirement for admission to a Type A training program should be the candidate's demonstration that he possesses the abilities and characteristics called for above. The following illustrative examples may serve the purpose of establishing the necessary qualifications for admission to a program and are provided as guides:

1. For Degree-Granting Programs: A candidate may be selected for the professional portion of the training following successful completion of the first two years of course work required by an affiliated college or university as a part of qualification for a baccalaureate degree.

2. For Non-Degree (Certificate) Programs:

a. A candidate may be selected if he has a high school diploma or its equivalent and can furnish appropriate assurances of his character and commitment. Experience has demonstrated that among the most reliable indications that a candidate possesses the necessary intangible characteristics is a showing that he has background experience in health-related work, including education and experience in direct patient care, and statements of evaluation from physicians or others competent to evaluate the qualifications cited above.

b. A candidate may be selected upon a showing that he has a speci-

fied number of years experience as a Type B or C assistant, and evaluation statements from those responsible for his work.

The curriculum of a program training Type A assistants should include adequate instruction in the basic sciences underlying medical practice and sufficient exposure to clinical medicine to ensure understanding of patients, their ailments, and the diagnostic and therapeutic responses to those ailments. Thus, students must be given adequate exposure to physician instructors and to clinical training essentially the same as that given medical students. The Type A assistant will generally have four types of training: 1) basic general education; 2) basic scientific education; 3) general clinical training; 4) specialized clinical training in some aspect or aspects of medical practice. The first two types of training may be available at a variety of institutions, including junior and four-year colleges. Because of the amount of physician time necessary for the third and fourth types of training, however, it is unlikely that it will be economically feasible to provide it except in hospitals associated with medical schools and other institutions participating in the training of physicians.

Persons entering a program who have already acquired clinical knowledge should be given appropriate credit.

The Type B Assistant

As for Type A assistants, the training of Type B assistants will require considerable participation by physicians. A significant portion of this training should be by physicians specializing in the area of the assistant's concentration because the Type B assistant will have a specialized skill in excess of that generally possessed by the ordinary physician. Because of the different nature of their activity, requiring less independence, the general education and clinical backgrounds of Type B assistants, of course, need not be as extensive as is suggested for Type A above.

Because of the specialized nature of the work and the narrow range of activity of a Type B assistant, the length of training required will tend to be more variable than for a Type A assistant.

The Type C Assistant

Type C assistants, because they are non-specialized personnel, require less general education, basic scientific education, clinical training, and special-skill training than is necessary for Type A or Type B assistants. A larger portion of their training might be given outside a medical center, and much of their clinical training could be given on the job. The training programs for practical nurses usually provide the type of preparation necessary for performance of the duties of Type C assistants. Recognizing that Type C assistants may wish to become Type A or Type B, educational programs for Type

A and B assistants should give credit for appropriate educational and work experience acquired in Type C training. This and other provision for upward mobility is of great importance and should be built into the system.

ACCREDITATION

Accreditation of programs should be in the hands of an accrediting agency. In medical education, this task has traditionally been performed under the auspices of the American Medical Association and the American Association of Medical Colleges, and it would be appropriate for these two organizations to establish the basis for review and approval of programs for the training of assistants.

In establishing criteria for entry into and mobility between groups of assistants, consideration should be given to proven competence as well as academic credentials. The accrediting agency should be aware of the fact that it is possible to establish the clinical and specialized skills of all three types of assistants starting with the basic background of a high school education. Recognizing that a non-degree (certificate) graduate may wish to achieve a baccalaureate degree later, it is urged that colleges consider a reversal of the usual sequence, permitting the professional courses to apply toward the degree, if the required pre-professional courses are completed later. The panel emphasizes that the success of this new concept in development of health personnel will depend in large measure on the flexibility of the approach of the accrediting agency.

LEGAL AUTHORIZATION

The need for development of professional quality control through an accreditation mechanism is accompanied by the need to provide legal authorization for the use of these new types of assistants. Such authorization must derive from the individual states, which have traditionally provided the legal framework under which health care is delivered.

It should be emphasized that these types of assistants are unique in the medical field, and the extent of their potential contribution has not yet been determined. Because of its desire to preserve the flexibility necessary for the optimal use and full development of the individual assistant's capabilities, the panel feels that legal authorization should not be effected through licensure. A type of authorization built around a system of registration could be developed, which would permit qualified physicians to employ assistants if such assistants have completed an approved program or have otherwise established their qualifications to perform the duties proposed for them. The basic objective should be to provide guarantees of the qualifications of personnel without imposing the rigid definitions characteristic of licensing legislation.

FUTURE IMPACT

Rapid strides have been made in recent years in expanding the scientific and technological knowledge that underlies medical care. Before the full potential of these advances can be realized, however, some resolution of the problems of physician shortage and maldistribution of medical care must be found. Discussions regarding the future of medical practice eventually lead to the conclusion that there must be major changes in the organization of health care delivery. Most such discussions lead to the conclusion that medical care must be organized into modes of service in which functions are coordinated and services rendered in such a way as to promote efficiency, convenience, continuity, and economy. Critical to the necessary reorganization is the utilization of different types of health care personnel.

Any mode of service developed must be capable of providing medical care to the many rural areas and depressed urban areas that are unable to attract and hold physicians. Technical interfaces, such as image transmission, might be developed to expand the physician's range of control and permit him to supervise an assistant physically separated from him. Skilled assistants will be needed to gather physical data, communicate it to the physician effectively, and administer the treatment prescribed by the distant physician. In addition, there is currently some speculation as to whether persons other than physicians might be able to act with some degree of independence in handling the more routine health problems in medically deprived areas. The development of assistants, such as those described herein, would contribute to the needed manpower pool and would provide an opportunity for experimentation with various combinations of personnel and technological advances.

CONCLUSION

There has been much discussion of health manpower needs and of roles for new types of personnel, such as physician's assistants. There is a need for objective data, including measurements of the effect of such assistants on the quality and quantity of medical care delivered in various settings. This task cannot be accomplished unless health personnel are trained and placed in practice settings in sufficient quantity to allow reliable observations to be made.

Although there are still unanswered questions and unresolved problems, the existing and still-growing shortage of physicians places programs for training physician's assistants among the top priorities for the health professions. The Board on Medicine endorses the concept of expansion of physician services by the use of physician's assistants, endorses and supports continued exploration of the effects of such assistants in a variety of clinical settings, and urges the cooperation of the Association of American Medical

Colleges, the American Medical Association, and government in the establishment and review of educational standards for training programs, the resolution of legal difficulties, and the establishment of uniform systems for testing and certification of such assistants.

APPENDIX

The following programs are training personnel who would be classified as Type A, B, or C assistants. This listing is not intended to be complete and is designed solely to give general information on the operation of such programs. This information is correct as of December 1969.

PROGRAM SPONSOR:	ALDERSON-BROADDUS COLLEGE, Philippi, West Virginia
Program Director:	Hu C. Myers, M.D., Myers Clinic, Philippi, West Virginia
Personnel Trained:	Physician's Assistants
Prerequisites:	High School graduate. Preference given to Medical Corpsmen
Duration of Program:	4 years
Degree or Certificate Awarded:	B.S.
Curriculum:	Courses in liberal arts and basic sciences for general education. Training in clinical procedure and technology. Clinical clerkship training.
Type of Instruction:	1. By physicians – 30% of the medical science portion of the curriculum (which is approximately half of the total experience). 2. Clinical: 40% of the medical science portion.
Specialty Areas:	Surgery, Internal Medicine, General Practice
Years in Operation:	2
Number of Trainees:	25 per class. No graduates to date
PROGRAM SPONSOR:	BOWMAN GRAY SCHOOL OF MEDICINE, WAKE FOREST UNIVERSITY, Winston-Salem, North Carolina
Program Director:	Leland Powers, M.D., Director, Division of Allied Health Programs
Personnel Trained:	Physician's Assistants

Prerequisites:	Two years of college or experience as a Medical Corpsman
Duration of Program:	24 months
Degree or Certificate Awarded:	Certificate. Some colleges credit this work toward a B.S. degree under a 3-2 program
Curriculum:	6 months of core subjects to give general background. 6-8 months of concentrated training in a particular specialty. 10-12 additional months of supervised clinical experience.
Type of Instruction:	1. By physicians – 50% during first 6 months; 100% thereafter. 2. Clinical: 18 months
Specialty Areas:	Pediatrics, Neurology, Family Practice
Years in Operation:	Since September, 1969
Number of Trainees:	8 in present class; plan to have about 70 per class
PROGRAM SPONSOR:	DUKE UNIVERSITY MEDICAL CENTER, Durham, North Carolina
Program Director:	D. Robert Howard, M.D., Department of Community Health Sciences
Personnel Trained:	Physician's Assistants
Prerequisites:	High School graduate; 3 years experience in the health field, one of which is spent in direct patient care; and CEEB Scores
Duration of Program:	24 months
Curriculum:	9 months of courses in basic scientific principles and medical sciences. 15 months supervised clinical experience, with provision for general and specialty training
Type of Instruction:	1. By Physicians – 75%. 2. Clinical – 60%
Specialty Areas:	General Practice, Internal Medicine, General Surgery, General Pediatrics, Radiology, Medical and Surgical Subspecialties
Years in Operation:	5
Number of Trainees:	40 in current class. Planned expansion to 60-100 per class. 29 graduates to date
PROGRAM SPONSOR:	FEDERAL HEALTH PROGRAMS SERVICE, DIVISION OF HEALTH SERVICES, U.S. MEDICAL CENTER, Springfield, Missouri
Program Director:	Dr. R. Brutsche

Personnel Trained:	Physician's Assistant
Prerequisites:	High School graduate or equivalent; ex-military corpsmen with 3½ years experience in nursing and experience in 2 specialties
Duration of Program:	1 year
Degree or Certificate Awarded:	Certificate
Curriculum:	Basic medical sciences in initial program, with advance training program for applied clinical training
Type of Instruction:	1. By physicians – not sure of %; 15 are on the teaching staff. 2. Clinical – 15%
Specialty Areas:	General; Medical, Surgical, Psychiatric
Years in Operation:	2 years, with formal program. Have had on-th-job training since 1930
Number of Trainees:	8 per class. 4 graduates to date. (125 with former on-the-job training)
PROGRAM SPONSOR:	GRADY MEMORIAL HOSPITAL, EMORY UNIVERSITY, Atlanta, Georgia
Program Director:	Dr. E. Alan Paulk
Personnel Trained:	Medical Specialty Assistants
Prerequisites:	2 years experience in medical corps, or similar hospital experience
Duration of Program:	2 years
Degree or Certificate Awarded:	Certificate from the hospital and the Emory Department of Medicine
Curriculum:	Courses in basic medical sciences and clinical experience in Coronary Care Units, Intensive Care Units, Cardiac Catheterization Laboratory, Pulmonary Function Laboratory, and Renal Dialysis Laboratory
Type of Instruction:	1. By Physicians – 90%. 2. Clinical – 50%
Specialty Areas:	Coronary Care
Years in Operation:	2
Number of Trainees:	6 per class. 7 graduates to date
PROGRAM SPONSOR:	PURSER-PHARMACIST MATE SCHOOL, PUBLIC HEALTH SERVICE HOSPITAL, Staten Island, New York
Program Director:	Mr. James Hensley, Director of Training

Personnel Trained:	Purser-Pharmacist Mates
Prerequisites:	Marine pursers and medical corpsmen
Duration of Program:	9 months
Degree or Certificate Awarded:	Public Health Service Certificate and license from the Coast Guard
Curriculum:	Basic medical sciences; principles and management procedures of the more common illnesses and injuries encountered at sea; principles of environmental sanitation and personal hygiene
Type of Instruction:	1. By physicians – 80%. 2. Clinical – 50%
Specialty Areas:	Marine General Practice
Years in Operation:	4
Number of Trainees:	30 per class. 90 graduates to date
PROGRAM SPONSOR:	UNIVERSITY OF ALABAMA, Birmingham, Alabama
Program Director:	Dr. Harold Schnaper
Personnel Trained:	Surgeon's Assistants
Prerequisites:	2 years of college
Duration of Program:	2 years
Degree or Certificate Awarded:	Certificate
Curriculum:	First year, basic science courses in anatomy, physiology, pharmacology, and pathology, and a clinical training period with courses in such things as medical history and physical examination procedures and surgical care techniques. Second year, supervised clinical experience.
Type of Instruction:	1. By physicians – 50%. 2. Clinical – 50%
Years in Operation:	3 years
Number of Trainees:	4-5 per class. 2 graduates to date
PROGRAM SPONSOR:	SCHOOL OF MEDICINE, UNIVERSITY OF COLORADO, 4200 East Ninth Avenue, Denver, Colorado
Program Director:	Henry K. Silver, M.D., Chairman, Department of Pediatrics
Personnel Trained:	Child Health Associates

Prerequisites:	2 years of college, including certain required courses in the basic sciences
Duration of Program:	3 years
Degree or Certificate Awarded:	B.A. and certificate from State Board of Medical Examiners
Curriculum:	Additional year of basic sciences; 1 year of clinical experience in pediatric wards, nurseries, the out-patient department, and certain community facilities; 1 year of internship.
Type of Instruction:	1. By physicians – 100%. 2. Clinical – more than 33%
Years in Operation:	9 months
Number of Trainees:	10 per class. No graduates to date
PROGRAM SPONSOR:	UNIVERSITY OF TEXAS MEDICAL BRANCH, School of Medicine, Galveston, Texas
Program Director:	Robert W. Ewer, M.D., Assistant Professor
Personnel Trained:	Clinical Associates
Prerequisites:	High School graduate. Preference given to those with hospital experience
Duration of Program:	4 years
Degree or Certificate Awarded:	B.S.
Curriculum:	General liberal arts courses, basic medical sciences, clinical and administrative procedures. Use and maintenance of equipment; ethics
Type of Instruction:	1. By physicians and allied health professionals – 1½ years. By physicians alone – an additional 1½ years. 2. Clinical – 1½ years
Specialty Areas:	
Years in Operation:	Not operational at present time – possibly by September, 1970
Number of Trainees:	4
PROGRAM SPONSOR:	UNIVERSITY OF WASHINGTON, Seattle
Program Director:	Richard A. Smith, M.D., Department of Preventive Medicine
Personnel Trained:	"Medex"
Prerequisites:	Experience as medical corpsman, with training to the level of independent performance

Duration of Program:	15 months
Degree or Certificate Awarded:	Certificate
Curriculum:	Didactic training at the medical school for 3 months; preceptorship with practicing physician for 12 months
Type of Instruction:	1. By physicians: 90%. 2. Clinical: 100% during preceptorship period
Specialty Areas:	General
Years in Operation:	Since July 1969
Number of Trainees:	15 per class; no graduates to date