

*Copyright 1971. All rights reserved*

## USE OF PHYSICIANS' ASSISTANTS IN THE DELIVERY OF MEDICAL CARE 7017

EUGENE A. STEAD, JR., M.D.

*Department of Medicine, Duke University School of Medicine  
and Regenstrief Foundation, Durham, North Carolina*

This review will not cover the education, training, and use of nurses, dietitians, physiotherapists, clinical psychologists, technicians of all kinds and occupational therapists in their traditional roles. It will cover only those developments in which nurses are assuming functions traditionally reserved in our culture for doctors, or where new programs are training various types of assistants to perform functions traditionally reserved for doctors.

The medical profession, the colleges and high schools, the medical schools and medical centers, the lay public and governmental funding agencies have all accepted the premise that doctors are, and will be for a number of years, in short supply. The nation is ready and able to purchase a larger quantity of personal health services. These services should be of high quality and low unit cost. Two types of programs are being developed:

1. Upgrade the education and functions of the nurse so that under the direction of a doctor she can carry out functions currently being performed only by doctors.
2. Train new categories of persons who can become members of the physician's health team.

Both these programs envision that the new personnel will engage in what is currently the diagnosis and practice of medicine. The pediatric nurse practitioner, the coronary care nurse specialist, the inhalation therapist, the physician's assistant are being taught to carry out functions which in the past have been performed only by physicians. In a few states, these functions have been legalized by changes in the medical practice act. In a majority of states, they are functioning with the tacit approval of the medical profession, because no one has a better solution to the needs of the public.

### UPGRADE THE FUNCTION OF THE NURSE NURSE CLINICS

Dr. C. E. Lewis and Barbara Resnik, R.N., M.P.H., described in 1967 their experience with Nurse Clinics and progressive ambulatory patient care (1). Patients included in the study had hypertensive cardiovascular disease, arteriosclerotic heart disease, exogenous obesity, psychophysiologic

reactions, and arthritis. The Nurse Clinic operated in the medical outpatient area. The nurse had her own office and scheduled her patients' appointments. The Nurse Clinic was listed among those clinics held by the Department of Medicine. The experimental group of patients (those seen in the Nurse Clinic) accepted the nurse as a primary source of care. The quality of health care in the Nurse Clinic was compared with that in the conventional medical clinic. There was increased adherence to appointment schedules and better utilization of time, as demonstrated by time and motion studies. The overall cost of the program on a dollar basis was less. The quality of care and patient satisfaction with care were higher in the experimental group.

#### THE NURSE IN AMBULATORY PATIENT CARE

At the Massachusetts General Hospital, the medical and pediatric services have initiated programs in conjunction with the nursing service where the nurse undertakes preventive and supervisory care of ambulatory patients (2). In the pediatric area, broad mandate is given to promote preventive care in communicable disease and nutrition, to analyze family interaction, to detect physical, mental, and emotional handicaps and to work in accident prevention and family planning. The nurse participates in the care of adult patients with chronic disease. She is responsible for maintenance of patient participation in medical treatment over long periods, prevention and early recognition of complications of the disease or its treatment, and management of the ordinary emotional adjustment problems.

#### PEDIATRIC NURSE PRACTITIONER

In the mid-1960s, Dr. Henry Silver (3), at the University of Colorado, developed the pediatric nurse practitioner department as a joint venture of the Department of Pediatrics and the School of Nursing. After a four-month training period at the Medical Center, the pediatric nurse practitioner functions in the office of pediatricians in private practice and in field stations in low income and rural areas where she is readily accessible to people. In the field stations, the nurses have office hours suited to the particular population groups in the adjacent areas.

The nurses provide total well-child care and make significant contributions in the supervision of infants by giving mothers instruction regarding many items of child care, including formula preparation, infant feeding, bathing, toilet training and accident prevention, as well as counseling about a number of minor physical and psychological problems. The nurses' services are particularly meaningful in counseling young, inexperienced mothers. Routine checkups of infants and older children, developmental testing, various screening procedures and tests, routine immunizations, complete physical examination when indicated, as well as the management of a number of minor disorders can all be carried out by the nurse. In caring for these patients, the nurses employ their nursing talents

to the fullest. At the same time the specialized skills of the physician are more effectively and wisely employed.

The child who is ill also has 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 followup continuity of care.

Dr. Silver emphasizes that the educational experience the nurse receives is important.

We feel that the type of educational experience the nurses receive is important. In order to perform the increased duties and assume the responsibilities of pediatric nurse-practitioners, the nurses entering our program must undergo a significant role reorientation so that they can function effectively in their new positions. On-the-job training does not permit the nurses to make the transfer from their previous professional identification to the new one. The physicians must demonstrate to the nurses that they and the nurses can be comfortable when the nurses are carrying out functions that were formerly within the province of the physician. Physicians must participate in authenticating the nurses' new role.

#### NURSE MIDWIVES

In 1959 Dr. Louis Hellman (4, 5), at New York State University-Kings County Medical Center, began to train and use midwives. Five years later, 86 persons had gone through the program and received certification as nurse midwives. All these nurses had R.N. degrees, and some the Bachelor or Masters degree. Only 13 of the graduates engaged in the practice of nursing midwifery. The majority of the graduates were employed as teachers, missionaries, or in the Public Health Service.

The nurse midwife works on the obstetrical floor. The medical resident has the responsibility for the initial examination of the patient and for the assignment of the patient to the midwifery service. The midwife then gives total care to her patient. This means not only conduct of labor and delivery but administration of total nursing care. The midwife can administer analgesia within limits, perform pudendal blocks at delivery, and repair a median episiotomy.

#### CLINICAL NURSING SPECIALISTS

The establishment of coronary care, respiratory, and renal dialysis units has led to a broadening of the nurse's role in the delivery of personal health services. Other physicians on the staff usually expect the director of the unit to be responsible for their patients when in the specialized area of care. The director of the unit usually gives a combination of didactic and on-the-job training to the nurses. He will eventually delegate to his nurses many of the responsibilities which are reserved for the doctor in other areas of the hospital. Gradually, but surely, the nurse specialist is being created.

## NEW COMPONENTS OF THE PHYSICIAN'S HEALTH TEAM TYPE A ASSISTANTS

See reports of Board on Medicine (6) and Committee of Association of American Medical Colleges (7).

*Physician's assistant.*—In the mid-1960s, doctors began to appreciate that they needed help from assistants who were selected by doctors, educated by doctors, and paid by doctors. In 1964, the Duke Medical Center began to develop the man component of a projected man-machine clinical support system for the doctor giving personal health services. The clinical faculty of the medical school select as students mature high school graduates who wish to work with doctors in delivering personal health services at the community level. The students have previously worked in the health field and have found satisfaction in their work. They are of good intelligence, have a rapid rate of learning, and most of them are men who have served in the medical corps of one of the armed services.

The clinical faculty gives these students, whom they refer to as "physician's assistants" (PAs), a two-year course leading to a certificate from the Duke Medical Center. The first nine months of the course are primarily didactic. Six weeks are spent in lectures in medical terminology, medical history and ethics, and basic laboratory procedures. Six months are spent in an integrated series of lectures, arranged by organ systems and covering anatomy, physiology, disease states and principles of therapy. During the last half of this period, instruction in history taking and physical examination is begun. The last six weeks are spent in an introduction to radiology and electrocardiography, plus an introduction to the public health system.

The remaining 15 months are spent in a series of clinical rotations. An inpatient ward rotation, an outpatient rotation including emergency room experience, and a rotation in the office of a community practitioner are all required. The remainder are arranged to fit the interests and career choice of the trainee.

The PA learns to take a history, to do a physical examination, to record the findings, and to present them in an organized way to the physician. He is taught to do technical procedures and to instruct patients. He is also able to carry out emergency cardiorespiratory support procedures, intubations, venipunctures, arterial punctures, minor suturing, and many other tasks. He knows how to approach the patient, to gather data and to organize the data so as to make the physician's job easier, and how to help the patient follow instructions regarding treatment.

In practice settings, the PA's duties vary with the activities of the physician. In a typical internist's setting, he performs and records histories and physical examinations, helps with patient instructions, records laboratory data, completes forms, follows patients in the hospital, et cetera. In a general practice setting, he may also suture minor lacerations, change dressings and

remove casts. In an endocrinologist's setting he may assume responsibility for arranging and performing complex tests involving precise timing and precise methods of sample collection. Any duty which the physician does repetitively might be assigned to a well-trained assistant. The assistant works long hours, usually 50 or more a week, and his beginning salary is about \$10,000 per year (8).

*Child health associate.*—On July 14, 1969, Dr. Silver (3) began a program to educate an entirely new type of health worker who would be associated with physicians in giving diagnostic, preventive, and therapeutic services to patients. The graduate of the Child Health Associate Program will enter practice five years after he graduates from high school.

Students enrolling in the Child Health Associate Program have completed two or more years of work in an undergraduate college or university. This is followed by a two-year course of instruction at our Medical Center and a one-year internship. The curriculum for the two years at the Medical Center consists of a chronologic development of pediatrics from antenatal life to adolescence—with basic science, psychosocial and clinical training and experience emphasized at each developmental period. Students will receive a Bachelor of Arts degree upon completion of the first two years at the Medical Center. The internship year follows. This internship will be similar to a straight internship in pediatrics but with emphasis on clinical experience in the outpatient clinics, in the offices of private physicians, and in community facilities. During this year, relatively little time will be spent on the hospital wards.

The graduate will limit themselves to the care of well children and will not be concerned in providing care for seriously ill children. Since hospitalization of pediatric patients is generally limited to those with severe illness or complex problems, hospital care (except for some aspects of routine newborn-nursery care) would automatically be considered outside the practice of the child health associate. Within the limits established, the child health associate will be qualified to diagnose, counsel and prescribe in both health and disease.

It is expected that graduates of the Child Health Associate Program will practice in two main areas: (a) as associates and employees of physicians (both pediatricians and generalists) in their private offices or (b) under the direct supervision of individual physicians in various public health departments. At all times, child health associates will function under the personal and direct supervision of a licensed physician.

Broadly trained physician's assistants produced by medical centers have not been available in the United States. They differ from other paramedical personnel in that they are taught by doctors to perform functions which doctors traditionally perform. Community colleges and colleges of allied health professions which do not have a large faculty of physicians cannot educate these assistants. Most doctors, not having worked with well-trained assistants, do not appreciate how useful they can be in the delivery of personal health services.

The Board on Medicine of the National Academy of Sciences has pub-

lished a report (6) urging the development of these broadly-trained assistants which they elect to call "Type A." They point out that the assistant is a dependent portion of the doctor's health team and that his independence must lie in the opportunity to evolve into a doctor. The Board comments as follows:

As far as can be visualized in the future, it is felt that 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 these assistants shall perform in a dependent relationship with physicians in fact expands the range of functions which are or may come to be within their sphere of competence. Of the various independent practitioners in the health field, only the physician is authorized to perform over the full spectrum of medical care. The more narrowly defined sphere of activity necessary for other independent practitioners is likely to influence strongly, if not firmly dictate, the limit of their functions and development—if for no other reason than that it bears so heavily on the spectrum of problems which will be presented to them. By contrast, assisting with the variety of problems which confront physicians over a period of time provides an opportunity for continuous learning and encourages the development of new skills which would justify a rising ceiling on the activities of the conscientious assistants.

The functions performed by such assistants should be within the areas of medical practice in which the responsible physician or physicians are clearly competent. 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 examinations they will be able to 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.

The Council of Academic Societies has approved and forwarded to the Executive Council of the Association of American Medical Colleges a report of its ad hoc committee on physician's assistant programs (7). The report deals primarily with the broadly trained assistant. This Council uses the same terminology as the Board on Medicine, calling these Type A assistants. They make the following recommendations:

A. The AAMC should demonstrate leadership in the definition of the role and function of these new categories of health care personnel, in setting educational standards for programs producing them, and in considering the additional problems raised in the preamble.

B. The AAMC should seek the counsel and the cooperation of other interested organizations and agencies as it moves ahead in the above task.

C. The AAMC should work toward an accrediting agency as a means of effective accreditation and periodic review of programs producing such personnel. A joint liaison committee with the AMA, similar to the Joint Liaison Committee for Medical Education, is one suggested mechanism.

The report gives, in considerable detail, guidelines for educational programs for Type A assistants.

#### TYPE B ASSISTANTS

See reports of Board on Medicine (6) and committee of Association of American Medical Colleges (7).

*Inhalation therapists.*—In the last 10 years, doctors who carry out highly specialized tasks have developed personnel to help them. These persons in the area of the specialty have a degree of skill in excess of that possessed by most physicians outside the specialty. The area of inhalation therapy is a good example. The Board of Schools of Inhalation Therapy is organized under the auspices of the Council on Medical Education of the American Medical Association and is sponsored by the American Society of Anesthesiologists, the American College of Chest Physicians, and the American Association of Inhalation Therapists. In 1962, the Council on Medical Education of the AMA established a mechanism for approving schools. Two recent textbooks of Inhalation Therapy describe the organization and staffing of the schools (9, 10).

The inhalation therapist is following the pattern laid down by other health professionals. The course is lengthening, the educational requirements, before admission to the school, are increasing. Inhalation therapists are in short supply, and inhalation technicians are being trained to assist the therapists.

As the educational background is broadened, the leaders in the field have begun to question the desirability of being quite so specialized. They point out the overlap between the pulmonary and cardiovascular areas and are considering the desirability of educating a broader-based inhalation-cardiovascular therapist.

The inhalation therapist operates under the supervision of a physician, usually a chest physician, an anesthesiologist, or an internist. The exact legal and moral responsibilities of the medical director of the inhalation therapy unit and its staff have not been clarified.

*Orthopedic assistants.*—In 1970 the American Medical Association approved the essentials for accrediting educational programs for orthopedic assistants (11). Applications for accreditation of an educational program for orthopedic assistants should be made to the Department of Allied Medical Professions and Services, American Medical Association, 535 North Dearborn Street, Chicago.

#### TYPE C ASSISTANTS

See reports of Board on Medicine (6) and committee of Association of American Medical Colleges (7).

Many doctors are training helpers with a combination of a short didactic course and a year of on-the-job training. The MEDEX program, developed under the auspices of the medical school of the University of Washington and the Research Foundation of the Washington State Medical Association has taken this direction (12).

Men who have been successful in the medical corps of the Navy, Army, Air Force, or Coast Guard are given a 15-month program consisting of three months of university training and 12 months of preceptorship with a doctor who has agreed to employ him at the end of the preceptorship. During the preceptorship, there are 10 three-day weekend continuing education seminars. Tasks which the new professional can perform include screening patients to be seen by the physician, history taking, performing parts of physical examinations, the application and removal of casts, assisting at surgery, suturing minor lacerations, taking roentgenograms and performing laboratory tests during nonoffice hours, assuming certain administrative responsibilities, and being available to provide the physician with assistance any day of the week and any hour of the night.

### LEGAL CONSIDERATIONS

Most medical practice acts state that the physician can diagnose and treat patients, with no provisions to enable the physician to delegate tasks. Arizona, Colorado, Kansas and Oklahoma have written in exceptions which allow the delegation of tasks to assistants under the control and supervision of a licensed physician.

A document entitled "Model Legislation Project for Physician's Assistants" has been prepared by the Department of Community Health Sciences of Duke University Medical School (13).

The reports of the Board on Medicine and the Committee of the Association of American Medical Colleges and the Duke document on model legislation emphasize that the Type A assistant is unique in the medical field and that the extent of his potential has not been determined. They recommend that legal authorization not be effected by licensure but, rather, by authorization built around a system of registration 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 is to provide protection to the public from unqualified personnel without imposing the rigid definitions characteristic of licensing legislation.

The Colorado Child Health Associate Law (3) "includes provisions so that no more than one child health associate will be employed at any one time by any one physician. Except in an emergency, the child health associate will practice only in the professional office of the physician and only when he is personally available. The associate will render services outside



the office only in the presence of the physician, or in caring for patients pursuant to the directions of the physician in relation to particular patients. The child health associate will be permitted to prescribe by prescription, but will prescribe only such drugs as shall be approved specifically by the State Board of Medical Examiners for prescription by the child health associate."



## LITERATURE CITED

1. Lewis, C. E., Resnik, B. 1967. *N. Engl. J. Med.* 277:1236-41
2. Connelly, J. P., Stoeckle, J. D., Lepper, E. S., Farrissey, R. M. 1966. *N. Engl. J. Med.* 275:765-69
3. Silver, H. K., Hecker, J. A. 1970. *J. Med. Educ.* 45:171-76
4. Hellman, L. M. 1967. *Obstet. Gynecol.* 30:883-88
5. Hellman, L. M., O'Brien, F. B. 1964. *Obstet. Gynecol.* 24:343-49
6. Report of Ad Hoc Panel, Board on Medicine of the National Academy of Sciences, 2101 Constitution Ave., Washington, D.C., August 1970. New Members of the Physician's Health Team: Physician's Assistants.
7. Report of Ad Hoc Committee, Council of Academic Societies of the Association of American Medical Colleges, 1 DuPont Circle, N.W., Washington, D.C., February 1970. Physician's Assistant Programs.
8. Estes, E. H., Jr., Howard, D. R. 1970. *J. Med. Educ.* 45:149-55
9. Young, J. A., Crocker, D. 1970. *Principles and Practice of Inhalation Therapy*. Chicago: Year Book Medical Publ., 332 pp.
10. Egan, D. F. 1969. *Fundamentals of Inhalation Therapy*. St. Louis: C. V. Mosby, 447 pp.
11. A Program for the Orthopaedic Assistant. Prepared by the Orthopaedic Assistant Training Program at the City College of San Francisco, March 1970. 101 pp.
12. Smith, R. A. 1970. MEDEX. Special Communication. *J. Am. Med. Assoc.* 211:1843-45
13. Model Legislation Project for Physician's Assistants. Prepared by Department of Community Health Sciences, Duke University, Durham, June 1970. 60 pp.