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**NEW PATTERNS
OF HEALTH CARE:
THE PHYSICIAN'S ASSISTANT**

Report No. 2, 1970

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FOREWORD

This report on the physician's assistant as a new pattern of health care has been prepared in response to Senate Concurrent Resolution 9 of the Fifth Legislature of the State of Hawaii, Regular Session of 1969, which directed the Legislative Reference Bureau to conduct a study on the need for certification standards for newly emerging health specialists.

This report could not have been completed without the information, cooperation, and suggestions so generously provided by various staff members of the Department of Health of the State of Hawaii, the faculty of the several schools in the College of Health Sciences and Social Welfare at the University of Hawaii, the Kapiolani Community College, the Department of Personnel Services, the executive secretary of the Board of Medical Examiners and the Board of Nursing, the Hawaii Medical Association, the Hawaii Nursing Association, the Hawaii League for Nursing, and the many private individuals and community organizations. We are especially indebted to Mr. Edward Honda for his technical assistance on this project.

Henry N. Kitamura
Director

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CONCURRENT RESOLUTION

REQUESTING THE LEGISLATIVE REFERENCE BUREAU TO STUDY THE
NEED FOR ESTABLISHING CERTIFICATION STANDARDS TO
FACILITATE THE EMPLOYMENT OF NEWLY EMERGING HEALTH
SPECIALIST OCCUPATIONS.

WHEREAS, there is a nationwide shortage of
several kinds of professional health manpower which
is depriving many of our people of adequate medical
and paramedical services; and

WHEREAS, lesser trained persons can not only
perform on behalf of professionals those tasks which
do not require highly specialized and professional skills
but can be trained to perform the more simple medical,
nursing, technical and other health tasks under direction
of licensed professionals not actually present; and

WHEREAS, reputable and nationally respected
medical centers are now training nurses to make observations
and recommendations and perform limited treatment services
hitherto performed only by a licensed practitioner of
medicine, training corpsmen to perform certain medical
and surgical functions similarly not presently permitted
under Hawaii licensure laws, and training other kinds
of persons for specified examination and treatment tasks
under suitable direction; and

WHEREAS, more and more of these paramedical occupations (such as "physician's assistants," "pediatric nurse practitioner," and "surgical technicians") are emerging in the labor market and can provide valuable and needed service to the people of this State; and

WHEREAS, public acceptance of a team of health professionals and paramedical personnel has been demonstrated in private physicians' offices in a few mainland areas with the lesser trained personnel being at some visits the only health person seen by patients, the patient knowing that each member of the team is not only under the tutelage and supervision of the physician but also in constant communication with him; and

WHEREAS, such a health team can preserve the patient-doctor relationship and extend it to those who previously lacked adequate medical care; now, therefore,

BE IT RESOLVED by the Senate of the Fifth Legislature of the State of Hawaii, 1969 Session, the House of Representatives concurring that the Legislative Reference Bureau, in cooperation with the University of Hawaii, Department of Health, Department of Personnel Services, Department of Regulatory Agencies, the Hawaii Medical Association, the Hawaii Nurses Association, the

Hawaii League for Nursing, and other public and private organizations concerned be, and it is hereby, requested to study the need in Hawaii for these newly emerging paramedical occupations including the establishment of certification standards and occupational categories and to report its findings and recommendations including proposed legislation, if indicated, for consideration by the Fifth Legislature of the State of Hawaii twenty days before the convening of the 1970 Session; and

BE IT FURTHER RESOLVED that duly certified copies of this Concurrent Resolution be transmitted to the Governor, the Legislative Reference Bureau, the President of the University of Hawaii, the directors of the Department of Health, Department of Personnel Services and Department of Regulatory Agencies, the presidents of the Hawaii Medical Association, the Hawaii Nurses Association, and the Hawaii League for Nursing.

Chapter I

INTRODUCTION

Identification of New Health Professions

Senate Concurrent Resolution 9 of the Fifth Legislature of the State of Hawaii, Regular Session of 1969, calls for a study of the need in Hawaii for certification standards to facilitate the employment of a new field of health specialists. Since the term "new health specialists" includes any one of a large number of health or health related occupations, inquiries were sent to 104 medical schools across the nation to determine whether health educators shared any ideas regarding health specialists. Replies were received from 62 schools, or 60 per cent, and are summarized in Appendix A. The responses indicate that a great number of variously named training programs exists, and that the definition of health specialist is primarily a local determination, i.e., it is considered to be new to the particular locality where the skills are practiced rather than new to the health field in general. The responses also indicated that most of these programs are aimed at the preparation of individuals in specific technical skills, and that these highly specialized personnel, such as nuclear medical technologists (University of Iowa), instructional media technologists (University of Texas), circulation technologists (Ohio State University), medical computer science (University of New York), and biomedical engineers (University of Miami), reflect contemporary developments in scientific knowledge and technology, and biomedical research.

Senate Concurrent Resolution 9 identifies three types of new health specialists: the physician's assistant; the pediatric nurse practitioner; and the surgical technician. The first two occupations mentioned in SCR 9, the physician's assistant and the pediatric nurse practitioner, are two distinctive types of physician's assistants being developed: the former being trained to assist the physician in providing general medical-health services; and the latter being specifically trained to assist the physician in providing maternal or child care services. As further stated in the resolution, these two types of health specialists are being developed at several mainland medical centers to be, at times, the only person seen by patients at office visits, to personalize the delivery of health care, to extend health services to those who lack adequate care, and to perform certain functions generally performed only by a licensed physician. There are a number of labels for this new health role which is primarily aimed at the better utilization of a physician's skills by transferring certain physician functions to nonphysicians especially trained to take on such tasks.

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In contrast, the surgical technician, also known as an operating room technician, is a longer established health occupation, a description of which can be found in almost any publication listing or describing health careers.¹ Moreover, the surgical technician's training is directed toward the development of certain technical skills rather than medical judgment. His activities are restricted to a highly specified health setting (the operating room or the emergency ward)² where, under the supervision of the operating room nurse, he primarily maintains aseptic conditions vital to patient care.³ The surgical technician's role has evolved primarily from experience with medical corpsmen in the armed forces where laymen with relatively little training were developed into efficient operating room assistants.⁴

The significant difference between the surgical technician and the physician's assistant lies in the level of skills⁵ and medical judgment each requires, and the type of health setting within which each performs his duties, although both "assist" the physician in the broadest sense of the term as do most other types of allied health personnel. Furthermore, the surgical technician does not necessarily reflect an attempt to implement the concept of delegating physician functions to nonphysicians, although this is sometimes done.⁶ Nor does the surgical technician reflect a deliberate attempt to personalize health care, or extend physician services to those who previously lacked adequate medical care.

The Physician's Assistant

In view of the lack of consensus illustrated by the results of the inquiry regarding health specialists, and the emphasis contained in the language of Senate Concurrent Resolution 9, the focus of this report will be on the concept of the physician's assistant as it relates to the extension of the physician's services and as it represents a different organizational pattern of health care. This report is intended to inform the Hawaii State Legislature on the development of the physician's assistant concept, its relevance to Hawaii, what other states are doing, and some of the available alternatives regarding certification standards for this health occupation. In view of the disparity of occupational labels, the term "physician's assistant" will be used in this report to identify a person who assumes certain functions ordinarily performed by a physician. Although the practice of a physician's delegation of certain responsibilities and more routine or lesser-skilled functions to a person who assists him over a long period of time is not new, the training of personnel to perform

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these functions through systematic educational programs at medical schools, hospitals and public health schools is relatively recent. These programs are designed to accommodate nurses, ex-military medical corpsmen, and students who are either majoring in or who have baccalaureates in biomedical disciplines, and the training includes simple diagnostic and treatment procedures involving some degree of medical judgment. An important aspect regarding the physician's assistant is whether a registered nurse or a nonurse carries out this role. Nurses have increasingly taken on many functions once performed only by physicians over the past years, including such practices as taking temperatures, blood pressure and providing immunizations. The gradual addition of such medical functions to the scope of nursing has expanded the role of nursing, sometimes referred to as the extended role of the nurse. From this point of view, a nurse performing certain delegated medical functions such as a physical examination may well be interpreted as part of the extended role of the nurse, rather than an extension of the physician. Although the physician's assistant is presented here within the framework of a method by which physician services can be extended to larger numbers of people without necessarily increasing the number of physicians, the question of whether a physician's assistant role is more within the scope of nursing practice or medical practice becomes relevant when the issue of regulation and training is confronted. For example, if what the nurse does as a physician's assistant is considered to be medical diagnosis, it is clearly beyond the scope of nursing as defined by most nurse practice acts. But if it is considered to be "screening", i.e., recognition of an abnormal condition from a normal condition with subsequent referral to a physician, then this could be considered to be within the scope of nursing.

Of the training programs taking place in other states, there appears to be a lack of agreement regarding who the trainees should be, the length of preparation, the content of preparation, the proper place for preparation, the health settings where such services would be best utilized, the kinds of standards to be imposed or enforced, and the appropriate body to impose such standards. Nor is there unanimous agreement on the proposed benefits to be derived, or the potential damage which could occur, from the development and utilization of a person in the role of a physician's assistant.

Other health-related or allied health personnel--technicians, technologists, and occupational aides--who are now rapidly increasing in number and undergoing changes in occupational categories and functions⁷ will be considered to be outside the scope of this report because very few, if any, of such health-related occupations are

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concerned with the extension of physician productivity by assuming certain diagnostic and treatment functions ordinarily performed by physicians. The recruitment of increasing numbers of technicians and aides to take on specialized and highly compartmentalized health functions or to take on the lesser skilled tasks of already established nonphysician health occupations, are more appropriately described as additions to existing patterns of health care and accommodations to technological developments in biomedical research. However, some of the recommendations listed in chapter IV may well apply to the development of regulations for other health occupations.

The data contained in this report are based on information gathered from the available literature on health and health manpower, correspondence with several medical schools and public health programs conducting physician's assistant training programs, inquiries to several medical schools across the nation, a telephone survey for the purpose of assessing the kinds of training programs for health service occupations being conducted in the local community, and extensive interviews conducted locally with persons in or connected with health or health-related fields.

Chapter II provides some background in the field of health manpower and the development of the physician's assistant concept. Chapter III describes some of the training programs for physician's assistants being conducted at several medical schools, schools of public health, and hospitals, and also provides some of the assessment studies on the effectiveness of the physician's assistant. A summary of the basic arguments for and against the concept is also presented. Chapter IV presents some conclusions regarding the relevance of physician's assistants to Hawaii, and some suggestions regarding legislation and the development of certification standards. Chapter V contains a summary of the report.

Chapter II

HEALTH MANPOWER AND THE NEWLY EMERGING FIELD OF HEALTH SPECIALISTS

Demands Being Made upon the American Health Care System

The field of health manpower is in a state of crisis according to almost any recent publication relating to health occupations and health manpower.¹ Although there is widespread agreement that there is a critical shortage of health manpower, there appears to be a lack of agreement on (1) appropriate methods of measuring health manpower shortages; (2) whether or not the issue is one of inadequate numbers of personnel, inadequate use of existing personnel, or inadequacies in the types and distribution of health services rendered; (3) which types of health occupations or services are suffering more acute manpower shortages than others; and (4) what the appropriate methods of relieving such inadequacies should be. The reason for increased attention to health manpower shortages and projections of such shortages, lies in the kinds of demands presently placed upon the methods by which health care is presently provided in this country.

Consumers today not only have higher incomes but are better educated and seek more health care. Others, not covered by private health insurance, are covered by Medicare and Medicaid.² Furthermore, there has been a change in social attitude, and health is now considered to be a right rather than a privilege. It is believed that access to care should be available to all who seek it.³ In addition to demands for more services by more people, there have been demands for different kinds of health services and a different organization of health care. Today's patient looks to the medical care system for an increasingly wider variety of services, such as preventive care and attention to behavioral problems rather than strictly physiological ailments. More care for chronic conditions are sought--hypertension, heart trouble, diabetes, arthritis--in addition to acute condition care.⁴ Other demands are placed upon the medical care system by the general advances of science and technology, where medicine now possesses cures and preventives that could not have been predicted even a decade ago. The National Advisory Commission on Health Manpower has the following comments on the responsiveness of the American system of health care to these new and different demands being placed upon it:

. . .the organization of health services has not kept pace with advances in medical science or with changes in society itself. Medical care in the United States is more a collection of bits and pieces (with overlapping, duplication, great gaps, high costs, and wasted effort) than an integrated system in which needs and efforts are closely related.

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Less than perfect use of resources is, of course, not unique to health. Yet in our opinion, the organization of health care has been less responsive to rapidly changing national needs than have many other aspects of society, and unless major changes are accomplished more quickly than has ever been possible in the past, a more serious "crisis" will be inevitable.⁵

The Development of the Physician's Assistant Concept

One of the resources considered to be used "less than perfectly" is health manpower: ex-military medical corpsmen, medical students, bio-medical students and graduates, and members of already established health professions.⁶ Of those presently established health occupations, the physician has probably received the greatest attention. National projections of physician supply and demand provide the not so surprising conclusion that there will never be enough physicians to accommodate the increased demands being made for medical services.⁷ Furthermore, the physician shortage is not geographically uniform. The distribution pattern for physicians is generally one where relatively high numbers are found in economically well-to-do communities. It is often the isolated, the economically sub-standard and the unattractive communities which maintain inadequate numbers of physicians, and have the greatest need for augmentation or optimization of its physicians.⁸

In view of the present and projected shortages in numbers and the uneven distribution of physicians, other alternatives have been sought--one of which has been the examination of ways by which physician productivity might be increased.⁹ This alternative embodies a shift in focus from numbers of people to the services rendered by these people.

The link between manpower and services is close, if our interest is in services--and, surely, if it is in health--we cannot focus simply on manpower. Technology is changed, capital equipment is modified, new discoveries are made, and new organizations for delivery of services are created. All these may alter the relationship between the "input" called the physician and the product he delivers: the health service. . . a patient's health is not improved by manpower itself, but by the services it may provide.¹⁰

The problem then becomes one of adding to the total supply of physician services rather than adding to the total supply of physicians.¹¹ The more effective utilization of potential and established health manpower and of physicians and nonphysicians to improve and increase

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health services is dependent upon the orderly development of new arrangements and patterns of organization, upon changes in the ways in which educational training institutions operate, and upon a recognition of the contributions which these types of personnel can make.¹²

The ineffective utilization of potential and established health personnel, the increasing demands for medical care and the lack of adequate numbers of and uneven distribution of physicians to accommodate these demands, the focus on physician services rather than on physicians, and the possibility of developing new arrangements for the rendering of medical care have all contributed to the development of the concept of the physician's assistant and the implementation of formal training programs in several states. Implicit in this concept is that all health and medical services need not be rendered by physicians, and that today's physicians' services need not be the same as tomorrow's. Some of the procedures undertaken by the physician in earlier years--for example, the administration of vaccines, glaucoma screening, Papanicolaou smears--are performed by other personnel today.¹³

Among the earliest discussions of expanding medical professional services with nonprofessional personnel is a publication by Charles L. Hudson in 1961.¹⁴ Hudson explores the possibility of improving manpower utilization in a hospital setting by the increased and more effective use of medical students, interns, resident physicians, nurses, and by the development of physician's assistants. He describes the latter group as a class of assistants with special training, intermediate between that of the technician and that of the doctor, who could not only handle many technical procedures but could also take some degree of medical responsibility.¹⁵ A curriculum consisting of two to three years college work with certain prescribed courses is suggested, with vocational training in medical school such as that in which graduate students, nurses, and others are instructed, and granting a baccalaureate in science, science in medicine, or medicine upon completion of training.¹⁶

The idea of extending physician services by delegating certain physician functions to lesser-trained personnel is often combined with extending medical care to specific segments of the population lacking adequate numbers of physicians or receiving less than adequate medical care. Projects exemplifying this approach are the Comprehensive Child Care Projects of the U.S. Children's Bureau which provide general pediatric services for children up to eighteen years of age through neighborhood health centers. Another is the Neighborhood Medical Care demonstration projects of the Office of Economic Opportunity which are

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directed toward family-centered health care. These types of programs represent attempts to break the poverty-illness cycle by providing comprehensive care to low-income urban areas where there are practically no physicians, with an emphasis on continuous care through the services of a permanent physician operating as a member of a team together with allied health personnel. In the Comprehensive Child Care projects, plans call for the eventual development of satellite centers staffed by a public health nurse with the responsibility for well-baby care under the guidance of pediatricians who would periodically visit each center.¹⁷

Another example of extending physician services to specific segments of the population, in this case to rural areas, is a demonstration project started in 1969 at the University of Washington. According to the sponsors of the project, it was initiated for the following reasons: the demands being placed upon physicians, not only in the State of Washington but nationwide; the increase in the number of physician-directed services; the diversion of physicians in increasing numbers from patient care to research, teaching, public health work, and administrative positions; physician concentration in metropolitan areas; decreasing numbers of general practitioners in medicine; and the fact that of the 30,000 corpsmen discharged annually from the military with some medical training, it is estimated that over 6,000 leave a military framework in the Navy, Air Force, Army and Coast Guard where they have been providing primary medical care to return to a civilian setting which is unable to utilize their extensive training and proven talents.¹⁸ Fifteen former military medical corpsmen, chosen from eighty applicants, are being trained over a period of fifteen months to work with general practitioners located in the State's rural areas. The training consists of three months' review and training with an emphasis on geriatrics, pediatrics, physical histories, physical examinations, performing minor surgical procedures and assisting at surgery, followed by one year of working with a physician-preceptor. During the training period the corpsmen are paid \$500 per month, and at the end of the training program an annual salary of \$8,000 to \$12,000 is expected.¹⁹

Chapter III

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Training Programs

In addition to those demonstration projects which function to explore and test the workability, acceptance, benefits, and problems of those new arrangements designed to extend physician services, there are several formalized training programs preparing individuals to assume specific physician functions. The major distinction among these educational programs appear to be in the type of health services rendered, i.e., the general practice physician's assistant, the maternal-child care physician's assistant and, to some extent, the trainees admitted to the program. For the maternal-child care physician's assistant, the primary source of manpower has been professional nurses, e.g., the pediatric nurse practitioner. Professional nurses have also been used in the more generalized physician's assistant role, but to a lesser degree. Of the several educational programs described in the following pages, other distinctions are apparent. There are as many different names for the role of the physician's assistant as there are training programs. There is a diversity of training settings and sponsors which include university or academic environments, hospitals, and governmental health departments. The length of training varies from four months to five years, and appears to be correlated with what the trainee brings with him in terms of prior skills and experience. Qualifications for admission include such criteria as academic credits (a high school diploma or two years of college work), an occupational title (registered nurse or public health nurse), or experience (military medical experience or experience in the care of the sick). Completion of training is recognized by a certificate, a baccalaureate degree, or a master's degree. Only one state, Colorado, regulates and licenses a type of physician's assistant.¹ Annual compensation for physician's assistants has been placed anywhere from \$7,500 to \$15,000 (see Appendix B).

On the other hand, the several training programs have certain shared features--the major similarity being the purpose for which each has been established. To some extent curriculum content is similar, for each program involves some or all of the following: schooling in interview techniques; taking physical histories; conducting physical examinations; learning to detect and identify deviations or abnormalities; carrying out simple diagnosis and treatment; and course work in such basic sciences as anatomy, physiology, biochemistry, pathology, microbiology, preventive medicine, growth and development, and child psychology. For most of the programs, particularly those involving .

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nonnurses, a major aspect of training lies in the physician-preceptorship. Many programs emphasize this aspect of training which is like an apprenticeship and involves a one-to-one relationship between the physician and the trainee, with considerable and almost continual contact. Another shared feature among these programs is that all have been developed within the last five years.

The following pages contain brief descriptions of several physician's assistant training programs presently being conducted in various settings across the nation. The selection has been determined only on the basis of those appearing most frequently in the literature and mentioned most frequently in locally conducted interviews for this report. Undoubtedly, there are many other demonstration projects and various universities, colleges, hospitals, and clinics planning or already conducting similar programs.

Physician's Assistant—General

At the Medical Center of Duke University, a two-year physician's assistant program was established in 1966.² The program is small, with approximately 12 students per class, and is aimed at the development of an assistant to the primary physician or the "first-line" physician--the generalist, general internist, and the general pediatrician. Applicants are required to have a high school diploma and "previous experience in caring for the sick". There is a preference for nonnurses in the program,³ and most of the applicants and students are ex-military medical corpsmen.⁴ A certificate is awarded upon completion of the program.⁵ It is reported that for 1968, over 5,000 applications were sent out, with a final number of over 300 well-qualified applicants to fill the 30 anticipated positions and since April of 1969, over a thousand application requests have been received by the physician's assistant program at Duke.⁶ Patient acceptance is reported as good if the patient is informed of the assistant's role and knows that effective communication is maintained with the physician. Graduates of the Duke program have been employed for the most part, by the Duke Medical Center, and salaries range from \$7,500 to \$9,500 per year.⁷ Augmentation of physician output has been reported at thirty to fifty per cent, based on the experience of two physicians in a small town practice who found their output with the addition of a single physician's assistant to equal the output of the same group with four physicians one year before.⁸ The basic approach used in the program is repetition and task-oriented training on a relatively low educational base with considerable physician contact.⁹ The

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students are provided academic credit for their work which is accepted by other educational institutions offering baccalaureate degrees in the health sciences.¹⁰

At the University of Kentucky, a two-year pilot program has been established for a physician's assistant called a "clinical associate" who is designed to assist the specialist in internal medicine and to work in a multiple specialty practice in a hospital or a group medical practice. The associate also assists in home care and nursing care of invalids and the chronically ill, and makes follow-up observations of patients who have been thoroughly studied and are known to the physician, but are unable to make frequent office visits. Within the purview of the associate are such procedures as: giving injections and immunizations; passing and caring for catheters, applying dressings, administering intravenous solutions; collecting blood and urine samples; giving, reading and recording skin tests, and performing pulmonary function tests.¹¹

In September 1968, Alderson-Broadbush College initiated a four-year physician's assistant program, terminating in a baccalaureate in medical science.¹² As conceived by Alderson-Broadbush College, the physician's assistant is a health professional who exists primarily to aid physicians in the care of patients, and works directly under the orders and supervision of a physician.¹³ The curriculum combines liberal arts, basic science, laboratory, nursing, and special medical science courses, the latter including lectures in medical history and ethics. The junior and senior years consist of physician-supervised experience at the Broadbush Hospital and the Meyers Clinic.¹⁴ For an outline of the duties of the Alderson-Broadbush physician's assistant, see Appendix C.

Another type of training program is one which provides special training to registered nurses. The following three examples describe this type of educational program. The first illustrates a hospital training program in which the trainees are subsequently deployed in hospital out-patient clinics and low-income urban areas. The second illustrates the training and utilization of nurses to extend medical care for chronic illnesses in a University Medical Center. The third is unusual in that it constitutes a response to a specific problem and involves the training of a single nurse at a University Medical School to provide general medical care in a rural community.

Massachusetts General Hospital in Boston offers a sixteen-week training course for registered nurses. The program consists of eight weeks of classroom instruction and eight weeks in clinical practice

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under close supervision. The nurses are taught to use a stethoscope, otoscope, take throat cultures and blood samples, and evaluate hearing and speech defects, eye problems, and congenital deformities. This program is directed toward systematic diagnosis, as compared to the four-year college program of a registered nurse which is directed more at patient care.¹⁵ Nurses in this role work in the several clinics within the hospital's out-patient department, such as the nurse well-child conferences,¹⁶ adolescent weight-control clinic, general medical clinic for care of medical patients with chronic diseases, diabetes clinic, pulmonary clinic, and an alcoholic clinic.¹⁷ These new types of health specialists, called extended role nurses or nurse practitioners (there is no agreement upon identification), are also being used to extend medical care into slum neighborhoods. It is reported that a low-income neighborhood in Cambridge, Massachusetts, established its first health clinic in the fall of 1968 and that it is staffed and almost completely run by nurse practitioners.¹⁸ These practitioners, however, are limited in their scope of functions, e.g., they cannot prescribe drugs or perform surgery, and like other registered nurses, they always work under a physician's supervision. Exactly what the nurse practitioner does depends on the doctor for whom she works.¹⁹

The University of Kansas Medical Center, Department of Nursing Education and Department of Preventive Medicine, is reported to have completed a study in which nurses served as the primary source of care for adults with chronic illnesses. It was found that patients accepted the nurse in the role, appointment schedules were followed more carefully, and the cost of the program was less than in the regular medical clinic.²⁰

The University of New Mexico School of Medicine has developed a "model of care" to remote communities without physicians which may very well be the farthest development of the physician's assistant concept utilizing a nurse. The Department of Epidemiology and Community Medicine, in conjunction with the Department of Pediatrics within the School of Medicine, provided a six-month physician's assistant training program to an experienced nurse as the trainee. This nurse was selected from the community in which she was to serve--the community of Estancia, sixty miles southeast of Albuquerque, which had a medical clinic but had experienced difficulty in recruiting a physician. The training program was designed to meet the needs of a rural community in health, illness, and accident situations, patient needs in prenatal care, well-child or well-baby care,²¹ routine adult check-ups, premarital examinations, and acute and chronic complaints. She was taught to observe and describe, to sort out abnormal from normal findings, and to act under the supervision of the two department chairmen at the University

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of New Mexico by means of written standing orders or direct telephone communication. In making observations and acting under physician's orders, her role conforms with pertinent New Mexico laws. A pattern was established in which the nurse could treat persons "on the spot" according to standing orders or instructions by telephone, send urgently ill patients to Albuquerque for immediate care, or arrange weekly visits by physicians for selected patients. This program has been offering health services to Estancia since February 1969.²² The chairman of the Department of Epidemiology and Communicable Diseases of the University of New Mexico School of Medicine reports:

In terms of original aims, it has been possible to train a physician's assistant (a family nurse practitioner or whatever one prefers to call her) and offer an "on the spot" program of care in health and illness. Presently, the School of Medicine is involved in assembling data to show what such services cost and whether the current fee-for-services method of payment meets those costs, which persons use the facility and which do not, what types of problems are brought to the physician's assistant, and what proportion of situations can be managed on the spot or require referral to the urban center.²³

Physician's Assistant—Maternal and Child Care

Health services relating to maternal and child care is the only other area in health care which has experienced as much, if not more, activity relating to the physician's assistant concept than the area of general health care. One of the major reasons for this development may be found in the nature of obstetrics and pediatrics. These medical specialties offer many services which are concerned with maintaining a certain level of comprehensive health care and providing informational services, such as monthly prenatal examinations for expectant mothers, premarital examinations, routine pelvic examinations, and regularly scheduled physical examinations and immunizations for children, as compared to other specialties which tend to be more concerned with acute illness care. Although acute illnesses do constitute a major portion of child care,²⁴ it is estimated that thirty per cent of the chronic conditions in children could be prevented or corrected by comprehensive care during the first five years of life, and comprehensive care which is continued to the age of eighteen could prevent or correct sixty per cent.²⁵ One of the physician's assistant programs in pediatrics, involving the longest period of training, proposes to prepare an individual in the knowledge necessary to care for the estimated eighty to ninety per cent of patients seen in pediatric practice who are well or have relatively mild diseases, and in the knowledge necessary to decide when to refer patients to pediatricians for consultation or further

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management.²⁶ Furthermore, it is in the area of the pediatric physician's assistant where a number of assessment studies have been conducted regarding such variables as parental acceptance, physician reaction, effect on number of patients seen, potential utilization of such personnel by pediatricians, and identification of those physician functions which could be transferred to the assistant. Similar evaluation or feasibility studies have not been published for the physician's assistant in general practice. Some of these studies in pediatrics are presented below, along with descriptions of some of the training programs, for pediatric physician's assistants.

Of the several on-going programs to train physician's assistants in maternal or child care, perhaps the most widely publicized programs are those at the University of Colorado. The Medical School there established a five-year training program in July 1969 for a "child health associate" which was originally called "pediatric associate".²⁷ The program consists of two years of undergraduate college or university work followed by a two-year course of study at the University of Colorado Medical Center and a one-year internship. The first graduates are scheduled for the summer of 1972.²⁸ Upon completion of the undergraduate curriculum and the program of training at the Medical Center, the title of "Child Health Associate" and a bachelor of arts degree are awarded.²⁹ Sponsors of the program indicate that the only patients who would not receive almost total care by the child health associate would be those who have some illness or condition which would require the diagnostic and therapeutic skill of a subspecialist in pediatrics.³⁰

In addition to the child health associate, the University of Colorado conducts a pediatric nurse practitioner program, initiated in 1965 under both the department of pediatrics of the School of Medicine and the School of Nursing. The pediatric nurse practitioner is a registered nurse with a baccalaureate degree and specifically trained in child care. Four months of intensive theory and clinical practice in pediatrics is provided, and includes training in taking a complete pediatric history, performing a comprehensive physical examination,³¹ carrying out necessary immunization procedures and knowing when and how to modify a scheduled program, knowledge relating to parent-child relationships and child-rearing practices, knowledge relating to psychosexual and normal growth and development, assisting in emergencies, performing developmental examinations and evaluations of physical impairments,³² performing various types of laboratory analysis, and evaluating and managing a variety of acute and chronic disorders.³³ Upon completion of training, the pediatric nurse practitioners work in neighborhood child health stations in low-income urban and rural areas, and in the offices of pediatricians in private practice. Although the

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nurse is under the general supervision and direction of a physician wherever she practices, in some neighborhood child health stations a physician may be in attendance only once or twice a week when he sees patients with special problems. When consultation is necessary in the health stations, the nurse may contact the physician by telephone or may refer the child to some medical facility for care. In some stations a physician is present at all times, making consultation readily available.³⁴ For a description of the program and evaluation, see Appendix D.

A third program that is developing physician's assistants in pediatric care is a two-year pediatric assistant course at the Bowman Gray School of Medicine, Wake Forest University, in North Carolina. The program takes applicants who have had two years of college with courses in biology and chemistry or well-trained ex-medical corpsmen. The training consists of one-year course work and one year of clinical work: in the first six months, a basic course in the clinical and basic science principles is presented; the second six-month period is spent in intensive training in the specific tasks which the pediatric assistant may perform under the direction of the employing physician and takes place under the direction and coordination of a member of the department of pediatrics; the final twelve months consists of supervised practice under a preceptor in clinics and practitioner's offices. The pediatric assistant is responsible for promoting and protecting the health of well children, including the identification of illness, abnormalities, and behavioral problems in association with and under the supervision of a child care physician.³⁵

A fourth type of program is the family health practitioner, which is funded by the National Institute of Health and involves the School of Public Health of the University of California at Berkeley, School of Medicine of the University of California at Davis and/or San Francisco, and the California State Health Department and Highland Hospital, Alameda County. This proposed educational program is scheduled to begin in the latter part of 1969 and differs from other types of demonstration projects by specifically calling for the development of an educational program to provide qualified public health nurses with knowledge and skills in physical diagnosis, clinical management, and community medicine so that they may assume responsibility as family health practitioners and provide comprehensive care to the individual and to families in certain settings. The proposed educational program is to be 21 months in length culminating in a master's degree, and is a direct result of the need for standardizing the several in-service programs carried on for some time by several local California health departments which were training public health nurses in extended

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roles.³⁶ The health departments had been transferring increasing responsibilities to public health nurses, particularly for the management of the child and family in well-child care conferences. In utilizing public health nurses in this role and setting, the physician may see the child and parent at their first visit and not again for some period of time, perhaps one year. The public health nurse is then responsible for the management of well-child care during that time and she continues to provide care in the interim between physician contacts.³⁷ For a comparison of the functions of a public health nurse and the family health practitioners as noted above, see Appendix E.

Assessment Studies on the Physician's Assistant in Child Care

The several studies and surveys conducted on the use of a physician's assistant in pediatrics have shown that child care services present a more than appropriate setting for the ready absorption of a physician's assistant in the health care team.

One study conducted in 1965 found that one-half of a pediatrician's time was taken up with well-child supervision (monthly and annual check-ups, counseling in nutrition and growth, immunizations) while an additional one-fifth was required for the management of minor respiratory infections. It was concluded that pediatric nurse practitioners could perform these same functions and the association of such an assistant with a pediatrician would be an effective way to increase comprehensive health care services to significantly larger numbers of patients by a wiser use of the professional skills of the physician and the nurse.³⁸ In another study, the performance of pediatric nurse practitioners over a period of one year in one of the Denver health stations had the following conclusions: 54 per cent of the visits were for well-child care while the remaining 46 per cent were for ill or injured children; and nurses were able to care for 82 per cent of the children by themselves and only 18 per cent required referral to a physician or medical facility.³⁹

In another report, the addition of a pediatric nurse practitioner to the private practice of two pediatricians produced almost a 19 per cent increase in the number of patient visits as compared to the number of patient visits prior to the addition of the pediatric nurse practitioner. The pediatric nurse practitioner was paid an annual salary of \$7,630, a sum which was 37 to 40 per cent greater than the salary of other registered nurses in the office. The nurse practitioner's added skills and increased responsibilities, however, made this differential acceptable to the other employees.⁴⁰ Patients were charged the same

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for visits to see the nurse as for visits to see the physician, and the net income from charges made for the nurse's services exceeded the nurse's salary by the fifth month of her association with the office.⁴¹

The Bowman Gray School of Medicine conducted a study in the spring of 1969 using "systematic sampling techniques" in order to explore certain questions relative to the proposed pediatric assistant program scheduled for the fall of 1969.⁴² The study indicated that if a pediatric assistant assumes, under the pediatrician's direction and supervision, the major responsibility for history taking, well-child evaluation and care, and minor medical advice, approximately half of the pediatrician's time can be freed for ill children and those with problems requiring his special skills.⁴³

On the subject of parental attitudes, a 1968 study indicated that all socioeconomic groups, including "affluent suburbia", will accept the concept of pediatric assistants, depending on how the innovation is presented.⁴⁴

The American Academy of Pediatrics has been the most active professional organization in the exploration of the physician's assistant concept and has recommended the development of three classifications of child health personnel (for a detailed discussion of the recommended training and functions of the pediatric nurse associate, see Appendix F):

1. A pediatric nurse associate--a registered nurse who has completed a diploma nursing program, an associate degree nursing program or is a graduate of a baccalaureate nursing program;
2. A pediatric office assistant, who will, when possible, have completed at least two years of college or its equivalent, or be a graduate licensed visiting or licensed practical nurse; and
3. A pediatric aide, who, when possible, will have completed at least high school or its equivalent.⁴⁵ The executive board of the Academy has endorsed a policy permitting a physician to delegate to properly trained individuals working under his supervision the responsibility for providing health examinations and health care for infants and children, and established a Division of Child Health Manpower to develop training guidelines, accreditation of educational institutions, and certification of allied health personnel.⁴⁶

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These developments, the purpose of which is to increase the pediatrician's capability to provide comprehensive pediatric care to larger segments of the public, are the direct result of a 1967 survey conducted by the Academy of its membership regarding the use of allied health workers in maternal or child care. Almost 90 per cent or 6,001 board-certified pediatric practitioners in the United States replied to the survey. It must be noted, however, that this survey only includes pediatricians whereas child care is also handled by general practitioners, internists, and other types of physicians. Also, the definition of allied health worker included registered nurses, licensed practical nurses, medical or pediatric assistants (non-registered or licensed practical nurses), laboratory technicians, medical secretaries, and secretary-receptionists. Some of the results of the survey are listed below:⁴⁷

1. It was estimated that a minimum of 25 per cent of the pediatrician's office time could be freed if an allied health worker were to assume an expanded patient care load only for health supervision, and at least 50 per cent of the average practitioner's time would be freed and better patient care would be provided in the process, if other office activities of the pediatrician (clerical, technical, and laboratory tasks, plus some aspects of home visit and illness care) were taken into consideration;
2. Forty-one per cent of the respondents generally favored the full-time employment of an allied health person, 22 per cent said they would hire such a person on a part-time basis, and the minority responding said they would not hire an ancillary person. However, many respondents indicated that the reason they would not hire someone was that they already had satisfactory arrangements; and
3. Less than 15 per cent of the total survey response revealed unsuccessful experiences in utilizing allied health workers, the major reason being that the worker was not capable. Another reason was that the pediatrician did not have time to train the individual. Parental objection and opposition of physicians were found to be less important than the lack of trained workers.⁴⁸

The data of the American Academy of Pediatrics survey on the utilization of allied health workers in pediatric practice for the State of Hawaii are as follow:⁴⁹

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1. Of the 44 pediatricians surveyed in Hawaii, 40 (or 90 per cent) responded, and of the respondents, 74 per cent were in active practice;⁵⁰
2. Of the number in active practice, 48 per cent favored the full-time employment and 14 per cent favored the less than full-time employment of an allied health person;⁵¹
3. Seventy-one per cent reported successful experiences in the utilization of allied health workers, and 22 per cent reported some unsuccessful experiences, the reasons being "parental objection", "training needs", and "worker inadequacy".⁵²
4. Forty-seven per cent were of the opinion that greater use of allied health workers would result in an increase in the number of children the practitioner serves and an improvement in the quality of service;⁵³
5. At least 50 per cent indicated that they now performed certain tasks which "could and should" be done by an allied health worker (see Appendix G for a listing of these tasks); and
6. Of the several listed obstacles which could interfere with greater use of allied health workers in pediatric practice, 42 per cent of Hawaii's practicing pediatricians responding to the survey listed as "very serious", the unavailability of competent, trained allied health workers.⁵⁴

It is important to bear in mind that, although the survey indicates both nationally and for Hawaii, the job potential for the several types of named allied health workers has been documented only for pediatric practice.

Developments in Hawaii

On the basis of interviews with health personnel and a telephone survey conducted to determine the types of training programs for health occupations taking place in the community at present (for data, see Appendix H), it was found that no formal training program for physician's assistants of the order described in this report is being conducted at any local hospital, governmental health agency, or academic

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institution. However, two private group practices have trained and are presently utilizing registered nurses in some of the functions of physician's assistants described above.

At the Kaiser Medical Center, a registered nurse with ten years experience in pediatrics was provided additional training for a period of six weeks in March 1969, and now operates as a "pediatric assistant". The training consisted primarily of learning the various techniques, procedures, and use of equipment such as the stethoscope and otoscope associated with the routine examination of well children. The pediatric assistant now serves among the four outlying Kaiser medical clinics on Oahu at Ewa, Pearl City, Koolau, and Maile. There is a pediatrician at each of these clinics except the Maile clinic, which has a general practitioner. The pediatric assistant provides independent patient care. On alternately scheduled well-baby check-ups, she spends approximately a half-hour with each patient. According to both the pediatric assistant and the staff pediatrician at the Kaiser Medical Center, who is primarily responsible for this development, no legal problems have been encountered and this role is considered by them to be within the scope of nursing and the Nurse Practice Act of Hawaii. Both report that the pediatric assistant role has operated successfully and that it has afforded health care services to larger numbers of children. Tentative plans are to train one or two more nurses in this role. However, the training would again be on a one-to-one basis, involving a nurse trainee and the physician or rotating physicians. No systematic evaluation procedure has been followed at Kaiser Medical Center, other than the already existing "patient complaint" procedure for the general medical facility and services.

At Straub Clinic, a private group practice, registered nurses are conducting initial physical examinations of apparently well individuals in the Health Appraisal Center Program, more commonly known as the multi-phasic screening program. The Health Appraisal Center officially opened in January of 1968 and is funded through a National Institute of Health grant until January 1971. The purpose of this unit is to train and utilize paramedical personnel so as to reduce the cost of and to offer, a comprehensive multi-phasic screening examination, and collect a large enough sample to determine normal laboratory values for the patients visiting the clinic.⁵⁵ This program has developed, in addition to the use of registered nurses in an extended role, a class of workers known as "diagnostic technicians". Most of these persons were formerly nurse's aides at the Straub Clinic and were provided additional training in order to perform routine tests associated with physical examinations, operation of certain kinds of medical equipment associated with the tests, and to interpret the results and

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to determine the need for further testing (see Appendix I for a description of the functions of a diagnostic technician at Straub Clinic). The registered nurses associated with the Health Appraisal Center go through both formal and in-service training (see Appendix J for detail on training and responsibilities for registered nurses in extended roles at Straub Clinic). They perform a screening physical examination, including a Pap smear and tonometry, and have participated in a physical diagnosis course given to medical students at the University of Hawaii.

In addition to the activities at Straub Clinic and Kaiser Medical Center, nursing educators in Hawaii have also been keenly aware of the development of the physician's assistant particularly as it relates to nursing and would consider such a role, when it involves nurses, to be an extension of nursing practice rather than an extension of medical practice. The University of Hawaii's School of Nursing initiated a dialogue on the extended role of the nurse on May 31, 1969, where representatives of the Straub and Kaiser programs as well as representatives of the University of Hawaii nursing faculty, the department of health public nursing program, and organized professional nursing participated in a discussion of the nurse in an extended role as a clinical specialist and in an extended role as a doctor's assistant.⁵⁶ The clinical nurse specialist is a nurse prepared at the master's degree level in advanced nursing theory and practice in any one of the several areas in nursing. The University of Hawaii's School of Nursing presently maintains a master's program in community health nursing, mental health-psychiatric nursing, and medical-surgical nursing. The clinical nurse specialist differs from the physician's assistant primarily in the level of training and scope of functions. The physician's assistant is prepared in a more narrow area, i.e., to perform specific medical tasks, particularly in the medical assessment of apparently well individuals and further, a significant portion of the apprentice-like training and subsequent practice is dependent upon the supervision of a licensed physician. Although the American Nursing Association has not taken an official position regarding nurses as physician's assistant, from interviews conducted locally with nursing educators and representatives of organized professional nursing, the general feeling appears to be that nurses should not be assuming a physician's assistant role. It is recognized that nurses have been taking on more and more medical tasks, and if delegated the additional function of physical assessment, would consider this not to be the preferred direction for nursing.

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Arguments Relating to the Physician's Assistant

The concept of the physician's assistant is not totally accepted in the health field. It is, at best, accepted in varying degrees by certain segments of the health community. For the most part, arguments associated with the physician's assistant concept focus on two issues: the acceptance of the concept itself; and the use of nurses in this role.

Advocates of the physician's assistant concept generally feel that it meets and, in fact, more than fulfills the reasons for its development. The major reasons are:⁵⁷

1. The use of such personnel eases the allocation and distribution problems on health care now facing a nation committed to health improvement but characterized both by private practice of medicine and largely, by private financing of medical care;
2. The use of such personnel might motivate more physicians to find practice in "poorer" areas more rewarding than they now do; and
3. Problems of overwork would be eased and the physician would have the time to practice the better medicine that he is trained for with the net effect that fewer physicians would be needed.

It is further argued that the development of physician's assistant would reduce the disparity in educational training for health personnel in primary patient care, where many years are presently required to prepare a physician in contrast to the minimum two years of post high school work for a registered nurse. Few opportunities exist for those with somewhat less training, i.e., there are doctors of medicine but not master's or persons with baccalaureates in the same field. Additionally, the creation of "sub-physicians" or assistant physicians does not imply the creation of a cadre of poorly trained physicians but the creation of a cadre of well-trained assistant doctors.⁵⁸

Some of the arguments against the physician's assistant concept are:

1. That such an assistant could not, in a matter of two or three years, approach that part of medical practice devoted to the whole patient (what is sometimes described

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as the "science and art of medicine" or the "mind-set" of the physician) without the complete training received under the M.D. degree program;⁵⁹

2. That there is no assurance that the use of such personnel will result in greater numbers of physicians in low-income and rural areas, and what may result instead is second class care for patients living in those areas;
3. That over-zealousness in the development of assistants may result in medical practice itself becoming a second class activity where physicians would enter only academic or administrative medicine or subspecialties, feeling that the actual practice of medicine is something which could be done by individuals with lesser intellectual capacities, training and skills;⁶⁰
4. That in the use of such assistants, the greatest risk is a decline in medical care quality for like others who are incompletely trained, the physician's assistant may not recognize his limitations. No help at all would be better than to render incomplete services to both the physician and the patient.⁶¹ A more suitable alternative is to upgrade the skills of present categories of allied health workers to further assist the physician and augment physician productivity rather than interpose a new category between the nurse and the doctor.⁶²

The idea of interposing a new category between the nurse and the doctor presents the question of possible role conflict between a nurse and the physician's assistant. Many feel that there would be no conflict. For example, a nursing consultant to the Rockefeller Foundation had the following comments after observing 32 students and three graduates of the Duke University program for eight weeks:

In talking with three of the assistants, and observing their work in the hospital, I saw nothing which I could interpret as interfering with the nurse's role. As a matter of fact, I saw the assistant doing procedures which nurses have rebelled against doing for many years, tasks which have been seen as medical rather than nursing: taking histories, drawing blood, collecting specimens for gastric analysis, and doing basal metabolism rates, electrocardiography, and skin-testing for allergies...the assistant may make suggestions to the nurse; he does not give orders.⁶³

Dr. Hu C. Myers of the Alderson-Broadbent program has commented that the creation of the physician's assistant will free nurses to develop

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their profession in the way that they would like to develop it, and points out that nurses have been recently moving toward independence and would like to be relieved of some of the duties of helping physicians.⁶⁴ The role of the physician's assistant is also considered different from the role of the professional nurse because of the personnel structure provided for his employment and supervision, by the necessarily wider and less strictly defined areas in which he works, and by his direct personal relationship to a physician as opposed to an institutional staff hierarchy.⁶⁵

Those opposed to the use of nurses as physician's assistants feel that:

1. It is unwise to recruit from an occupational category already faced with a national shortage in manpower;⁶⁶
2. It is objectionable to use nurses in something that is yet experimental;
3. There is expected resistance to the acceptance of the new role by some individuals and groups.⁶⁷

Much of this expected resistance lies in the contention that the functions of the physician's assistant lie outside the scope of nursing. It is argued that a shift in the traditional pattern of nursing occurs when physical appraisal and the use of the stethoscope and otoscope are required of nurses. Some nursing educators question whether the physical appraisal aspect of the extended role is nursing, and would call the role pseudo-doctoring. Some physicians also question whether this is nursing practice, and they would call it second class medicine.⁶⁸

On the other hand, those who strongly favor the use of nurses in an extended role as physician's assistants feel that rather than further deplete the already critical supply of nurses, it may work the reverse. By providing a kind of challenging and responsible opportunity for nurses, extended role nursing may work to maintain nurses, attract capable people to the field, and be instrumental in encouraging inactive nurses to return to work. Appropriately prepared nurses working in this role could be far better utilized than they presently are in many actual work situations, and under-utilization of nursing abilities may already be depleting the supply of nurses to a far greater extent than would the use of nurses in the extended role.⁶⁹ A nursing consultant with the California Department of Health has commented:

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It would seem to those of us working with the extended role that the answer to the question: "Is this nursing?" will be found by asking other questions. Will this kind of service provide the kind of health care which patients want and need? Are nurses effective in the role? Will the use of nurses on this role contribute to the better utilization of health personnel generally? Will the nurse supplement the responsibilities of other health personnel so that comprehensive care is provided to the patient? Will duplication of health services to patients be reduced?⁷⁰

It is felt by the advocates of nurses in extended roles that nurses are already performing many duties which formerly were considered the responsibilities of doctors. Professional nurses could and should take a greater part in meeting and improving the delivery of health services, which requires experimentation in the most effective use of physicians, nurses, and others, as well as an adaptive approach to traditional, heirarchical, and organizational structures.⁷¹

Understandably, those interested in developing the physician's assistant concept look toward nursing as an advantageous source of manpower for this role, since registered nurses bring with them years of experience, knowledge and expertise in patient care, and would require less in terms of specific training in the assistant role than a non-nurse. Although nursing would probably not find the proposal of a nursing-medicine hybrid consistent with their present goals for nursing education, there is nothing to prevent individual nurses who might wish to qualify as physician's assistant from doing so. However, it would seem incautious to presume that nurses and nursing should be the principal field for the recruitment of physician's assistants without at least the endorsement of the nursing profession.⁷² The Committee on Nursing of the American Medical Association has stated:

The AMA Committee on Nursing is in agreement with and puts its support behind, the establishment of programs that will assist the physician in providing the best possible medical care. The committee supports the premise that a role reorganization is necessary and can be done only in a separate, structured, formal educational experience, in a setting which allows and encourages the evolution of an expanded role for the nurse. It is imperative that programs such as Silver et al. describe be developed jointly by the School of Medicine and the School of Nursing in a university. The academic environment provides the necessary personnel to assure that qualified candidates are selected for such programs.⁷³

Chapter IV

FINDINGS AND RECOMMENDATIONS

Relevance to Hawaii

The concern expressed in Senate Concurrent Resolution 9 relates to the need for certification standards to facilitate the employment of these newly emerging health specialists. The question of the need for certification standards in the regulation of physician's assistants requires the preliminary determination of whether there is a need in Hawaii for these kinds of health personnel. As discussed in Chapter III, the physician's assistant concept has experienced a more active development in maternal and child care. A significant part of this active development is the number of studies assessing: (1) the amount of time spent by pediatricians on certain tasks or groups of tasks, such as well-child supervision, and a determination of which of these groups of tasks constituted an inefficient utilization of a pediatrician's specialized skills and therefore may well be within the purview of a trained assistant; (2) the number of patients visits with a physician's assistant in pediatric practice as compared to the number of patient visits in a practice without such an assistant; and (3) acceptance by parents of a physician's assistant in pediatric practice. Attention on the development of the physician's assistant in pediatric care is also true in Hawaii. The data for Hawaii of the American Academy of Pediatrics 1967 survey on allied health workers provide some indication of the potential in Hawaii for physician's assistants in child care. A majority of the Hawaii practicing pediatricians responding favored the employment of allied health workers, reported successful experiences in the utilization of allied health workers and indicated that they now perform certain tasks which "could and should" be done by an allied health worker. A lesser but still significant number were of the opinion that greater use of such personnel would result in the increase in the number of children the practitioner serves and an improvement in the quality of service, and reported that a "very serious" obstacle to the greater use of such personnel is the unavailability of competent, trained allied health workers. Furthermore, the reported success of the pediatric assistant developed at Kaiser Medical Center, particularly in providing health care to larger numbers of children on a more personalized basis provides additional data relating to the question of the potential for physician's assistants in child care for Hawaii. This information indicates that there is, at the least, a significant interest for the development and utilization of this category of health specialists in Hawaii. The possible development of certification standards for physician's assistants as far as pediatric care is concerned is somewhat facilitated by the availability of training guidelines published

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by the American Academy of Pediatrics contained in Appendix F. There is, however, a lack of comparable data for Hawaii on the need for physician's assistants in general medical care at the present time. The only known case in Hawaii where a kind of general physician's assistant is utilized is the Straub Clinic program where registered nurses provide preliminary physical examinations. On the other hand, there appears to be ample data from the experience of several other states with demonstration projects and training programs as described in this report--all of which indicate the acceptance of the physician's assistant concept, and in most instances, the successes derived from its application.

Comment on the Data Relating to the Determination of the Need for Physician's Assistants in Hawaii

The data necessary to determine the need for physician's assistants in Hawaii are, at best, limited. The responses of Hawaii pediatricians to the American Academy of Pediatrics favoring the need for allied health workers is of limited use since the responses are to a categorical group of assisting personnel which includes not only the pediatric assistant but also registered and licensed practical nurses, laboratory technicians, medical secretaries, and secretary-receptionists. The survey did not separate the pediatric assistant from the other types of health personnel but grouped them all together as "allied health workers". The kind of information necessary to properly determine the need for physician's assistants in Hawaii is presently not available and is of a nature which would require further study.¹ Throughout the course of this study, it has been difficult to identify what the best method of measuring manpower needs would be. As discussed in Chapter II, there is a lack of agreement in the health field on: the appropriate methods of measuring health manpower shortages; whether or not the issue is one of inadequate numbers of personnel, inadequate use of existing personnel, or inadequacies in the types and distribution of health services rendered; which types of health occupations or services are suffering more acute manpower shortages than others; and what the appropriate methods of relieving such inadequacies should be. For example, one of the more conventional indices of physician shortages is the use of physician-population ratios. Although in 1967, the national median for the number of non-federal physicians in relation to population was 148 per 100,000 and Hawaii's ratio for the same year was 146 per 100,000,² there are several limitations with this type of information: it is already out of date; it does not indicate whether 148 per 100,000 is a satisfactory ratio for the provision of medical care; it does not indicate what

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level of medical care is being achieved by such a ratio; it is a count of total number of non-federal physicians which includes physicians in health and hospital administration, in education institutions, in research, those retired from practice, and those working at some other non-medical occupation.

Although additional information is necessary to properly determine the need for physician's assistants in Hawaii, the lack of such data should not preclude an awareness on the part of the legislature of the concept itself, its development in other states, the possible implications it may have for Hawaii's future health picture, and methods by which regulation of the physician's assistant may be achieved. It is clear that the physician's assistant represents a significant trend towards examining and testing new organizational patterns of delivering health care in other states, and that probing in the area has already begun in Hawaii.

Regulation of the Physician's Assistant

In this report, the following kinds of newly emerging health specialists have been discussed: (1) the extended role nurse or the nurse practitioner (Massachusetts); (2) the family nurse practitioner (New Mexico); (3) the pediatric nurse practitioner (Colorado); (4) the family health practitioner (California); (5) the physician's assistant (North Carolina and West Virginia); (6) the clinical associate (Kentucky); (7) the pediatric assistant (North Carolina); and (8) the child health associate (Colorado). The first four health specialists listed required that the practitioner be a nurse, and at least three of these explicitly require a registered professional nurse.³ The two known instances of physician's assistants in Hawaii also have utilized registered nurses. The last four health specialists listed do not require that the practitioner be a nurse.

Legislation Relating to Nurse Physician's Assistants. When registered professional nurses act as physician's assistants, the need for implementing legislation is minimal. It is maintained by some of the individuals involved in the development of nurses as physician's assistants that the conducting of a physical examination falls within the limits of nursing. Dr. Henry K. Silver of the University of Colorado Medical Center has stated:

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Since pediatric nurse practitioners are registered nurses, they are allowed to perform all the functions of any licensed nurse. This includes the provision of health care when a physician is not present.⁴

The Colorado statutes provide the same definition for the practice of professional nursing as does Hawaii's, for both are patterned after the American Nursing Association's model definition:

The term "practice of professional nursing" means the performance, for compensation, of any acts in the observation, care, and counsel of the ill, injured, or infirm or in the maintenance of health or prevention of illness of others, or in the supervision and teaching of other personnel, or the administration of medications and treatments as prescribed by a licensed physician or a licensed dentist; requiring substantial specialized judgment and skill and based on knowledge and application of the principles of biological, physical, and social science. The foregoing shall not be deemed to include acts of diagnosis or prescription of therapeutic or corrective measures.⁵

The relevant statutes of California, where the family health practitioner has been developed, and of Massachusetts, where the nurse practitioner had been developed, are somewhat similar. They read respectively: "...the application of such nursing procedures as involve understanding of cause and effect in order to safeguard life and health of a patient and others",⁶ and "...applying counsel and procedures to safeguard life and health..."⁷ Most, if not all, of those functions delegated to a registered nurse in a physician's assistant role would fall under the phrase "...maintenance of health or prevention of illness in others..." Many of the activities described in Chapter III of this report such as routine and periodic examinations, immunizations, chronic care measures, and informational and counseling services relating to growth and development, child-parent relationships, nutrition, and behavioral problems, have been categorized as preventive care measures, comprehensive health care, or health supervision. However, the word "diagnosis" has been used by some publications to describe one of the functions of the physician's assistant, and the Nurse Practice Act cited above clearly states that the practice of professional nursing does not include diagnosis. What could constitute a legal problem is very likely avoided by examining the definition of diagnosis. Black's Law Dictionary provides the following definition:

...a medical term, meaning the discovery of the source of a patient's illness or the determination of the nature of his disease from a study of its symptoms; Said to be little more than a guess enlightened by experience. Swam v. Railroad Co., 29 N.Y.S. 337, 79 Hun. 612; People v. Jordon, 172 Cal. 391, 156 P. 451, 454.

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Under this definition, it would seem that the term "diagnosis" applies when there is an existing state of disease or illness, which differs then from the maintenance of health or the prevention of illness. Furthermore, if physicial examinations and other tasks associated with the role of the physician's assistant which require the use of such diagnostic equipment as the stethoscope and otoscope are considered to be "screening" rather than diagnosis, i.e., the identification of an abnormal condition from a normal condition, then it would seem that a nurse assuming such functions would be performing within the scope of the nurse practice act. Based on the relevant statutes of the State of Hawaii regarding the practice of nursing and the experience of other states with similar laws which have already developed systematic programs for the use of professional nurses as physician's assistants, it appears that the implementation of registered professional nurses in this role would not require any new legislation or amendments to existing laws at the present time. Those involved with the development of nurses in a physician's assistant role at both Kaiser Medical Center and at Straub Clinic consider it to be within the scope of nursing and the Nurse Practice Act of Hawaii.

Legislation Relating to Nonnurse Physician's Assistants: Supervision by the Employing Licensed Physician. For the most part, formulators of physician's assistant programs and supporters of the concept maintain that, at the present time, the quality of the assistant's performance would be governed by the employing physician. The Health Manpower Commission has stated that the delegation of health service functions by the employing physician to his assistant is predominantly governed by prevailing custom and practice.⁸ The commission places the primary responsibility for developing legal rules regarding delegation of tasks by physicians to non-physicians with the legislatures rather than the courts, in view of the tendency of the courts to provide strict construction of medical practice acts.⁹

...If delegations are judged by strictly construed medical practice statutes, they are permissible only to the extent that these medical licensure statutes, reflecting traditional policies of public protection, are expressly modified by exceptions accommodating new policies of increased physician productivity and manpower utilization.¹⁰

The licensure statutes of four states--Arizona, Colorado, Kansas, and Oklahoma--provide general exemptions for delegations of functions (see Appendix K). The Corporate Law Department of the AMA has suggested that physician supervision of competent assistants might be

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provided legally by modification of state medical practice acts after that of Oklahoma, which reads:

Nothing in this article shall be so construed as to prohibit service rendered by a physician's trained assistant, a registered nurse, or a licensed practical nurse if such service be rendered under the direct supervision and control of a licensed physician.¹¹

Such an amendment is considered to be workable only where physicians are not hesitant to delegate more functions, and if there is public acceptance of such delegation without increased risks of liability.¹²

Hawaii's medical practice act did at one time contain language similar to that suggested by the AMA. Prior to 1965, the definition of medicine contained the phrase:

...provided, that nothing herein contained shall forbid any person from the practice of any method, or the application of any remedial agent or measure under the direction of a licensed physician.¹³

This part of the definition of the practice of medicine was repealed¹⁴ in conjunction with the establishment of temporary and limited licenses to practice medicine. The major reasons for the amendment provided in the accompanying committee reports were:

1. The definition of what is meant by "physician's direction" is difficult to achieve;
2. Temporary licensing might help alleviate the continuing shortage of physicians for rural areas and government hospitals; and
3. Better control over, and record keeping on, unlicensed physicians, interns, and residents would be provided by temporary and limited licensing procedures.¹⁵

One method then, by which quality control may be maintained over physician's assistants whose performance or preparation is not regulated in any other way, is to modify the definition of medicine in the manner suggested by the American Medical Association.

On the other hand, it is possible that such a modification may not be necessary if we turn to the exemption from temporary and limited medical licenses of nurses and other similar personnel acting under the direction and control of a licensed physician. Section

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453-3 of the Hawaii Revised Statutes relating to limited and temporary licenses for physicians concludes with the following statement:

Nothing herein requires the registration or licensing hereunder of nurses, or other similar persons, acting under the direction and control of a licensed physician.

It is not clear, however, whether "other similar persons acting under the direction and control of a licensed physician" would include physician's assistants.

Departmental Rules and Regulations. Another alternative to ensuring quality control over physician's assistants may be through the development of a set of standards by the Department of Health, in cooperation with other state agencies and private organizations which would be able to provide expertise and assistance. Sections 321-12 through 321-15 of the Hawaii Revised Statutes authorizes the Department of Health to prescribe rules and regulations which it deems necessary for the public health and safety for certain named occupations. These sections could be amended to include physician's assistants. Those health and health-related occupations presently regulated by the department include laboratory directors, laboratory technicians, physical therapists, midwives, podiatrists, sanitarians, and nursing home administrators.¹⁶ These sections of Hawaii's health laws enable regulation of certain health occupations, in addition to the licensing of other health occupations by occupational licensing boards in the Department of Regulatory Agencies. The elements to be included in the development of any regulations relative to these occupations by the Department of Health, as cited in section 321-13, are: the health, education, training, experience, habits, qualifications, or character of person to whom certificates of registration or permits for such occupations or practices may be issued; the health, habits, character, practices, standards of conduct of persons holding such certificates or permits; and the grounds or causes for revoking or suspending such certificates or permits.

The formulation of such standards for physician's assistants by the Department of Health could be developed through an advisory body created specifically to assist the department, and dissolved upon the completion of its task. Such a body might be composed of consumers, physicians, nurses, public health officers, hospital administrators, and health educators. The existence of such measures of control may then provide guidelines for and promote the training of physician's assistants by reducing some of the potential risk for

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sponsors of training programs and employer physicians. Departmental regulation provides added flexibility in that alterations to qualifications and requirements for the certification of an occupation would not require legislative action.

It is worth noting that the outline for regulation of the physician's assistant by the department of health presented herein could be equally applicable to the regulation of other health or health-related occupations presently not regulated. The mechanism of an advisory body reflecting the community and health groups within the community, working cooperatively with the health department to develop public health regulations for certain occupations as the need arises or as opportunities for the potential development of new methods of delivering health care arises, could provide the State with a flexible means of control over expanding or developing health occupations. It is flexible since it would not necessarily involve legislation; the advisory body could often act as a fact-finding body; and such an arrangement may possibly avoid the creation of separate licensing boards for each new health occupation seeking licensure in the future.

It is recommended, however, on the basis of the several authorities on physician's assistants, that the requirement that the assistant operate under the direction and supervision of a licensed physician be embodied in any set of standards developed for this class of health specialists. The Child Health Associate Act, the only licensing act for one kind of physician's assistant, not only provides that the associate practice under the direction and supervision of a physician whose practice is to a substantial extent in pediatrics, but also requires that he practice only when the physician is directly and personally available. The legislature of the State of Colorado in 1969 enacted the Child Health Associate Law (see Appendix J) and of direct relevance to this proposed method of quality control, are the standards for certification of the child health associate contained in the Act. The following qualifications are provided for certification as a child health associate:

1. Personal qualifications--at least 21 years of age, of good moral character, holds citizenship in the United States;
2. Academic requirements--has completed a course of study approved by the board of medical examiners in an accredited college or university which includes the subjects of anatomy, physiology, biochemistry, pathology, pharmacology, microbiology, growth and development, child psychology and psychiatry,

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preventive pediatrics, and clinical pediatrics, and possesses at least a bachelor's degree from such college or university;

3. Internship of at least one year approved by the board; and
4. Examination requirements--pass an impartially administered examination given and graded by the board either in writing or oral, or both, which shall fairly test the applicant's knowledge in theoretical and applied pediatrics as far as it applies to the practice of a child health associate in at least the subjects of growth and development of the child, infant nutrition, immunization procedures, care of the normal newborn, and the common diseases of the child.

Regulation of Clinical Investigations in New Patterns of Health Care. An alternative is suggested by E. H. Forgotson, Associate Professor of Preventive Medicine and Associate Professor of Public Health at the University of California, Los Angeles,¹⁷ which calls for the establishment of a regulatory program for the controlled investigation of manpower uses. The purpose would be to ensure the health and safety of the patient in any experimental undertaking involving different and new uses of health manpower in the rendering of health care. This could be achieved by lending legislative sanction and control to such innovations and by providing for the systematic operation of such investigations with acceptable measurements of success or failure. Forgotson suggests that such regulations include qualifications for public and private institutions and individuals interested in conducting experimental programs which would demonstrate the safety and effectiveness of new uses of existing and potential categories of health manpower, requirements for the protection of patients against irresponsible and dangerous experiments, and provisions for the orderly translation of those innovations demonstrated to be safe and effective into regular patterns of medical care.¹⁸ Such a program might be implemented by a council which would receive projects proposals, i.e., comprehensive plans of investigation following scientific standards of research including a showing that experimental results and medical manpower requirements warrant such action in the public interest, and such a council could provide the necessary funding. This council function could be delegated to an already existing body, preferably one with interests germane to the delivery of health care services and training methodology. A possibility would be the executive committee of the College of Health Sciences and Social Welfare at the University of Hawaii, which includes the dean of each of the four schools within that college: the School of Medicine; the School

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of Social Work; the School of Public Health; and the School of Nursing. Another possibility would be to have the Department of Health, in cooperation with an advisory committee much like that discussed for certification standards, develop and administer regulations for the function of accepting for review, approval and funding, proposals for investigative activities in manpower utilization. A third possibility is the establishment of a council, which could be placed for administrative purposes under the University of Hawaii or the Department of Health, and its membership could include representatives from: (1) the several state health or health-related occupational licensing boards; (2) each of the schools within the College of Health Sciences and Social Welfare at the University of Hawaii; (3) various health and medical occupational organizations; and (4) the various governmental agencies and programs concerned with health and health-related services. The council could require periodic reports on the progress, development, and problems encountered by those involved in approved and operating projects, and present annual reports to the legislature.

The basis for this proposal lies in Forgotson's contention that the present legal climate carries the following limitations:

1. The enactment of the present occupational licensure statutes was based on considerations not necessarily related to optimal allocations of responsibilities among the allied or auxiliary health occupations or to the delivery of health and medical care to the entire population as a "civil right" of the people;¹⁹
2. Present occupational licensure laws tend to preserve the status quo, thereby discouraging new allocations of responsibilities within the health manpower matrix and inhibiting experiments to test the safety and effectiveness of new manpower uses;
3. Present licensure statutes generally make no provision for the orderly and systematic creation of new categories of health manpower and consequently, recognition and widespread use of new categories of manpower will normally be enacted only if such a category of personnel exists and seeks licensure, and such categories are unlikely to develop without legal recognition because of fear of criminal or civil penalties for engaging in illegal practice.²⁰

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The conditions which could be imposed as part of the suggested regulatory program to help overcome these limitations are: requirements for physician supervision; written consent from all patients whose care would be part of the demonstration project; ad hoc licensure for those unlicensed persons involved in the project as deemed necessary and only for the duration and purposes of the project, or a certification of competence of the trainees by the sponsors of the plan and the staff of the clinic, hospital, or other type of setting selected for the implementation of the project.²¹

Under this proposal, the sporadic occurrence of clinical experiments could be transformed to a systematic program of clinical investigations with legal sanction and state funding. Such a system could then provide the legislature with an ongoing source of information necessary in determining whether or not present patterns of health care are adequate, and when improvements, if any, need to be made.

Voluntary Systems of Regulation. Traditionally, criteria for quality control governing the preparation and performance of an individual in the health field have been developed through voluntary or nongovernmental systems, where measurements of competence are established within the profession itself through occupational organizations. The Child Health Associate Act presents an unusual departure from this practice. Standards developed through occupational organizations constitute a self-regulatory system to ensure quality preparation and performance among those individuals either aspiring to or already in the practice of that occupation.²² The general pattern followed in the health field toward the development of such standards has been one where individuals trained to perform similar health services organize into occupational associations. These associations act to promote comradeship with others of the same occupational background and to share knowledge, skills, and experiences. Publications are often issued, and more importantly, ethical codes are developed which set forth qualifications for membership, the type and extent of training required, conditions of employment, maintenance of status within the profession, and the association's authority to dismiss a member from its ranks.²³

The development of certification standards by an occupational association lies in its determination of the type and extent of training required of members of its occupation as well as members of its organization. The maintenance of standards of training is generally

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achieved by approval or accreditation of curricula or by providing examinations for persons aspiring to practice in the specialty. Some associations like the American Society of Medical Technologists and the American Society of Radiologic Technologists do both. Upon passing the society's examination, a person is "certified" or "registered", meaning that he carries the stamp of approval of that national society.²⁴ The pattern of voluntary quality control may culminate in an association's seeking legislation, first to protect the occupational status of members by inhibiting the use of an occupational title (permissive licensing) and then by prohibiting the practice of the occupation except only by those individuals who meet the minimum standards set forth by law (mandatory licensing).²⁵

Although certification in the health field refers to a method of nongovernmental regulation conducted by voluntary occupational organizations and not legally necessary for an individual to operate in his vocation, such a selective use of certification is not the case where statutory provisions are concerned. The terms "certificate" and "license", in fact, appear to be used interchangeably in some states where a certificate may be issued instead of, and have the same effect as, a license.²⁶ In Hawaii, of the approximately 21 health or health-related occupations regulated by the State, including those listed in section 321-12 of the Hawaii Revised Statutes, five are issued a "certificate", "certificate of registration", or a "permit":

Podiatrist	Certificate of Registration	Sec. 321-12, HRS
Physical Therapist	Permit	Sec. 321-12, HRS
Dispensing Optician	Certificate	Sec. 458-4, HRS
Optometrist	Certificate of Registration	Sec. 459-7, HRS
Psychologist	Certificate	Sec. 465-2, HRS

In all of the above-noted occupations, the requirements are generally the same as those required for a license in other health occupations: certain educational qualifications are stipulated; an examination of one kind or another is required; and other "personal" qualifications such as age, citizenship, residence and moral character, must be met.

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Voluntary certification is dependent upon the gradual evolution of an occupation. Time and experience are needed to determine the curriculum needs for a specialized skill and to achieve uniform standards or quality for training programs.²⁷ The setting of educational guidelines generally involves specific requirements for the administration of a training program, requirements for faculty, personnel and facilities, and prerequisites for admission and curriculum requirements (usually stated in terms of numbers of hours or credits, and specifically named courses of study).²⁸ These same characteristics are generally cited as reasons why it is preferable to leave certification standards to voluntary associations. In considering the risks of liability in the use of new kinds of paramedical personnel to assist the physician in new ways, one writer has commented that the degree of risk involved is greatly minimized if "...appropriate medical or specialty societies establish standards for training and a program for private certification of students who satisfactorily complete the approved training."²⁹

Some of the disadvantages of voluntary system of certification are:

1. That it would not be satisfactory in an era where there is a demand for highly specialized skills to reflect the explosion in scientific and technological knowledge;³⁰
2. That the characteristic emphasis upon formal educational programs tends to neglect the development of a mechanism which could recognize competence derived from experience, provide the incentive to achieve higher degrees of skill, and avoid the freezing of individuals into classes unless they can return to formal educational programs;³¹
3. That upon attaining legislation--the ethics, standards, and particular interests of the private association may well constitute what is adopted into law or administrative regulation and in the delegation of regulatory powers to the regulated group itself, and the number of practitioners and the development of new techniques and skills may be inhibited by the imposition of restrictive qualifications and by including and excluding certain practices in setting the limits of the profession;³²
4. That an association is hampered by the lack of enforcement powers, i.e., an association cannot prevent what it

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considers an unqualified person from hiring himself out in that particular occupational capacity, nor can it prevent the operation of non-accredited educational or training programs.

From the information available, none of the training programs for physician's assistants described in this report is approved or accredited by a nongovernmental occupational association. One of the problems presently facing the health field is the achievement of a national consensus on educational levels and job titles for a number of allied health occupations. Work on this problem has been done by the Department of Allied Medical Professions and Services of the American Medical Association which lists, among a number of occupations, the pediatric associate³³ and the physician's assistant. The pediatric associate is listed as requiring at least a baccalaureate and the physician's assistant is listed as requiring at least two years of higher education.³⁴

The professional development for the physician's assistant has already begun through the incorporation of the American Association of Physician's Assistants in 1968. The objectives for this organization are to provide continuing education for the graduates of physician's assistant programs, participate in the future development of the program and work closely with organized medicine so that the aims of physicians can always be met.³⁵ Other developments have been provided by the American Academy of Pediatrics which has established a Division of Child Health Manpower for the express purpose of developing training guidelines and accreditation of educational programs for the three recommended classifications of child health personnel: the pediatric nurse associate; the pediatric office assistant; and the pediatric aide.

Chapter V

SUMMARY

The concern expressed in Senate Concurrent Resolution 9 of the Fifth State Legislature, 1969, calls for a study of the need in Hawaii for certification standards to facilitate the employment of a new field of health specialists. From the language contained in the resolution, combined with preliminary research on the subject, the focus of this report has been on the concept of the physician's assistant as it relates to extending physician services to greater numbers of people and as it represents a different organizational pattern of health care. This report has attempted to inform the Hawaii State Legislature on the development of the physician's assistant concept, what other states are doing, its relevance to Hawaii, and some of the available alternatives regarding certification standards for this health occupation. Some of the recognized characteristics of the American health care system upon which this report has been premised are: the increased acceptance and expectation of the health consumer of more comprehensive and preventive health care; the lack of adequate numbers of physicians and the maldistribution of physicians by geographic areas and by socioeconomic groups; the need to focus on increasing physician services rather than on increasing numbers of physicians; and the need to overcome the ineffective utilization of potential health personnel as well as those in already established health occupations.

Other health-related or allied health personnel such as technologists, technicians, and occupational aides, have been considered to be outside the scope of this report since very few, if any, are concerned with the extension of physician productivity by assuming certain diagnostic and treatment functions ordinarily performed by physicians. Furthermore, these types of personnel tend to better reflect advances in biomedical technology and research, or are additions at lesser-skilled levels to already existing health occupations. The physician's assistant, or a person especially trained to assume certain functions ordinarily performed by a physician (physical examinations, simple diagnosis and treatment procedures, seeing patients independently, providing counseling and informational services) is a relatively recent development in the United States. Traditionally, physicians have delegated certain responsibilities as well as more or less routine or lesser-skilled functions to persons who have assisted him over a long period of time. However, what is new about the physician's assistant is that it exemplifies the transition of delegating certain medical functions to lesser trained personnel from an informal practice involving unknown legal risks to systematic educational programs in academic institutions and other medical facilities with subsequent

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beginnings in legal regulation and controls. In addition to educational programs, there have been various demonstration projects and evaluation studies to explore and test the workability, acceptance, benefits, and problems of the physician's assistant role. The two major types of physician's assistants developed thus far are the physician's assistant for general medical practice and the physician's assistant for maternal and child care. The major sources for trainees have been registered professional nurses and ex-military medical corpsmen, and to a lesser extent, students majoring in or possessing baccalaureates in the biomedical sciences. Among the existing educational programs there is a wide diversity in training settings, length of training, qualifications for admission, and recognition of completion of training. On the other hand, the training programs have in common the general purpose of the program and certain aspects of curriculum. All include an extended period under a preceptor or apprentice-like arrangement. Training programs for physician's assistants have been implemented in at least seven states, with the programs at Duke University, Bowman Gray School of Medicine, the University of Colorado, and the Alderson-Broadbent College receiving the most attention.

Hawaii has also participated to some extent in the development of the physician's assistant concept. Two private group practices are involved in the development of registered professional nurses in the role of physician's assistants, and the responses of Hawaii pediatricians to a 1967 survey conducted by the American Academy of Pediatrics favored the increased use of allied health workers in pediatric practice. Such information, however, can be interpreted at best as a significant expression of interest and an indication of potential for the development and utilization of this category of health specialists in Hawaii. The kind of information necessary to properly determine the need for physician's assistants in Hawaii is presently lacking. Such information would be partly on the order of the type of studies conducted in other states on the various aspects of pediatric practice and of the type of survey conducted nationally by the American Academy of Pediatrics, all of which are described in this report. Although additional information is necessary to properly determine the need for physician's assistants in Hawaii, the lack of such data should not preclude consideration of the concept itself, and an awareness on the part of the legislature of its development in other states, the possible implications it may have for Hawaii's future health picture, and methods by which regulation of the physician's assistant might be achieved. Even at this preliminary stage, it is possible to examine a few of the available methods by which regulation of the physician's assistant--and in some instances, other types of existing or developing types of health occupations--might be achieved.

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The traditional nongovernmental method by which standards of professional competence in the health field are developed is through appropriate medical or specialty societies which accredit educational programs and certify members of the occupation. The professional development for the physician's assistant has already begun through the incorporation of the American Association of Physician's Assistants in 1968. Other progress in this direction has been made by the American Academy of Pediatrics which has developed training and accreditation guidelines for certain classifications of child health personnel. The basic argument favoring the development of certification standards by voluntary associations is that an occupation evolves gradually and that time and experience are needed in order to determine curriculum needs for a specialized skill and to achieve uniform standards for training and performance. Some of the arguments against this method are: its overemphasis on academic qualifications; its lack of enforcement power; and its tendency to develop overly restrictive criteria.

Governmental regulation of physician's assistant might be achieved by two possible alternatives: the requirement that such personnel operate under the supervision and control of a licensed physician; the development of certification standards by the department of health in conjunction with an advisory board. The former would require an amendment to Hawaii's present medical practice act, although from the experience of other states which have developed systematic programs for the training of nurses in this role and from the two experiences in Hawaii, it appears that such a requirement may not be necessary where registered professional nurses are trained as physician's assistants if their duties as physician's assistants are considered to be within the scope of the nurse practice act. The sponsors of physician's assistant programs and other supporters of the concept maintain that at the present time the requirement that such personnel operate under the supervision of a licensed physician is sufficient for the purposes of ensuring a certain standard of competence, and it suggested that such a provision be included in a state's medical practice act.

The development of standards of professional competence for physician's assistants through the Department of Health would occur under sections 321-12 to 321-15 of the Hawaii Revised Statutes which authorize the department to prescribe rules and regulations for certain named health occupations. These regulations are required by law to include the setting of requirements for training and standards of conduct and practice which must be met by an applicant or holder of a license or certificate for that occupation. Such regulations could be developed in cooperation with an advisory body representative of the several sectors of the community having a specific interest in the subject, and created specifically for the purpose of assisting the department

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in its task. The mechanism of an advisory body reflecting health groups within the community, working cooperatively with the department, provides the State with a flexible means of control as health occupations expand and develop, and as opportunities for the potential development of new methods of delivering health care arises. It is a flexible means since it would not necessarily require legislation--the advisory body could act as a fact-finding body and make recommendations to the health department, and such an arrangement may possibly avoid the creation of a separate licensing board for each new health occupation seeking licensure or certification in the future.

Another approach which goes beyond the development of certification standards for physician's assistants is one which places the focus directly on the patient's safety and welfare by providing legislative controls over innovative uses of health manpower. It would generally provide for the controlled investigation of health manpower uses by delegating to some already existing body, or to a board especially created for that purpose, the function of receiving and reviewing comprehensive proposals in much the same manner as contracts and grants review boards do, and providing the necessary state funding for those demonstration projects receiving approval. Such a program could provide the data and information necessary in assisting the development of legislative policy on health manpower utilization.

Health specialists such as the physician's assistant described in this report reflect new patterns of manpower utilization and new patterns of health care. The delegation of health service functions to lesser trained personnel is predominantly governed by prevailing custom and practice, and the need for developing legal rules or standards is dependent upon whether or not new policies of increased physician productivity and manpower uses are adopted. Whether or not Hawaii needs physician's assistants is partly a question of numbers of physicians, numbers of physician's assistants, and potential employment market--but above all, it is a question of whether we need to attain a more efficient utilization of physician's skills in providing adequate levels of health care for greater numbers of people in Hawaii.

FOOTNOTES

Chapter I

1. American Medical Association, Horizons Unlimited, 5th ed. (Chicago: 1968), pp. 109-110.
2. Charles U. Letourneau, "The Assistant Physician," Hospital Management, 105:55 (April 1968), p. 55.
3. American Medical Association, pp. 109-110.
4. Charles L. Hudson, "Expansion of Medical Professional Services With Nonprofessional Personnel," Journal of the American Medical Association, 176:10 (June 10, 1961), p. 840.
5. Most surgical technician or operating room technician training programs run anywhere from three to several months (American Medical Association, p. 112) whereas physician's assistant programs as described in Chapter III of this report run anywhere from four months for registered professional nurses to five years for nonnurses.
6. See Whittaker v. Superior Court of Shasta County, 66 Cal. Rptr. 710 (1968).
7. U.S. Department of Health, Education, and Welfare, Public Health Services, A Report to the President and to the Congress, The Allied Health Professions Personnel Training Act of 1966, as amended, April 1969, pp. 2-3.
8. E. H. Estes, Jr., "Task Oriented vs. Degree Oriented Training Concept of Optimizing the Use of the Most Highly Skilled with Specific Personnel," Military Medicine, 134:6 (June 1969), p. 386.
9. Rashi Fein, The Doctor Shortage: An Economic Diagnosis (Washington, D.C.: The Brookings Institution, 1967), p. vii.
10. Ibid., p. 4.
11. Ibid., p. 129.
12. Fenninger, p. 386.
13. Fein, p. 112.
14. Charles L. Hudson, "Expansion of Medical Professional Services With Nonprofessional Personnel," Journal of the American Medical Association, 176:10 (June 10, 1961).
15. Ibid., p. 840.
16. Ibid.
17. William Obrinsky, "The Role of Voluntary and Governmental Groups of Physicians," American Journal of Diseases of Children, 116:5 (November 1968), p. 477.

Chapter II

1. National Commission on Community Health Services, Health Is A Community Affair (Harvard, 1966), p. 79.
2. Hollis S. Ingraham, "The Health Manpower Crisis," Vital Speeches of the Day, 35:12 (Pelham, New York: City News Publishing Company, April 1968), p. 374.
3. Leonard Fenninger, "Where Do Allied Personnel Fit In Health Services," Military Medicine, 134:6 (June 1969), p. 383.
4. U.S. Advisory Commission on Health Manpower, Report of the National Advisory Commission on Health Manpower, Vol. I (Washington, D.C.: U.S. Government Printing Office, November 1967), p. 10.
5. Ibid., p. 3.
6. Fenninger, p. 386.
7. Ingraham, at p. 374 states: "Estimates of the total demand for physicians' visits can be expected to grow by perhaps 22 to 26 per cent by 1975 and by 35 to 40 per cent by 1980. . . . We know that this country will need to train an additional 50,000 doctors by 1975 to meet the rising demand for medical care;--but we do not know how we shall accomplish this. We know that present plans to build 15 new medical schools in the nation will help to meet the projected doctor deficit;--but we do not as yet know what can possibly be done to shorten the 6 to 10 years it takes to build and begin operating a medical school, not to mention the additional years before a class of physicians is produced."

Chapter III

1. The State Legislature of Colorado, 1969, enacted the Child Health Associate Act. For a discussion of this legislation, see Chapter IV.
2. E. H. Estes, Jr., "Task Oriented vs. Degree Oriented Training Concept of Optimizing the Use of the Most Highly Skilled with Specific Personnel," Military Medicine, 134:6 (June 1969), p. 388.
3. Robert Howard, "The Physician's Assistant," Journal of the Kansas Medical Society (October 1969), p. 412.
4. Eugene A. Stead, "Preserving Costly Talents--Providing Physicians' New Assistants," Journal of the American Medical Association, 198:10 (December 1966), p. 182.
5. Estes, p. 402.
6. Ibid., p. 389.
7. Howard, p. 413.
8. Estes, p. 388.
9. Ibid., pp. 386-389.
10. Howard, p. 415.

11. Charles U. Letourneau, "The Assistant Physician," Hospital Management, 105:55 (April 1968), p. 57.
12. Hu C. Myers, "A New Educational Program for Physician's Assistants," Medical Times, 97:3 (March 1969), p. 141. This program is sponsored by the Commonwealth Fund of New York City and has the official support of the University of West Virginia Medical Center and the Council of the State Medical Association.
13. Ibid.
14. Hu C. Myers, Medical World News, 9:28 (July 12, 1968).
15. Wall Street Journal, August 4, 1969, p. 1.
16. Well-Child Conferences are federally funded programs under the U.S. Department of Health, Education and Welfare, the purpose of which is to enable states to extend and improve services for promoting the health of mothers and children, especially in rural areas and in areas suffering from severe economic stress through federally allotted grants-in-aid. (Basic Act of 1912; 42 U.S.C. Ch. 6; Social Security Act, Title V, Parts 1 and 2; 42 U.S.C. Ch. 7, Sub ch. V; Reorganization Act of 1945; 60 Stat. 1095; P.L. 88-156; 77 Stat. 273.)
17. LaVerne Fakkema, "Professional Role Change: The Extended Nursing Role" (California Department of Health, Bureau of Maternal and Child Health, August 1968), p. 8. (Mimeographed). See also J. Connelly, J. Stoeckle, E. Lepper, and R. Farri-sey, "The Physician and the Nurse, Their Inter-professional Work in Office and Hospital Ambulatory Settings," The New England Journal of Medicine, 275:765 (October 1966) and R. Farrisey, "Clinic Nursing in Transition," American Journal of Nursing, 67:305 (February 1967).
18. Wall Street Journal, p. 1.
19. Ibid.
20. Fakkema, p. 8. See also C. E. Lewis and B. A. Resnik, "Nurse Clinics and Progressive Ambulatory Patient Care," The New England Journal of Medicine, 277:1236 (December 1967).
21. The term "well-child" care refers to health services rendered to children who are not necessarily ill in order to maintain a state of good health; a preventive care approach.
22. Communication from Robert Oseasohn, Chairman, Department of Epidemiology and Community Medicine, School of Medicine, University of New Mexico, Albuquerque, September 9, 1969.
23. Ibid.
24. American Academy of Pediatrics, Council on Pediatric Practice, p. 1.
25. Henry K. Silver, "Use of New Types of Allied Health Professionals in Providing Care for Children," American Journal of Diseases of Children, 116:5 (November 1968), p. 486.
26. Ibid., p. 489.
27. Ibid.
28. Communication from Henry K. Silver, Chairman, Department of Pediatrics, University of Colorado School of Medicine, September 9, 1969.
29. Silver, p. 490. A salary for the child health associate is foreseen as starting between \$10,000 and \$12,000 with subsequent increases to \$15,000. The child health associate program is supported by grants from the Commonwealth Fund and the Carnegie Corporation.
30. "Child Health Associate Program," by Henry K. Silver (American Academy of Pediatrics, August 1969), p. 2. (Mimeographed).
31. Donald W. Schiff, Charles H. Fraser, and Heather L. Walters, "The Pediatric Nurse Practitioner in the Office of Pediatricians in Private Practice," Pediatrics, 44:1 (July 1969), p. 62. Training of the pediatric nurse practitioner in performing a complete physical examination includes the basic skills of inspection, palpation, auscultation, and the use of the otoscope, ophthalmoscope, and stethoscope.
32. Ibid. Training of the pediatric nurse practitioner in performing developmental examinations and evaluations of physical impairments include hearing defects, speech difficulties, visual impairments, orthopedic and other congenital deformities.
33. Ibid. Laboratory analysis includes urinalysis, hemoglobin determinations, obtaining cultures and specimens. Evaluation and management of acute and chronic disorders include upper respiratory infections, various skin eruptions, diarrhea, constipation, otitis media, allergic conditions, and the common contagious diseases.
34. Silver, p. 487.
35. "Report on the Training of Pediatric Assistants" (Bowman Gray School of Medicine, Wake Forest University, Winston-Salem, North Carolina, 1969). (Mimeographed).
36. "Proposal for Family Health Practitioners" (School of Public Health, University of California, Berkeley, April 1969). (Mimeographed).
37. Fakkema, p. 3.
38. A. B. Bergman, S. W. Dassel, R. J. Wedgewood, "Time-Motion of Practicing Pediatricians," Pediatrics, 38:254-263 (August 1965), p. 301.
39. Silver, p. 488.
40. Henry K. Silver, L. C. Ford, L. R. Day, "The Pediatric Nurse Practitioner Program," Journal of the American Medical Association, 204:4 (April 22, 1968), p. 298.
41. Schiff, Fraser, and Walters, p. 66.
42. "Report on the Training of Pediatric Assistants," p. 1. The questions investigated were: (1) identification of patient-care tasks the pediatrician performs which do not require his specialized training and judgment and which could be feasibly delegated to a qualified assistant; (2) the pediatrician's willingness to delegate these tasks; (3) acceptance by the consumer of such delegation of physician responsibilities for child health supervision. The systematic

work sampling technique used is basically a statistical technique to measure the percentage of time spent in various activities using pre-arranged categories. Two pediatric practices in a small North Carolina town were selected.

43. Ibid. It was also concluded that such assistants could make a real contribution to the thoroughness of child assessment and the quality of care by performing careful visual and auditory screening, developmental evaluation, screening types of laboratory tests, and obtaining valuable information by visiting the home for evaluation of the home environment and for follow-up of illness, and visiting the school for information exchange when school adjustment is a problem. The assistant could also assume much of the responsibility of instruction for new-borns in hospitals with follow-up visits to the home after hospital discharge.
44. Patricia K. Patterson, Abraham B. Bergman, Ralph J. Wedgewood, "Parent Reaction to the Concept of Pediatric Assistants," Pediatrics, 44:69 (1969), pp. 69-75.
45. American Academy of Pediatrics, "Ad Hoc Committee Appointed to Develop Guidelines for Training Pediatric Assistant Personnel," Bulletin of Pediatric Practice, 2:4 (December 1968), pp. 5-6.
46. Ibid.
47. Ibid.
48. Ibid. The gross findings of the survey indicate that the performance of technical, clerical, and laboratory tasks by the pediatrician is essentially a function of the practice setting in which he works and the workers he employs. This setting is influenced in part by the degree of urbanization in the region and the delegation of responsibilities is subject to the influence of local customs. The data display a striking gap between current task performance in the field of patient care (who does what now) and the opinion of pediatricians as a group about "who should do what". The major obstacle to eliminating this gap is felt to be a lack of adequately trained workers. This finding can be translated into a need for training programs geared to supply the need of pediatric practitioners.
49. "Report of Survey Data for Hawaii Chapter on Utilization of Allied Health Workers in Pediatric Practice," from the files of Calvin J. Sia, Chairman, Hawaii Chapter of the American Academy of Pediatrics, August 26, 1968.
50. Ibid., pp. 1-2. The number of pediatricians in the State of Hawaii has been placed at 56 according to a draft of the Medical School of the University of Hawaii, "Status, Plans and Recommendations," September 1969. (Mimeographed).
51. Ibid., p. 13.
52. Ibid., p. 10.
53. Ibid., p. 13.
54. Ibid.
55. Communication from Mrs. Holly Meyer, registered professional nurse, Straub Clinic Research Institute, Honolulu, Hawaii, September 18, 1969.
56. Mary G. Patterson (ed.), Dialogue: The Extended Role of the Nurse, May 31, 1969, School of Nursing, University of Hawaii, Draft. (Mimeographed).
57. Rashi Fein, The Doctor Shortage: An Economic Diagnosis (Washington, D. C.: The Brookings Institution, 1967), pp. 145-147.
58. Ibid.
59. Charles L. Hudson, "Expansion of Medical Professional Services With Nonprofessional Personnel," Journal of the American Medical Association, 176:10 (June 10, 1961), p. 840.
60. William G. Crook, "The Private Pediatrician's Future," American Journal of Diseases of Children, 116:5 (November 1968), p. 483.
61. Hudson, p. 840.
62. Alex Gerber, "The Medical Manpower Shortage--A World-wide Problem," World Medical Journal, 16:1, pp. 2-6.
63. Thelma Ingles, "A New Health Worker," American Journal of Nursing, 68:5, pp. 1059-61.
64. Hu C. Myers, Medical World News, 9:28 (July 12, 1968).
65. Hu C. Myers, Medical Times, p. 141.
66. Hu C. Myers, Medical World News.
67. "Proposal for Family Health Practitioners".
68. Fakkema, p. 4.
69. Ibid.
70. Ibid.
71. Henry K. Silver, L. C. Ford, L. R. Day, p. 302.
72. Hudson, p. 841.
73. Editorial comment, Journal of the American Medical Association, 204:4 (April 22, 1968), p. 118.

Chapter IV

1. The several studies on various aspects of pediatric practice and the American Academy of Pediatrics 1967 survey provide some guidelines regarding the kind of information needed in order to properly determine the need for physician's assistants in Hawaii. The preparation, collection and analysis of such information should properly ascertain, among others, the following:
 - a. An identification of the general array of medical tasks most frequently performed by physicians and the average amount of time consumed by each task;
 - b. An identification of those tasks which could and should be performed by a trained assistant;
 - c. The number of physicians who would favor the use of a physician's assistant on a full-time or part-time basis;
 - d. The identification and investigation of problems of acceptance, career mobility, salary, training.

- Another possible method of determining the need for physician's assistants in Hawaii would be to empirically test the concept through a demonstration project. Such a project could be conducted by the School of Medicine at the University of Hawaii and could include the training and utilization of several types of trainees or possibly only one type of trainee. If only one type is preferred, ex-military medical corpsmen might prove to be a fruitful category for investigation since the physician's assistant concept utilizing this class of health manpower has not yet been tested in Hawaii. Such a project would have to include the cooperation and assistance of the several health groups in the community, and several physicians willing to provide preceptorship services and to utilize the physician's assistant in actual practice.
2. U.S. Department of Health, Education, and Welfare, National Center for Health Statistics, Health Resources Statistics (Washington, D.C.: December 1968), p. 125.
 3. It is not known whether the University of New Mexico's nurse practitioner is a registered nurse.
 4. Communication from Henry K. Silver, Chairman, Department of Pediatrics, University of Colorado School of Medicine, September 9, 1969.
 5. U.S. Advisory Commission on Health Manpower, Report of the National Advisory Commission on Health Manpower, Vol. II (Washington, D.C.: U.S. Government Printing Office, November 1967), p. 439.
 6. California Business and Prof. Code, sec. 2725.
 7. Massachusetts General Laws, chapter 112, sec. 80B. (1965).
 8. U.S. Advisory Commission on Health Manpower, Vol. II, pp. 291-292.
 9. Ibid., pp. 293-294.
 10. Ibid., p. 294.
 11. Oklahoma Stat. Title 59, sec. 492 (Supp. 1966).
 12. B. J. Anderson, "Presentation to the 65th Annual Meeting of the Federation of State Medical Boards of the United States" (February 7, 1969), pp. 1-2. (Mimeographed).
 13. Rev. Laws of Hawaii 1955, sec. 64-2.
 14. Session Laws of Hawaii 1965, Act 218.
 15. Standing Committee Report 612, Senate Bill 635, Third State Legislature, State of Hawaii, 1965.
 16. Sections 321-13 through 321-15, Hawaii Rev. Stat., as amended by Act 160, Session Laws of Hawaii 1969, which added nursing home administrators.
 17. Edward H. Forgotson and John J. Cook, "Innovations and Experiments in Uses of Health Manpower--The Effect of Licensure Laws," Law and Contemporary Problems, 32:4 (Duke University School of Law: August 1967), p. 731.
 18. Ibid., p. 746.
 19. Ibid., p. 736.
 20. Ibid., p. 743.
 21. Ibid., p. 747.
 22. Communication from Israel Light, School of Related Health Sciences, University of Health Sciences, Chicago, Illinois, September 19, 1969.
 23. Council of State Governments, Occupational Licensing Legislation in the States (Chicago: 1952), pp. 20-21.
 24. Communication from Israel Light.
 25. B. J. Anderson, pp. 1-2.
 26. U.S. Department of Health, Education, and Welfare, Public Health Service, State Licensing of Health Occupations (Washington, D. C., Public Health Service Publication No. 1758: October 1967), p. 3.
 27. B. J. Anderson, p. 8.
 28. This is the format used for the presentation of essentials of an acceptable school for a health occupation by the Council on Medical Education of the American Medical Association, in cooperation with the private organizations of that occupation.
 29. Richard P. Bergen, "Irregular Assistants and Legal Risks," Journal of the American Medical Association, 209:6 (February 10, 1969), p. 1231.
 30. B. J. Anderson, p. 8.
 31. Ibid.
 32. Council of State Governments, pp. 3-4.
 33. Henry K. Silver, "Use of New Types of Allied Health Professionals in Providing Care for Children," American Journal of Diseases of Children, 116:5 (November 1968), p. 489.
 34. "Allied Medical Occupations, Seventh Draft for Comment and Review" (Department of Allied Medical Professions and Services, American Medical Association, August 8, 1969). (Mimeographed).
 35. Robert Howard, "The Physician's Assistant," Journal of the Kansas Medical Society (October 1969), p. 416.

Appendix A

DATA ON INQUIRY SENT TO MEDICAL SCHOOLS TO IDENTIFY NEW HEALTH SPECIALISTS

Of the 62 schools responding, only 10 or 16 per cent confirmed training programs for what they considered new types of health personnel and all reported that these new paramedical personnel were not presently regulated by their respective states. Thirty-four per cent of the responding schools reported intentions to initiate new training programs in the near future, while 32 per cent had no comment regarding plans. All schools responding expressed a need for training new health personnel. The training programs reported by the ten schools mentioned above are listed below.

48	<u>School</u>	<u>New Programs</u>	<u>Description</u>	<u>Future Programs</u>
	University of Cincinnati College of Medicine	Inhalation Therapy Animal Care Technology Pediatric Nurse Associate		Nurse Associate
	University of Miami School of Medicine	Biomedical Engineering		
	Downstate Medical Center State University of New York	Laboratory Animal Sciences Medical Computer Sciences		Operating Room Technician
	School of Allied Medical Professions Ohio State University	Medical Communications Circulation Technology		
	College of Physicians and Surgeons Columbia University	Inhalation Therapy		Orthopedic Assistants Stoma Technicians
	Georgetown University School of Medicine	Ophthalmic Assistants		
	University of Kansas Medical Center	Nurse Clinicians	Physician's assistants in the care of people with stable diseases	
	University of Iowa	Nuclear Medical Technology		

<u>School</u>	<u>New Programs</u>	<u>Description</u>	<u>Future Programs</u>
University of Texas Southwestern Medical School at Dallas	Rehabilitation Specialists	Aides to the vocational rehabilitation counselor	
	Instructional Media Technologist	Involved with TV develop- ment in hospitals, making films, photography, and in general visual communica- tion of medical health information	
Albert Einstein College of Medicine Yeshiva University	Nurse Physician Associates	Physician surrogates with duties parallel to those of physician assistants	

UNIVERSITY OF HAWAII

Legislative Reference Bureau

Our office is presently engaged in a study on the need for certification standards for newly emerging paramedical occupations in the State of Hawaii. As part of our work on this project, we would like to obtain some information on what kinds of new health specialists medical schools are preparing, in addition to physicians, registered professional nurses, and other already established and licensed or certified professional-technical health personnel. Such information would be helpful to our State in terms of facilitating future employment of such new health specialists in Hawaii. For this reason, we would greatly appreciate a response from your school or institution as soon as possible on the following questions:

1. Is your school or institution presently engaged in preparing new types of health personnel, and if so, what are they called and what are they being trained to do?
2. Are these new types of health specialists, or their performance, in some way regulated by your State, and if so, how is this done?

We would appreciate hearing from you even if your response to the first question above is negative. Thank you very much for any assistance you may be able to provide us on this matter.

Very truly yours,



(Mrs.) Millicent Kim
Junior Researcher

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Appendix B

COMPARISON OF EDUCATIONAL PROGRAMS FOR PHYSICIAN'S ASSISTANTS

<u>Title</u>	<u>Qualifications</u>	<u>Length</u>	<u>Total Training Period</u>	<u>Salary</u>	<u>Certifi- cate</u>
Physician Assistant Alderson-Broadbudd College	Admission to Alderson- Broadbudd College	4 years			BMS
Duke University	H.S. diploma, experience in the care of the sick	2 years		\$7,500-\$9,500	Yes
Clinical Associate University of Kentucky	2 years				BMS
Extended Role Nurse Massachusetts General Hospital	Registered Nurse	16 weeks			
Model of Care University of New Mexico	Registered Nurse	6 months			
Child Health Associate University of Colorado	2 years of college	3 years (1 study) (2 intern)	5 years	\$10,000-\$12,000 (max. \$15,000)	BA
Pediatric Nurse Practitioner University of Colorado	B.A. or Registered Nurse	4 months			
Pediatric Assistant Wake Forest University	2 years college (biology or chemistry background); Corpsmen				
Family Health Practitioner University of California California State Health Department Highland Hospital	Public Health Nurse	21 months			MS

As can be seen, the programs involving physician assistants have various names. Qualifications vary from a high school diploma to registered nurses, and training periods run anywhere from four months to three years. Annual salaries may range from \$7,500 to \$15,000 with recognition of completion varying from a certificate to a Master's Degree.

Appendix C

GENERAL OUTLINE OF DUTIES - PHYSICIAN'S ASSISTANT AT ALDERSON-BROADDUS SCHOOL OF MEDICINE

A. IN A HOSPITAL

1. Make daily rounds with the physician, taking notes to record on the progress sheet.
2. Take histories.
3. Give I.V. injections.
4. Change routine dressings.
5. Make separate rounds (morning or evening, before or after the physician's rounds) reporting any unusual findings to the physician.
6. Do electrocardiograms, basal metabolism tests, cystometrograms, etc.
7. Write orders as requested by the physician.
8. Assist in the operating room as first assistant in minor and second assistant in major operations.
9. Apply and/or adjust traction apparatus, casts, etc.
10. Determine residual urine.
11. Assist in various treatments and tests being carried out by the physician, or perform those in which the physician's assistant has been trained, and in which he has become proficient.
12. See patients in the emergency room, administer first aid, order any necessary x-ray or other laboratory work, and report to the physician.
13. Conduct training courses for aides of various types.
14. Counsel patients on tension-producing factors and situations, diets, etc.
15. Such other duties as the supervising physician may direct and/or assign.

B. IN A PHYSICIAN'S OFFICE OR CLINIC

1. Greet the patient, evaluate the overall problem, take the history, order routine and/or obviously needed laboratory and x-ray work, do such specialized tests as audiometric studies, tests for vision, visual fields, and screening types of neurological examinations, blood pressure, etc.
 2. Take dictation (in longhand) during the physician's examination.
 3. Answer telephone, make appointments, and record messages.
 4. Maintain supply of diet sheets and instructions to patients for various diseases, and explain them to patients.
 5. Make appointments with consultants.
 6. Keep record of the professional appointments and engagements of the physician.
 7. Be responsible for overall management of the physician's office.
 8. Make room reservations for patients at the hospital.
 9. Schedule operations.
 10. Give first aid.
 11. Make travel arrangements to medical meetings for the physician.
 12. Keep records and special files of possible research projects.
 13. Do simple laboratory tests, such as urinalyses, blood counts, etc.
 14. Send fee for calls or office visits, or charges for hospital calls, operations, etc. to clerk or business manager.
 15. Make routine calls in an extended care unit or nursing home to determine whether the physician's services are needed.
 16. Such other duties as may be assigned by the physician himself.
 17. Carry out such technical, developmental, and research projects as the physician's assistant's basic knowledge, innate ability, and supplemental education or training will permit him to undertake, under the guidance of the physician.
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Appendix D

DESCRIPTION OF THE PEDIATRIC NURSE PRACTITIONER PROGRAM AT THE UNIVERSITY OF COLORADO

The pediatric nurse-practitioner program was developed jointly by the Department of Pediatrics of the School of Medicine and the School of Nursing of the University of Colorado. Initially, nurses receive approximately four months of intensive theory and practice in pediatrics at the Medical Center of the university in Denver where they have 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 physical 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 (including breast feeding, the preparation and modification of formulas, introduction of solid foods, vitamin and other nutritional requirements, etc), and immunization procedures and schedules (including modification of schedules in individualized circumstances). 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, otitis 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 nurses provide total well-child care and make a significant contribution in supervision of infants by giving mothers instruction regarding many items of child care, including formula preparation, infant feeding, bathing, toilet training, 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 immunization, 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 follow-up and continuity of care.

Source: Henry K. Silver, "The Pediatric Nurse Practitioner Program," Journal of the American Medical Association, Vol. 204, No. 4, April 22, 1968, pp. 298-302

EVALUATION OF THE PEDIATRIC NURSE PRACTITIONER

Henry K. Silver, M.D.
and
Burris R. Duncan, M.D.

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.

Forty-eight pediatric nurse practitioners have completed the course of training during the past four years. They are in practice throughout the United States in various types of public health facilities and with pediatricians in private practice.

The first survey was made of a health station in a low-income urban neighborhood in Denver. It was found that 82 percent of all the children who came to this health station (which is quite removed from any physician or medical facility and only has a physician in attendance one-half day each week) were cared for by the nurse. Seventy-one percent were cared for by the nurse alone, while in the other 11 percent she merely needed to consult with a physician by telephone. In this health station, 54 percent of the visits were for well-child care while the remaining 46 percent were for ill or injured children.

In the second survey we evaluated the competence of the pediatric nurse practitioners in the physical assessment of the child. We reviewed the charts of 182 children (half of whom were well and half ill) who were seen within a short time of each other, both by a nurse practitioner and a pediatrician. Each of the 182 children was considered to have one or more "conditions" which could and should have been ascertained by the nurse. Wellness, any significant deviation from normal, or any illness or injury were all considered as conditions. A total of 280 conditions were noted in the 182 children. The nurses and the physicians agreed on 82 percent (230/280) of the conditions which were noted.

In 48 instances, or 17 percent, there was some degree of disagreement in assessment between the nurses and the physicians but these differences were not considered to be significant, with significant being defined as a misdiagnosed or undiagnosed condition which could have been helped with treatment. For example, the nurse heard an innocent murmur in two instances where it was not heard by the physician, while he found this type of murmur four times when the nurse did not. In each of the total of 48 conditions where there was some degree of disagreement, the nurse properly assessed the severity of the illness.

In only two instances, which represented 0.7 percent of the total number of conditions and 1.1 percent of all the children seen, was the degree of disagreement found to be significant. In one case the nurse felt that a child had an inflamed pharynx and was ill enough to be seen immediately by a physician. The physician suspected lower respiratory disease; roentgenogram revealed a patchy infiltrate of one lung.

In another case a child was seen by the nurse and found by her to have a fever and an inflamed pharynx. The mother was asked to bring the child back the next day.

During the night he became extremely irritable and developed a stiff neck. He was seen by a physician who diagnosed meningitis. However, examination of the cerebrospinal fluid revealed normal cell count, protein, sugar, LDH and culture. Blood culture was negative but throat culture grew out a Group A hemolytic streptococcus. In this case, the nurse was probably right.

We also carried out an opinion survey of parents who take their children to a private pediatrician who has a pediatric nurse practitioner as an associate in his office. This survey showed that parents have a high degree of satisfaction with the combined care provided jointly by the pediatrician and the nurse practitioner. Ninety-four percent of parents expressed satisfaction with the services they received from the two health professionals together and with their opportunity to maintain adequate communication with the physician while 57 percent stated that the care given jointly by physician and nurse was better than they had received from a physician alone; 34 percent indicated that their ability to communicate with the physician had actually improved. Parents were also highly satisfied with other aspects of the care provided by the pediatric nurse practitioner.

In addition, this survey found that 95 percent of parents favored the association of a pediatrician and a nurse practitioner so they could provide comprehensive health services to a significantly larger number of patients, and over 90 percent of parents considered such an association to be a desirable and inevitable trend in the private practice of medicine.

Although no extensive study was made of the saving in time or number of additional patients who could be seen as the result of an association of a pediatric nurse practitioner with private pediatricians, observations in this regard were carried out in two offices. In one office with two pediatricians, it was found that the addition of the nurse practitioner to the office staff resulted in an 18.8 percent increase in the number of patient visits to the offices as compared to the number of patients previously seen by the two pediatricians together (or approximately one-third more patients that could have been seen by a single pediatrician alone.)

In another office it was found that the association with a nurse provided the pediatrician with at least one-third more time than he formerly had for patient care, while both the nurse and the physician had increased time for reading, attendance at meetings, and for other purposes.

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.

Lastly, study of the time spent by the private physicians with the patients already seen by the nurse showed that the physicians' time with patients ranged in most cases from two to ten minutes with an average of just over four minutes. This compares with the previous average of approximately 14 minutes per child seen by these particular physicians alone.

Source: Abstract of Paper Presented at the American Pediatric Society Meeting, May 3, 1969 at Atlantic City.

Appendix E

FUNCTIONS OF FAMILY NURSE PRACTITIONER CALIFORNIA PROJECT UNDER NIH GRANT

O V E R V I E W O F C O M P A R I S O N

PUBLIC HEALTH NURSE	FAMILY HEALTH PRACTITIONER
<p>In various community settings such as homes, schools, or industries, the public health nurse works with individuals, families, and other groups to improve the health of the community.</p> <p>She uses a comprehensive approach toward health, including emphasis on prevention, treatment, and rehabilitation, and integrates all components of health--physical, psycho-social, economic, and environmental.</p> <p>In identifying health problems, she uses such skills as interviewing, observation, inspection, and screening; in carrying out her activities, she uses such skills as teaching, counseling, giving direct nursing care, and referral to sources of medical care or to other community agencies.</p> <p>* * *</p>	<p>In ambulatory care centers, the family health practitioner extends the health-care services available to the community. She may work in a neighborhood-health center, a group-medical practice office, an out-patient clinic, or in an area remote from sources of medical care.</p> <p>She provides care to individuals and families between that of a skilled public health nurse and of a family physician. She utilizes her background of knowledge and skills in nursing and, in addition, provides a more intensive service in health assessment, diagnosis, and treatment of frequently occurring types of illness. She is responsible for clinic management in those cases which fall within her scope of competence. She may also coordinate the care given by various specialists and interpret the significance of findings as appropriate.</p> <p>* * *</p>

DIFFERENCES BETWEEN PRESENT AND PROPOSED FUNCTIONS

WHAT SHE DOES NOW	WANT HER TO DO IN ADDITION	DIFFERENCE
INDIVIDUAL AND FAMILY HEALTH		
IDENTIFYING HEALTH PROBLEMS		
For All Age Groups		
Takes a limited history	In an ambulatory setting, <u>takes</u> a complete, detailed individual and family history, including: Chief complaint Present illness Systems review Dietary and drug history, etc.	Acts as a family practitioner, with greater responsibility in the clinical area.
Performs screening procedures	<u>Performs</u> a thorough <u>physical exam</u> ...including inspection, palpation and auscultation.	Knowledge
Does inspections		Skills
Obtains laboratory specimens when indicated by standing orders. Interprets results when authorized.	<u>Initiates diagnostic tests</u> and laboratory procedures when indicated. <u>Forms a clinical impression or makes a diagnosis.</u>	Initiation of diagnostic tests, leading to increased level of responsibility for judgment, decision-making.
Observes, explores and evaluates the patient's physical and emotional condition.	<u>Recognizes health problems</u> with a strong interrelationship of psychobiological components, especially as related to <u>treatment</u> of these conditions. Example: asthma, some allergies, peptic ulcer, hypertension, etc.	Level of responsibility
Recognizes behavior and attitudes that influence individual and family health. (Public Health Nurse especially competent in the area of psycho-social problems, interrelationships, etc.)	<u>Recognizes and describes</u> behavior indicative of overt mental illness.	
Assesses cultural influences, particularly as they affect the health of individuals, families and groups.		

ACTIONS TAKEN ON BASIS OF FINDINGS

Gives preventive and therapeutic nursing treatment under medical or dental direction.

Initiates treatment in commonly occurring illnesses within her scope of competence

Acute conditions

Chronic conditions within limits

Refers to the physician or other source of medical care those conditions which require more precise delineation or treatment. These patients may be referred back to the nurse for management when the health problem is under control. e.g., diabetic, overt mental illness

Refers to a variety of community agencies when indicated.

Plans with other agencies and individuals for the continuity of patient care.

Coordinates nursing services for individuals and families.

Coordinates activities of all members of the health team. Synthesizes information from medical systems specialists concerning the individual and family to provide more comprehensive care.

Interprets implications of diagnosis and treatment considering individual readiness.

Interprets information to individual and family.

Teaches positive health measures

Encourages attitudes and actions that will promote optimum health for each individual.

Gives due consideration to family priorities.

Initiation

Clinical management within her scope of preparation

Addition of a broader aspect of coordination of health care.

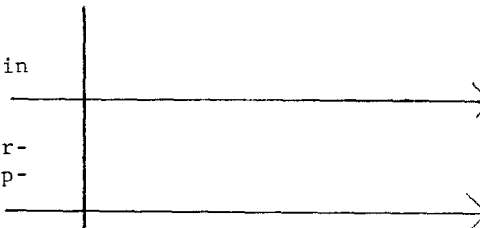
Initiates interpretation to individual and family when indicated.

Initiation

Level of responsibility

Guides the family toward self-help in providing and arranging care

Helps individuals and families understand patterns of growth and development



COMMUNITY HEALTH

Assesses statistical data related to community health needs.

Collects and analyzes data on individual and family health and looks at the aggregate to recognize emerging community health problems requiring community action.

Initiates community planning and implements plans.

Level of responsibility between assessing on the one hand and collecting, analyzing, and initiating on the other.

SCOPE OF SERVICE

At present, community nursing practice emphasizes the family as a unit of service, including individuals in all age groups. In a similar way, the family health practitioner in this program will have responsibility for patients all along the age continuum. This approach differs from other programs preparing nurse practitioners in that they deal with a specific age group such as pediatrics or specific conditions such as chronic illness. Within these age groups, she will be concerned with general components of health such as:

1. Infant, preschool and school-age children

- a. Care of well children, including physical and psychosocial development, immunizations
- b. Treatment of minor illnesses such as upper respiratory infections, otitis media, skin eruptions
- c. Emergency aid

2. Adult

- a. Maternity

During the course of pregnancy, the family health practitioner will assume responsibility for normal routine obstetrical care. After an initial examination by the physician, the family health practitioner will take responsibility for determining fetal position, weight gain, fetal heart sounds, blood pressure, urine analysis, etc., and will provide anticipatory guidance as indicated. She will differentiate those conditions requiring consultation with, or referral to, the

physician. The major difference between the traditional public health nurse's role and that of the family health practitioner is the level of responsibility and judgment requiring increased knowledge and experience.

b. Chronic Illness

The family health practitioner will be responsible for the medical supervision of those patients in a relatively stable phase of their illness. The diagnostic classifications she will manage may include such conditions as cardio vascular disease; arthritis, both rheumatoid and degenerative; psychophysiologic reaction; exogenous obesity, diabetes mellitus.

c. Acute Care

The family health practitioner, in many situations, will be in an ambulatory setting where people will present themselves with a variety of symptoms. She may assume responsibility for examining the patient and initiating diagnostic tests. Based on her clinical impression, she will initiate treatment if it is within her scope of competence or will make the necessary referral.

RELATIONSHIP WITH THE PHYSICIAN

The family health practitioner will work in close cooperation with a physician at all times. The method of cooperation may vary with the setting and the nature of the problem. For example: In providing routine antepartum or post-partum or well-baby care, she may work with great independence and will maintain contact with the physician as teacher, consultant and collaborator.

Source: School of Public Health, University of California, April 1969 Proposal for Family Health Practitioners, Berkeley,
pp. 6-9.

Appendix F

SUGGESTED ESSENTIAL GUIDELINES FOR THE TRAINING OF PEDIATRIC NURSE ASSOCIATES

The American Academy of Pediatrics, with appropriate advice and consultation, is prepared to assist in a pediatric nurse associate's education, survey and approve educational programs for graduate registered nurses in child health care, and publish lists of acceptable programs for the information of hospitals, colleges, medical schools, physicians, and prospective students, as well as for the protection of the public.

These standards would be used as a guide for the development of an effective professional education. The general principles to be followed in the establishment of programs for nurse associates, as outlined in the following sections, should be observed.

The objective of a training program for nurse associates is to provide registered nurses with the background, understanding, and skills which will enable them to assume a more direct and responsible role in ambulatory pediatric care under a physician's direction. Course content seeks to build on nursing knowledge and the skills previously gained through education and experience, and to update and augment this background with some clinical skills which conventionally have been provided by pediatricians. The training program will help registered nurses extend the scope of their nursing practice to enable them to utilize more fully their skills, judgment and clinical knowledge in direct patient care activities; namely, well child supervision and management of common illnesses and accidents. The course will help guide them in the development of conduct and attitudes that will be expected of them as members of the health team.

Organization and Administration

1. Educational programs may be established in schools of nursing, colleges and hospitals accredited by respective regional associations, provided that hospitals or pediatricians' offices suitable for directed experience are available. Educational programs of no less than the equivalent of four months study may also be established in hospitals for students who meet the admission requirements outlined in this document. Educational programs of no less than the equivalent of four months study may be established under the sponsorship of pediatric groups in cooperation with community colleges and hospitals for students whose education meets the admission requirements. Hospitals and pediatric groups involved in education programs should be acceptable to the American Academy of Pediatrics. Hospitals should be accredited by the Joint Commission on Accreditation of Hospitals.

2. Financing of the educational program should not necessarily depend on student tuition fees. It should be assured through stated college, hospital or pediatric group budgets, gifts, or endowments in the same proportion as other education programs sponsored by the institution.
3. The medical and nursing directors of the program, whose qualifications are acceptable to the Division of Allied Child Health Manpower of the American Academy of Pediatrics, will be responsible for the organization and administration, periodic review, continued development and general effectiveness of the educational program. In carrying out these functions, they shall be guided by the standards set forth in these suggested essential guidelines, and by the established policies of the institution or institutions concerned. To assist in formulating these policies, schools may wish to appoint an advisory committee comprised of the curriculum coordinator, a pediatric and nursing advisor, and the American Academy of Pediatrics Chapter Chairman or his representative.
4. A bulletin describing the curriculum should be issued at least biennially. It should include information regarding the organization of the program and a listing of required courses, entrance requirements, tuition, and fees, and hospitals and facilities used for directed practice experience.
5. In colleges, selection of students should be made by the admission office in cooperation with those responsible for the education program in accordance with the generally accepted practice of the school. In hospital or pediatric group-sponsored programs, selection of students should be made by an admissions committee in cooperation with those responsible for the education program. Admissions data should be on file at all times in colleges, hospitals or pediatric groups sponsoring the program. All applicants should be required to submit adequate evidence of satisfactory physical and mental health.
6. A record of class participation and accomplishment of each student should be kept in accordance with the college or hospital requirements. A detailed analysis of the field experience and directed practice of each student should be on file.
7. Copies of the course outlines, class schedules, directed practice schedules and teaching plans should be on file in colleges and hospitals, and they should be open for review.

Services and Facilities

1. A student health service should be available for evaluation and maintenance of mental and physical health.
2. A counseling service should be available for student guidance.

3. Library facilities should be readily accessible and should contain an adequate supply of books, periodicals and other reference materials related to the curriculum.
4. Appropriate equipment and supplies should be provided in sufficient quantities for demonstration and student participation. Classroom facilities should be available. Charts, models, slides, films, sample files, specimens and other appropriate teaching aids should be provided.
5. A pediatric department or a group of several pediatric practices should be designated as the primary teaching unit for demonstration, student observation, and initial directed practice experience. The directed practice material provided in the primary teaching units should include functions and standards of procedure of sufficient scope to illustrate generally accepted pediatric practice.
6. In addition to the primary directed practice teaching unit, other pediatric practice facilities may be used for directed practice experience. These facilities should be in institutions or groups which have sufficient qualified, experienced pediatric personnel, adequate equipment and directed practice material to provide the type and amount of experience for which the student is assigned. Each of these facilities should be under the direction of a pediatrician whose qualifications are acceptable to the Division of Allied Child Health Manpower of the American Academy of Pediatrics.

Faculty

1. The instructional staff should be qualified through academic preparation and experience to teach the subject (or subjects) assigned. A planned program for upgrading of faculty should be provided.
2. The medical director or coordinator of the program should have a medical degree, should be registered with the Division of Allied Child Health Manpower, American Academy of Pediatrics, and should have three years experience in general pediatric office practice; or he should have other appropriate educational qualifications or experience satisfactory to the bodies concerned with accreditation. His appointment should be acceptable to the Division of Allied Child Health Manpower of the American Academy of Pediatrics.
3. The nursing director or coordinator should be a registered nurse with special training in child health and/or public health. She should have three years of experience in community pediatrics; she should have other appropriate educational qualifications or experience satisfactory to the bodies concerned with accreditation. Her appointment should be acceptable to the Division of Allied Child Health Manpower of the American Academy of Pediatrics.

4. The instructional staff should include one or more qualified pediatricians and one or more nurses specially trained in child health. Sufficient staff should be available to instruct, counsel and supervise in the various facets of the education program. The student-instructional staff ratio should be in at least the same proportion as similar education programs sponsored by the educational institution.

5. There should be qualified preceptors in each field practice to which students are assigned under the general direction of the director of the program.

EDUCATION PROGRAM

Admission Requirements

Candidates for admission should be graduate nurses.

Curriculum

The curriculum shall be designed to assure that students develop an appreciation of their working relationships to health personnel. They shall acquire an understanding of the contents of pediatric practice and of the ethical and legal principles governing medical practice.

Incorporated in the program for the preparation of pediatric nurse associates should be planned field experiences and directed practice which provide a transition from theory to application. These activities should include field practice and assignments, case studies and similar educational experiences which allow for the application of previous and ongoing learning under the direction of competent instructors and practitioners.

The course of training should include not less than four months of theoretical instruction and practical hospital-office experience so students acquire sufficient child craft skills to perform the following functions under the direction of a physician:

1. secure a health and developmental history from a parent;
2. carry out a pediatric physical appraisal which would use the basic skills of palpation, percussion and auscultation;
3. record findings of physical and developmental assessment in a systematic, accurate, and succinct form;
4. carry out a developmental screening test on children from newborn through preschool age;

5. give definitive advice and counsel to parents around problems of child rearing, feeding, growth and development;
6. advise parents in the care and management of children with common illnesses and accidents;
7. make a home visit when deemed necessary in light of presenting nursing problems;
8. provide parents and other family members with the opportunity to increase their knowledge of and develop skills necessary to participate in the maintenance and/or improvement of their families' health;
9. cooperate and communicate with other professionals and agencies also involved in providing a service to a child and/or his family;
10. identify resources available within the community to help children and their families, and guide parents in their use;
11. identify and help in the management of technologic, economic and social influences affecting nursing in pediatric ambulatory care;
12. identify nonpatient care tasks of a technical and clinical nature and find ways and means of reallocating these to trained aides and secretaries;
13. plan and work as a member of a team directly responsible for child health services in unfragmented systems of comprehensive and curative health care;
14. answer certain predetermined telephone inquiries from parents.

Admission to Approved List

1. Application for approval of schools for pediatric nurse associates should be made to the American Academy of Pediatrics. Forms for this purpose will be supplied upon request.
2. Approval may be withdrawn whenever, in the opinion of the Academy, a school or group does not maintain an educational program in accordance with the foregoing standards or has not been in operation for a period of two consecutive years.

3. Approved schools should notify the Academy whenever personnel or major curriculum changes occur in relation to the administration of the school.

Program Information

Inquiries regarding schools and careers in the field of pediatrics and inquiries for information on the Pediatric Nurse Associate Program should be addressed to the Division of Allied Child Health Manpower, American Academy of Pediatrics, P.O. Box 1034, Evanston, Illinois 60204.

Appendix G

LISTING OF TASKS WHICH HAWAII PEDIATRICIANS INDICATED "COULD AND SHOULD" BE DONE BY ALLIED HEALTH WORKERS IN THE 1967 AMERICAN ACADEMY OF PEDIATRICS SURVEY

Per cent in Each Category Whose
Opinion about Task Delegation to AHW was:

<u>TASK TO BE PERFORMED</u>	<u>Favorable¹</u>		<u>Unfavorable²</u>		<u>Not Answered</u>	
	<u>USA</u>	<u>HAWAII</u>	<u>USA</u>	<u>HAWAII</u>	<u>USA</u>	<u>HAWAII</u>
Venous blood	75	79	22	21	3	--
Info./child care	91	95	7	5	2	--
Info./immuniz.	88	92	10	8	2	--
Interpret inst.	85	84	13	16	3	--
Fam./soc. hist.	74	87	24	13	2	--
Past med. hist.	63	82	35	18	2	--
Pres. ill. hist.	38	63	60	37	2	--
Int. hist./well ch.	64	82	34	18	2	--
Int. hist./sick ch.	45	71	53	29	2	--
Teleph./child care	76	87	22	13	2	--
Teleph./minor med.	58	68	40	32	2	--
Exam/well child	25	40	73	58	2	3
Exam/sick child	19	24	79	71	2	5
Advice/minor med.	52	66	46	34	2	--
Advice/feed.-dev.	62	68	37	32	2	--
Advice/school child	40	47	57	53	3	--
Mat. hosp. vis.	32	29	66	68	3	3
Home vis./observ.	68	71	29	24	4	5
Home vis./Rx acute	49	61	48	37	4	3
Home vis./Rx chronic	58	68	38	29	4	3
Home vis./behavior	44	47	53	45	4	8
School visit	68	68	28	26	4	5

¹Favorable: AHW "could and should" perform task

²Unfavorable AHW "could but should NOT" or "could not" perform task

N for USA: 5798

N for Hawaii: 38

<u>TASK TO BE PERFORMED</u>	<u>Priority Score* Given to Task in: Hawaii</u>
Venous blood	5
Info./child care	31
Info./immuniz.	10
Interpret inst.	1
Fam./soc. hist.	13
Past med. hist.	8
Pres. ill. hist.	6
Int. hist./well ch.	7
Int. hist./sick ch.	--
Teleph./child care	41
Teleph./minor med.	37
Exam/well child	1
Exam/sick child	1
Advice/minor med.	14
Advice/feed.-dev.	19
Advice/school child	6
Mat. hosp. vis.	3
Home vis./observ.	8
Home vis./Rx acute	1
Home vis./Rx chron.	--
Home vis./behavior	4
School visit	3

*"Score" determined as follows: Pediatricians (both practitioners and non-practitioners) who indicated that any of above tasks "could and should" be carried out by an allied health worker were asked to record in priority rank the three most important ones, that is the three for which they felt there is greatest need of assistance in pediatric practice. The "score" was arrived at by allotting 3 points to the first priority choice, two points to the second choice, one point to third choice, and summing the total for each task. Those not answering questions were not scored. The rank ordering of priority choices is generally similar for all states, sections and districts.

Number of Practitioners in Hawaii who:

<u>JOB MARKET POTENTIAL*</u> <u>FOR SPECIFIC TASK:</u>	<u>Already Dele-</u> <u>gate Task</u>	<u>Would Delegate but Now:</u> <u>"Not Done" Do Themselves</u>		<u>No.</u>	<u>Total</u> <u>% of: 27</u>
Venous blood	6	2	12	20	74
Info./child care	5	2	19	26	96
Info./immuniz.	20	1	5	26	96
Interpret inst.	11	2	10	23	85
Fam./soc. hist.	8	--	15	23	85
Past med. hist.	11	--	11	22	82
Pres. ill. hist.	14	--	6	20	74
Int. hist./well ch.	9	1	12	22	82
Int. hist./sick ch.	11	--	8	19	70
Teleph./child care	16	1	6	23	85
Teleph./minor med.	19	--	4	23	85
Exam/well child	3	1	7	11	41
Exam/sick child	4	--	3	7	26
Advice/minor med.	13	--	6	19	70
Advice/feed.-dev.	11	1	9	21	78
Advice/school child	2	--	9	11	41
Mat. hosp. vis.	--	1	7	8	30
Home vis./observ.	1	15	4	20	74
Home vis./Rx acute	1	13	3	17	63
Home vis./Rx chronic	1	14	4	19	70
Home vis./behavior	1	13	--	14	57
School visit	1	14	4	19	70

*These data represent responses of practitioners only. They are based on a comparison of each individual's response to two questions. The first question asked who currently performed the task in his practice. Those who already delegated it are given in the first column. Those who indicated the task was "not done" in their practice and also in response to a second question that it "could and should" be done by an "allied health worker" are given in the second column. Those who indicated that they themselves now performed the task and also, in response to the second question, that it "could and should" be done by an "allied health worker" are given in the third column. The two "Total" columns sum the previous three and express the sum as a percentage of 27, the approximate number of practitioners from whom all the preceding information was available. Thus, the total columns represent the "potential job market" in terms of absolute numbers and in terms of the proportion of all practitioners responding. The converse of the total percentage column represents the proportion of practitioners who indicated they "would not" delegate the specific task.

Source: Report of Survey Data for Hawaii Chapter on Utilization of Allied Health Workers in Pediatric Practice 1967, from the files of Calvin S. Sia, Chairman, Hawaii Chapter of the American Academy of Pediatrics, Honolulu, Hawaii, August 26, 1968.

Appendix H

SURVEY OF HEALTH OCCUPATION TRAINING PROGRAMS
BEING CONDUCTED IN NON-ACADEMIC SETTINGS IN THE
CITY AND COUNTY OF HONOLULU, AUGUST 1969

<u>Training Program</u>	<u>Length</u>	<u>Cost</u>	<u>Certified</u>
Queen's	6 mos.	\$25.00 stipend	yes
<u>Operating Room Nurse</u>			
Tripler	4 mos.		
<u>Nurse's Aide</u>			
Queen's	3 wks.		yes
Hale Nani	6 wks.	free meals bus fare	yes
Maluhia	6 mos.	stipend by NYC	yes
Wahiawa General	8 wks.	stipend	yes
<u>Radiological Technician</u>			
Queen's	2 yrs.	start 0, 6 mos. \$25, 12 mos. \$50, 18 mos. \$75	yes
St. Francis	2 yrs.	stipend	yes
<u>Licensed Practical Nurse</u>			
Castle	45 wks.	cost \$300	diploma PN
<u>Coronary Care (RMP)</u>			
Queen's	4 wks.		yes
<u>Cardiac Pulmonary Resuscitation (RMP)</u>			
Queen's	3 levels: Doctors Nurses Layman		yes

Appendix I

DIAGNOSTIC TECHNICIAN - STRAUB CLINIC

The Diagnostic Technician

Recruitment: All technicians except one were previous nurse's aides in the clinic. One was an OEO enrollee. The clinic circulated a notice for the jobs offered, and the people interested volunteered for the job. All technicians have to have graduated from high school, aptitude tests have to be taken for the job.

Training: The unit offered three months of training before the technicians were responsible for seeing patients. This training included formal lectures from various specialists in the field of medicine, laboratory technicians, men from equipment companies and movies, as well as a sensitivity group session. One technician attended an intensive training session in Minnesota learning the Blackburne's EKG coding system, which lasted for two weeks. She is responsible for teaching the other technicians. Another technician is learning to determine normal from abnormal 4X4 X-rays, and learning to read the abnormal ones. She is under the direct supervision of a radiologist. The laboratory technicians are teaching several of the technicians to do microscopic urinalysis through formal classes and constant supervision and spot checks.

Quality Control: The various functions that the technicians have assumed are carefully monitored for quality of readings and interpretation of data found. The laboratory sends samples to the technician to read and then they compare the results to the results found in the laboratory. The radiologist checks the results found on the 4X4 X-rays. The senior technician is responsible for spot checking the technician in the results found. The specialty departments of ENT and Eye spot check the abnormalities found on the hearing or vision screening test on request and randomly at their discretion.

Technician's Capability: The technicians not only perform the tests as indicated, but also are responsible for interpreting the results found to determine the necessity of further testing.

Audiometer, hearing screening test

Vision screening tests

Achilles Reflex Time and interpreting normal for that individual patient

EKG, both lead I and 12 leads; taking and coding with the Standard Minnesota Pulmonary function screening - reading and doing the mathematics for the interpretation. Blood Pressure - interpreting the findings to determine further testing such as a 12 lead EKG or further blood work.

Venous Puncture

Microanalysis for blood sugar

Microscreening of urine

Screening urine for sugar, protein and bile with dipsticks

Reading the hemoglobin through the photometer, also taking it.

X-ray - taking all 4X4 in the Unit, developing the film, screening them for normal, and reading the abnormal films.

X-ray - taking all 4X4 in the Unit, developing the film, screening them for normal, and reading the abnormal films.

This last part of screening and reading the films are under the supervision of a radiologist.

(From communication of September 18, 1969, Mrs. Holly Meyer, Straub Medical Research Institute)

Appendix J

TRAINING AND USE OF REGISTERED NURSES IN EXTENDED ROLES AT STRAUB CLINIC*

Health Appraisal Center's Usage of Nurses

Requirements: All nurses have their RN degree. Only one has her B.S. degree. All nurses are interested in doing nurse screening physicals of the apparently well patient, and are interested in extending the role traditionally thought to be that of the nurse.

Training: The training is of both the formal and in-service type. The formal training consists of attending medical courses, especially that of the physical diagnosis class. The in-service training consists of formal lectures given by doctors in their field of medicine. This lecture service is ongoing and consists of three to four hours of lectures a month. Also movies are shown, again three to four hours, per month, for review of the various systems and review of pathological or abnormal states found in patients.

Nurse's Responsibilities: All the nurse physical screening examinations in the Unit, this is based on the review of system and checked by a doctor.

Public health teaching i.e. in preventive medicine, smoking, dental hygiene, family planning, etc.

Tonometry

Vascular Checks

Responsible for Nurse Managed clinics. These are clinics for chronic diseases such as hypertension, diabetes, and obesity. The doctor sees the patient initially and then the nurse checks up on the patient's condition to see if the patient is keeping himself at the best possible condition.

Taking EKG and Venopuncture

Papanicolaou Smears

*Communication from Mrs. Holly Meyer, Straub Clinic Research Institute, September 18, 1969.

Appendix K

EXEMPTIONS FOR DELEGATIONS OF FUNCTIONS IN MEDICAL PRACTICE ACT OF ARIZONA, COLORADO, KANSAS, AND OKLAHOMA

Statutory Exemptions for Supervised Delegations

ARIZONA Rev. Stat. § 32-1421 (Supp. 1966):

This chapter shall not be construed to apply to or inhibit: * * * (6) Any person acting at the direction of or under the supervision of either a doctor of medicine or under the supervision of (a U.S. commissioned medical officer or a physician licensed by another State) * * *, so long as he is acting in his customary capacity, not in violation of any statute, and does not hold himself out to the public generally as being authorized to practice medicine.

COLORADO Rev. Stat. § 91-1-6(3) (1963):

Nothing in this section shall be construed to prohibit, or to require a license hereunder with respect to, any of the following acts: * * * (m) The rendering of services under the personal and responsible direction and supervision of a person licensed under the laws of this State to practice medicine or to practice a limited field of the healing arts, but nothing in this exemption shall be deemed to extend the scope of any license.

KANSAS Stat. § 65-2872 (1964):

The practice of the healing arts shall not be construed to include the following classes or persons: * * * (g) Persons whose professional services are performed under the supervision or by order of or referral from a practitioner who is licensed under this act.

OKLAHOMA Stat. tit. 59, § 492 (Supp. 1966):

* * * (N)othing in this article shall be so construed as to prohibit * * * service rendered by a physician's trained assistant, a registered nurse, or a licensed practical nurse if such service be rendered under the direct supervision and control of a licensed physician.

Appendix L

CHILD HEALTH ASSOCIATE ACT COLORADO STATE LEGISLATURE, ENACTED 1969



(House Bill No. 1169. By Representatives Shore, Bain, Bryant, Burns, Cole, Cooper, Dittmore, Grace, Grant, Jackson, Johnson, Munson, Sack, Sanchez, Schmidt, Showalter, Younglund, Bastien, DeMoulin, Edmonds, Hamilton, Koster, Lamm, Mullen, Neal, Safran, and Strahle; also Senators Bermingham, Chance, L. Fowler, Hodges, Kemp, MacFarlane, Nicholson, and Cisneros.)

CONCERNING THE PRACTICE AS A CHILD HEALTH ASSOCIATE, AND PROVIDING FOR THE REGULATION THEREOF.

Be it enacted by the General Assembly of the State of Colorado:

Section 1. Short title.—This act shall be known and may be cited as the "Child Health Associate Law".

Section 2. Definitions.—(1) As used in this act:

(2) "Board" means the Colorado state board of medical examiners.

(3) "Pediatrics" means that branch of medicine which deals with the child and its growth and development and with the care, treatment, and prevention of diseases, injuries, and defects of children.

(4) "Physician" means a person who is licensed to practice medicine in this state.

(5) A "child health associate" is a person who, subject to the limitations provided by this act, practices pediatrics as an employee of and under the direction and supervision of a physician whose practice to a substantial extent is in pediatrics.

Section 3. Limitations on practice.—(1) No person, other than a physician, shall practice as a child health associate in this state unless certified as such or as otherwise authorized pursuant to this act. Except as otherwise provided in this act, and except in the case of an emergency, a child health associate shall practice only in the professional office of the employing physician or physicians and only during the time when the employing physician or, in the case of a group of employing physicians, when one of such physicians whose practice to a substantial extent is in pediatrics, is directly and personally available. A child health associate may render pediatric services outside the professional office of the employing physician if such services either are rendered in the direct and personal presence of such physician, or consist of the follow up care of a patient pursuant to the specific directions of such physician related to that particular patient.

(2) (a) A child health associate may prescribe drugs, except narcotic drugs, which have been approved by the board for prescription by child health associates. The board may approve drugs from the following categories for prescription by child health associates upon the recommendation of an advisory committee appointed by the board, consisting of a board member, a member of the department of pharmacology of the university of Colorado medical center, a practicing pediatrician, a licensed pharmacist, and a faculty member of the university of Colorado child health associate program:

(b) Proprietary and nonprescription drugs.

(c) (i) Specific drugs from the following categories of drugs for which a prescription is required:

- (ii) Immunologic agents
- (iii) Vitamins and dietary supplements
- (iv) Topical and oral decongestants
- (v) Oral laxatives and drugs affecting fecal consistency
- (vi) Oral or rectal antipyretics
- (vii) Oral nonnarcotic antitussives
- (viii) Oral expectorants
- (ix) Oral antihistaminics
- (x) Oral emetics in an emergency
- (xi) Local anti-infective agents
- (xii) Local antifungal agents
- (xiii) Local adrenal corticosteroids
- (xiv) Other agents for treatment of local skin conditions
- (xv) Oral or rectal antiemetics
- (xvi) Oral antidiarrheal agents
- (xvii) Oral hematinic agents
- (xviii) Injectible epinephrine, in an emergency
- (xix) Diagnostic agents to determine the presence of various diseases

(3) Narcotic drugs may not be approved for prescription by child health associates.

(4) A child health associate shall not perform any operative or any cutting procedure or engage in the treatment of fractures, but this subsection (4) shall not be construed as prohibiting the rendering of such follow up care as may be delegated by the employing physician.

(5) No more than one child health associate shall be employed at any one time by any one physician or, in the case of a group of employing physicians, no more than one child health associate shall be employed at any one time for each of such physicians whose practice to a substantial extent is in pediatrics.

(6) A child health associate shall practice in pediatrics only with respect to children who are the patients of the employing physician or physicians.

(7) (a) A child health associate may be employed only for work under the supervision of a physician who has been approved for such purpose by the board. The board shall approve any physician to employ child health associates if he furnishes evidence to the board that a substantial amount of his practice is concerned with pediatrics, that he is not then under investigation for unprofessional conduct as defined by law or that charges have not been filed because of such conduct, and that he is fully complying with all of the provisions of this act.

(b) Failure to continue compliance with the provisions of this subsection shall be grounds for withdrawal of such approval by the board.

(8) No child health associate shall use the title of doctor or associate with his name any other term which would indicate to other persons that he is qualified to engage in the general practice of medicine.

Section 4. Responsibilities of physician.—Nothing in this act shall be construed to relieve the physician of the professional or legal responsibility for the care and treatment of his patients. In furtherance of the purposes of this act, a physician utilizing the services of a child health associate pursuant to the provisions of this act shall not delegate to a child health associate the performance of, or permit a child health associate to perform, any act or duty not authorized by this act, and such physician shall exercise such direction, supervision, and control over such child health associate as will assure that patients under the care of such child health associate will receive medical care and treatment of high quality.

Section 5. Powers of board.—The board shall have and exercise with respect to this act, all of the powers and duties granted it by article 1 of chapter 91, Colorado Revised Statutes 1963. It shall also have the power to make specific rules and regulations pertaining to the certification and regulation of child health associates.

Section 6. Qualifications—examination.—(1) (a) The board shall certify as a child health associate and issue an appropriate certificate to any person who files a verified application therein upon a form prescribed by the board, tenders payment of the required fee, and furnishes evidence satisfactory to the board that the following qualifications have been met:

(b) Is at least twenty-one years of age.

(c) Is of good moral character.

(d) Is a citizen of the United States.

(e) Has completed a course of study approved by the board in an accredited college or university which includes the subjects of anatomy, physiology, biochemistry, pathology, pharmacology, microbiology, growth and development, child psychology and psychiatry, preventive pediatrics, and clinical pediatrics, and possesses at least a bachelor's degree from such college or university.

(f) Has completed an internship of at least one year approved by the board.

(g) Has passed an impartially administered examination given and graded by the board. Such examination may be in writing or oral, or both, and shall fairly test the applicant's knowledge in theoretical and applied pediatrics as it applies to the practice of a child health associate in at least the subjects of growth and development of the child, infant nutrition, im-

munization procedures, care of the normal newborn, and the common diseases of the child. The applicant's professional skill and judgment in the utilization of pediatric techniques and methods may also be examined.

Section 7. Certification by reciprocity.—The board may certify as a child health associate in this state, without examination, a person who has been so certified or licensed by examination in another state of the United States which has requirements substantially equivalent to those in this act and who meets all requirements of section 6 of this act other than examination.

Section 8. Renewal.—(1) Every person holding a certificate as a child health associate shall renew his certificate annually in the twelfth month following the date of issuance of his certificate.

(2) Any certificate not so renewed shall be suspended on the first day of the thirteenth month following the anniversary date of issuance of his certificate. A certificate so suspended may be reinstated during the following twelve months by payment of the renewal fee and a reinstatement fee as fixed by the board. Thereafter, a certificate so suspended may be reinstated only upon payment of all delinquent renewal fees and a reinstatement fee fixed by the board pursuant to section 11 of this act, following specific approval by the board.

(3) Renewal of a certificate shall be requested by every person certified as a child health associate upon a form which shall be furnished to him by the board during the tenth month of each year following the anniversary date of issuance of his certificate upon a form which shall be furnished to him by the board.

(4) A renewal request shall be accompanied by the prescribed fee together with evidence satisfactory to the board of the completion during the preceding twelve months of at least fourteen hours of post-graduate studies in pediatrics approved by the board.

Section 9. Denial, suspension, revocation, and probation.—(1) (a) The board may deny an application for, suspend for a period not exceeding one year, revoke, or impose probationary conditions upon, a certificate for any of the following causes:

(b) A final conviction of a felony or any offense involving moral turpitude upon a plea or verdict of guilty or following a plea of nolo contendere.

(c) Use of drugs or intoxicating liquors to an extent which affects his professional competence.

(d) Obtaining or attempting to obtain a certificate by fraud or deception.

(e) Willfully violating any of the provisions of this act or any of the provisions of article 1 of chapter 91, C.R.S. 1963, as amended, which are applicable and which are not inconsistent with this act.

(f) Willfully and intentionally assisting in the practice or holding himself out to be a child health associate by one not certified under this article.

(g) Being legally determined to be mentally incompetent.

(h) Practicing as a child health associate other than as specified in sections 2 and 3 of this act.

- (i) Being grossly negligent in the practice as a child health associate.
- (j) Prescribing any drug which has not been approved for prescription by child health associates by the board.

Section 10. Disciplinary proceedings.—Proceedings under this act shall be conducted in the manner specified by article 1 of chapter 91, and article 16 of chapter 3, C.R.S. 1963, as amended.

Section 11. Fees.—(1) (a) The fees in connection with a certificate as a child health associate shall be as follows:

(b) For certificate by examination, not less than twenty-five dollars nor more than seventy-five dollars.

(c) For re-examination within one year, not less than fifteen dollars nor more than forty-five dollars.

(d) For certificate by reciprocity, not less than twenty-five dollars nor more than seventy-five dollars.

(e) For renewal of a certificate, not less than two dollars and fifty cents nor more than ten dollars.

(f) For reinstatement of a certificate, not less than five dollars nor more than twenty-five dollars.

(g) For reissuance of a lost or destroyed certificate, following approval of the board, ten dollars.

(2) Not later than the first day of June of each fiscal year, the board shall fix fees in each of the above categories within the stated limits in an amount which will produce sufficient revenue for the ensuing fiscal year not to exceed one hundred twenty per cent of the anticipated expenses of the board for the operation of the child health associate program by the board for that year.

(3) All fees received by the board and all fines collected under the provisions of this act shall be paid to the department of revenue for transmission to the state treasurer who shall credit the same to the Colorado state board of medical examiners' fund.

(4) No fee shall be refunded.

Section 12. Violations and penalties.—(1) Except as provided in section 13 of this act, it shall be unlawful for any person not certified under this act to practice as a child health associate or to hold himself out to be a child health associate in this state.

(2) Any person violating subsection (1) of this section, upon conviction, shall be punished by a fine of not less than twenty-five dollars nor more than three hundred dollars, or by imprisonment in the county jail for not more than ninety days, or by both such fine and imprisonment. Each violation shall be considered a separate offense.

Section 13. Exclusions.—(1) (a) Nothing in this act shall be construed to limit:

(b) The activities and services of a child health associate student in pursuing an approved course of study or of an intern serving in an approved child health associate internship.

(c) The practice in this state for a period of not more than six months by a person certified as a child health associate in another state with re-

quirements for such certification substantially equivalent to those in this act if such person first secures a permit from the board in a manner prescribed by the board, but the board may reduce such period to not less than thirty days.

(d) The employment of a child health associate by any federal, state, county, or municipal agency, but the child health associate so employed must be individually supervised by a designated and approved physician. Such physician shall supervise only one such child health associate. Such employment shall be subject to all the provisions of this act.

Section 14. Injunctive proceedings.—(1) The board may, in the name of the people of the state of Colorado and through the attorney general of the state of Colorado, apply for an injunction in any court of competent jurisdiction to enjoin any person from committing any act prohibited by the provisions of this act.

(2) If it be established that any person has been or is committing an act prohibited by this act, the court or any judge thereof shall enter a decree perpetually enjoining said person from further committing such act.

(3) In case of violation of any injunction issued under the provision of this section, the court or any judge thereof may summarily try and punish the offender for contempt of court.

(4) Such injunctive proceedings shall be in addition to and not in lieu of all penalties and other remedies provided in this act.

Section 15. Feasibility study.—During the eighth year after the effective date of this act, the board shall make a feasibility study and review of the provisions of this act to determine its effectiveness and accomplishments, and shall solicit the cooperation and advice of the Colorado medical society, the Colorado academy of general practice, the Colorado chapter of the American academy of pediatrics, the Rocky Mountain pediatric society, the Colorado osteopathic association, the faculty of the child health associate program of the university of Colorado medical center, and any such other interested person as the board or other named agencies may deem proper. The board shall report its findings and recommendations to the governor and the general assembly of the state of Colorado. Such report shall be issued subject to the provisions of section 3-3-17, C.R.S. 1963, as amended.

Section 16. Effective date.—This act shall take effect September 1, 1969.

Section 17. Safety clause.—The general assembly hereby finds, deter-

mines, and declares that this act is necessary for the immediate preservation of the public peace, health, and safety.

John D. Vanderhoof
SPEAKER OF THE HOUSE
OF REPRESENTATIVES

Mark A. Hogan
PRESIDENT OF THE
SENATE

Lorraine Lombardi
CHIEF CLERK OF THE HOUSE
OF REPRESENTATIVES

Comfort W. Shaw
SECRETARY OF
THE SENATE

APPROVED _____

John A. Love
GOVERNOR OF THE STATE OF COLORADO