

THE ASSOCIATION OF THE NORTH CAROLINA

REGIONAL MEDICAL PROGRAM

POSITION PAPER

ON  
SUGGESTIONS FOR THE BETTER UTILIZATION OF  
PHYSICIANS  
BY

Delegation of certain evaluative and therapeutic responsibilities to university trained physician's assistants.

Amassed ideas and data gathered from a four-year effort to produce highly skilled, dependent, career-oriented Physician's Assistants at Duke University Medical Center.

It is increasingly evident throughout the world,<sup>1,2</sup> and painfully evident in North Carolina,<sup>3,4</sup> that there is an acute shortage of people trained to provide patient care services, in spite of the fact that technical advances in diagnostic and therapeutic procedures, greater use of auxiliary personnel, and urbanization have resulted in a marked increase in physician productivity.

The Federal Government has long been concerned about medical manpower shortages. Fifteen years ago the Magnuson Commission,<sup>5</sup> appointed by President Truman, accurately predicted the present shortage of physicians and nurses. Regretfully, the findings went unheeded. The Bane Report of 1959<sup>6</sup> called further attention to the inadequate supply of medical graduates, and similar warnings were voiced repeatedly by top government health officials.<sup>7,8</sup> President Kennedy paid heed to the "growing nationwide shortage of doctors, dentists, and nurses" in his 1963 State-of-the-Union message.<sup>9</sup> The 1965 White House Conference on Health<sup>10</sup> and the Association of American Medical Colleges report to the Agency for International Development<sup>11</sup> pinpointed the manpower problem.

The American Medical Association has been slow to adopt a responsible medical manpower position and its official pronouncements have been irresolute and contradictory.<sup>11-15</sup> Recently, however, the AMA has acknowledged the seriousness of the physician shortage in unmistakable terms, and its Board of Trustees has submitted a report to the House of Delegates indicating that health manpower problems must be vigorously attacked.

A report from the AMA Council on Medical Service also claimed, "We have now reached a point where further significant increases in productivity of physicians are not likely to occur. The physicians of the country cannot be expected to work harder and longer than they do without jeopardizing the quality of their services." Others have noted that many doctors are seeing too many patients and working far too many hours for the optimal provision of medical care.<sup>16</sup>

In 1965, there were an estimated 305,000 physicians (active and inactive Doctors of Medicine and Osteopathy) in the United States. Population growth, rising levels of education and income, a changing population distribution, and new and expanded systems of medical payment are expected to increase the demand for physician services some 22 to 26 percent during the 1965-75 period.<sup>17</sup>

In 1968, 4,145 physicians, exclusive of interns and residents, lived in the State of North Carolina. Three hundred and seven of this number were retired or unable to practice, leaving 3,838 physicians actively engaged in medical functions. In 1965, the last year for which comparable figures are available for all states, North Carolina had a total of 103 physicians per 100,000 population compared with the national average of 153 physicians per 100,000 population. Two other states had identical ratios and 13 states had lower physician-population ratios.

In comparing the number of physicians in private practice in North Carolina with the number in other states, it is necessary again to turn to the computations from 1965. In that year, North Carolina had 69 physicians in private practice per 100,000 population. The national average was 97 per 100,000 and only five states ranked lower than North Carolina. If the goal in North Carolina was simply to achieve the national average, a total of 7,650 physicians, or about 3,500 more than now reside in the state would be required. This is, in the foreseeable future, an impossible goal.

For a potential solution of the physician manpower shortage, medical faculties across the country were recently asked to state the most practical solutions to the problem.<sup>18</sup> The replies of 344 teaching physicians are reflected in the figures below, which represent the percent of the faculty who named the solution indicated:

Broader use of paramedical personnel	50%
Expansion of present medical schools	38%
Building more medical schools	35%
Better distribution of physicians	17%

Accelerated medical education programs	16%
Broader use of automation and computers	13%
Other	8%

In spite of a growing concern over the continued solvency of non-tax supported medical schools, 35 percent indicated the need was to develop new medical schools. A solution of this sort represents an initial capital investment of \$50 million to \$100 million along with the continued input of sums of money equal to at least 10 percent of this amount annually; a requirement for funds that would tax the capacity of the most affluent private universities. For these reasons, there is not likely to be a rush towards the creation of new medical schools. In addition, this solution is altogether too slow. At optimal conditions, the acquisition of the capital funds would be followed by a time lag of seven years before the appearance of the first graduate--three years for building the facilities and gathering a faculty, and four years for training the first class. With another three years of postgraduate training added, the first class would begin to move into the field 10 years after the new school was begun. Another five years would be required to repay the debt created by withdrawing a faculty from the manpower pool--thus the school would begin to show a net gain with respect to manpower some 15 years after its creation.

Expanding the output of existing schools is obviously faster and less expensive. Adding one new student to the entering class of each existing medical school is equivalent to creating a new medical school. This course of action is also expensive, but less so than constructing a new school. It should be added that reducing the failures in each school by one would have the same net effect, usually without the added expense.

Even on the exclusive basis of the continuing population growth, 330,000 physicians will be needed nationally by 1976 in order to maintain the present ratio of 153 physicians for every 100,000 people. Such an increase in the number of

physicians is not an attainable goal, at least within the next five to ten years, leaving as the single remaining alternate solution the increased productivity of the individual physician.

Physicians have long pursued the goal of increased individual productivity. Some of the earliest assistants date back to the Contubernals in the ancient Roman army, the medieval Knights Hospitalers and Knights Templers<sup>19</sup> and somewhat later the Russian Feldsher,<sup>20</sup> the Diener<sup>21</sup> of the Pathologist, and the nurse.<sup>22</sup> They were trained in apprenticeship fashion, quite similar to the physicians of their day. It wasn't until the time of the Flexner Report in 1910 that the modes of current allied health professionals' training evolved.

Prior to 1930, save for the nurse and assistant in pathology, few other allied health professionals existed,<sup>23</sup> which required the physician to perform most tasks, including urinalyses and blood chemistries. As both the capability and requirement for additional laboratory services became more complex, medicine delegated its tasks centrifugally--identified fringe tasks to the role of the physician and delegated them to specially trained people, thus creating the fields of medical technology, radiologic technology, pharmacology, cytotechnology, and physical and rehabilitation therapy as we know them today. Through revised approaches in education and improved technical methodology, these allied health professionals have been able to furnish a vast spectrum of quality services beyond that anticipated at the time of task delegation.

An industrial engineering approach to the understanding of precise manpower needs may seem a bit remote, but it presages a thrust toward solving the health services deficit. A critical eye has been turned on the doctor himself. Can he use his time still more effectively?

Some answers are apparent from studies already completed and reported in the medical literature. A 1956 study of North Carolina general practice stated, regarding

assistants, that "... physicians with two or more auxillary workers provided better medical care than did those with fewer workers." In a 1965 series of articles, the office practice of 500 New York Internists was discussed. Of the many findings, two are pertinent here: 1. it is feasible to use non-physician personnel to abstract data from medical records, and 2. a majority of doctors were in solo practice, but there was a trend for newer graduates to enter group or partnership practice which tends to indicate greater use of non-physicians. In 1969, a time-motion study of practicing peditricians showed that more than half their time was spent with well children, and that "'intellectual understimulation' was complained of due to spending more practice time with children who didn't need their expertise." In 1966, Temple University's Comprehensive Medicine Clinic reported that although 90 percent of new patients required direct physician attention, an impressive number of those returning for further treatment or evaluation--some 4,500 patient visits per year--could be managed by non-physicians.

In addition, by sheer necessity, individual paramedical workers in private offices, clinics, and hospitals have assumed clinical responsibility under the direction of the physician. This group includes psychiatric social workers, nurse anesthetists, cardiac care nurses, midwives, peditric nurse clinicians, and industrial nurses.

Reports by Cartwright and Scott in England;<sup>24</sup> Richards in Sweden;<sup>25</sup> Silver, Ford, and Milvoy in Colorado;<sup>26</sup> and Stead in North Carolina,<sup>27</sup> analyzed the work done by nurses and other recently developed health categories and concluded that they can effectively augment physician services.

A point discussed by many observers concerns the organization in which the nurse and doctor work.<sup>28</sup> In some hospitals the annual turnover of nurses in patient care areas is 150 percent. If this turnover is as great in the practicing physician's office, the nurse could not provide continuous personal care and would commit the

physician to operating an employment and training agency. It can thus be stated that using this professional manpower source with its own documented shortages to fill another void would be nothing more than "robbing Paul to pay Peter."

Because of the acute manpower shortage, bold innovations attuned to projected as well as current needs must lead to the production of new health team members for augmenting physician services.

In contemplating the use of specific personnel to augment physicians services,<sup>29</sup> consideration must first be given to the striking maldistribution of physicians that exists from one state to the next, within the borders of single states, and even within single metropolitan areas. Freedom in selecting practice locations based on hospital facilities, proximity of professional colleagues, community allure, and educational and recreational facilities has led to the concentration of physicians in relatively high numbers in economically well-to-do communities. Because of this, efforts of physician augmentation should be directed towards the isolated, economically substandard, and unattractive community.

Although a great disparity exists between the need and the availability among the various types of physicians, the greatest stresses are experienced by the first line physician. The conscientious generalists, general internists, and general pediatricians in this category are faced with intolerable patient loads, inadequate family lives, and the difficulty of continued professional education, and are leaving their practices after 10 to 15 years. Bright, perceptive medical students are quite aware of this plight of the first-line physician, and are turning to increasingly narrow subspecialties, further exaggerating the problem.

With these two points in mind, support should be given for the development and training of a new health professional to augment the general or broad-based primary physician, using available faculty talent and existing facilities, thus requiring much less financial commitment than would the endowment and perpetuation

of one new medical school.

Assistants for physicians can be divided into two broad classifications; one, a dependent assistant who works under the direction and supervision of a duly licensed physician, and the other an independent assistant who assumes independent responsibility for actions performed within certain defined limits. As an example of dependent assistants, there are office nurses who take medical histories, instruct patients and administer certain treatments, and the graduates of the Duke University Physician's Assistant Program. As examples of independent assistants there are the Colorado Pediatric Nurse-Practitioners, the Child Health Associates, the Kentucky Frontier Nurses, the Russian Feldshers, and the Assistant Medical Officers of a number of foreign nations.

Careful examination of the physician's role can reveal the advantages of the input into our system of an individual capable of assisting the broad-based physician throughout his entire realm of duties; thereby reducing the physician shortage through the extended provision of his professional services to a greater patient population. Currently in this country many efforts are being made in this direction by various means. One such effort revolves around the upgrading of nurses to fulfill this need. However, current nursing shortages are so critical that wards, intensive care units, and even hospitals are being closed for lack of their services; some large municipal hospitals have only filled 30 percent of their RN requirements, and "there has been an alarming dilution in the quality of nursing service because demands are increasing faster than supply."<sup>30</sup> Under the most optimistic estimates, the nation will require an additional 170,000 nurses by 1970. If present trends continue, the need will more likely be for 200,000 which clearly identifies the nursing pool as an impotent source of personnel for the alleviation of physician shortages.



The problem of inadequate personnel exists at all levels. Allied health service personnel are in short supply and training facilities for an appreciable improvement in the future are woefully inadequate. For example, the 2,000 occupational and physical therapists graduating each year will not begin to meet the predicted need of an additional 50,000 in these categories by 1970. Medical technologists, medical record librarians, radiologic technologists, inhalation therapists, and even quickly trained, licensed vocational nurses are not available in sufficient numbers, according to a 1966 hospital and extended-care-facilities survey.<sup>32</sup> This report also showed 11,000 budgeted vacancies in the areas mentioned above, plus a need for an additional 22,000 workers to provide optimum patient care,<sup>1</sup> in contrast to the annual training output of slightly over 9,000. To provide the required number of workers, annual rates of production would have to be raised from 1.9 to 4.0 per 100,000 population at the baccalaureate level, and from 5.0 to 10.0 per 100,000 population at the sub-baccalaureate level. This would raise the total number of allied health professional graduates from 3,800 to 8,000 and from 9,700 to 20,000 respectively.<sup>33</sup>

Currently there are 2.8 million people in health occupations, and this number is expected to increase to 3.8 million by 1975. The above mentioned survey of 7,000 A.H.A. registered hospitals and 499 extended care facilities indicates that even with the increase to 3.8 million workers, and additional 300,000 established health workers would be needed to provide optimum patient care. Obviously, the existing nursing and allied health professions have manpower shortages parallel to physician shortages. This fact is supported by testimony presented before the House Interstate and Foreign Commerce Committee<sup>34</sup> and the Senate Labor and Public Welfare Committee, in support of the Allied Health Professions Personnel Training Act. Existing allied health professions are not, therefore, ideal manpower sources from which to select individuals to augment the physician manpower supply.

In the face of these obvious shortages, there does exist a relatively large untapped manpower pool, the military corpsmen. Currently, some 32,000 corpsmen are discharged annually who have received valuable training and experience while in the service. Because of the need for financial security and career stability, the vast majority of this group has turned to other career endeavors, and has thus been lost to the health services industry. However, it seems reasonable to assume that if an economically sound, stable, rewarding career were available in the health industry, many of these people would prefer to pursue such a course.

The Duke University Physician's Assistant Program<sup>35</sup> had its inception in 1965 as the result of an unsuccessful attempt to propagate an extensive postgraduate physician's education program. Dr. Eugene A. Stead, Jr., then Professor and Chairman of the Department of Medicine, who had been instrumental in the physician's postgraduate education program, inquired in depth as to the cause of its failure. His inquiry led to the simple conclusion that the physicians in the State simply did not have adequate time to participate in postgraduate education.

Dr. Stead, in attempting to find a solution for this time-factor problem, realized that it was infeasible to view increasing the number of physicians as the only possible solution for increasing the effective physician-manpower-to-population ratio. He realized that to effectively increase the physician manpower output there must be some means of increasing the physician's efficiency. It seemed, on the basis of these conclusions, that the most plausible solution lay in the delegation of repetitious, time-consuming tasks to other well-trained members of a health team. A careful evaluation of functions within medical centers revealed that many tasks, previously assumed by the physician, had been successfully delegated to less educated, but highly trained and skilled supportive personnel.

Dr. Stead, working within the guidelines set forth by an ad hoc committee, developed a curriculum and selected four ex-military corpsmen from the ranks of the

ancillary health workers within the medical center as the first students in the Physician's Assistant Program. During the course of the program development, the major emphasis for recruits has been the utilization of the ex-military corpsmen because of the 32,000 medical corpsmen being discharged annually, over 10,000 have one or more years of training coupled with three or more years of experience and a desire to stay in the health field.

Although some institutions have indicated a difficulty in attracting the discharged corpsmen, a survey of the Duke effort shows that in the past four years there have been over 2,250 completed corpsmen applications. From August, 1969, to December 18, 1969, there have been over 3,000 requests for applications of which more than 95 percent have been from military corpsmen. These figures seem indicative that this manpower pool does exist, despite difficulties in reaching and mobilizing it. Through the use of this manpower source, it is possible to select mature, career oriented, experienced, partially trained people for participation in the program. Though this is the largest untapped manpower source, there are many others who have received training in the health sciences and coupled this training with experience in the civilian setting who can also be utilized.

During the course of their training, physician's assistants acquire a multifaceted education that provides them with a broad, yet intense program in the applicable basic sciences, plus extensive clinical training. In the hospital setting, the physician's assistant: 1. takes and records the initial detailed history and performs and records a complete physical examination; 2. follows the patient's daily progress, taking notes and scheduling a wide variety of laboratory, radiological, and diagnostic procedures as indicated; 3. accomplishes numerous diagnostic procedures including arterial and venous punctures, intravenous catheterization, intramuscular and intravenous medication administration, dressing changes,

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intravenous cutdowns, lumbar punctures, paracenteses, bone marrow biopsies, thoracenteses, and tolerance and diurnal testing; 4. performs a variety of laboratory studies including complete urinalyses and hematology, gram stains, acid-fast stains, culture management, blood gas analysis, spinal fluid analysis, electrolyte determinations, and stool studies; 5. carries out and interprets other evaluative procedures including electrocardiography, phonocardiography, and spirometry; 6. performs and records the discharge physical examination and records the narrative summary to insure completeness of the patient record, and 7. instructs the patient concerning the therapeutic regimen prescribed by the physician.

The clinical, office and emergency room activities of physician's assistants include all of the above, and, in addition: 1. triage and first aid for the injured patient; 2. suturing of superficial lacerations, after examination by the physician; 3. cast application and removal; 4. organization and evaluation of historical, physical, and laboratory data for presentation to attending and consulting physicians; 5. participation in the evaluation and management of emergency conditions such as status epilepticus, status asthmaticus, cardiac arrest, pulmonary failure, acute traumatic shock, and cerebral vascular accidents, and; 6. explanation to the patient of the preparatory steps, the performance, and the meaning of various tests including roentgenograms, contrast media studies, and nuclear scanning procedures.

These skills enable physician's assistants to handle many of the tasks that do not require the expertise of the highly-trained physician and his education enables him to learn virtually any procedural task utilized in patient care. The physician's background is most essential in analyzing data to make a diagnosis and in prescribing a therapeutic management program. With these factors in mind, it is evident that, in assuming the role as dependent assistant to a physician, the

physician's assistant supplements rather than competes with other allied health professionals.

Graduates of the Duke Program are currently furnishing supportive services in all these areas. Duties consistently performed by all graduates include history taking and physical examination, patient rounds, scheduling consultations, performance of patient diagnostic procedures both in the clinic and hospital, discharge examinations, recording narrative summaries, pre-employment and insurance physicals, patient education, electrocardiographic screening, repair of superficial lacerations, application and removal of casts, and emergency care procedures.

In drawing a comparison between the activities of the physician's assistant and other similarly trained categories, we find that the pediatric nurse-practitioner and child health associate receive more emphasis in the area of social, behavioral and psychological aspects of child health care.<sup>36</sup> In most respects, however, their academic training appears very similar: both have backgrounds that include previous health training, one year of direct patient contact, and several years of experience. The ability to perform a broad array of procedural tasks is more refined on the part of the physician's assistant, although both of these individuals are quite capable of performing intricate historical and physical evaluations in addition to basic diagnostic procedures.<sup>37</sup>

The child health associate spends one year in internship, is certified by the State Board of Medical Examiners, and is then allowed to independently diagnose and prescribe within defined limits. The physician's assistant devotes nine months to academic training, followed by fifteen months of clinical training; and, upon completion of their training, they undergo oral, written, and clinical examinations. They are certified by the institution but function in a dependent relationship and do not diagnose or prescribe medication, even though they might possess the knowledge

and skill to do so. To function professionally, they must be employed by and work under the direction and supervision of a licensed physician.

Originally the Duke Program was directed solely towards the development of generalist physician's assistants who could provide supportive services for general practitioners and general internists in community practice. However, as faculty members from the medical specialties participated in the training of these assistants, they realized the need for the development of such assistants to aid physicians with more limited clinical interests. As a result, and after demonstration of the economic and social feasibility,<sup>39</sup> the program has expanded its scope to include radiology, pediatrics, medical and surgical subspecialties, and will eventually expand into other clinical areas including industrial medicine and geriatrics.

The value of this level of assistants is readily demonstrated by their skill and attainment applied to the specialty they serve, whether it is in general medicine or some limited subspecialty. Because physician's assistants have been trained to supplement skills available to the health team rather than to compete with other participants on the team, they have been readily accepted by all other team members at the working level. Nurses, trained primarily in the areas of patient care, have welcomed the introduction of the physician's assistant whose training in patient evaluation has allowed them to relinquish tasks for which they were not specifically trained and thus have greater freedom to exercise their expertise in the care of patients through physical and psychological support. So too with other members of the health team, they find the physician's assistant capable of providing liaison and assistance not previously available.

The degree of augmentation of a physician's patient care output by utilization of a physician's assistant is under objective study at this time, with initial figures of more than 50 percent having been reported from those physicians using the graduates. The utilization of one such individual in an exceptionally busy family practice group, has produced almost a 100 percent augmentation of the combined physicians services,

thus creating an additional 8 physician man-hours per day. The increased income generated is used, in part, to pay the assistants salary. Similar figures have also been reported for the pediatric nurse-practitioner.

Exact evaluation of the impact of such assistance in a variety of practices must await further experience but is now the subject of several studies. Even if a minimum figure of 30 percent proved accurate, and if half the nation's physicians used such assistants, the manpower effect would be equivalent to an increase of 50,000 physician man-years per year. In support of the above figures, a program analysis of the Human Investment Programs for the Delivery of Health Services for the Poor<sup>41</sup> and a survey reported by Medical Economics among physicians indicated, though not conclusively, that increased physician productivity can be achieved by the use of physician's assistants.

Experiences with the independent type assistant have also been generally good. The Pediatric Nurse-Practitioner Program has been successful enough to cause the originators to consider expansion of the concept to include a new six-year program beginning with qualified high school applicants. The Russian Feldshers are also considered by most observers as a very effective solution to the problem of providing medical care in remote areas.<sup>42</sup> The Assistant Medical Officer Programs in underdeveloped areas are felt to be serving a very essential purpose and worthy of continuation.<sup>43</sup> The question is whether these program can be integrated into a highly complex medical system such as that present in this country to provide services to those remote or deprived areas not now supplied with physicians? Consideration must be given to such alternatives, but the eventual solution in this country most probably centers around a dependent assistant working in conjunction with a well developed communication and transportation system.

With the creation of this new role within the established health care system, questions concerning the degree of self-acceptance, physician acceptance, and economical benefits directed towards the cost of medical care have been raised.



Generally speaking, both patient and physician acceptance of the graduate and student physician's assistants has been high. From a previous study<sup>39</sup> of self and role-set acceptance of graduate physician's assistants, it was evident that self-acceptance proved necessary to maintain the career commitment, with role acceptance being equally necessary for generating a maximum effectiveness within the system. A problem of student self-identity and individuality, in the medical center, resulted from competition for responsibilities with medical students, interns, and residents, and because of this need, there is a move by the graduates to enter the private sector of medicine where the needs are most acute.

A second study concerned the patients acceptance of physician's assistants.<sup>44</sup> In the study there were no patients who exhibited a negative attitude toward the incorporation of the physician's assistant into the health team and data indicated that the degree of patient acceptance correlated with the patients educational background, level of income, and understanding of the role of the physician's assistant. Thus, patients with six years or less of education and whose income level fell below \$5,000 per year were not enthusiastic in their acceptance of the physician's assistant. They did, however, see a need for this individual in the health care system. This same less enthusiastic acceptance was expressed by those patients who were highly affluent because they felt a loss in status when they paid for "just the physician's assistant."

The greatest acceptance occurred between these two extremes of educational and financial status because the patients identified more with the system, and were freer in judging the situation and assessing the value of the assistant to themselves, as well as being fairly well informed and sophisticated concerning health affairs. Because of their own situations, this group created a connection between the system's efficiency and their own personal benefit. The study also indicated patient acceptance to be highest in the small community clinic which, interestingly, is identified as the area in which the doctor shortage is most severe.

A study concerning the cost of training physician's assistants revealed that the yearly expenditure closely parallels that required to educate medical students and graduate nurses. The difference is that a \$4,000 per year expenditure is incurred over a two-year period as compared to four to six years for a degree graduate nurse and eight to ten years for a physician.

Initial physician acceptance of the student and graduate physician's assistant has been quite good as supported by attitudinal studies carried out by Duke and by the survey of Coye and Hansen<sup>45</sup> of Wisconsin practitioners, which pointed out that some 2,000 physicians saw an opportunity to employ assistants given responsibilities similar to those outlined in the survey. It was of interest to note that most physicians using physician's assistants were not particularly concerned over setting limits on their potential activity. Most felt that this would be an individual matter, although it was conceded that this was also a legal matter, but most indicated either implicitly or explicitly that the physician's assistant should not be responsible for professional decisions.

The use of new manpower in the health field can present legal difficulty in view of the licensing schemes for medical personnel. All states have enacted licensure laws to regulate the practice of medicine for the protection of the health and safety of its citizens. Although the licensure laws for allied health professionals were often merely permissive when first enacted, preventing only the use of a given title by the unlicensed, they have subsequently become mandatory, making liable any action within the scope of a licensed profession, taken by one not licensed by that profession. The initial question posed was, therefore, whether graduates would, by their activities, infringe upon the sphere of persons that performed under such mandatory licensure. The problem was considered by the North Carolina Attorney General, who, in 1966, issued the advisory opinion that the performance of the projected physician-supervised activities would not contravene the licensure laws of the State. The concept development has operated thus far

under the opinion, with no difficulties have been encountered. If the physician's assistant performed independent functions, some explicit exception to the Medical Practice Act would have to be made. However, the solely dependent duties of the physician's assistant are under the direction of the physician, with the physician actually "practicing" medicine in each situation, thus developing custom and usage to furnish the necessary legal sanction. The employment of such dependent people as a customary practice, even among a respectable minority of physicians, will minimize the dangers of criminal liability.

Under the doctrine of respondeat superior, the physician is responsible for negligent actions of any person in his employ or under his supervision. The physician's liability is similar to his current liability for the actions of his nurse and other office personnel. Although there exists a more significant initial implication, it decreases as the practice is established as custom and usage through wider and wider acceptance by the profession.

As with any new program, there are uncertainties and unanswered questions. Although no actual issues have materialized in the practical operation of the program or in the use of the graduates thus far, there has been a continuing effort to clarify the legal issues and resolve any lingering uncertainties. It is clear that the physician must be responsible for the actions of his dependent assistant. Because the wise or unwise use of such personnel is more likely to be a function of the physician than of the assistant, some have advocated licensure of the physician-user rather than the assistant. Following a legal conference, sponsored by the Department of Health, Education, and Welfare, the ultimate consensus was that efforts should be directed toward the drafting of a general statute authorizing supervised delegation by physicians, with the responsibility for determining the delegatee being vested in the State Board of Medical Examiners. It may be that these efforts are inspired by an overabundance of caution, as the physician's assistant seems to be fitting harmoniously into the scheme of health care delivery.

A definite legislative sanction would, however, go far towards curbing any lingering doubts as to the risks inherent in employing such personnel.

The question of professional liability has been investigated. Initial coverage, in 1966, was limited to the student in the medical center. They were found to be automatically included under the existing policy carried by the medical center. As the students moved outside the medical center for community-based experience, companies that provided coverage for the physician involved extended his coverage to include the physician's assistant at a rate similar to that paid for his other employees.

In 1969, as the expanded class was assigned to physicians from coast to coast, the issue of professional liability was raised once more. As a result of the inquiries and because the question was relevant to all related programs, various aspects of this issue were placed before the major professional liability carriers listed by the American Medical Association. These carriers, in conjunction with the recommendations of the Insurance Rating Board, expressed willingness to furnish professional liability coverage to the physician and hospital at a negligible rate, and to the university-trained physician's assistant at a rate approximately 50 percent of the rate charged the employing physician.

Thus, both the child health associate and the physician's assistant have had professional liability coverage extended to them, but, unlike the physician's assistant, the child health associate has been granted limited legislative recognition as of September, 1969, in the State of Colorado.

A comparison of the physician's assistant with other allied health professionals shows that the graduate "assistant" has greater income opportunities. Nurses and other health professional salaries, only now attaining a level they have so long deserved, are nonetheless based on the 40 hour week with a variety of services provided in one location. The physician's assistant provides services in the same geographic areas as the physician. In doing so, he works on an average of 25 percent longer per week than other health care professionals.

## Conclusion and Summary

The duties that other health professionals and the physician's assistant perform have certain areas of interchangeability. The physician's assistant, however, trained to support the physician in his role in the office, the home, and the hospital has developed a closer liaison between the physician and other team members. Specifically, he is trained as a data gatherer. He takes detailed patient histories, completes extensive physical examinations, collects specimen data through many intricate and detailed technical procedures, and provides routine patient analyses in addition to providing such services as splinting, cast application and removal, superficial wound suturing, dressing changes, and after-hours laboratory studies.<sup>46</sup> The physician's assistant extends the physician's services into the home and community hospital by performing routine workups, writing narrative summaries, scheduling diagnostic studies, and accomplishing closer supervision of the bed ridden patient. In the office setting, physical, historical, and laboratory data are collected ahead of time making the physician patient interaction more meaningful and less time consuming. In the home, the physician's assistant provides continuity in the care of the invalid patient. The greatest indication of this individual's usefulness lies in the fact that the physician has a well-trained, virtually unrestricted assistant to whom he can teach skills and functions that will allow his particular practice to function in a more efficient, effective, and economical manner.

As indicated, initially, there exists a significant physician and allied health manpower shortage, which cannot be solved by merely reshuffling the available talents. Increased physician production would require a vast and continued financial input with the benefits not becoming available for some 10 to 15 years following initial molding. This method offers little or no assistance in filling the void that presently exists and that has been projected to increase significantly in the next decade.

Superficial evidence indicates that the utilization of nurses and other allied health personnel offers the prime solution to the physician shortage because these individuals have demonstrated the ability to augment physician services. Insight into this alternative clearly shows that there exists a significant need for nurses and allied health workers in their own fields, thus nullifying this source as the primary pool for new health manpower.

Regardless of the availability of new highly trained manpower to the health care system and the physician specifically, many areas of concern have been expressed. Perhaps the biggest is whether the physician would utilize this manpower. Data shows that the physician has delegated tasks in the past creating new health fields, and is willing to do so at the present time. With the utilization of this individual will come the identification of which tasks to delegate. The ongoing programs have shown very effectively what tasks and responsibilities can and have been delegated and have indicated the level of proficiency at which they can be performed.

The physician's assistant concept has raised questions in the area of legislation, liability insurance, licensure, patient and physician acceptance, and educational mobility. As pointed out, concerted efforts are underway to identify the legal responsibilities and methods of recognition of this group. Liability coverage has been made available to physicians and hospitals that utilize this type of assistant and to the university-trained assistant himself. A spectrum of attitudinal and cost-benefit studies have been performed which indicate that these new members of the health team have been accepted by the patient and physician, and can effectively augment and extend his services by more than 50 percent.

Use of the dependent or independent assistant in the diagnosis and prescription of medication, even in light of the Colorado legislation, requires further consideration. Traditionally, and by legislation, the physician has made the ultimate diagnosis and prescription of treatment. Because of the physician shortage, a willingness to delegate

limited responsibilities in certain areas can be expected. The presence of even 2,000 independent practitioners at this level could create a situation that would require concerted, continuous efforts to insure adherence to the imposed limitations. With this in mind, the dependent assistant in conjunction with an effective communications network and transportation system offers a more plausible solution and allows control over diagnosis and prescription to be retained by the licensed physician.

A rewarding career has been offered to individuals who would have been otherwise lost to the health care industry. It is also recognized that a small percentage of these individuals will aspire to continue their academic training through the baccalaureate level and beyond. To assist in the realization of these goals and to provide a true "career ladder" towards higher plateaus of knowledge, the development of a degree-option at the baccalaureate level has been undertaken.

Physician's assistants, pediatric nurse-practitioners, and child health associates are similar in numerous ways. They :

1. perform complete historical, physical and laboratory maneuvers;
2. have professional liability insurance coverage;
3. have received favorable acceptance by both the patient and physician; and
4. have allowed extension and augmentation of physician services by more than 50 percent.

The areas of dissimilarity are: 1. the child health associate has been given recent legislative support in the State of Colorado; and 2. the child health associate is allowed to diagnosis and prescribe medication to a limited extent. However, if organized medicine is to control the growth and direction of these types of professionals, the area of limited diagnostic and therapeutic licensure must be given a great deal of thought.

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