Physician Assistants: Current Status of the Profession

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In the two decades since the inception of the physician assistant concept in the United States, 52 physician assistant training programs have been established. Currently, approximately 16,000 physician assistants are employed by physicians and institutions throughout the country. Established to fill a perceived gap in primary health care delivery in the 1960s, the profession continues to serve mainly in primary care settings, with 43 percent of all physician assistants in family practice clinics. There is a trend, however, for physician assistants to fill health care gaps in other settings, such as long-term care institutions and correctional facilities. The clinical effectiveness of physician assistants has been demonstrated in terms of both quality of care and patient acceptance, and they are adept at adjusting to shifts in the health care marketplace. However, the real determinant of the future of the profession will be economic advantage. Recent changes in Medicare legislation now permit reimbursement for physician assistant services in nursing homes and hospitals, and payment under Medicaid has been approved in one half of the states. Given the cost effectiveness of physician assistants, their demonstrated competence and acceptability, and their adaptability to a variety of settings, the demand for their services is likely to continue.

The physician assistant profession celebrated its 21st birthday in October 1986. The concept was born two decades ago at Duke University in Durham, North Carolina, after the National League of Nursing refused to accredit a program for training nurse practitioners devised by Dr. Eugene Stead, a Duke internist.[1,2] Concerned about the shortage of primary care physicians in the country, Stead turned his energies to designing the first physician assistant training program in the United States.

In October 1965 four students entered the first physician assistant class at Duke, all of them ex-Navy corpsmen.[3] During this same period, Dr. Richard Smith launched a similar project at the University of Washington in Seattle—called the MEDEX Program.[4] Designed especially to expand the services of general practitioners in rural Washington, it, too, tapped the pool of military corpsmen available in the late 1960s.

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New physician assistant training programs were developed in the 1960s and 1970s for three reasons: (1) to help alleviate a perceived shortage of primary care physicians, (2) to compensate for geographic and specialty maldistribution of physicians, and (3) to help control escalating health care costs.[5] The energy for the physician assistant movement probably came from two sources: the heightened social consciousness of the times, which called for plans to ease deprivation in society, and the increasing value Americans placed on sophisticated medical care.[3] As more young physicians flocked into specialty training, inadequacy of primary care was seen as a major concern. Americans felt that they foresaw the demise of the family physician. Indeed, the general practitioner seemed to be a disappearing breed. In 1923, 89 percent of US physicians were general practitioners, and by the mid-60s the figure had declined to about 25 percent.

As physician assistant programs developed, they graduated young men and women who went forth to answer the call for more primary care practitioners. Lacking the historical precedent and continuity of most other health care professions, however, physician assistants were also open to innovation and opportunity. This flexibility, combined with the dramatic changes that have taken place on the health care scene in the last two decades, has re-

sulted in modifications of physician assistant roles and functions.

The main reasons that physician assistant roles did not remain clearly circumscribed was that the crisis in primary care, which provided the original impetus for physician assistant programs, subsided. Continued importation of foreign medical graduates until the mid-1970s helped alleviate the shortage. In addition, US medical school enrollment was boosted significantly. As a result, the number of US physicians rose from 323,000 in 1970 to over 454,000 by 1982.[7] The shortage in primary care as such was alleviated by greater numbers of physicians entering family practice as well as by enhanced primary care training in general internal medicine. Current estimates point to the eventual disappearance of the shortage; according to one estimate, primary care physicians will be available for 94 percent of the country's population by 1990.[8]

PHYSICIAN ASSISTANT TRAINING PROGRAMS

Currently, 52 physician assistant training programs are accredited in the United States. Three quarters of the programs offer a baccalaureate degree or degree option; three offer master of science degrees. The typical school has a two-year curriculum (which includes both didactic and clinical instruction), but some schools are adding postgraduate programs that offer advanced training in medical and surgical specialties. Disciplines represented include pediatrics, neonatology, emergency medicine, surgery, and occupational medicine.

Nonetheless, the main focus of basic physician assistant education and training continues to be patient care in the primary care practice setting. The first six to 12 months of training are devoted to preclinical studies—usually courses in anatomy, physiology, microbiology, pharmacology, psychology, clinical medicine, physical diagnosis, preventive medicine, and clinical laboratory procedures.[9] This part of the curriculum is followed by nine to 15 months of clinical training.

An area of increasing emphasis in many training programs is health maintenance. Physician assistant trainees are taught preventive health care, patient education, and utilization of community health and social service agencies. Physician assistant faculty planners are sensitive to the need of their profession to be responsive to changes in the health care scene, and so the curricula of physician assistant programs undergo regular review and modification. Experience with graduate physician assistants has indicated that this kind of flexibility has paid off; newly employed physician assistants have been found to adapt to a wide variety of practice settings without difficulty.

PROFILE OF PHYSICIAN ASSISTANTS

Currently, approximately 16,000 physician assistants are in practice, up from fewer than 9,000 in 1980.[9] About 40 percent are women, compared with a predominantly male representation in the first years of the profession. The percent of nonwhite physician assistants is about 9 percent.

Most physician assistants had health care experience before they entered their training programs. In 1984, the average preenrollment employment in a health field was three years.[9] The average age at graduation was 28 years. A youthful professional, the typical physician assistant is 36 years old.

Physician assistants earn about one fourth to one third as much as physicians. In 1985, their mean salary was $25,500.[9] Physician assistants in surgery and occupational medicine receive the highest salaries; those in pediatrics and obstetrics and gynecology make the least.[9]

ROLES AND FUNCTIONS

A comprehensive literature review revealed 11 categories of tasks performed by physician assistants[10]: (1) history taking, (2) physical examination, (3) simple diagnostic procedures, (4) data gathering, (5) synthesis of data for physician, (6) formulation of diagnosis, (7) initiation of basic treatment, (8) management of common acute and emergent conditions, including health maintenance and well-child care, (9) management of stable chronic conditions, (10) patient and family counseling, and (11) supportive functions. A task not mentioned in this review is the prescribing and dispensing of drugs—an issue that has been highly controversial. States have enacted varying regulations regarding the prescribing of medications by physician assistants; 18 states now allow limited prescribing practices.

In the physician assistant's relationship with the employing physician, he or she shares or takes over tasks that were previously the responsibility of the physician. The underlying concept of the physician assistant's role is that of the dependent professional. The physician assistant profession was developed on the assumption that the physician and physician assistant would function as a team, with the physician assistant acting as an extension of the physician and not as a substitute. A 1985 document published by the American Medical Association's (AMAs) Committee on Allied Health Education and Accreditation reads[11]:

> The physician assistant is academically and clinically prepared to provide health care services with the direction and respon-

sible supervision of a doctor of medicine or osteopathy who is responsible for the performance of that assistant . . . in any setting in which the physician renders care, in order to allow more effective and focused application of the physician's particular knowledge and skills.

As physician assistants are not licensed, they are bound legally and professionally to the physicians with whom they work.[12] This relationship contrasts to the situation of some other midlevel practitioners, such as nurse practitioners and nurse midwives, who can claim more autonomy in their health care roles. A consequence of the dependent nature of the physician assistant role is that the physician bears legal and ethical responsibility for the outcome of all services performed by the physician assistant as well as for the problems resulting from any omissions in care.

About 65 percent of the profession fulfills the original intention of physician assistant training—to serve as extensions of primary care physicians. Within this group, the range of activities performed by individual physician assistants appears to vary widely from setting to setting. Primarily, the physician assistant's activities are shaped by the specialty and practice content of the employing physician or institution.[12] The breadth of the physician assistant's role is a function of the physician's perception of the physician assistant's skills and capabilities—a sociological phenomenon called "negotiated performance autonomy."[13] Because the responsibilities of the physician assistant tend to be a matter of negotiation, studies of physician assistant roles have not surprisingly indicated that job descriptions seldom provide accurate information on tasks actually performed by physician assistants.[14]

Legally, task delegation is determined by the State Board of Medical Examiners within each state, as directed by statutes. The board provides guidelines for physician assistant performance. State laws are frequently vague, however, about the specific functions that physicians can delegate to physician assistants. A great variability also exists among states in how supervision is defined.

Studies of task delegation indicate that in primary care practices up to 90 percent of routine children's office visits and 80 percent of adult visits can be safely turned over to physician assistants.[5] The highest rates of delegation occur in health maintenance organizations, where physicians appear more amenable to delegating duties. Many office visits can be handled totally by the physician assistant; others require that the physician also see the patient. Whether the physician assistant or physician sees the patient has been found to be related to the patient's complaint, sex, age, and whether the visit is scheduled or unscheduled (physician assistants are more likely to see unscheduled patients). Physician assistants do not autonomously care for groups of their own patients; the physician retains overall responsibility for each patient's care. The division of labor between physician and physician assistant then allows the physician to reserve the bulk of his or her time for patients presenting with complex problems.

PRODUCTIVITY AND COST EFFECTIVENESS

Virtually all studies indicate that physician assistants are productive and cost effective in their employment settings.[11,15] In primary care practices, physician assistants bring in four times more in revenue than they draw in salary.[9]

Studies designed to measure physician assistant productivity indicate that the substitution ratio of physician assistant to physician is approximately 0.50 to 0.75 (with the physician taken as 1.0).[16] In other words, a physician assistant in practice may be able to handle one half to three quarters of the clinical services that his or her supervising physician would. When one considers that physician assistant salaries are one fourth or one third those of physicians, the cost benefits of using physician assistants are obvious. Extrapolation of the data on substitution ratios to costs reveals that physician assistants can provide about two thirds of physician services at about one third of the cost of a physician.[15]

Productivity figures are highest in institutional settings. Consequently, hospitals under severe pressure by cost-containment measures such as diagnostic-related groups (DRGs) are employing increasing numbers of physician assistants. A 1981 survey of hospitals with more than 400 beds showed the consensus of administrators to be that the addition of physician assistants contributed to more effective cost containment and enhanced the quality of care.[9]

Reimbursement of physician assistant services varies according to setting and geographical location. Most Blue Shield plans do not reimburse for care given by physician assistants in any setting; reimbursement is subsumed under physician fees. Effective January 1, 1987, Medicare Part B included payment for physician assistant services in nursing homes and hospitals, but not in ambulatory care settings. Payment under Medicaid is allowable in 24 states.[19] The American Academy of Physician Assistants is trying to change the Medicare rules for outpatient settings, so that physician assistant services can be reimbursed—with payment made to the employing physician or institution. Congress has mandated that by spring 1988 the Health Care Financing Administration must conduct and report market research regarding current reimbursement schemes for physician assistant services throughout the United States, and make recommendations for national policy regarding Medicare reimbursement for physician assistants in all settings in the future. The guidelines

that the Health Care Financing Administration recommends for Medicare will probably be adopted subsequently by private insurance companies. Whether physician assistants can be appropriately reimbursed will be a key determinant of how their services are viewed by physicians and administrators in the long run.

QUALITY OF CARE

Review of the literature reveals that quality of care offered by physician assistants is comparable to that given by physicians. One review of over 40 studies on midlevel practitioners, such as physician assistants and nurse practitioners, reported that physician assistants "provide office-based care that is indistinguishable from physician care."[17] Another review indicated that no significant differences could be found between care offered by general or family physicians and general internists and that provided by physician assistants in terms of "diagnostic errors, treatment plans, prescription errors, referrals to specialists, or success of treatment."[18]

Quality of care can be measured in a number of ways. One measure is the process of care, ie, the methods and standards of care to which physician assistants adhere when they manage patients. Appropriateness of diagnostic and treatment methods, as well as the skill with which procedures are carried out, are key factors in the process of care. Another measure is medical outcome, ie, the physical and psychological status of the patient after treatment. A third measure is patient satisfaction. Studies of all three aspects of care have indicated that in primary care settings physician assistants deliver care equivalent in quality to that given by physicians.[17] It is important, however, to note that most studies have been limited to ambulatory primary care settings. Little research has been done on physician assistant care in emergency rooms, hospitals, and nursing homes.

Physicians who have not employed physician assistants often express reservations about their use. Those who have, however, appear to be highly satisfied. A recent government report states that "acceptance of the concept by employing physicians . . . in both ambulatory and non-ambulatory settings has been generally positive."[9] A survey of surgical chairmen from large US hospitals using surgical physician assistants revealed high physician acceptance: "Two thirds of the responding surgical chairmen felt that the quality of care had improved and nearly half believed that residency training had also improved following the introduction of surgical physician assistants."[19]

REGULATION AND LEGAL ISSUES

An entry-level competence examination is offered to new graduates of accredited physician assistant programs by the National Commission on Certification of Physician's Assistants; the commission is predominated by representatives of various national medical organizations. This examination, conducted in collaboration with the National Board of Medical Examiners, is now recognized by three quarters of the states. When passed, it allows physician assistants to append the title "PA–C" (Physician Assistant–Certified) to their names. They must then re-register every two years by documenting 100 hours of approved continuing medical education. Every six years physician assistants must sit for a recertifying examination to assure continued clinical competency. These steps permit the physician assistant to continue using the official title PA–C. (For physician assistants wishing to demonstrate special competence in primary care or surgery, the national commission now provides additional examinations.)

Forty-nine states and the District of Columbia now permit physician assistants to perform medical services under the supervision of a physician; New Jersey is the sole state to withhold its sanction. There, physician assistants can practice only in federal institutions. Most states stipulate that, to qualify for practice, physician assistants must have been graduated from a training program accredited by the AMA's Committee on Allied Health Education and Accreditation and pass the national certifying examination. Beyond that point, state laws are highly discrepant regarding the scope of physician assistant practice, specific tasks physician assistants may perform, and what constitutes adequate physician supervision of physician assistants. Physician assistant spokespersons are currently supporting cooperation among states in devising uniform practice regulations.[9]

An early legal concern among physicians about hiring physician assistants was the potential for malpractice litigation. Their fears have proven to be unfounded. In fact, all indications are that adding a physician assistant to a private practice setting reduces malpractice exposure.[11,20] The low malpractice risk is thought to be attributable to the documented positive effects that physician assistants have in primary care settings: reduced waiting periods, more personal care, improved patient compliance, diminished somatic complaints, less need for return visits, and fewer hospitalizations.[18]

PRACTICE SETTINGS

The distribution of physician assistants in various practice settings is dictated primarily by need as perceived by physicians and health care administrators. Practice choices made by physician assistants are a secondary factor. Physicians choose their specialties through residency training, but as dependent practitioners, physician assistants respond to the availability of employment opportunities.

Consequently, their medical specialty and practice type are determined at the time they accept a job.

Primary care specialties continue to claim the majority (approximately 65 percent) of physician assistants, with 43 percent in family practice, 9 percent in general internal medicine, 6 percent in emergency medicine, 4 percent in pediatrics, and 3 percent in obstetrics and gynecology.[9] These figures, however, reflect a gradual decline from previous years. Physician assistant representation in family practice, for example, fell from 54 percent in 1981 to 43 percent in 1984.[9] In contrast, physician assistants in the surgical specialties are increasing—up from 12 percent in 1978 to 18 percent in 1984.[9] A combination of economic and demand factors suggests that this percentage will continue to climb.[19] The numbers in medical subspecialties are also rising, but not so rapidly. Shifts in employment patterns are displayed in Table 1.

Physician assistants have worked mainly in private practices, but growing numbers are appearing in occupational health settings, emergency rooms, hospitals, ambulatory care clinics, correctional facilities, long-term care institutions, and prepaid group practices. These changes are occurring largely because of unanticipated shifts in the medical marketplace.

An interesting phenomenon has been the employment of physician assistants as "junior housestaff" in teaching hospitals to supplement patient care.[21] Physician assistants are being tapped to fill the gaps left by the discontinuation of residency positions. Some see the use of physician assistants and other midlevel practitioners in teaching hospitals as the only way to maintain the high quality of care these institutions traditionally provide, while still decreasing the number of specialist and subspecialist physicians in the marketplace.[22] Physician assistants who serve as "surrogate housestaff," as they are sometimes called, offer the additional advantage of providing greater continuity of care on a hospital service than the changing population of residents. Physician assistant employment also allows residents and fellows more opportunity to focus on complex cases and devote time to medical educational experiences.

While those who review and accredit physician assistant training programs maintain that the goal of training should be to prepare graduates for primary care employment,[12] a survey of physician assistant educators reveals that some shift in practice setting and type is expected for physician assistants.[23] In ranking the likelihood of future roles for physician assistants, faculty of physician assistant training programs still selected primary care as their first choice. Faculty indicated, however, that they foresaw the following roles ranking closely behind: positions as surgical assistants, jobs in health maintenance organizations, house staff positions, jobs in emergency medicine, and employment in industrial or occupational health.

A hallmark of the physician assistant profession has been its flexibility and willingness to fill gaps in health care services. The US Department of Labor estimated that in 1980 more than 40 percent of physician assistants were practicing in areas underserved by physicians.[24] Physician assistants have moved into settings such as nursing homes, inner-city clinics, prison systems, and other facilities that have inadequate supplies of physicians.[18] Prisons and institutions for the chronically, physically, and mentally ill are particularly short of physicians. Administrators of these facilities have recognized that physician assistants have the potential to provide a great deal of the needed medical care at much lower cost without sacrifice of quality. Rural health manpower shortages have been more difficult to address because in most states the physical presence of a supervising physician is required for a physician assistant to practice, and some rural areas have difficulty in attracting these physicians.

TABLE 1. SHIFTS IN PHYSICIAN ASSISTANT EMPLOYMENT PATTERNS BY SPECIALTY BETWEEN 1978 AND 1984*

Specialty	Percent Employed		
	1978	1981	1984
Family practice	52	54	43
General internal medicine	12	10	9
Emergency medicine	5	5	6
General pediatrics	3	4	4
Obstetrics and gynecology	2	3	3
Medical subspecialties	6	3	5
Surgical specialties	12	13	18
Other specialties	8	10	12

** Data adapted from Fifth Report to the President and Congress on the Status of Health Professions Personnel in the United States: 1986[9]*

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