

Origins of the Physician Assistant Movement in the United States

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Summary

The physician assistant (PA) movement in the United States arose from the convergence of events that encompassed the decline of the general practitioner, the rise of physician specialization, and a perceived scarcity of doctors. The 1960s era of social change, returning Viet Nam War medical corpsmen, and federal activism in health workforce policy set the stage for exploration of new concepts in health personnel. With significant support from the federal government, the PA was established by medicine, and their roles assumed many of the responsibilities previously reserved within the domain of the physician.

Keywords: new health practitioners; physician assistants; nonphysician providers; health workforce; primary care.

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Introduction

The establishment of the physician assistant (PA) profession has been a remarkable occurrence in American medicine. Physicians, responding to accusations that they were failing to meet the health care demands of our post-World War II society willingly opened the monopoly that they held for a century on the practice of medicine. With rapidly evolving changes in medicine and society, the roles for existing and what would become new health professions were changing and expanding. Doctors began a process whereby they delegated many of the essential components and symbols that defined medicine: diagnosis and treatment; these tasks would also come to include procedures, admitting privileges, and prescribing.

We examine the factors responsible for the development of the PA and an analysis of its successful establishment in American medicine.

Background

The years following World War II brought sweeping changes to American medicine, with profound effects on physicians, nurses, and the size and shape of the health delivery system. The climate of medicine, in particular the decades of the 1950s and 1960s, led to the proposal of the PA concept and the movement that came to be known as the creation of “new health practitioners.”

The most common reason given in response to the question of, “Why did the PA concept emerge?” is that there was a shortage of physicians. We argue that was partially the case but other influences were at play. In health workforce policy discussions, it is inherently impossible to know the “right” number of doctors for a country. The optimal number of doctors is largely subjective judgment and may be based on considerations of self-interest.¹ Others have asserted that the creation of the PA had more to do with the corpsmen returning from the Viet Nam war. The prototypical PA was a male military veteran who uses battle-tested skills to become a health professional. A common belief was that the creation of the PA was based on the failure of the medical profession to address the health

¹ Goodman, D.C.; Fisher, S.F. Physician workforce crisis? Wrong diagnosis, wrong prescription. *New England Journal of Medicine*. 2008; 358(16): 1658-1661.

delivery needs. This latter view holds that the system problems in the 1960s were a product of frustration with medicine in a society coupled with a rebellious mood for social change. One of the first examinations of the PA noted that the concept was “... exciting because it holds great promise for improving and distributing health care. Many of the problems and issues that first appear unique to the PA are... part of the most crucial issues affecting our health care system.”²

We argue that the PA emerged due to a number of reasons. The PA (and similar types of practitioners) became one of the most successful developments in American healthcare in the decade of the 1960s because it cut across many elements of society and the health care system. Furthermore, we suggest the success was due to the view that it was “the right idea at the right time.”³ The forces and fundamental reasons for the creation of PAs arose in a number of areas and should not be attributed to any one source, including the initiatives at Duke University. Clearly, other forces were at hand: medical institutions, medical organizations, individuals desirous of medical delivery change, and the federal government.

American Medicine Following World War II

Starr’s description of medicine in the 20th century as a “sovereign profession” characterized the common perception of physicians in society for much of the 20th century.⁴

The transforming forces in medicine in America were the spectacular advances in science and technology of the 19th century and first part of the 20th century. Discoveries in microbiology, surgery, diagnostic imaging, and many others were embraced by allopathic physicians and contributed substantially to their rising prominence in American society. Physicians and their interventions could actually make a difference in the outcome of patient illnesses.

² Sadler, AS, Sadler, BL, Bliss, AA. *The Physician Assistant -Today and Tomorrow*, 2nd Edition. Cambridge, Ballinger, 1975, p.1.

³ These observations are taken from a number of sources both personal and archived: Crane, S. Personal communication, 11April, 2006. E.H. Estes, Jr. Personal communication, 24 May 2009. Oral history project: PA History Society.

⁴ Starr, P. *The Social Transformation of American Medicine*. New York, Basic Books, 1982

Hospitals also assumed greater size and prestige and their close association with the doctor grew proportionally. The hospital became the doctor's workplace, the "core around which the delivery of medical services was organized."⁵ Linkages between physicians, hospitals, and medical education strengthened their power and authority over health affairs. Medical centers provided physicians with a wide amount of latitude and prerogatives to keep the beds filled. By avoiding becoming salaried employees in hospitals, doctors were able to maintain and increase their prominence, independence, and influence over the health system.

Dependency on physicians and medical authority is closely related to the concept of and reasons for cultural authority. The American Medical Association (AMA), as the representation of medicine, protected the interests of physicians in terms of income and security. As medicine evolved from a cottage industry of mostly isolated and often rurally based practitioners to an urban, sophisticated profession with rising cultural authority, the prominence of the AMA rose. While its power has diminished in the past several decades, the AMA has been a dominant player in many critical decisions affecting the health system. Many of their decisions related to the sole authority of allopathic physicians to perform medical diagnosis and treatment at the exclusion of other practitioners. Allopathic physicians who embraced the new scientific discoveries were able to convince state legislatures that they alone were in the best position to hold medical licenses.⁶

The medical profession rose to prominence in the first portion of the 20th century. Along the way, the additional trend toward specialization was a particularly strong movement that would influence the emergence of the physician assistant. Prior to specialization, a doctor had license to see patients, to hospitalize them, provide anesthesia, perform surgery, prescribe medications, and discharge them with no oversight. Specialization disjointed this generalist approach to be all to all patients. Specialties also resulted in the decline of the general practitioner (GP) beginning in the 1950s, giving rise to primary care services that occurred a decade later.

⁵ Shi and Singh, op.cit., p. 89.

⁶ Anderson, O.W. *Health Services as a Growth Enterprise in the United States Since 1875*. Ann Arbor, Michigan, Health Administration Press, 1990, p.60.

Physician specialization transformed medical care delivery after World War II. In 1940, there were 36,880 full-time specialists in the U.S., compared with 120,090 part-time specialists and GPs. By 1949, the number of full-time specialists had risen to 62,688 but there were still only 110,441 GPs and part-time specialists.⁷ This took place in an era where the overall supply of physicians was actually declining. The Ewing Report of 1948 considered that the overall supply of physicians fell short by nearly 20%.⁸ The number of US medical school graduates fell from a high of nearly 6,400 in 1947 to just over 5,000 in 1949, almost the same number of graduates as in 1940. In 1949, there were 135 physicians for every 100,000 population, just one more than in 1942.⁹

Demise of the American GP

Stevens notes that the defeat of the Wagner-Murray-Dingell bill in the 1940s, which would have instituted a federal compulsory system of health insurance, sounded the death knell for the possible public support of the GP through a health service payment scheme.¹⁰ Thus, action portended a long-lasting trend of federal payment policies that rewarded medical specialist services at higher rates than generalist services. Hospital medical service needs were increasing as well. The Hill-Burton Act passed in 1946 and, by 1971, had distributed \$3.7 billion to fund the construction of hospitals.¹¹ Clinical services expanded dramatically in the two decades after WW II with dramatic growth in the number and size of hospitals. Hospitals were increasing the use of house staff, and the need for additional personnel was apparent. With the creation of the National Institutes of Health (NIH) in 1948, research began to play a greater role in the activities of medicine, particularly in the large centers. Thus, physicians available for service needs as well as emerging areas of research were in short supply.

⁷ Ibid, p. 297. Stevens includes in the appendix of her book tables delineating trends in specialization in American medicine; Appendix A2 presents the numbers of full-time specialists in 13 specialties in 1940; table A4 presents the numbers of full-time specialists in 19 specialties in 1961.

⁸ Ewing, O. *The Nation's Health: A Ten Year Program, Report to the President* by Oscar R. Ewing, Federal Security Administrator, Washington, DC, 1948.

⁹ Stevens, op.cit., p. 354

¹⁰ Ibid, p. 293.

¹¹ Shi and Singh, op. cit.,

While the AMA insisted there was an adequate supply of physicians during the 1950s, there was mounting evidence that this was not the case. In 1953, the President's Commission on the Health Needs of the Nation predicted a physician shortage of 59,000 by 1960. Two influential reports - The Bayne-Jones Report in 1958 and the Bane Report in 1959 - put forth the concern that there was a shortage of doctors in the U.S.¹² These reports expressed the view that there were insufficient numbers of physicians and recommended that 20 new medical schools were needed to meet demand for medical care services.

In 1963, the AMA appointed John Millis to study the entire area of graduate medical education (GME). In 1964, the Willard Committee examined general practice preparation. Both reports appeared in 1966, and were regarded as influential documents with regard to health workforce policy.¹³ Both Commissions endorsed the certification process for the newly proposed specialty of family medicine.

Medicine and Society in the 1960s

During the 1960s, a wave of ideologies swept the nation centered on the problems of the poor, ethnic minorities, and women; disparities in access to healthcare were painfully apparent. Social programs were directed toward improvements in health, education, civil rights, and employment. Issues in health care were front and center in domestic policy. In a period characterized by major social movements, the 1960s also saw the war in Viet Nam escalate. Efficiency in military medical care was advanced by the use of trained personnel in combat areas. Physicians, nurses, corpsmen/medics returned home with accounts of medical improvements and team-based care. The role and skills of combat corpsmen were maximized as never before. An additional factor in the climate of change was the Johnson Administration's War on Poverty. This ambitious governmental effort brought the substandard conditions and deprivation of people within the borders of the "richest country on earth" to public attention. The nation felt optimistic about

¹² Stevens, *op. cit.*, p. 364.

¹³ Citizens Commission on Graduate Medical Education, *The Graduate Education of Physicians*; known as the Millis Commission report. *AMA, Ad Hoc Committee on Education for Family Practice, Meeting the Challenge of Family Practice*. This report is known as the Willard Commission report.

finding solutions for chronic social ills. Optimism extended into the healthcare system where, as we have seen, the evidence was mounting indicating a shortage of physicians and a lack of primary care providers.

Innovations in the health sector during the 1960s and 1970s included the Medicare and Medicaid Acts, health maintenance organizations, Community Health Centers, community mental health centers, free clinics, rural primary care clinics, the emergence of family medicine as a specialty, and the development of new health professions. The concept of the PA, and similar types of health practitioners, was considered a reasonable strategy to cope with the shortage of primary care doctors.

In the 1960s, the PA, as well as the nurse practitioner (NP) was introduced, along with the rebirth of the nurse midwife in North America. This represents a major transformation in American medical practice. The PA was conceptualized as one in which a well-trained assistant would assume a scope of practice that included medical tasks heretofore reserved only for physicians. The concept focused on extending the capabilities of physicians in the delivery of primary care, particularly in medically underserved populations or rural areas.¹⁴

Shortage of Physicians

A commonly cited reason believed to support the creation of the PA was an ostensible shortage of physicians. There was evidence of a shortage in the 1960s due to the since the size of the medical education enterprise and the number of physicians in practice had been more or less static since WWII despite a rapidly expanding population.¹⁵ The PA was viewed as a part of several creative solutions to health manpower shortages, including increasing physician supply. Bliss wrote, “[During this time] the doctor deficit is one of the most discussed and documented aspects of our current health scene. Numerous efforts are underway to shorten the medical curriculum, develop varied and more flexible “track systems,” expand medical school size, and create new schools. The Carnegie Commission

¹⁴ Cawley JF, Hooker RS, Asprey DP. Development of the Profession. In Hooker RS, Cawley JF, Asprey DP. 2010, p24-41. *Physician Assistants: Policy & Practice*, 3e. FA Davis, Philadelphia.

¹⁵ Starr, Paul. *The Social Transformation of American Medicine*. 1981. Basic Books. New York, NY.

recommended, in 1970, a plan to educate 50% more physicians by 1980.”¹⁶

The ebbing number of GPs (generalists) in the U.S. contributed to the need for additional generalist services. Carter and Gifford argue that the American PA movement was the product of a nationwide demand for clinical support personnel who could extend the role of the physician in patient management whether in hospital- or office-based practice settings.

The increased social consciousness of the 1960s led to government attempts to promote equality in society, especially among the poor, minority groups, and women. A positive value was attached to health and health care delivery, with concerns regarding health care access, cost, the supply of physicians and their geographical and specialty maldistribution. Solutions to the relatively low number of generalist physicians led to examination of a variety of physician extender models, including the community nurse-midwife in America, the “assistant medical officer” in Africa, and the feldsher in Russia. Nurses and ex-military corpsmen were other potential sources of manpower. Local circumstances in numerous hospitals and office-based practice settings required additional clinical support professionals. One analysis of what became a concerted movement noted, “Early acceptance of the PA model was due partly to its relevance to problems in medical care delivery.”¹⁷

The Corpsman

A recurring theme in the creation of the PA in American medicine is the notion of lateral movement among the medical professions. The founders of the concept believed that provider advancement could be based on previous experience; for instance, as Army medics and Navy hospital corpsman (generically referred to as “corpsmen”). It seems embedded in PA lore that the typical PA was an ex-military corpsman seeking an entry into the medical

¹⁶ Sadler, Sadler, and Bliss, op. cit, p. 3; Ann Bliss makes a reference to the report of the Carnegie Commission (Carnegie Commission on Higher Education), *Higher Education and the Nation's Health: Policies for Medical and Dental Education*. New York, McGraw Hill, 1970.

¹⁷ Gifford, JF, Jr. The Development of the Physician Assistant Concept. In: Carter, RD, Perry, HB, eds. *Alternatives in Health Care Delivery: Emerging Roles for Physician Assistants*. St. Louis, MO: Warren H. Green, 1984:4-13.

practice arena. One question that arises relates to the degree to which the selection of the corpsman was responsible for the success and acceptance of the PA movement in the U.S. Was it really the corpsman that provided the foundation of the PA concept or was this merely a component, albeit one that garnered a great deal of public recognition, of the overall phenomenon?

In the early 1960s, considerable interest was generated around training new categories of allied health workers modeled after the U.S. corpsman/medic. An early (1965) indication can be found in a White House Conference on Health where the concept of new types of health providers, then referred to as a "medical officer assistant", was raised. Neither an appropriate nor adequate title had been given to this "proposed new auxiliary", and the role was barely defined.

"Although an adequate title is still elusive, the duties of such a person are even more nebulous. What an auxiliary like this would not be can be predicted. He would not be a qualified physician, but might assume some of the duties of a physician. He would not be in competition with a physician, but might serve as his ranking assistant. He would not be a nurse, but might be more highly trained than a nurse. One of the reasons why it is difficult to affix a title to this individual and describe his responsibilities is that there has not been a counterpart for such a health worker in the United States."

Advocates promoted the name *assistant medical officer* (AMO) to describe this type of healthcare worker. The AMO was not original and the authors identified countries where such assistants were performing medical services, "although it must be reported they are not always accepted with enthusiasm." Examples included *behdars* in Iran, *apothecaries* in Ceylon, *public health workers* in Ethiopia, *clinical assistants* in Kenya, and AMOs in Fiji and Papua-New Guinea. There were also *feldshers* in the USSR and the *barefoot doctor* in China¹⁸. Because AMO-type providers were serving as the "doctor" to millions of persons throughout the world, it was suggested that the AMP adopt this name and prototype for the United States. However, supervision of AMOs was identified as the major challenge in this and other reports.¹⁹

¹⁸ Sidel, V. W. Feldshers and "feldsherism": The role and training of the feldsher in the USSR. *New England Journal of Medicine*. 1968;278:934–939

¹⁹ Rosinski, Edwin F.; Spencer, Frederick J. *The Assistant Medical Officer: The Training of the*

It is hard to underestimate impact of the connection of the returning medical corpsmen on the success and acceptance of the PA in American medicine. The roughly 6,000 returning medical corpsmen per year in the early 1970s was an ideal substrate for the health workforce experiments of Stead, Smith, and others.²⁰ The corpsmen had extensive field medical experience and some independent duty corpsmen on ships possessed advanced skills in acute injuries, laboratory medicine, x-ray capability, suturing, fracture stabilization, and ventilation therapy. While the corpsman is clearly a component of the early PA, there is also evidence that the corpsman population was shrinking in the early 1970s and that many other types of individuals were entering PA training at that time. As the idea that began at Duke caught on in medical education, the supply of corpsmen kept pace with available program slots as the war in Vietnam conveniently produced a large pool of trained manpower. However, this pool began to dwindle before 1975.

Celentano asserts that while it was the commonly accepted rationale that the development of the PA concept was the unfilled demand for healthcare services and the undersupply of medical manpower in primary care, these were simplistic notions. He argues these were articles of faith among those in support of the creation and deployment of PAs and similar types of health providers. While it would be inappropriate to consider the entire allied health professional movement in the U.S. as a response to filling gaps based on the availability of an existing, yet unused, resource, it is educational to see how the movement derived its impetus. The fundamental impetus for the initiation of the PA had to do with the physician shortage and that, “in concert with these beliefs were professed needs for the expansion of primary care services and the growth of consumerism in the public of which the view of ‘health care as a right’ was gaining in popularity.” Celentano presents evidence that “a skeptical orientation suggests that these interpretations of history may

Medical Auxiliary in Developing Countries. 1965 University of North Carolina Chapel Hill, North Carolina Press. Rosinski, EF, Spencer, FJ. The training and duties of the medical auxiliary known as the assistant medical officer. *American Journal of Public Health*. 1967; 57(9): 1663-1669. Rosinski, E.F.: Physician's assistants. A review of their status. *Israel Journal of Medical Sciences*. 1971; 7(5): 697-700. Rosinski, E.F. Education and role of the physician. A redefinition. *Journal of the American Medical Association*. 1972; 222(4): 473-475.

²⁰ Sadler, Sadler, and Bliss, op. cit, p. 2.

not be entirely faithful to fact.”²¹. [Further more] “While some may argue that the original concept in the U.S. was based upon ideals of promoting accessible and available health services for the needy, such a position is difficult to reconcile with the concurrent recognition that a manpower resource was becoming increasingly available which had no readily translatable position within the existing healthcare system.” As such, the system accommodated the flow of military corpsmen, “re-trained” them as PAs that provided them with what he calls a “cloak of legitimacy,” and altered the form of the system to provide an acceptable place for them (under the direct control of physicians).²²

Celentano’s has a point. In 1971, to demonstrate its support of the PA concept, the AMA placed an advertisement entitled, “We want to place this man in the hospital,” in Life Magazine and newspapers to recruit former military medics/corpsmen into the PA profession. The ad noted the need to help with “a shortage of doctors” and to inform the general public about the growing use of physician assistants in clinical settings. This advertisement includes a photograph of a young African-American who had served as a corpsman in Vietnam washing the windshield of a car in a service station. The text accompanying the picture states, “Back in civilian life, he’s pumping gas. Nothing wrong with that, of course. Except for the terrible waste of his training.”²³

In reality, the corpsman/medic population, while providing a highly visible and sympathetic base, was at best a component of the PA initiative, but not its major rationale. In 1978, with approximately 4,500 PAs in practice, only 42% were ex-military corpsmen.²⁴ Perry stated at that time that, “although the stereotype of the physician assistant as a former military medical corpsman is still commonplace, it is no longer valid. The most frequent background was medical technician or technologist (51%); nearly a quarter was either an LPN or RN.”²⁵ Recruits to the PA profession came from many allied health fields

²¹ Celentano, D.D. The optimum utilization and appropriate responsibilities of allied health professionals. *Social Science & Medicine*. 1982; 16: 687-698, p. 689.

²² Ibid, p. 690.

²³ Life Magazine, July 30, 1971, p. 67.

²⁴ Perry, H.B., Breitner, B. *Physician Assistants: Their Contribution to Health Care*. New York, Human Sciences Press, 1982, p. 177.

²⁵ Ibid, p. 178.

and offered the opportunity for career mobility. While this continued to be the case throughout the evolution of the PA profession, the corpsman population continues to decline as an applicant source for entry into the profession.

After the failed attempt to start his PA program with nurses, Stead realized that there were additional benefits to the utilization of corpsmen as the model for the PA. According to Holt, "He (Stead) hoped a physician assistant with a powerful presence would convince skeptics – of which there were many among medical and nursing ranks alike – of the viability of the physician assistant concept." As he explained, "I thought if I had ex-Marines in there, they'd (physician and nursing opponents of the concept) have a hell of a much harder time restricting the viability of the new role. If it was going to be a knock-down drag out fight (which Stead believed it would be) who better to contend with than returning military corpsmen?" The Vietnam veteran's experience with conflict and controversy would be as useful as his medical experience.²⁶ Dick Smith, in commenting on his selection of former corpsmen training in the Medex PA program, and their subsequent successful deployment said, "America could not slam the door on the corpsman."²⁷

The Rationale of the Overworked Physician

One observation postulated as an important rationale for the development of the PA concept was that the emergence of the PA profession emanated from the failure of postgraduate physician education. Given the shortage of physicians and the rising demand of patients, it became more difficult for practicing physicians to maintain their knowledge of current medical advances. The need to provide assistance to practicing doctors delivering medical care services was an important and underappreciated factor in understanding the emergence of the PA. A Department of Medicine academic at Duke who assisted in the development of the PA program recalled, in his doctoral thesis, that "When Stead analyzed the reasons for the failure of post-graduate physician education, he discovered that practicing physicians had almost no time which they could reasonably set

²⁶ Holt N. 'Confusion's Masterpiece': the development of the physician assistant profession. *Bull Hist Med.* 1998; 72: 246-278.

²⁷ Smith, personal communication, February 26, 2006.

aside for continuing education.”²⁸

According to Lewis, Stead reasoned that this new category of worker would be preferred over existing allied health professionals for several reasons. “First, physician’s assistants (sic) could be created to complement and not replace other available health workers. Second, the PA concept could attract new people to health services and thus supplement existing manpower resources. Third, the PA role could provide a career ladder for competent personnel who were currently “dead-ended” at their present levels and thereby could reduce attrition of talented non-professionals leaving for medically unrelated industries.”²⁹ During the years preceding the founding of the Duke Program, Stead developed, and Duke University sponsored, a continuing medical education (CME) program for physicians living in the region. The CME program failed because of a lack of attendance.

The need to augment practicing physicians’ capabilities in the development of the PA concept is illustrated in the story of Amos Johnson. Johnson was a physician in his rural general medical practice in eastern North Carolina who was known to Stead and others on the Duke University faculty. Johnson was a prominent leader in organized medicine during the 1950s, and his utilization of a prototypical PA, Buddy Treadwell, figured prominently in the development of the PA profession. Without Treadwell, Johnson would not have been in a position to lead the American Academy of General Practitioners during watershed moments, or to champion the establishment of family medicine as a specialty.

From the 1940s, until his death in 1975, Johnson personally trained and used a “doctor’s assistant.” Johnson’s prototypical physician-PA practice was a strong influence on Stead’s decision to establish a formal education program for physician assistants. The assistant’s ability to take care of routine medical and surgical tasks with minimum

²⁸ Lewis, D.E. *The Physician’s Assistant Concept*. Doctoral Dissertation Department of Education in the Graduate School of Duke University, 1975, p.21 Lewis’ source was a series of interoffice memorandums from the files of Dr. D. Robert Howard, the first Director of the Duke PA program, 1965-1972.

²⁹ Howard, D.R. The Physician’s Assistant. *J. Kans. Med. Soc.* 1969; 70: 411-416.

supervision and to keep the practice open while the physician attended medical seminars and meetings were specific reasons cited by Stead for training a “new type of clinical support personnel for physicians.”³⁰

Johnson and Treadwell and their practice arrangement gained national attention in an article describing the role of the PA as using “nondoctors to do doctors’ work”.³¹ The article described the close working relationship between Johnson and Treadwell, the scope of Treadwell’s duties, and his acceptance by patients and the medical community. The author writes, “By having someone [Johnson] can trust to coordinate patient care when he is away, he feels free to spend more time at medical meetings or participating in activities of organized medicine.” The article quotes Johnson as saying; “I don’t know any other way a doctor is going to get significant amounts of time for himself.”³²

A pioneer of the American Board of Family Practice (ABFP), Johnson became its president in 1973. He also served as an advisor to the American Association of Physicians’ Associates (the first name of what came to be the American Academy of Physician Assistants). In accepting this latter responsibility, he indicated that it would give him great pleasure to serve “since the ... physicians’ assistant has been a long time dream and reality for me.”³³

The Original Proposal

The PA may have come about as a result of perceived failures on the part of the medical profession to respond to acute medical personnel shortages in U.S. healthcare. One of the earliest suggestions to create PAs came in 1961 when Charles Hudson, then president of the National Board of Medical Examiners. Hudson was concerned about the shortage of

³⁰ Stead, E.A., Jr. Conserving costly talents—providing physicians’ new assistants. *JAMA* 1966; 198:1108-1109.

³¹ Manion, M. “Coming: More nondoctors to do doctor’s work”. *Medical Economics*, May 15, 1967. See also: Biography of Amos Johnson. <http://www.pahx.org/johnsonBio.html>; and Dixon, J.E. Ask The Man Who Uses One: A Physician’s Experience. *Physician’s Associate* 1972; 2: 11-16. Dixon was the employer of Steve Joyner, PA, one of the first Duke graduates who began working with him in Ayden, NC in August, 1969.

³² **Ibid.**

³³ Carter RD. <http://pahx.org/> website of the Center for the Study of Physician Assistant History.

doctors and put forth the notion of providing assistants, whom he called “externs”, for physicians.³⁴ Hudson’s rationale’ for new types of health personnel was also based on changing medical labor/hospital staffing personnel demands and advancing technology and he made it clear that the assistant would be directly responsible to the physician, as he suspected that proposing the creation of “externs” based on a nursing model ran the risk of upsetting the nursing profession. While Hudson noted theoretically that the “goals of nursing could be redefined as part-nursing and part-medicine” he expected (correctly) that nurse leaders would frown on “the proposal of a medicine-nursing hybrid.”

Hudson was sensitive to the need to find civilian roles for military corpsmen. He hoped to “extend the usefulness” and experience of military corpsmen who would serve as assistants where they “would not be expected to exercise medical judgment, but might well develop considerable technical skill which could be a source of satisfaction.” Hudson advocated that “a curriculum could be devised, consisting of 2 or 3 years of college work with certain prescribed courses” that paralleled medical school, and that these new health providers should be called “externs” rather than just “medical students.”³⁵

Stead of Duke University

It was Dr. Eugene A. Stead, Jr. at Duke University who transformed Hudson's prophecy into reality by developing the first PA training program. Stead was a titan of American academic medicine then Chairman of Medicine at Duke in the 1960s. Stead had long been interested in breaking down barriers in medical education and recognized the changing medical service and personnel needs in and around Duke University Medical Center. Stead addressed the common wisdom of the time that the nation had a shortage of doctors and began experimenting with programs aiming to extend and augment physician services by creating new personnel. While he was professor of medicine at Emory University prior to coming to Duke he worked with very capable third and fourth-year medical students at a time when the intern staff went from 15 to zero (due in part to the WWII draft being extended to doctors in training). In spite of their limited training, these medical students gave “superb

³⁴ Hudson, CL. Expansion of medical professional services with nonprofessional personnel. *JAMA* 1961; 176: 95-97.

³⁵ *Ibid*, p. 96.

medical care.”³⁶ Knowing what could be accomplished with focused training, he envisioned a new type of “mid-level” generalist (between the level of a doctor and a nurse), a medical clinician who could be trained in a relatively short time period to assist physicians in a broad range of practice settings. Stead believed that such providers should work closely with the physician and established the role in a configuration that would not directly threaten physicians. Over four decades of experience, it may be this factor – the dependent practice model – that is most responsible for the lasting success of the PA concept.

The PA initiative at Duke was a result of the thoughtful reflection and creative problem solving approach of Stead. His initial efforts in reform of medical education began with an attempt to train nurses with previous experience to function in the role of the PA. He approached Thelma Ingles, a nursing leader at Duke who was interested in an advanced nursing/medical role. Stead and Ingles began to experiment with training approaches to expand the nursing role in generalist medical care delivery. Stead had great respect for nursing experience in patient care. After creating a prototype advanced medical training program for nurses at Duke he concluded that nurses “... were very intelligent and they learned quickly, and at the end of a year we had produced a superb product, capable of doing more than any nurse I had ever met.”³⁷ This program could have initiated the NP movement, but was refused accreditation as an educational program by the National League of Nursing. The attempt failed because on three occasions on the basis that delegating medical tasks to nurses was inappropriate.³⁸ Nursing organizations, at odds with medicine, were in no mood to sanction efforts where nurses performed medical tasks rather than nursing tasks.

In 1964, Stead, frustrated with his “experiment” in starting a program based on the model of the nurse, appointed an ad hoc committee chaired by Andrew Wallace to formulate a plan for the establishment of a program to train PAs. Members of Wallace’s committee were physician researchers who had worked with corpsman in the course of

³⁶ Stead, E.A., Jr. New roles for personnel in hospitals: physician extenders. *Bull. N. Y. Acad. Med.* 1979; 55: 41-45.

³⁷ Stead, EA. The Duke Plan for Physician’s Assistants. *Medical Times* 1967; 95: 40-48; see also: Stead EA Jr. The new profession: the physician assistant. Personal Web site of Eugene A. Stead Jr. Available at: <http://easteadjr.org/profession.html>. Accessed 13 June 2009.

³⁸ Holt, op. cit, .

their training at the National Institutes of Health and Bethesda Naval Hospital. Several former corpsmen were working at Duke in research on hyperbaric medicine. One of Stead's assistants, James Mau, was a former Navy fighter pilot who later had a leading administrative role in the Duke PA Program.

In 1965 Duke University instituted the first PA program consisting of a 2-year curriculum based upon the traditional medical education model of training. This curriculum was devised and implemented at Duke by Dr. Stead and Harvey Estes, MD. The goal of the 2-year program was to "expose the student to the biology of humans and to learn how doctors rendered services." On graduation, PAs had learned to perform many tasks previously performed only by licensed doctors and could serve a useful role in many types of practices.³⁹

Four former Navy medical corpsmen were selected to enter the inaugural Duke PA program; three completed the program. The three who completed the Program, graduating on October 6, 1967, were Richard Steele, Victor Germino, and Kenneth Ferrell. For two years they had utilized the house staff's television lounge in the medical center hospital as their classroom. Their graduation ceremony was held in a small Durham barbecue restaurant. For aspiring PA students, entry to the PA Program was career advancement and a good deal since the GI Bill funded education. These men were already working at Duke at least 20 hours a week either as a patient care technician, in the hyperbaric chamber, and as research assistants. Part-time jobs were plentiful around the hospital at that time. Students received a \$200 monthly stipend and did not pay tuition.⁴⁰ From such inauspicious beginnings, these prototype PAs began to formulate a new unchartered role.

The Duke program expanded rapidly and in 1967, just before the first class graduated, the program moved from the Department of Medicine to the Department of Community Health Sciences later the Department of Family and Community Medicine) where it came under the direction of Dr. E. Harvey Estes, Jr., MD. In 1969, Stead retired from active professional duties at Duke and Estes oversaw the development of the Duke Program, along with the dissemination of the PA concept and educational programs throughout the country.

³⁹ Stead, *op. cit.*

⁴⁰ Carter, RD, Ferrell, K., Germino, V., Scott, P. In the beginning: a PA history roundtable. *JAAPA* 2005; 18: 27-30.

Under Estes' leadership, the Duke program continued to grow, increasing its number of students, physical facilities, and scholarship. The Duke program provided the curricular model for a large number of new programs starting up in other institutions. Informally, the "Duke model" became a standard for PA curricula across the country.

The very audacity of this new program attracted immediate attention, far beyond its size and position within the hierarchy of the medical school. Before the initial class had finished its course of study, the program had become the biggest generator of news media space at Duke University."⁴¹

If the idea of a PA movement was a gleam in the eye of its creators, its success also rested squarely on the shoulders of its first students. The first PA students recalled thinking that if any of them did poorly, it could be the early demise of the movement. Germino, a graduate of the first class, had a background as a surgical technician, a corpsman, and practiced in the hyperbaric unit at Duke for five years. Afterwards he spent three years as a PA working in occupational medicine on the Alaska pipeline.

The Alaskan Pipeline also contributed to the American acceptance of PAs. During the mid to late 1970s, there were over 200 PAs who accepted Alaska pipeline positions. The jobs were based in Fairbanks, Alaska but the actual practices were located hundreds of miles north near Prudhoe Bay where pipeline construction was taking place down to Valdez Bay. In such settings, the PA was the only medical provider. These positions appealed to PAs for two key reasons; given the tough conditions, these positions tended to pay very well, and they appealed to those PAs who were seeking autonomy in the practice activities. While it was the case that the workers were largely healthy and thus the practice was mostly trauma care, these PAs seemed to thrive under circumstances of little to no direct physician supervision and endeared themselves to a whole generation of laborers.⁴² Many PAs traveled to Alaska serving 6 to 9 month stints, returning to the U.S.

⁴¹ Estes, E.H. Historical Perspective-How We Got Here: Lessons From the Past, Applied to the Future. In: Zarbock, S.F., Harbert, K. (Eds). *Physician Assistants: Present and Future Models of Utilization*. New York: Praeger, 1986.

⁴² Randall, G.B. Don't Call Me Doctor: One PA's unique experience working on Alaskan Pipeline. 1997. Morris Publishing, Kearney, NE

to decompress for a time and then return for another period of remote practice.⁴³

The MEDEX Movement

Richard A. Smith, MD, MPH (1932-) founded the MEDEX concept and sits alongside Stead/Estes as a pioneer in the PA movement. The MEDEX program, started by Smith at the University of Washington, was an innovative approach to health professions education, one that was less emulating of traditional medical education, and one with a strong sense of social purpose.⁴⁴

Smith's interest in medicine was stimulated in 1951 during a college summer work camp in Cuba where he worked in the cane fields and observed a nurse running a rural clinic. At that time, he decided that he wanted to become a medical missionary and train large numbers of people to provide basic, life-maintenance health services in underserved areas.

Smith attended undergraduate and medical school at Howard University and completed a residency in public health/preventive medicine at the University of Washington. Smith had ideas regarding medical training early in his career. In 1960, he requested his church mission board to send him overseas as a trainer of new healthcare providers; the request was turned down. Undaunted, he had England's Archbishop of Canterbury present his plan to the World Council of Churches' meeting in New Delhi in 1961. Once again, his plan to "multiply my hands" by training other healthcare providers on a large scale was declined. But, he knew he had an idea and it needed testing.

When Smith joined the U.S. Public Health Service, he was assigned to the Indian Health Service in Arizona in the early 1960s. This was followed by two years in the Peace Corps in Nigeria. While overseas, Smith validated the need for and the appropriateness of training non-physician providers to meet healthcare needs in underserved areas. Some of his ideas were formed as a result of visiting the medical missionary Albert Schweitzer at

⁴³ Interview with Victor H. Germino, PA-C, in Durham, NC, February 25, 2006 and July 24, 2010 in Asheville, NC.

⁴⁴ Smith,R.A. Medex: A demonstration program in primary medical care. Northwest Medicine. 1969; 68: 1023-1030. Smith,R.A.; Bassett,G.R.; Markarian,C.A.; Vath,R.E.; Freeman,W.L.; Dunn,G.F. A strategy for health manpower. Reflections on an experience called MEDEX. Journal of the American Medical Association. 1971; 217(10): 1362-1367.

Lambaréné Hospital in Gabon, West Central Africa. Schweitzer was European educated and did not think that anyone less than a doctor could be in charge of medicine. Not to be discouraged, Smith decided he needed to further develop his ideas to make his case for assistants to doctors and struggled with how to do this. Upon returning to the U.S., Smith worked in the Surgeon General's office in Washington DC, from 1965 to 1968, eventually becoming the Deputy Director of the Office of International Health. During this period, he began to refocus his development interests domestically. It was also during this time that Smith accepted the assignment from the Surgeon General to lead the effort to de-segregate hospitals in the South. Smith, an African American, was the federal representative who had the task to inform hospitals that if they did not stop segregationist practices they would be ineligible for Medicare subsidies. Exposure to the poverty of the South and lack of healthcare was influencing on how to provide more with less.

In the 1960s Smith became acquainted with the same Dr. Amos Johnson from Garland, NC, who had influenced Eugene Stead to seek acceptance for his PA concept. Johnson heard of Smith's ideas, knew of Stead's work, and introduced Smith to the leadership in the AMA. He often mentioned the relationship he had with his assistant, Buddy Treadwell, and wanted Smith to develop a similar type of assistant.⁴⁵ Smith acknowledges that Johnson and Treadwell were influences on his MEDEX concept.

The MEDEX PA concept was centered on an individual with an enriched health background and one willing to serve in primary care settings in rural and medically underserved areas. Smith was a physician with broad vision, a curious mind, and a wealth of experience in medical care in the Third World as well as in the United States. While in the Peace Corps in the early 1960s, he was exposed to the French African Medical Officer and an Asian counterpart (L'Officier Médecin Indochinois). Smith returned to the U.S. in the mid-1960s as International Health Planning Director for Surgeon General William Stewart. During that time, he was assigned to the U.S. Delegation to the annual World Health Organization Assembly in Geneva where he further explored use of new health providers with health officials from other countries. He continued to nurture the idea of the creation of a new category of healthcare professional, one who could work with doctors and perform tasks associated with the majority of the routine care that a physician

⁴⁵ R. Smith, personal communication, 2000 and 2007 with the authors.

provided.

The MEDEX concept (a contraction of the two words Medicine and Extension) involved a collaborative model of healthcare development, one that actively involved health professions schools, local and national medical organizations, rural and urban communities, and overworked practicing doctors. These collaborating partners participated in introducing and supporting the PA concept as an appropriate, timely and useful tool for improving healthcare in underserved communities. The concept's most important feature was the element of deploying clinicians to rural and remote areas.

Smith wanted his program to be more than a demonstration project that was typically underwritten by the federal government and then forgotten a few years later. Believing that he could sell his concept to physicians in a conservative state, he chose to start his program at the University of Washington. Smith had earned his master's in public health at this institution and had worked in Washington where his familiarity with the local medical politics would be an advantage.

In 1968, the MEDEX Demonstration Project was jointly sponsored by the University of Washington, the Washington State Medical Association and funded by the National Center for Health Services Research. One year later, the first MEDEX class of 15 former corpsmen began their training and graduated in 1970. The program was initially a 1-year program (curriculum consisted of 3 months of intensive didactic work in basic and clinical sciences at the university medical center, followed by a preceptorship with a practicing primary care physician for 9 months), later increased to 15 months, and then further extended to 24 months. Graduates referred to themselves as MEDEX, and put *Mx* after their names. In 1971, as a result of Smith's work with organized medicine, an amendment to the Washington Medical Practice Act was passed, allowing *Mx* (PAs) to practice medicine under the supervision of a licensed physician.

The MEDEX program differed from the Duke model in that entering students needed to have considerable health experience. Course work was built on background and introduced concepts of medicine. Students received most of their training through "on-the-job" with selected physicians in rural areas of the Pacific Northwest. Often these

sponsoring physicians became employers.⁴⁶

The MEDEX movement caught on and by 1974 eight programs were distributed from the inner city of the Watts district of Los Angeles at Drew University, to rural areas such as Alabama, North Dakota, and Hershey, Pennsylvania. Programs also emerged at the University of Utah, the University of South Carolina, and Dartmouth University.

Smith's efforts were not solely domestic; the MEDEX Group produced the MEDEX Primary Healthcare Series, a 7000-page, 35-volume resource used for training and managing thousands of health personnel in 88 countries (in 33 languages) to improve basic health services. He is a member of two World Health Organization committees on human resource development and a member of the Institute of Medicine of the National Academy of Sciences.⁴⁷

MEDEX programs evolved over time from Smith's original conceptualization to a more "conventional" configuration. Programs either changed their educational philosophy to a more academic medical center model configuration or ended. The MEDEX movement was one of the most successful models in PA education with superior records in terms of graduate deployment into primary care specialties and into medically underserved areas.

Child Health Program at the University of Colorado

The third pioneering model of PA education was the University of Colorado where the Child Health Associate Program began in 1968. Throughout the 1960s, Henry Silver and colleagues recognized that many children were not receiving medical care. He developed three programs to address this problem. These included the Pediatric Nurse Practitioner (PNP) Program (1968), the Child Health Associate Program (1968) and the School Nurse Practitioner program (1970).

Dr. Henry Silver, a professor of pediatrics at the University of Colorado, with Loretta Ford, RN, EdD, Professor and Chair of Public Health Nursing, recruited nurses and other applicants with diverse backgrounds for a 5-year (later reduced to 3 years) training

⁴⁶ Smith, R.A. Medex: A demonstration program in primary medical care. *Northwest Medicine*. 1969; 68: 1023-1030.

⁴⁷ Physician Assistant History Center, 2008. <http://www.pahx.org/timeline.html>

program to assist pediatric physicians.⁴⁸ The program drew applicants from nursing and became the progenitor of the NP movement. Originally, the mission was to supply preventive and routine care to children and it began as an NP program. The NP program opened in 1965 at the University of Colorado's Schools of Medicine and Nursing. In 1968, Dr. Silver launched the Child Health Associate Program at the University of Colorado Medical Center.⁴⁹ Individuals with 2 to 3 years of college education enrolled in the 3-year training program to become PAs who would provide primary healthcare services to children.

The CHA/PA Program is the only PA program to focus on the healthcare needs of children. Silver recognized the need to document the educational, legal, and healthcare ramifications of these new professions. He and his colleagues published on these topics and documented the competency, efficiency and effectiveness of the CHA/PA.⁵⁰ This program later expanded to cover all areas of pediatric primary care and enrolled non-nurses.⁵¹ For the first 10 years, graduates of this program put CHA after their names, but they now take the Physician Assistant National Certifying Examination (PANCE), and are certified as PAs. The CHA/PA Program was the first PA program to offer a master's degree in 1975.

Role in Diagnosis

An important historical nexus was whether or not the domain of the PA as a dependent practitioner would enter into the medical problem-solving process. A major challenge for the new profession was to take the legal approach which would, on one

⁴⁸ Glicken,A.D.; Merenstein,G.; Arthur,M.S. The Child Health Associate Physician Assistant Program -- an enduring educational model addressing the needs of families and children. *Journal of Physician Assistant Education*. 2007; 18(3): 24-29.

⁴⁹ Silver, HK. The Syniatrist. *JAMA* 1971; 217: 1368-1370.

⁵⁰ Dungy,C.I. The child health associate. The new image in the nursery. *American Journal of Public Health*. 1975; 65(11): 1179-1183.; Dungy,C.I.; Silver,H.K. Pediatricians' perceptions: competence of child health associates. *Rocky Mountain Medical Journal*. 1977; 74(1): 25-27.; Dungy,C.I.; Sander,D.L. Evaluation of a child health associate program. *Journal of Medical Education*. 1977; 52(5): 413-415.

⁵¹ Fisher,D.W.; Horowitz,S.M. The physician's assistant: profile of a new health profession. In *The New Health Professionals: Nurse Practitioners and Physician's Assistants*. 1977. Aspen System Corporation. Germantown, MD.

hand allow them to work on a fairly advanced level of function in performing medical tasks, and on the other avoid seeking licensure so as not to imply that PA practice would be independent. The features of physician dependency and being excluded from the diagnostic and prescriptive process were believed to be compatible and the perception was that PAs could be legally recognized in a fashion that did not require licensure.⁵² What in fact has evolved over more than forty years is that PAs perform a vast range of duties including all aspects of diagnosis and treatment based on universally accepted legal premise that a licensed physician can delegate almost any medical function to a qualified PA.

Support of Organized Medicine

The PA concept may not have germinated and become successful had it not been for the overt support and active involvement of major physician groups. The notion that physicians were able to directly control the activities of the newly created physician assistant was to a large degree responsible for their acceptance. The AMA contributed substantially to confirming legitimacy along with acceptance of the concept, and providing a strong role in the establishment of standards of PA educational program accreditation and professional credentialing organizations. The earliest correspondence with the AMA related to the physician assistant concept were by Stead and Estes, who convinced organized medicine that this was an idea that would provide benefit to physicians.⁵³

One critical event in the survival of the PA concept was the “endorsement” given by the AMA in 1969. Stead and friends were able to introduce and assure passage of a resolution in the AMA House of Delegates to encourage state medical boards to amend medical practice acts to enable and sanction PA practice.⁵⁴ Support for the development

⁵² Ballenger, MD, Estes, EH. Licensure or Responsible Delegation? *New Eng J Med* 1971; 284: 331-334.

⁵³ Stead and Estes correspondence, letters, AMA. Duke University archives.

⁵⁴ Todd, MC, Foy DC. Current Status of the Physician’s Assistant and Related Issues. *JAMA* 1972; 220: 1714-1720. Another paper describing the development of the certifying examination was: National Board of Medical Examiners. A National Program for Certifying Physician’s Assistants. *Federation Bulletin*. 1972; 59: 364-370. For a description of the initiation of the educational accreditation standards for PA program see also: Detmer, LM. The American Medical Association, Council on Medical Education Accreditation Program for the

of the PA profession also came from the American College of Surgeons, the American Academy of Family Physicians, the American Academy of Pediatrics, and other medical groups particularly in efforts that helped to shape the infrastructure of the PA profession. These medical groups were involved in the formation of two critical systems that were vital parts of the young profession: The PA program accreditation system and the national certifying examination. The AMA assumed a major role in establishing the program accreditation structure through its Subcommittee of the Council on Medical Education's Advisory Committee on Education for Allied Health Professions and Services in 1971. The Subcommittee, which oversaw the formation of the Joint Review Committee (JRC), included representative from most of the aforementioned physician organizations. The JRC was the organization that developed the *Essentials for an Accredited Program for the Assistant to the Primary Care Physician*, the accreditation standards document and conducted on-site evaluation visits to programs seeking accreditation status. A similar structure of substantial physician organization involvement was seen in the development of the certifying examination and the certification agency.⁵⁵ On the other hand, Natalie Holt contends that in the end the major health professions groups – the AMA and the ANA – played a relatively small role in the actual establishment of the PA profession; in the earliest conceptual days of the formation of the PA profession, from 1961 through 1965. Holt observes “the two professional organizations had played little, if any, part in the years that encompass the conception of the physician assistant role.”⁵⁶ However, she notes that there was a good deal of debate about the PA, particularly within the ANA, who denounced the creation of the PA primarily because it was proposed by medicine. Yet once the initiative began at Duke, with the resultant ripple in other educational institution, the necessity to involve and gain the approval of the AMA was paramount and obvious.

Federal Support of the PA Concept

After WWII, the federal government entered the area of “health manpower” by becoming involved in the supply and distribution of health professionals. Until the 1940s,

Education of Assistants to the Primary Care Physician. *Physician's Associate*. 1973; 3: 4-9.

⁵⁵ Mastrangelo, R. The Name Game. *Advance for Physician Assistant*. 1993; 2: 17-18.

⁵⁶ Holt, op. cit., P 252.

the government was regarded as uninvolved when it came to the health sector. Yet, the history of federal subsidies in health reveals a series of patchwork legislative efforts of assistance. The initial thrust of the federal involvement in the 1930s stressed grants-in-aid for maternal and child health programs. A period of investment followed from 1946 to 1963 during which federal aid was provided to hospitals through the Hill Burton Program, research efforts in the NIH (1946-1963), and through health manpower programs. The very active years of the early Johnson administration (1963-1966) produced Medicare, Medicaid, community mental health centers, and neighborhood Community Health Centers.

Early policy initiatives such as the Allied Health Professions Personnel Act of 1966 and the Health Manpower Act of 1968 (Public Law 90-490) were enacted with input and support from medical organizations and key constituents including state medical boards, private foundations, and hospitals. The initial federal role was to provide funding for educational programs for these new types of providers, and provide incentives for their incorporation into the health system.⁵⁷ Although interaction among these groups helped to support the creation of the PA, as well as the NP, there were clear differences in outlook and direction among the respective health professions. When approached to participate in the process, organized nursing rejected the concept of the PA and, for a time, even had significant philosophical problems with the concept of the NP.⁵⁸

Because a shortage of physicians existed in the 1960s, federal support for the expansion of medical manpower emerged. In response to direct support for U.S. undergraduate medical education funding, the expansion of existing schools, and the start up of new medical schools, the number of graduates increased from 8,772 in 1963-64 to more than 16,000 in 1978. In 1967, the U.S. Public Health Service indicated that there was a shortage of 50,000 physicians. Congress responded with the Comprehensive Health Manpower Training Act, which was aimed, in part at expanding medical school capacity. Forty new allopathic medical schools opened after 1960, compared to sixteen in the

⁵⁷ Pohutsky, LC. The Origin and Development of the Physician's Assistant Programs in the United States, 1960-79. Doctoral Dissertation, Teachers College, Columbia University, March 22, 1982.

⁵⁸ Christman, L. New roles for personnel: nurses and physician extenders. *Bulletin of the New York Academy of Medicine*. 1979; 55(1): 37-40.

previous half century.⁵⁹

Comprehensive health planning efforts became an accepted policy approach, and the National Center for Health Services Research and Development (NCHSRD) was created in the early 1970s to fund this type of effort. Thus, the federal government sought to take an active role in promoting their use in primary care, assisting primary care physicians. The federal mandate, which had a significant bearing on the direction of the PA profession in its first and second decade, was that these providers would be deployed to assume positions in rural and medically underserved areas.

Directly, the government was involved in the PA development; NCHSRD underwrote the first Medex training program at the University of Washington. PA programs also received funding from other federal sources including the Office of Economic Opportunity, the Model Cities Program, the Veterans Administration, the U.S. Public Health Service, the Department of Defense, and the Department of Labor.

In 1967, the National Advisory Commission on Health Manpower recommended that the federal government give high priority to the training of new categories of health practitioners. The following year, the NCHSRD was charged to produce a national protocol for evaluation of health manpower innovations.⁶⁰ This organization soon began to directly fund a number of demonstration projects supporting the training of Medex and Primex (nurse practitioners). Several federally sponsored PA educational programs began, the first at the U.S. Public Health Service Hospital in Staten Island, New York, in 1966 and later the Federal Bureau of Prisons in the Springfield, Missouri, prison facility.

Generating more primary care providers was the principle thrust of several major pieces of legislation. The Comprehensive Health Manpower Act of 1971 (Public Law 92-157) provided the first large federal provision for PA training programs.⁶¹ The Bureau of Health Manpower of the National Institutes of Health established an Office of Special

⁵⁹ Fox, op. cit., p. 35.

⁶⁰ National Advisory Commission on Health Manpower. *Report of the National Advisory Commission on Health Manpower*, Volumes I and II. Washington, D.C: U.S. Government Printing Office, 1967.

⁶¹ Grupenhoff, JT, Strickland, S.R. *Federal Laws: Health/Environment Manpower*. Washington, DC: Science and Health Communications Group, 1972

Programs to coordinate PA educational program funding activities. Between 1972 and 1975, \$11.7 million was spent to train 280 Medex and 376 Primex providers.⁶² In 1977, the Health Professions Educational Assistance Act of 1976 (Public Law 94-484) was amended by the Health Services Extension Act (Public Law 95-83) to provide for grants and contracts for PA and nonphysician training programs. By 1981, the federal government had spent about \$65 million to train nonphysician providers, from \$1 million in fiscal year 1969 to \$21 million in fiscal year 1979.⁶³

Philanthropy

Support from philanthropic organizations helped start over a dozen PA programs and in the establishment of the profession's organizations. The Josiah Macy, Jr., Foundation provided support for the Duke program. Like Stead, the foundation's president, John Z. Bowers, was interested in developing healthcare personnel who could undertake medical duties and had examined nonphysician clinicians in other countries. With the support of Bowers, the Foundation awarded Stead \$30,000 for three years, beginning in 1967.⁶⁴ Later, the Duke program received grant support from the Carnegie and Rockefeller Foundations and the Commonwealth Fund. Four PA programs also began with grant support from the Commonwealth Fund, the Robert Wood Johnson Foundation, the Brunner Foundation, and the Kellogg Foundation. The defunct Johns Hopkins University Health Associate program was funded through grants from the Robert Wood Johnson Foundation.

Analysis and Conclusion

Determination of which policies best achieved the goal of expanding the US medical workforce through the development of the PA is viewed in light of the extraordinary events at the time; the making of a fire. Weighing each of the components brings some measure to the task. We proffer that the decreasing GP presence in American medicine, the War in Vietnam, and the era of social change and federal activism were key components that were present but existed separately.

⁶² Perry, *op.cit.*, p. 43

⁶³ LeRoy, L. The Implications of Cost-Effectiveness Analysis of Medical Technology, Background Paper # 2 Case Studies of Medical Technologies, Case Study # 16: The Costs and Effectiveness of Nurse Practitioners. Washington, DC: Office of Technology Assessment, 1981

⁶⁴ Perry and Breitner, *op. cit.* p. 27

The spark that set this tender ablaze was the collective energy of three charismatic physician leaders who started a movement simultaneously across the continent. Once begun, the fire that represented the PA profession spread progressively with the development of legal codification due largely to the establishment of the concept as a physician dependent profession. This approach, which avoided posing a threat to physicians as well as a limiting laundry list of proscribed tasks, ensured that the profession would maintain an unparalleled flexibility in employment and specialty opportunity.⁶⁵ Benefiting from the lessons learned by organized medicine over the years, standardization of the profession followed for PAs. Accreditation of PA Programs and certification of their graduates provides a “gold standard” model of professional credentialing to this day.

With the backing of organized medicine, physician assistants entered into team practices with physicians. Educated in the medical model, extolling the necessity of primary care, and accepting the autonomy afforded them in caring for patients under a framework that made the PA dependent on their supervisors, graduate PAs encountered a health care system in crisis. The crisis in health care delivery still exists today, despite nearly a half-century of PA education and practice. A trend toward specialization of PAs and the abandonment of their primary care roots parallels the specialization of physicians and the decline of generalist practice during the post WWII era. There are a myriad of reasons for this recent PA specialization trend, not the least of which is the present reimbursement mechanism placing primary care providers at an economic disadvantage⁶⁶.

Ironically, the flexibility built into the PA profession has also played a role in this migration away from generalist practice for PAs. One could argue that shortages exist across all areas of medicine, thus making the PA an ideal substrate

⁶⁵ Hooker, RS, Cawley, J.F., Leinweber, W. Physician Assistant Career Flexibility: A Primary Care Resource Health Affairs, 2010, 30:888-892.

⁶⁶ Morgan PE, Hooker RS. Choice of specialties of physician assistants in the United States. *Health Affairs*. 2010; 29 (5); 887-892.

for any type of medical practice. At best, the recent trend in specialization of the PA profession can be viewed as the positive impact of the flexibility in job choice built into the dependent model of PA practice from the very beginning. At worst, history may view this trend of PA specialization as a betrayal of the original intent of the movement and a subversion of the desires of the charismatic leaders who gave birth to the profession.

In conclusion, the physician assistant movement in the United States began in the 1960s due to a convergence of circumstances: increased specialization of doctors, the demise of the GP, advancing technology, returning corpsmen, the War on Poverty, and charismatic leaders who understood the process of education and apprenticeship. The 1960s were a time for change throughout the country, and the PA was one of the many social innovations. Had the movement started in the 1950s, there may not have been adequate support on any front; nor were there good prototypes. Had it started in the 1970s, the family physician and nurse practitioner movement may have eclipsed the development of the PA. Instead, a dozen or so popular doctors were in command of events in their own spheres of influence and produced the impetus for the movement. The fact that each initiated their idea of a PA at the same time without knowing each other suggests that the time was ripe for this new occupation. Lay people accepted the idea of a PA because doctors sanctioned it. Doctors adopted the idea because the PA was trained in the medical model.

This grand social experiment of PA education and practice came at precisely the right time in US history. The fledgling profession, which took on tasks from the once sovereign domain of medicine, was facilitated, in part, by the relative animosity between organized medicine and organized nursing. The failure of these two powerful groups to work together to solve the problem of access to needed primary health care in the post WWII decades, worked to

advance the concept of an advanced assistant to the physician. By initially utilizing the military corpsman, not taking other professionals out of their roles in the health care workforce, and creating a dependent practice framework that allowed graduate PAs to function in concert with physicians not in competition with them, were all additive to the success of the movement. The corpsman symbolized a hero figure due to the press received in Vietnam, and was generally considered above reproach. Utilizing returning corpsmen, mandating a dependent role for them as PAs, and placing an emphasis on primary health care in their education and practice coalesced to forge a profession that worked to help physicians recapture their “cultural authority” in medicine, placed competent assistants in underserved patient care settings, and attempted to fulfill the 1960’s promise of quality health care to all US citizens. With infusion of funding for additional education support under the Patient Protection and Affordable Care Act of 2010 the deployment of PAs in American society moves to a new phase of development. It is imperative that the PA profession remains cognizant of its primary care roots and appreciates the continuing need for primary health care, as the founders did, as the next half-century unfolds.

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We are privileged observers of history having talked with many people mentioned in this essay; principals of the early development of the PA movement. Insightful conversations with E. Harvey Estes, Eugene Stead, Richard Smith, Thomas Piemme, Fred Sadler, and others occurred over three decades. From 1974 to 2011 we returned to our primary sources for clarification and to triangulate resources whenever possible. The PA History Center, located in Durham, North Carolina, houses a vast collection of papers, oral histories, and documents, which were sources of information pertinent to this project. Finally, this undertaking would be incomplete without the assistance of the PA History Center, the PA Historian (emeritus), Reginald Carter, PhD, and the Society for the Preservation of Physician Assistant History's archivists.

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