

Review Article

THE VALUE OF PHYSICIAN ASSISTANTS IN PRIMARY CARE

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Abstract

A shortage of primary healthcare physicians has been worsening since the new century. One strategy is the deployment of physician assistants (PAs) in primary care underway for 60 years. As the demand for health services rises, the availability of PAs has also increased and with-it value in improved primary care service delivery. Understanding the role and importance of PAs is essential for policymakers, health economists, and employers. As of 2020, there are approximately 140,000 certified PAs, distributed across 69 medical and surgical disciplines. The graduation rate is 10,000, and the mean age is 44 years. The majority are full-time, and approximately one-third work in family medicine/general medicine. The PA represents the best job in America as of 2020. As the demand for more medical providers grows, the prediction of the PA per capita ratio is to develop as well. PAs and nurse practitioners are providing approximately one-third of the medical services in family medicine, urgent care, and emergency medicine.

INTRODUCTION

“Primary health care is a whole-of-society approach to health and well-being centered on the needs and preferences of individuals, families and communities.” (WHO 2019).

A transformation in American medicine to improve the efficiency of healthcare delivery began in 1965 with the development of the American physician assistant (PA). The intention was to increase the public’s access to healthcare services.(1) This physician-created innovation in healthcare labor has paid dividends in addressing shortages in the supply of doctors and augmenting primary care delivery. (2) Following the early development of the PA, initially as an adjunct to the busy physician, a succession of federal policies and enabling state licensures ensued. This integration process spanned half a century, and the result was a PA formally recognized in medical practices in a way that exceeded expectations. (3)

The primary care PA was the *raison d’être* for back-filling the increasing scarcity of generalist physicians beginning in the middle of the 19th century. (4, 5) Developing a means to span the medical gap had been the focus of Congress leading up to 1965 when a series of policies in healthcare was passed.⁶ Thus, primary care became the focus for the PA profession in the first several decades following their introduction. One crucial federal initiative, Title VII, gave priority funding for primary care education and PA programs developed in response.(7) By the 1990s, two decades later, more than half of all PAs were in primary care specialties (defined as family medicine, general internal medicine, and general pediatrics) many of whom were located in rural and medically underserved areas.(8, 9) While

the number of PAs participating in the primary care workforce continues to rise a half century later, during the past two decades the proportion of PAs practicing in primary care relative to other specialties has declined.(10) The market forces of supply and demand have drawn PAs into one of 69 medical or surgical specialties.(11) Yet, PAs continue to play a vital role in primary care delivery throughout the US. As the contributions and characteristics of PAs in primary care have become more refined over the past two decades, a summary of their activities was undertaken.

CHARACTERISTICS OF PAS IN PRIMARY CARE

Primary care is a vital component of American medicine and remains the most prominent specialty for PA practice. Of the 140,000 clinically active PAs, 26,111 (18.6%) were employed in family medicine/general practice at the beginning of 2020 (Figure 1). This second-decade number is a 13% increase since 2015 and suggests that employment opportunities in primary care are growing.(11)

Source: NCCPA 2020

Footnote: American primary care is defined as family medicine, general internal medicine, and general pediatrics. Urgent care is included in the primary care definition.

In terms of practice settings, one-half (55.3%) of PAs work in office-based practices (Table 1). The most significant practice setting for PAs is multispecialty group practices. Types of employment settings with the largest proportions of PAs include single-specialty and multispecialty group practices, solo practice physician offices, hospital operating rooms, emergency

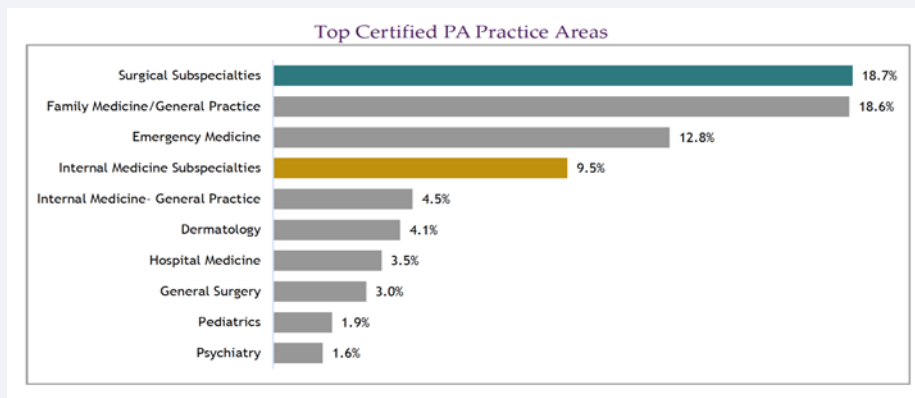


Figure 1 Distribution of PAs by Specialty, 2020.

Setting	2019	Setting	2015
Office-based private practice	55.3%	Office-based private practice	58.4%
Community health center (Federally Qualified Health Center)	9.5%	Federal government facility/hospital/unit	10.4%
Federal government facility/hospital/unit	9.4%	Community health center (Federally Qualified Health Center)	10.0%
Hospital	8.9%	Rural health clinic (federally certified)	7.7%
Rural health clinic (federally certified)	6.5%	Hospital	6.4%

Table 1 PA Primary Care Settings.

departments, and inpatient and outpatient units of hospitals.(11)

Source: NCCPA 2020

The median age of primary care PAs is 41 years, and 70% are female (Figure 2). Approximately 90% work full-time (defined as 32+ hours per week).

DELIVERY OF PRIMARY CARE SERVICES

Physician office and medical clinic visits remain the most common way patients receive primary care. By the second decade of the new century, primary care serves 87% of the adult American population.(12) Patients also receive primary care services in a wide range of other settings such as Federally Qualified Health Centers (FQHCs), rural health clinics (RHCs) hospitals or healthcare system clinics, school-based clinics (SBHCs), free clinics that primarily serve the uninsured, retail clinics, urgent care centers, military treatment facilities, Department of Veterans Affairs, and hospital emergency departments. For many citizens with limited resources and no insurance, the default primary care provider and Medicaid beneficiaries are the emergency department.(13,14) Concurrently, there are evolving models for care delivery and reimbursement drivers to increase capacity by involving PAs in developing primary care practice. (15) One strategy involves expanding roles and responsibilities for primary care PAs and NPs and moving toward ‘pay-for-value care systems that include reimbursement based on the quality of services provided rather than the type of provider or setting in which care is delivered.(16,17) Financial approaches to stimulate the quality of care will further the employment of PAs and NPs, increase access to care, and broaden the use of team models of care delivery.(18)

A consistent pattern of delivering primary care services is to staff with PAs, and NPs.(19, 20, 21) Care managed by PAs and NPs in ambulatory settings increased from 10% in 2001 to 15% in 2009 to 33% in 2018.(22, 23) While PA employment varied by location; 36% of visits involving PAs were in nonmetropolitan centers.(23) At the same time, the size of the hospital correlated with increased use of PAs or APRNs; the smaller the hospital, the more likely PA/NPs are present.(24) PAs and NPs also provide more care in clinics associated with nonteaching hospitals and handle a higher percentage of Medicaid, Children’s Health Insurance Program, or uninsured patients, as well as younger patients.(25, 26, 27) Also, PAs and NPs see a higher percentage of patients with preventive care visits (17%) compared with visits for a routine chronic condition or pre/postsurgical care. (28 19 29) Clinic visit analyses suggest that PAs and NPs are used to a greater degree in smaller facilities located in non-urban areas to serve populations that may be otherwise medically underserved, trends that are consistent with the policy intentions of their creators.(22, 30) As part of a national safety net, PAs and NPs provide a “critical healthcare function” by providing services in medically underserved communities. The role of Community Health Centers in addressing these shortages is one of the more significant initiatives to improve access for ‘medically underserved areas’ and highly dependent on the utilization of PAs and APRNs.(31, 19) In these settings, PA/NPs provide care that is more prevention-oriented than physician care and is proportionally more likely than physicians to see patients without private insurance.(31, 28)

QUALITY AND PATIENT SATISFACTION

In primary care settings, PAs attend to common patient

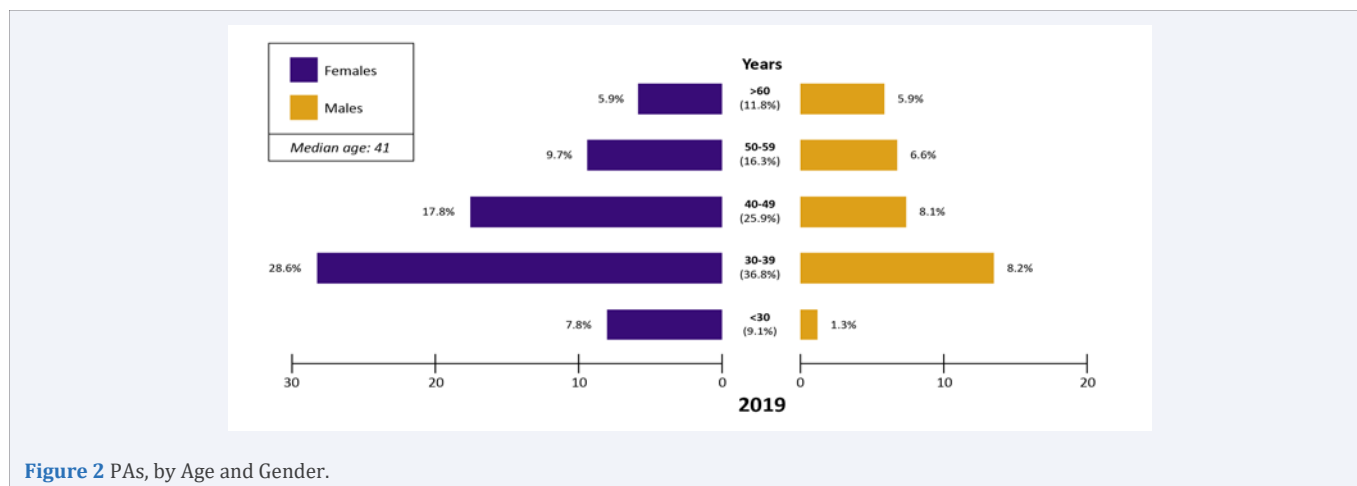


Figure 2 PAs, by Age and Gender.

complaints, follow-up visits and provide patient counseling. The use of PAs permits patients to receive prompt attention, with routine problems addressed effectively with the expertise of the available physician if needed. This strategy can provide more time for a physician to focus on different aspects of the practice (e.g., managing more complex or time-consuming patients). Quality of care as measured by patient satisfaction, one of the critical elements of outcomes of care, has found in over 30 studies that patients are as satisfied with PAs as they are with physicians in the same setting.(32, 33) In terms of quality of care, PA and NP practice extends to a broad and growing range of medical disorders and clinical procedures. Outcomes of care delivered by PAs are indistinguishable from physician care, a finding first observed in 1979.(34, 35)

TEAM-BASED PRACTICE

Team-based care is a hallmark of PAs as the demand for services increases.(29) Collaborative practice in primary care is frequently mentioned by family medicine practitioners as they face a growing demand for their services.(29, 36) In vertically integrated systems, they improved the outcomes of chronic diseases in the elderly. At the same time, patient satisfaction with care was higher than it was for physician-only care.(37, 38) A Department of Veterans Affairs study demonstrated that outcomes of care of patients with chronic disease patients managed by physicians, PAs, and NPs were similar regardless of the complexity of the patient and the type of service.³⁴ In this example, panels of patients were equally assigned to physicians, PAs and NPs. All had similar proportions with homeless, cardiac disease, diabetes, disability, and depression.(34)

RURAL HEALTH

Physician assistants remain an essential component of the rural healthcare workforce. Despite increasing urban and suburban localization and specialization trends, PAs deliver primary care services in rural areas often as the usual providers of care for patients with chronic conditions.(39, 40) Rural PAs are cost-effective and safe and increase access to care. One analysis noted that “not only can a rural PA or NP can have an employment effect of 4.4 local jobs and labor income of \$280,476 from the clinic but that their multiplier effect is similar to rural physicians.

The total effect of adding a PA/NP to a rural community with a hospital increases the downstream employment effect to 18.5 local jobs and \$940,892 of labor income”.(41) The location quotient, a metric developed by the Bureau of Labor Statistics, in 2019 showed PAs are more likely to be rurally located than NPs. (23) (Figure 3).

PAYMENT FOR SERVICES

Medicare coverage of medical services provided by PAs was first authorized in 1977 through the Rural Health Clinic Act (1). Early practice laws required the supervising physician to be the PA’s employer. As a result, the Medicare statute required that reimbursement for the medical care provided by PAs be made to the employer.(42) The 1986 Omnibus Budget Reconciliation Act provided Medicare authorization for practices employing PAs to be reimbursed to include Medicare-certified health maintenance organizations (HMOs), services provided in skilled nursing facilities, hospitals, and assisting at surgery (1986) at a rate that was non-uniform and fractional of the physician rate. In 1997, Congress authorized coverage of PA services as allowed by state law, in all settings, and at a uniform rate.(43) As of 2021, the policy of “incident to” billing remains unchanged. This mechanism applies to care provided in the office or clinic setting, not in hospitals or facilities. The clause requires the physician is part of the patient’s care during the initial visit for the medical condition; establish a diagnosis and treatment plan, and be on-site when a PA or APRN renders a follow-up service.(44) “Incident to” billing hides the clinical impact of PAs on patient care and obscures accurate identification of the type, volume, or quality of services delivered by PAs. In 2019, the Medicare Payment Advisory Commission (MedPAC) recommended eliminating “incident to” billing for PAs (as well as advanced practice registered nurses [APRNs]) under the Medicare program.(44) Despite the longstanding goal of Title VII was the increase of the total supply of primary care professionals, and health marketplace signals suggest that an undervaluing of primary care providers relative to specialists persists.(45)

1 Enacted to address an inadequate supply of physicians serving Medicare beneficiaries in underserved rural areas, and to increase the utilization of NPs and PAs in rural areas. Established Section 1861(aa) of the Social Security Act which authorized payment to RHCs on a costbasis, subject to reasonableness and payment limits.

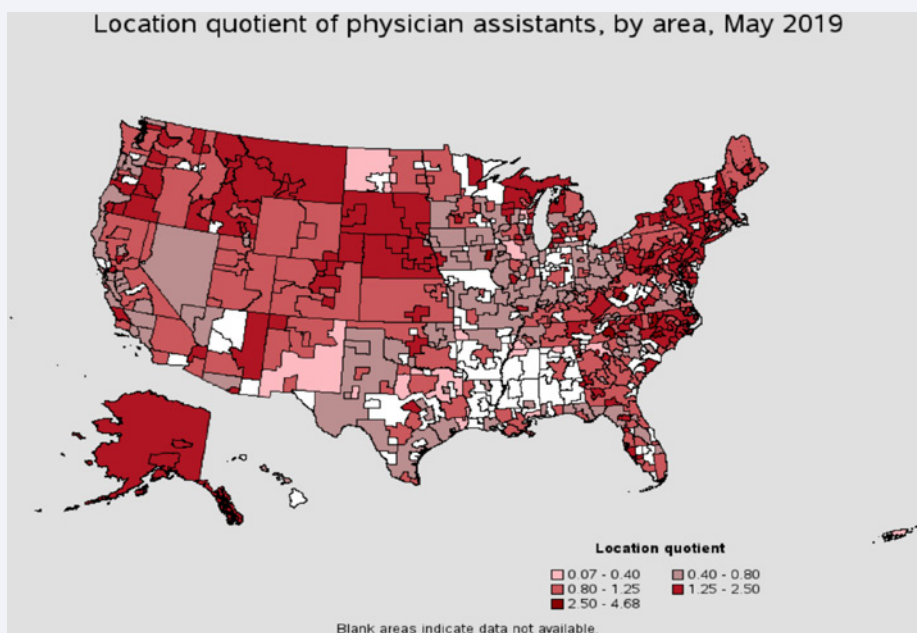


Figure 3 Location Quotient of PAs by area.

PAs receive less compensation than physicians, but compensation differs substantially across specialties and employment settings.⁴⁶ The salary differential of a PA and a family physician in the same location is approximately 50% (Table 2).(23)

The employing organization, location, duration of a PA career, contract arrangements, return on revenue, and benefits will affect the overall salary.(47) As such, substantial wage differences occur in other areas such as cardiology, dermatology, emergency medicine, neurology, cardiovascular surgery, and orthopedics (NCCPA 2020). (11) In the entrepreneurial setting that is characteristic of American medicine, the labor input of PAs can generate multiples of their salary in revenue received. (48, 49, 34, 50) The organizational aspect of PA employment strongly influences how they are used—either as substitutes or complements—to improve productivity. By any measure, PAs are productive and would not be employed if they were not so. Their annual compensation-to-production ratio (as measured by revenue) is one of the highest in the health professions industry. (49)

PRACTICE WITH OTHER HEALTH PROFESSIONS

With the reality that healthcare is a team-oriented activity and the predominant organizational structure in healthcare

systems (with few exceptions), about 60% of family practices employ a PA and/or NP and many outpatient clinics, ambulatory, and community health centers. (51, 15, 52) What distinguishes a PA is their impact on effectiveness in care delivery and quality. (53, 54, 55) The physician-PA partnership in medical practice has primarily been responsible for the acceptance of the PA concept by the public, medical practices, health systems, and state medical licensing boards. (55) The 2018 adoption of the Optimal Team Practice policy by the American Academy of PAs is to redefine statutes and regulations with the term “supervision” to “collaboration” and establishing the PA in law on a more autonomous basis. (56)

Despite their half a century presence, examining the economic and social utility of PAs by the federal government and foundations has been limited. Thus, the complete understanding of how best to enjoin PAs in medical practices and settings remains to be detailed. Lastly, Medicare billing codes such as the “incident to” provision mask or misidentify the clinical services provided by the PA, making it difficult to determine their economic contribution and clinical productivity. (44)

Where PAs are employed in high ratios to physicians occurs in vertically integrated systems such as the Veterans Health Administration (VHA), The Department of Defense, Kaiser Permanente, Geisinger Medical Group, Cleveland Clinic, and the Mayo Clinic, to name a few. (37, 57) Their output compares favorably with that of physicians when employed in specialties such as emergency medicine, family medicine, and dermatology (although patients can be differentiated for select PA services and added to improve system throughputs).(34,58–60) PAs in family medicine see a broad range of patients with diagnoses that comprise 85% to 90% of the scope of a family medicine physician. (24, 29, 15, 52) As more physicians join integrated organizations PAs and NPs follow. (61)

Table 2: Comparison of wages by three medical providers of primary care.

	Employment 2020	Median wage (hourly)	Annual Wage
Physician Family Medicine	109,370	\$102.53	\$213,270
PA general	120,090	\$54.04	\$112,410
NP general	200,600	\$53.77	\$111,840

Bureau of Labor Statistics, 2020.

In terms of utilization, the federal government has been an employer of PAs since 1968 and the largest single employer to date (Smith 2020). The Veterans Health Administration (VHA) could not meet the needs of its growing and aging population in 150 medical centers and 900 community-based outpatient clinics without a large cadre of PAs and NPs. (34, 55, 59, 62) To address this shortage, the VHA established primary care postgraduate programs for PAs and NPs.⁶³ The military is a significant employer of PAs as medical officers.⁵⁷ As uniformed personnel PAs must be prepared for multiple roles such as battlefield traumatologists, family medicine clinicians in military treatment facilities, public health officers in refugee situations, and occupational medicine officers in barracks. (57, 64) Underscoring the military includes PAs in the Army National Guard, the Air Force National Guard, and in the reserve components of the Army, Navy, Air Force, and Coast Guard. Their inclusion adds 1900 citizen-soldier/sailor PAs as commissioned medical officers available to medical response teams for casualty response, trauma, crisis intervention such as the temporary staffing of field hospitals during the SARS-CoV-2 crisis of 2020-21 or Hurricanes such as Katrina in 2005.(64)

LIMITATIONS

The health services literature describing PA quality of care, the content of care, and cost-benefit are often found within studies that collectively include PAs and NPs. This aggregation of two medical professionals suggests some interchangeability but can mask or distort the actual contributions of PAs (Hooker 2019b). Moreover, the close clinical practice interaction of PAs and physicians makes it challenging to identify the precise functions and decisions made by the PA. (65)

CONCLUSIONS

Why has the introduction of PAs into US medicine been so successful? The first answer is that PAs were a good fit in the entrepreneurial American healthcare system due to their economic advantages, clinical flexibility, and dependent practice stance. U.S. population growth with greater intensity of services ultimately means more medical personnel and resources. Couple these factors with the aging of the population, improvements in childhood survival, and the control of archaic diseases drives up the demand for medical services, which continues to outpace the supply of medical providers. In addition, PAs were a creation of organized medicine, and this handiwork has meshed well with physicians and their practices over the past half-century. Questions of their acceptance by patients and fellow clinicians, quality of care, cost-benefit, and clinical performance have been answered affirmatively in a series of systematic reviews. Their shorter education period, along with high standards of clinical performance, raises questions about whether prolonged medical education is in society's best interest. Finally, spanning half a century and three generations, at least one in four patients has received medical advice or treatment from a PA. Furthermore, when income, education, insurance, health status, or locality were controlled, PAs recipients did not differ from recipients of physician care.

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