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POLICY ARTICLE

Addressing Misconceptions about the Physician Associate/Assistant Profession

James R. Kilgore[1*], Thomas Colletti[2], Jenna Rolfs[3], Elyse Watkins[4], Jeremy M. Welsh[5], Stephen Lewia Jr[6], Debra S. Munsell[7], Blake Rogers[8], Jay C. Somers[9]

[1]Associate Professor, University of Lynchburg, College of Medical Science.
[2]Professor, University of Lynchburg, College of Medical Science.
[3]Dean, Program Director, Associate Professor, University of Lynchburg, College of Medical Science.
[4]Associate Professor, University of Lynchburg, College of Medical Science.
[5]Professor, VP Strategy, University of Lynchburg.
[6]Adjunct Faculty, University of Lynchburg, College of Medical Science.
[7]Associate Professor, University of Lynchburg, College of Medical Science.
[8]Associate Program Director, Associate Professor, University of Lynchburg, College of Medical Science.
[9]Adjunct Faculty, University of Lynchburg, College of Medical Science.

[*]jrkilgore@att.net

ABSTRACT

The Physician Associate/Assistant profession has recently experienced attacks seeking to malign the extensive positive contributions made to patients and healthcare systems for over 50 years. The myopic view of some of these critics that only a physician is qualified to lead healthcare teams is not based on evidence in many cases but misconceptions about the training and experience of physician associates/assistants. In fact, when comparing a physician associate/assistant and a physician with the same number of hours of clinical experience, patient outcomes are similar. The purpose of this paper is to systematically analyze the statements being propagated and provide scientific data that categorically refutes these statements. Addressed are issues of education, clinical training, medical malpractice liability concerns, changing provider numbers, and expanding scopes of practice to meet healthcare needs worldwide.

Introduction

The Physician Associate/Assistant (PA) profession was created over a half-century ago in a time of physician shortage in the U.S[1]. The concept was initially developed by physicians and was simple: provide concise medical education to clinically experienced Navy corpsmen to expand patient access to the healthcare system. Historically, PA training was clinically based and built upon on-the-job training. An academic degree was not a requirement for providing quality primary care. As the profession matured, PA educators gradually advanced educational requirements from a certificate of completion to the bachelor degree[2]. In 2020, the entry-level master's degree was standardized as the terminal degree for the PA profession in the US.[2] In addition, the entry-level doctoral degree has been endorsed by other healthcare professions such as pharmacy, physical therapy, occupational therapy, audiology, and others and is being considered by the PA profession[3,4]. The PA profession over the past fifty years has advanced its educational standards and better prepares the PA to enter clinical practice with the knowledge and skills necessary to navigate a complex healthcare system and provide high quality care to patients.

Training of Non-physician Providers

Physician Associates/Assistants are skilled medical providers educated in the basic medical sciences and complete clinical training in the same disciplines as medical students (Table1). Once entering clinical practice, under the supervision of, or in collaboration with a licensed physician, PAs receive experiential clinical training over the subsequent 3-5 years equivalent to an internship or residency. The PA, particularly with the doctoral degree, brings to the healthcare team a tremendous amount of leadership, healthcare administration, and other focused skills to enhance healthcare. The training of nonphysician providers such as the PA, has evolved beyond the basic didactic science courses and supervised clinical experiences to include topics such as executive leadership, strategic leadership and management, entrepreneurship and innovation, justice, diversity, equity, and inclusion in the curriculum for doctoral educated PAs.

Table 1 Required Curriculum[10-11]

Phases of Training	Physician Associate/Assistant	Medical Student
Didactic Courses	Anatomy Physiology Pathophysiology Pharmacology Pharmacotherapeutics Genetic and molecular mechanisms of health and disease Medical ethics	Anatomy Biochemistry Immunology Microbiology Pathology Pharmacology and therapeutics Physiology Medical ethics

Phases of Training	Physician Associate/Assistant	Medical Student
	Preventive medicine Clinical reasoning Problem-solving abilities	Preventive medicine Biomedical, behavioral and social/economic science
Supervised Clinical Experiences	Family medicine Emergency medicine Internal medicine Surgery Pediatrics Women's health Behavioral and mental health Clinical electives	Family medicine Internal medicine Surgery Pediatrics Women's health Psychiatry Clinical electives

Those opposed to the expansion of the scope of practice of PAs state that PAs have approximately 2,000 hours of medical training when beginning medical practice; whereas, a specialty trained physician acquires 9,000 to 10,000 hours of medical education before being licensed to practice medicine after a residency[5]. Both a physician and a PA are required to obtain a 4-year college degree (BA/BS) before attending a graduate level training program of didactic and clinical training of 4 years and 2-3 years respectively in the US[5-6]. The PA is not currently *required* to complete a postgraduate residency to become board-certified by the National Commission on Certification of PAs (NCCPA)[7]. However, they may earn a Certificate of Additional Qualifications (CAQs) that entails additional training and testing, or by attending one of many U.S. residency programs[8]. Those opposed to expansion of scope of practice (SOP) of PAs fail to equate the additional clinical hours that PAs acquire in clinical practice or in a residency, as comparable to the hours physicians engage in gaining experience in a residency over an equivalent period of time[5]. As a comparison, at the 7-year point in the career of both the physician and the PA, they will have acquired 15,000 to16,000 hours of clinical training. The amount of time medical residents spend in the hospital and clinic varies from program to program[9]. Generally, most residencies require a minimum number of hours spent with patients per week as well as other educational requirements[9]. On average, it is expected that the total number of hours would be between 60 and 80 hours per week during residency[9].

The Accreditation Standards for PA Programs (ARC-PA) requires a licensed and board certified physician as the program medical director, and that supervised clinical experiences must be with a physician who is specialty board certified in their area of instruction, NCCPA certified PAs, or other licensed health care providers qualified in the area of instruction[10]. Didactic instruction is required in the following areas of medical sciences and their application in clinical practice: anatomy, physiology, pathophysiology, pharmacology and pharmacotherapeutics, and the genetic and molecular mechanisms of health and disease[10]. The PA curriculum must

include instruction in clinical medicine covering all organ systems, interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families and other health professionals[10]. The curriculum must include instruction related to the development of clinical reasoning and problem-solving abilities[10]. Supervised clinical practice experiences must include family medicine, emergency medicine, outpatient and inpatient medicine, surgery, pediatrics, women's health including prenatal and gynecologic care, and behavioral and mental health care[10].

The Accreditation Commission on Colleges of Medicine (ACCM) requires, in the preclinical curriculum education: anatomy, biochemistry, physiology, microbiology and immunology, pathology, pharmacology and therapeutics, medical ethics, and preventive medicine[11]. The preclinical basic science courses include appropriate biomedical, behavioral and social/economic science to support the student's understanding of contemporary medical scientific knowledge as well as the concepts and methods fundamental to their application to the health of individuals and populations[11]. The clinical curriculum is presented in an integrated and multidisciplinary approach to include the following core subjects: Internal medicine, surgery, pediatrics, obstetrics and gynecology, psychiatry, and family medicine[11]. Both the physician and PA training offer clinical electives[10-11].

The PA medical training is rigorous[12]. The PA school curriculum is modeled after the medical school curriculum that involves both didactic and clinical education training[12]. Both physicians and PAs are well trained prior to entering the practice of medicine.

Medical Malpractice Liability Concerns

It has been stated by some physician groups that historically, malpractice insurance premium costs for the nonphysician providers, when compared to physicians, were lower due to the overall rates of malpractice claims that impacted physicians more than nonphysician providers; however, that trend is beginning to change[13]. Physician groups state that according to the National Practitioner Data Bank (NPDB), claims against nonphysician providers have increased over the last ten years, while claims against physicians have decreased[13].

However in a recent observational study that examined 10 years (2010-2019) of medical malpractice payment reports from the NPDB compared to the laws and regulations of states for the same period, there were no statistical differences in medical malpractice payment reports between states with more permissive PA practice laws and regulations[14]. The conclusion of the study suggests that removing restrictive laws and regulations to PA practice does not increase the overall risks to patients or increase rates of malpractice in the US[14].

The high per capita cost of care, low value per cost, and other factors have caused policy experts (e.g., The National Academies of Sciences, Engineering, and Medicine, and The Hamilton Project), regulatory agencies (e.g., US Department of Health and Human Services, US Department of Treasury, and US Department of Labor), and other stakeholders to recommend changes to the US health system[15-19]. The recommended changes include

authorizing qualified healthcare practitioners, such as PAs, to practice to the full extent of their training and qualifications without restrictive state laws and regulations that limit their scope of practice (SOP) or impose requirements on physician collaboration[15-19].

State laws and regulations have been imposed on the PA profession in part to address health and safety concerns, yet there is a lack of evidence that these laws and regulations affect patient safety[16-19]. Some PA practice laws and regulations and physician collaboration requirements have been noted to be unnecessary, unjustified, costly, and potentially detrimental[16-19]. Proponents of more permissive PA practice laws and regulations note the demonstrated high quality, cost-effective care provided by PAs that has been shown in many ways to be comparable to that of physicians[19-23]. The available evidence demonstrates that favorable PA practice laws and regulations increase patient access, lower healthcare costs, positively affect quality of care, and reduce preventable healthcare related deaths[16-18, 24-26]. Past research has noted that PAs have lower rates of malpractice and lower malpractice payments when compared to physicians[27-28]. In addition, the comparable and sometimes complementary services PAs provide compared to physicians are associated with high levels of patient satisfaction, and patients report that PAs are trusted, valued practitioners who provide safe and effective healthcare and improve health outcomes[22, 29-31]. This is in direct conflict with statements made by others who claim no such proof exists[5,34].

Despite the evidence supporting the benefits of PAs and the removal of restrictive SOP laws and regulations, there is opposition from some physicians, physician groups, and regulators primarily based on an unfounded assertion that more permissive PA practice laws and regulations threaten patient safety and should be opposed[32-33]. The findings of the largest study that reviewed the medical malpractice reports of PAs related to state practice laws and regulations provide evidence that restrictive PA SOP elements can be eliminated from state laws and regulations without adversely affecting medical malpractice reports or patient safety[14]. Removing barriers to optimal practice environments for PAs improves access to high-quality, cost-effective healthcare while maintaining patient safety[14]. Less restrictive state PA laws and regulations will allow PAs to meet the medical needs of patients while increasing benefits for patients and the US healthcare system[14].

AMA Recovery Plan for America's Physicians

One of the most controversial stances and publications in recent years in regard to Physician Associates/Assistants and other providers has been the "AMA Recovery Plan for America's Physicians". The focus by many vocal physicians has been in regard to the plan, "We need a permanent solution to end the annual battles that threaten the *economic* survival of physician practices …"[5].

The "AMA Recovery Plan for America's Physicians" focuses on five key goals to re-build health care so that it works better for *physicians* and all those they serve: Supporting telehealth to maintain coverage and payment, reforming Medicare payment to promote thriving physician practices and innovation, stopping scope of practice creep

that threatens patient safety, fixing prior authorization to reduce the burden on practices and minimize care delays for patients, and reducing physician burnout and addressing the stigma about mental health[34].

An element of the AMA Recovery Plan that has become the most controversial is stopping "unsafe" scope expansions[34]. Quality, affordable health care is only possible with teamwork. The healthcare system relies on physicians, nurses, physician associates/ assistants, nurse practitioners, midwives, licensed social workers, physical and occupational therapists, pharmacists, clinical laboratory professionals, and office workers among others to do the invaluable work they are trained to do in making the health care system work effectively and efficiently. The problem has been the definition of "unsafe" scope expansion and its use by a number of physicians and physician groups leading one to question their motivation.

Physicians have stated that patients need to trust that a physician is leading their care and leading the team[5]. Physicians claim they have more years of education and thousands of hours more clinical training than other members of the team, and are better prepared to treat complex cases, and complications[5]. These groups are speaking in regard to didactic and clinical training of medical school and the required additional years of supervised postgraduate work within residencies[35].

As noted previously the PA educational track is similar to the physician educational track[10, 35-37]. Both are trained in the medical model with similar courses and supervised clinical experiences[10,35-37]. We previously provided data that at the 7-year point in the career both the physician and the PA will have acquired 15,000 to16,000 hours of clinical training.

The issue of SOP is primarily a state issue in the U.S. Some physician groups are working with their partners through the *AMA Scope of Practice Partnership* to defeat the many purported unsafe scope expansion bills that are proposed during each state legislative session[5]. The primary issue with their opposition is that many physicians do not want the responsibility of tethered registration or collaboration agreements requiring that they supervise or collaborate with a PA or other providers.

Interestingly, the physician groups opposed to increasing the scope of practice of the PA and other health care providers are aware of the issue with underrepresentation of minorities in health care[5]. Acknowledging the issue must be addressed, there has been no realistic and practical solutions to resolve the concerns[5]. The utilization of the PA may well help address the shortage of underrepresented minorities in underserved areas. Several physician groups have voiced a desire to see an expansion of the number of residency training slots and remove caps to Medicare-funded positions that the US Congress has in place to address healthcare provider shortages[5]. But with costs exceeding $175,000 per resident per year in the US it is unlikely that the US Congress will greatly expand the slots. Another proposal has been to secure funding from the US Congress to support the creation of new medical schools and residency programs at Historically Black Colleges and Universities, Hispanic-Serving Institutions, and Tribal Colleges and Universities.[5] Rather than tapping into and maximizing the increasing numbers of well-

trained PAs, the goals to address issues by many groups are focused decades into the future and do not address immediate or short term needs. These proposals would only be successful in the U.S. if the physician groups convinced the U.S. Congress to make billions of additional dollars in education funds available for medical training.

Total Number of Physicians, Physician Associate/Assistants and Nurse Practitioners

The push by many physician groups opposed to expanded scope of practice of the PA and other providers is to increase the number of medical students, residency slots, improve payment systems and seek additional funding for the proposals from the federal government[5]. What is not discussed as part of the solution to the physician shortage is the significant increase in the number of PA and other providers being produced currently in the US. In a commentary and article in the *Journal of the American Academy of Physician Associates* (*JAAPA*) August 2023 authors discussed the changing employment of physicians, NPs and PAs in the US[37-38]. The author stated that what has not seen to date is a concerted effort by the various professional associations, the federal and state governments, nor insurance providers to address the issue in a collaborative and productive manner, although the pending provider shortage will affect healthcare delivery in many ways within a decade[37]. What has been clearly articulated by various physician groups is an opposition to the expanded scope of practice of PAs and other providers and not working in a collaborative manner to address the many issues with healthcare provider shortage issues[5].

Addressing the healthcare provider shortage will require many different approaches, including expanding scopes of practice so that non-physician providers can practice at the top of their training and provide medical services with greater autonomy[37]. It has been noted that "expanding" is the hot-button term among entrenched physicians who do not want the added competition for dollars or decision-making authority[5,37]. What roles will physicians, PAs and other providers play in providing healthcare services in the future?[37] What are the strengths (and perceived weaknesses) of each group of clinicians?[37] Do they complement each other, or should they focus on delivery of different aspects of healthcare?[37] These are all questions that must be addressed[37].

There is an obvious difference in the education programs for the various clinicians and in the number of clinicians entering the healthcare system[37]. Physician education includes 155 accredited medical schools and 37 accredited medical institutions granting doctorates of osteopathy in the United States[37]. About 28,337 students graduated from MD and DO programs in 2021[37].

In early 2023, the United States had 303 PA programs, with 40 more in the pipeline. These programs graduate about 11,000 PAs each year[39]. The 400 NP programs graduate about 36,000 students per year[39-40]. PA and NP education programs are graduating more than 47,000 students per year, numbers that are anticipated to grow substantially over the next decade. What has not been determined nor discussed in greater detail is what role

each of the respective professions will play in the delivery of healthcare in the future. This includes the specialty focuses, employment, and geographic locations.

The Hooker and Christian article looked at the 2021 Bureau of Labor Statistics (BLS) employment data that was probed for the occupational settings of 698,700 physicians and surgeons, 246,690 NPs, and 139,100 physician associates/assistants (PAs)[38]. These three healthcare professionals accounted for about 1.1 million medical and surgical clinicians serving a US population of 331.5 million[41]. As the gap has widened between the supply of physicians and the demand for more healthcare services, a shift emerged in US healthcare provider types[38]. Medical and surgical providers now fall into three main types: physicians, NPs, and physician associates/assistants (PAs)[38].

The BLS data predicts over the next decade that total employment for PAs is predicted to grow 27.6%[38]. This growth will predominate in physician offices and hospitals[38]. For NPs, total employment is projected to grow 45.7%[38]. NP employment is predicted to grow in physician offices (31.7%) and in hospitals (52%)[38]. For physicians and surgeons, total employment is projected to grow 2.9%[38]. The physician and surgeon employment is predicted to grow 4.2% in physician offices and 3.5% in hospitals[38].

Expanded Scope of Practice

There are currently 30 states in the US where NPs can practice without physician supervision or collaboration[42]. Scope of practice is determined at the state level in the U.S[42]. Some states grant independent practice, but a specified number of supervised practice hours must be completed before practicing independently[42]. These hours range from 2000 to 6000 hours[43]. Improved access to healthcare, positive job outlook, high patient satisfaction, improved patient outcomes, and greater autonomy within practice are frequently listed as the advantages of working in states with greater scopes of practice[42].

Forty-seven states require PAs to be supervised by physicians[44]. In several states (Alaska, Illinois, Tennessee and Virginia), PAs operate under collaborative agreements with physicians[44]. New Mexico requires supervision of PAs with less than three years of clinical experience and for specialty care PAs[44]. In Michigan, PAs work under a participating physician[44]. Independent (or unsupervised/ non collaborative) practice by PAs is allowed in North Dakota, Wyoming, and Utah[45]. These are the only states where PAs experience the most independence, graded as an "Optimal Practice" environment by the American Academy of Physician Associates (AAPA)[45].

The goal of the AAPA is to achieve Optimal Team Practice (OTP) in all states[46]. This is defined as PAs may practice to the fullest extent of their medical education, training and experience[46]. Their employer and/or the healthcare team may establish collaboration, consultation and/or referral beyond what state laws and regulations outline[46]. PAs collaborate, consult and/or provide referrals to the appropriate healthcare team member(s) as indicated by the PA's competencies, patient's condition, and standard of care[46].

In 1994, five states – Alaska, Iowa, Montana, New Mexico and Oregon – granted NPs full practice authority[47]. Thirty years later there are

30 states that allow full practice authority[47]. Of greatest interest is that self-employed NPs represent 1.69% of the 246,690 NPs[38]. Self-employed PAs are 0.96% of the 139,100 PAs[38]. The vast number of NPs and PAs are not moving into self-employment in great numbers but continue to work in hospitals and office setting, the majority of the time in "collaboration" with physicians[38]. This is occurring even though over one-half of the states allow for independent practice by the NP[38]. The number of self-employed physicians is predicted to drop 32% over the next decade[38]. In the majority of the states where PAs are currently practicing, the majority of PAs do not work under the direct supervision of a physician in providing care. As indicated by the low percentage of PA working in a self-employed setting, PAs continue to provide care in close collaboration or consultation with physician colleagues with or without direct supervision.

The expansion of NP and PA practices face have challenges on several grounds, such as competence, standard of care, and malpractice liability[48]. However, states with NP independent practice enjoyed greater access to primary care with lower cost and no reduction in quality of service[49]. Likewise, states with advanced PA practices have increased appointment availability, especially for the poor urban and rural areas[50]. The country's need for primary care physicians outpaces the supply, especially in rural areas[50]. The demand for primary care providers continues to grow while the number of primary care physicians has progressively decreased[50]. Efforts to increase the supply of primary care physicians have failed while the growth in numbers of primary care NPs and PAs have been significant over the past two decades[50]. About 48 percent of primary care providers (PCPs) are physicians while 42.9 percent of PCPs are NPs, and 8.2 percent are PAs[50]. In many areas of the country, nonphysician providers are becoming the principal source of primary health care[50].

Discussion

The Association of American Medical Colleges (AAMC) has indicated that PA and NP involvement in any visit—alone or in combination with an attending physician—has increased dramatically between 2011 and 2016[37-38, 51-52]. The AAMC concludes that "APRNs and PAs significantly contribute to the nation's healthcare delivery capacity, and both professions are growing rapidly[37-38, 51-52]. The extent to which these groups offset physician demand has significant implications for physician workforce needs and projections"[37-38, 51-52]. The growth of both the PA and NP professions continues and their involvement in the delivery of health care at significant percentages"[37-38, 51-52].

The 10-year BLS prediction for profession growth (2021-2031) for physicians is 3%; for NPs, 46%; and for PAs, 28%[37-38, 53]. Most physician specialties will either remain the same or slightly shrink over the 10-year period based on the BLS prediction[37-38, 53]. Areas of physician growth are forecasted in psychiatry and family medicine[37-38, 53].

Several of the authors have experienced a shift of primary care to PAs and NPs, with limited physician involvement. This was especially prominent during the COVID-19 pandemic with the changes in many laws and regulations in the U.S. regarding PA

supervision. The lower costs of employing NPs or PAs, the increasing demand for medical services, the increasing age of the general population, the significant increase in the number of NPs and PAs, together with the flat or low projected growth of new physicians and the increasing age of the physician workforce provide the PA profession with a unique opportunity to advocate for significant changes in the healthcare delivery model to better utilize their services[37].

We have a clear indication in the Hooker and Christian article that the healthcare workforce is changing[38]. Better defining the roles and addressing the obstacles that hinder the full use of all clinicians is critical[38]. This will best be accomplished if the groups work together with other organizations with a vested interest in healthcare delivery and address the issues collaboratively, rather than trying to protect turfs or promote their perceived superiority in knowledge and skills[37-38].

The demand for medical services in the United States is increasing because of a growing and aging population, new technology, fewer physicians per capita, chronic diseases, and a decline in annual productivity in primary care[54-55]. The current literature confirms that PA/PA-comparable professions span over 62 countries worldwide under 33 different country practice titles and 5 US territories[56]. The majority of countries globally are facing many of the same issues and are developing new strategies to address the issues. Ministries of Health, Education, and Finance, universities/ colleges, accreditation organizations, licensure boards, employers, and health educators worldwide are interested in developing future strategies to optimize the profession as a component to address issues related to access and delivery of healthcare to its citizens[56].

There are multiple reasons given for the job outlook that is predicted to grow for PAs more than for physicians. The cost of building a new medical school is exceptionally high, more than $180 million in 2017, and new medical schools occur infrequently[57]. Adding a PA department to an existing university was assessed at about $5 million in 2015[58]. This relatively inexpensive investment may explain why PA program development is accelerating. The PA programs produce more than 11,000 graduates per year[37,39].

Another explanation for the limited physician growth in the U.S. is that Direct Graduate Medical Education (DGME) payment to hospitals for resident physician training has not expanded[59]. The DGME calculation was formulated in 1985 and recalculated in 2010, but it continues to constrain the expansion of physician postgraduate training[59]. Changes may be underway to increase the number of board-eligible physicians in the U.S. The federal fiscal year 2022 inpatient prospective payment system establishes policies to distribute 1,000 new Medicare-funded physician residency and fellowship slots to qualifying hospitals, phasing in 200 places annually over 5 years[60]. The Centers for Medicare & Medicaid Services estimates that funding for the additional postgraduate slots, once fully phased in, will total about $1.8 billion over the next 10 years[61].

Conclusions

The concept that a physician is the only medically trained individual qualified to lead healthcare teams is not based on evidence

but misconceptions about the training and experience of PAs. For 50 years PAs have contributed to the delivery of healthcare in a wide variety of healthcare settings and the training is well documented both in obtaining high quality technical skills and the management of patients. We have shown in our report that PAs are skilled medical providers educated in the basic medical sciences and complete clinical training in the same disciplines as medical students. Laws and regulations have been imposed on the PA profession in part to address health and safety concerns, yet there is a lack of evidence that these laws and regulations affect patient safety. Some PA practice laws and regulations and physician collaboration requirements have been noted to be unnecessary, unjustified, costly, and potentially detrimental. Public policies regarding access to healthcare and providers must include conversations regarding the expansion of the utilization of well-trained PAs.

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