

Current Evidence and Controversies: Advanced Practice Providers in Healthcare

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Nurse practitioners (NPs) and physician assistants (PAs) emerged as occupations in the 1960s to mitigate shortages in the US primary care workforce.¹⁻⁴ Recently, a second wave of primary care physician shortages resulted from resident duty hour restrictions.⁴ Presently, 248,000 NPs and 115,500 PAs practice across all sites of care in the United States.⁵⁻⁷ The term “advanced practice providers” (APPs) refers to NPs and PAs, as well as other licensed, nonphysician providers, including certified nurse midwives, clinical nurse specialists, and certified registered nurse anesthetists.⁸ This commentary focuses on NPs and PAs, compares their education and training with that of primary care physicians, and reviews their scope of practice. We review literature on quality of care and offer a perspective on restructuring primary care in America.

Education and Training

NPs are registered nurses with additional education and clinical training at the master's or doctoral degree level.^{5,6} Nurses must complete at least 1000 hours of clinical practice in a focused area, such as pediatric, adult, or geriatric medicine, to earn an NP degree. Although NPs can pursue additional training (eg, NP residency), such training is not required for licensure. State nursing boards license and regulate NPs, who typically recertify every 5 years; however, requirements (eg, recertifying intervals and continuing education metrics) vary.⁹ Laws also vary by state; for example, nearly half authorize NPs to practice independently without oversight.^{5,9,10} All US states allow NPs full prescriptive authority, including controlled substances.⁵

PAs, on the other hand, train for 2 years—frequently alongside medical students—and receive a master's degree.^{5,7} PA students complete at least 2000 hours of supervised practice before graduation.⁷ Similar to NPs, PAs can also pursue additional training. State medical boards regulate PAs, who must practice with a supervising physician, although the extent of physician supervision varies by state.^{2,5} Maintenance of certification for PAs is similar to that for physicians: They must complete 100 hours of continuing medical education every 2 years and take a recertification exam every 10 years.⁷ Although PAs can write prescriptions in all 50 states, Kentucky does not allow PAs to prescribe controlled substances.⁵

In contrast to NPs and PAs, a typical family physician completes 15,000 hours of clinical work over 5 additional years of training, including residency.¹¹ Such extensive training enables primary care physicians to generate broad differential diagnoses and provide comprehensive care to medically complex patients.¹² Yet, some argue that APP training is the fastest and least expensive way to address the primary care physician shortage in the United States.¹⁰ The United States could train 3 or more NPs for the price of educating 1 physician—in a fraction of the time.¹³

This educational and training differential is one of many arguments to overhaul medical education in America. Overcoming the primary care shortage will likely involve coordinated, team-based care from physicians and APPs alike; a realistic solution will not only produce more APPs but also restructure physician education. One proposed model is competency-based medical education, which shifts training from the current time-intensive curriculum to one based on trainees demonstrating competencies and achieving milestones.¹⁴ This model holds promise for producing a well-trained physician workforce in a shorter time frame, while also reducing medical student debt.¹⁴ Other models focus on osteopathic or international medical graduates or on incentivizing primary care over specialty care.¹⁵ Regardless of the approach, the United States must critically evaluate its current system of training physicians to inform a necessary reprioritization of primary care.¹⁵

Scope of Practice

Despite differences in training and licensure, APPs have considerable overlap in their scope of practice.^{2,3} Nearly half of inpatient medical services in Veterans Health Administration hospitals employ APPs, with few differences in their roles and perception of care by administrators.² Yet, physicians and NPs have conflicting opinions of their respective roles.¹⁶ For example, NPs are more likely than physicians to believe that they should have hospital admitting privileges and receive equal reimbursement for providing the same clinical services.¹⁶ Two-thirds of physicians believe that doctors provide higher-quality exams and consultations than do NPs, whereas three-fourths of NPs disagree.¹⁶ NPs are more likely to practice in rural settings and treat Medicaid

beneficiaries and other vulnerable populations compared with physicians.¹⁷ Moreover, PAs and NPs often serve as primary care providers to underserved patients.¹⁸

Quality of Care

Although perceptions of care quality may vary by profession, studies comparing outcomes between physicians and APPs offer mixed results. Physicians prescribe fewer unnecessary antibiotics for acute infections,¹⁹ order fewer diagnostic tests,²⁰ and make fewer specialist referrals for patients with diabetes compared with APPs.²¹ However, a retrospective study of 30 million patient visits to community health centers found that APPs cared for similar patient populations as physicians and achieved equivalent or better results on quality metrics (eg, smoking cessation, depression treatment, statin therapy) and utilization (eg, physical exams, education/counseling, imaging, medication use, return visits, referrals).²²

A 2018 Cochrane review of 18 randomized controlled trials suggested that nurses provide care equivalent to physicians and achieve similar patient outcomes (eg, blood pressure control, mortality, patient satisfaction), although nursing visits were longer than physician visits.²³ However, this review included studies with insufficient blinding, wide variation in nurses' education and roles, and heterogeneity in outcome measures.²³ Some studies provided just nurses with protocols and decision tools, and only 3 studies assessed the impact of nurses on physicians' behavior, so it remains unclear how to optimize NPs' roles within a healthcare team or maximize cost-effectiveness. Finally, the Cochrane review focused on primary care, thus its results may not be applicable to other settings.²³

Meanwhile, evidence comparing APPs and physicians continues to emerge from acute care settings.¹ Academic medical centers employ NPs and PAs in response to resident duty hour restrictions and to increase patient access and throughput.⁴ Despite the simultaneous need to contain healthcare costs, most medical centers did not assess the financial impact of substituting physicians with APPs.⁴ Using Medicare claims, patients managed by NPs cost 29% less than patients managed by physicians, even after adjusting for comorbidities.²⁴ Assuming that such work is reproducible, increasing access to APPs could generate cost savings to Medicare. However, there remains a lack of rigorous research assessing the financial implications of substituting physicians with APPs.²⁵ Future work must consider key confounders, such as physicians' roles in collaborating with NPs and supervising PAs, because variations in such relationships may significantly affect outcomes.

How Can Physicians and APPs Work Collaboratively to Improve Care?

First, NPs (and PAs) should practice to the fullest extent of their education and training, a recommendation echoed by the Institute

TAKEAWAY POINTS

- ▶ Nurse practitioners (NPs) and physician assistants (PAs) represent a growing aspect of primary care in the United States.
- ▶ Education, training, licensure, certification, and scope of practice vary between NPs and PAs, with significant variation across US states.
- ▶ Quality of care is similar among NPs, PAs, and physicians for routine patient presentations, but evidence is less robust for complex patients, and there is little evidence on cost-effectiveness.
- ▶ Reforming the US healthcare system must include a reprioritization of primary care, significant revisions to medical education, and development of a conceptual framework to promote and critically evaluate interdisciplinary, team-based care.

of Medicine.^{9,10,26} All healthcare providers should be transparent about their education, training, credentials, and certification. Next, the United States must standardize state laws governing APPs—key primary care providers—to avoid incentivizing specialty practice in less restrictive states, which limits access for underserved patients.^{9,10} Finally, both APPs and physicians must be accountable to competency-based standards specific to their scope of practice.^{9,27} Although seemingly obvious, APPs are particularly vulnerable to the consequences of suboptimal clinical rotations because their training is less extensive than physicians'. Many NPs indicated a need for more rigorous education with relevant content and experiences supervised by practicing faculty.²⁸ Where clinical rotations are limited, potential solutions must simultaneously improve APP education and minimize the negative impact on physician training, ideally by promoting interdisciplinary care.

In our experience as physicians providing care to complex older adults, APPs are effective members of interprofessional teams. Typically, physicians evaluate and manage patients presenting with diagnostic dilemmas, debilitating symptoms, and multiple consultants, whereas APPs complement physicians' work by addressing goals of care and managing common symptoms. Additionally, we draw upon the diversity of our APPs' prior experiences to enhance the care that we provide to our mutual patients. Our teams discuss challenging cases, share insight from all perspectives, and work together to deliver care that utilizes each profession's unique skills and expertise.

We recognize that challenges exist, but we must separate perceptions about differential quality of care from reality: Physicians' arguments about quality are largely unfounded, at least for common health concerns. Nevertheless, questions remain regarding the quality, efficiency, and cost-effectiveness of care provided by physicians, NPs, and PAs in different care settings and among complex patient populations.¹² Future work should measure key covariates, such as physical and cognitive function and social determinants of health.²⁹ We urge physicians, APPs, and their respective professional societies to review successful models that exist in geriatric medicine to assist in developing approaches to high-quality team-based care for vulnerable populations.²⁹

Currently, most insurers reimburse for services provided by APPs at 85% of the rate paid to physicians.^{6,7} Physician total compensation

is greater because they see 30% more patients than NPs and are often paid for supervising APPs.¹⁶ Expanding the supply of APPs in primary care and paying them equally for the same services may negate potential cost savings from the lower payments that APPs currently receive.¹⁶

Clearly, there is no simple resolution to this debate. In 2013, Blumenthal and Abrams summarized 5 principles to guide US healthcare policy in the future.²⁷ First, policy reforms should reflect each professional's competencies, not antiquated state laws. Second, policies should be dynamic and respond to the evolving roles, organization, and financing of healthcare. Third, we must incorporate patients' preferences about receiving primary care services. Fourth, America needs to prioritize rebuilding a primary care infrastructure, which should include educating clinicians in care coordination. Finally, physicians and APPs must collaborate to improve the delivery of primary care; otherwise, neither profession will be happy with the outcome.

Beyond these principles, we believe that a conceptual framework is necessary to guide key aspects of interdisciplinary care—education, practice, policy, and evaluation. Although frameworks exist,³⁰ professional societies must negotiate to develop consensus on, test, and refine a mutually acceptable model for interdisciplinary care in America. Until then, we urge physicians and APPs to respect one another, which is essential to providing quality, interdisciplinary care to our mutual patients. Besides, there is plenty of work for us all. ■

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Source of Funding: The Center for Medical Education supported an earlier version of this work as an audio podcast (not peer reviewed).

Author Disclosures: Drs Sarzynski and Barry were paid an honorarium by the Center for Medical Education for a podcast that included critical commentary on 30 research papers and a commentary; that commentary served as the basis for this editorial.

Authorship Information: Concept and design (ES, HB); drafting of the manuscript (ES, HB); and critical revision of the manuscript for important intellectual content (ES, HB).

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