COMBATTING RURAL HEALTH DISPARITIES WITH ADVANCED PRACTICE PROVIDERS

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EPIGRAPH

"The physician shortage that we have long feared—and warned was on the horizon—is already here. It's an urgent crisis…hitting every corner of this country—urban and rural—with the most direct impact hitting families with high needs and limited means."

American Medical Association President Jesse M. Ehrenfeld, MD, MPH

ABSTRACT

The United States faces a critical healthcare crisis marked by high physician turnover, pandemic burnout, rising demands from an aging population, and cuts in healthcare funding. Rural areas suffer the most, desperately in need of healthcare professionals as physicians increasingly prefer to practice in urban settings. Advanced practice providers (APPs), such as physician assistants and nurse practitioners, present a potential solution: due to the rigorous clinical training required to become an APP, they have gained significant clinical autonomy in recent years. Though the implications of these deregulatory measures are still not entirely known, several studies indicate that, in primary-care settings, APPs provide care comparable to that of traditional physicians, achieving similar outcomes in areas such as smoking cessation and chronic-disease management. However, they may require more oversight for complex cases, for they have been found to, with respect to physicians, more frequently overprescribe medications and over-refer patients for external consultations. Patient satiety, economic, and ethical factors associated with APPs' increased autonomy have also yet to be fully explored. Whilst APPs cannot fully supplant physicians, with the proper training and support, they can help mitigate the rural-health disparities that plague communities across the nation. Further research is needed to optimize their integration into the healthcare system.

THE RURAL-URBAN HEALTH DIVIDE

The United States is on the verge of a major healthcare crisis. Record high physician turnover rates exacerbated by pandemic and post-pandemic burnout; a soaring demand for care by an increasingly aging, chronically ill population; and drastic reductions in healthcare funding and health-insurance reimbursements threaten the future wellbeing of Americans. Rural Americans are already suffering the consequences of a collapsing healthcare network

(Panagioti et al., 2022; Jones & Dolsten, 2024). Though the term "rural America" is often regarded as a catch-all toponym for subjectively defined regions of the nation, this paper delineates it according to the National Center for Health Statistics's Urban-Rural Classification Scheme for Counties, which identifies them as the areas that most critically require access to healthcare professionals and infrastructure (Figure 1).

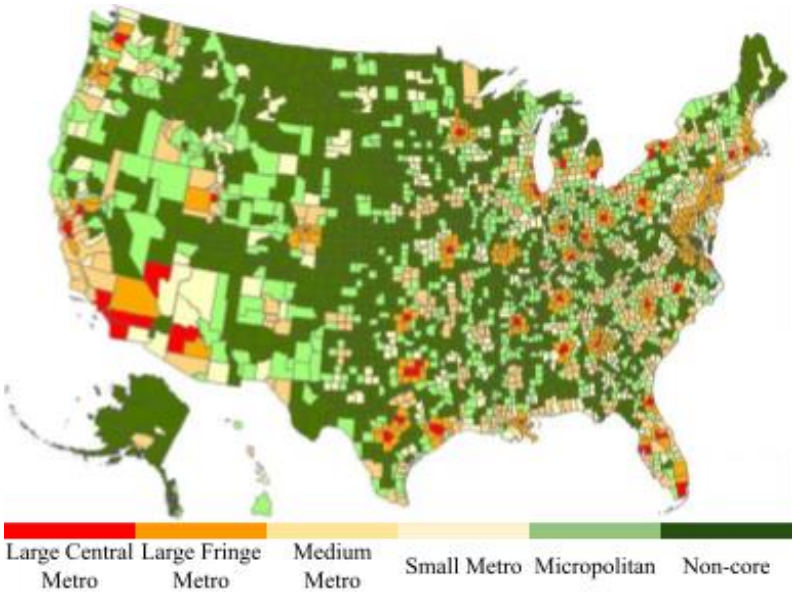

***Figure 1**: 2013 Urban-Rural Classification Scheme for Counties (NCHS, 2017).*

Unfortunately, these are also the areas wherein physicians least desire to practice medicine and establish clinics due to lower incomes and limited prospects for career growth. Although several public-health initiatives, notably those that promote telehealth consultations and monthly physician visits to rural sites, have sought to remediate these disparities in recent decades, they have proven to be largely inadequate, explaining the significant healthcare disparities between rural and urban America (Table 1; Asghari et al., 2017; Gajarawala & Pelkowski, 2020).

Overview	**Urban**	**Rural**
Proportion of U.S. Population	80.7%	19.3%
Physicians per 10,000 People	31.2	13.1
Specialists per 10,000 People	26.3	3.0
Overweight/Obesity Rate	29.8%	34.5%
Cause of Death (per 100,000 People)	**Urban**	**Rural**
Heart Disease	156.3	189.1
Cancer	142.8	164.1
Unintentional Injuries	47.4	61.1
Stroke	36.6	39.0
Alzheimer's Disease	29.2	32.8
Diabetes	20.5	27.3

***Table 1**: U.S. Healthcare Disparities with Leading Causes of Death (Matthews et al., 2017; NRHA, 2016).*

The stark reality demonstrated in Table 1 and described by Dr. Ehrenfeld underscores a profound healthcare inequity: families with high needs and limited means in rural areas face not just a lack of access to healthcare professionals but also systemic barriers that exacerbate their struggles. These families often contend with chronic conditions left untreated due to physician shortages, long travel distances to clinics or hospitals, and financial constraints that make even basic care inaccessible (AMA, 2023). For instance, a parent in a rural community may delay seeking care for a child's persistent illness because the nearest clinic is hours away, or an elderly individual might forgo routine checkups due to prohibitive costs. These stories are not isolated; they represent a pervasive crisis affecting millions of Americans. By centering these lived experiences, we can better understand why addressing rural healthcare disparities is not merely a logistical challenge but a moral imperative.

A POTIENTIAL SOLUTION: ADVANCED PRACTICE PROVIDERS

Advanced practice providers (APPs), also known as mid-level practitioners, are non-physician healthcare professionals with significant clinical training who are allowed to practice with a relatively high degree of autonomy. Examples include physician assistants (PAs), registered nurses (RNs), advanced practice registered nurses (APRNs), certified registered nurse anesthetists (CRNAs), and certified nurse-midwives (CNMs). These professionals often require advanced education in their respective disciplines; for example, to even apply for a CRNA license, one must have earned a bachelor's degree in nursing, qualified to be a registered nurse, practiced in acute-care nursing for one year, and completed a doctoral degree in nursing.

Since the passage of the Affordable Care Act in 2010 and the implementation of a series of deregulatory public-health executive acts under the Trump administration, APPs have become increasingly prevalent in clinical settings, for they have been empowered with almost as much patient-care autonomy (i.e., the ability to perform medical care without supervision) as traditional physicians (healthcare professionals with an MD, DO, or equivalent degree) but require significantly less remuneration. Between 2017 and 2021, the number of physician assistants in the United States increased by nearly thirty percent, though the median salary of the profession remained almost one-half that of physicians (Kidd et al., 2023; BLS, 2019).

As the United States's physician shortage becomes increasingly dire, with a predicted national deficit of greater than 100,000 jobs, government and regulatory commissions, non-governmental and medical-professional organizations, and hospitals and clinics ought to evaluate the merits of strengthening established APP training programs and empowering APPs to practice independently, particularly in rural and neglected areas (Zhang et al., 2020). This paper seeks to examine the advantages and disadvantages of the

growing prevalence of APPs in healthcare before assessing their potential to combat rural-health disparities.

HEALTH OUTCOME CONSIDERATIONS

Few robust studies have compared health outcomes between physicians and APPs. However, there is strong evidence to suggest that both practitioner types offer a near-equal quality of care in primary-care settings: A retrospective study of thirty million patient visits found that both practitioner types achieve similar levels of success in encouraging smoking cessation, depression treatment, and medication use (Sarzynski & Barry, 2019). Similarly, a systematic review of fifty-three studies found no significant differences in the quality of care offered by physicians and APPs in child/maternal health, chronic-disease management, and infectious-disease treatment (Lassi et al., 2013). A cohort study of nearly ninety thousand Veterans Affairs diabetes patients found that the presence of NPs actually lessened the progression of disease in patients (Jackson et al., 2011).

However, when measuring quality of care in terms of processes instead of outcomes, a clear difference emerges: compared to physicians, APPs more frequently prescribe antibiotics and psychotropics, engendering antibiotic resistance and opiate addiction; are more likely to order needless diagnostic imaging, unnecessarily exposing patients to harmful radiation; and, specific to CRNAs, beget far higher rates of severe post-operative, anesthesia-related complications (Sanchez et al., 2016; Yang et al., 2018; Hughes et al., 2015; Memtsoudis et al, 2012). Succinctly, with status-quo training guidelines, APPs have been shown to require stringent physician oversight for complex, process-driven patient care.

PATIENT SATIETY CONSIDERATIONS

Even less research has been conducted to compare patient satisfaction between physicians and APPs, largely due to the subjectiveness of measuring "satisfaction". Nevertheless, several self-dubbed low-quality–evidence studies exist and have found that patients feel more satisfied with care from APPs: The aforementioned systematic review of fifty-three studies determined that women in labor experience greater satisfaction from midwives than obstetricians (Lassi et al., 2013). A study of a trauma unit found that within one year of adding an NP to a team that was otherwise entirely composed of physicians, there was a nine-percent decrease in patient complaints (Medeiros et al., 2011). Interestingly, there is some evidence to suggest that whilst pediatric patients experience greater satisfaction from APPs than physicians, adult patients often prefer physicians over APPs (Roblin et al., 2004). It has yet to be determined why APPs generally beget better patient satiety.

ECONOMIC CONSIDERATIONS

Though visits to APPs cost significantly less—twenty-nine percent less, in fact—to patients and insurance companies due to their lower remunerations as compared to physicians, as stated earlier, they have been found to more frequently order diagnostic tests and imaging, request external consultations,

and prescribe medication that was subsequently adjudged to be medically unnecessary for and financially cumbersome to patients. Thus, depending on specific clinical needs and circumstances, a patient's personal cost of care remains nearly the same, regardless of provider type. For these same reasons, APPs positively impact hospital profits; they cost far less to employ and order more hospital-based diagnostic tests (Sarzynski et al., 2019; Hughes et al., 2015).

ETHICAL CONSIDERATIONS

Seeing as though there still exists significant uncertainty in evaluating the health outcomes, patient satiety, and economic detriment from care by APPs, it would be unwise, and perhaps unethical, for regulatory bodies to further increase their autonomy in locations and clinics that would otherwise be able to comfortably maintain an adequate staff of physicians whose size is commensurate with the demands of their patient populations. This is particularly concerning because corporate hospitals could, in pursuit of increasing their profits, eliminate physician jobs and supplant them with lower-salaried APPs at the expense of patients' health and well-being (Kahn & Baum, 2019). However, in areas that struggle to recruit traditional physicians, APPs can serve a vital role in ensuring the continual well-being of locals, appropriately informing them of the risks and benefits associated with care by APPs and affording them a convenient, inexpensive avenue wherefrom to obtain healthcare.

LIMITATIONS AND IMPLICATIONS

As earlier stated, there are few robust studies comparing patient care by physicians with that by APPs. Those that exist often bear, ostensibly at least, significant conflicts of interest. For example, most studies that favor increasing the autonomy of APPs are published by APPs and nursing organizations, whilst most studies against such measures are published by physicians and physician organizations. Moreover, because APPs are legally required to practice under physicians, there are no studies that truly compare physician care with APP care; rather, they compare physician care with physician *and* APP care, explaining why most studies' findings are either marginal/inconclusive or in favor of APPs. Finally, most studies examining this issue are cross-sectional surveys; a longitudinal study design would allow for better comparative analysis through the incorporation of long-term health outcomes.

Despite these unresolved uncertainties about the quality of patient care afforded by APPs with limited-to-zero physician oversight, for many patients residing in rural and medically underserved areas, the care offered by APPs would still be better than no care at all. Though APPs require significantly more training before they can truly be considered equivalent to physicians, they can still offer quality medical services to patients who would otherwise entirely lack access to healthcare. To address potential deficiencies in APPs' training, physician and nursing organizations can collaborate to create for them a robust training program focused on rural medicine. To encourage them to practice in

rural areas, federal and state governments can offer them incentive pay; even with these bonuses, an APP's total compensation will still remain much lower than that of a physician.

It is, however, important to note that implementation may face resistance from both medical professionals and the public. Some physicians might oppose expanded APP autonomy due to concerns about fragmented care quality in complex cases, while patients accustomed to physician-led care could question APP competency despite evidence of comparable primary-care outcomes. Strategic public education campaigns highlighting APPs' cost-effectiveness and similar patient satisfaction rates in chronic disease management could mitigate backlash. Successful integration would require transparent communication about APP competencies alongside data-driven monitoring of rural-health outcomes to demonstrate equivalence in core primary care metrics.

Thus, though far more research must be conducted before establishing a firm consensus about the appropriate role of APPs in healthcare settings, this paper proposes that, if empowered with rural clinical autonomy in primary-care disciplines, they will have the potential to serve an invaluable role in otherwise medically underserved and neglected communities across the nation.

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