

Increased reliance on physician assistants: an access-quality tradeoff?

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ARTICLE HISTORY Received 25 November 2021; Revised 6 January 2022; Accepted 14 January 2022

Overview

In recent years, Physician Assistants (PAs) have become an increasingly important class of medical practitioners in the USA (U.S.) healthcare system. After physicians, PAs and Nurse Practitioners are the most skilled among the commonly observed types of medical practitioners, having earned a Masters Degree from an accredited medical sciences program. Further, PAs perform many of the same tasks as physicians within the U.S. healthcare system. According to the American Association of Physician Assistants, PAs commonly: 'Take medical histories; Conduct physical exams; Diagnose and treat illness; Order and interpret tests; Develop treatment plans; Prescribe medication; Counsel on preventive care; Perform procedures; Assist in surgery; Make rounds in hospitals and nursing homes; Do clinical research.' [1] These tasks can either be transferred from physicians to PAs or completed in physician-PA teams. As such, PAs can act as substitutes or complements for physicians within U.S. healthcare and other healthcare systems. More specifically, PAs can work without day-to-day physician supervision while performing physician-like tasks or in teams in which they are directly supervised by physicians [2]. Given that their tasks are highly related to those of U.S. physicians, it is important to characterize trends in the role and scale of PAs in the U.S. healthcare system.

The number of PAs is growing at a rapid rate in U.S. healthcare systems [3]. The number of employed PAs in the U.S. is expected to grow by 39,300 or 31.3% between 2019 and 2029. This growth rate is well above the average rate of labor growth in the healthcare industry. By comparison, the projected growth rate for U.S. physician and surgeon positions over the same time period is 3.6%, with a projected

27,300 new physician/surgeon positions over that time. [Figure 1](#) shows the beginning of this projected trend.

These projections suggest that the ratio of physicians to PAs will decrease from 6:1 in 2019 to 4.7:1 in 2029. This rapid change can be linked to structural shifts in the U.S. healthcare systems, including increased demand attributable partly to the Affordable Care Act of 2010, an increased market concentration of for-profit health institutions that seek to maximize profit partly by reducing labor costs, and a fairly-substantial average pay gap between physicians and PAs, among others.

Presently, we consider whether this shift will create a tradeoff between health care access and quality within U.S. healthcare. In 2019, median physician pay in the U.S. was \$208,000 compared to \$115,390 for Pas [3]. Consequently, the cost savings from increasing the proportion of PAs relative to physicians are substantial. The BLS projects that the number of U.S. PAs and physicians combined will expand to 944,500 by 2029. If this expansion were to be conducted while preserving the 6:1 physician-to-PA ratio observed in 2019, it would cost approximately \$1.38 trillion more system-wide at current salaries, as calculated from the previous BLS data and assuming that the expansion is linear in time. In these worker categories, the respective workforces were approximately 727,000 for physicians and 125,000 for PAs in 2019 [3]. Therefore, the salary cost of U.S. physicians in that year was approximately \$151.2 billion or 4.0% of total U.S. healthcare costs, and the salary cost of U.S. PAs was approximately \$14.4 billion or 0.38% of total U.S. healthcare costs. While perhaps not a primary driver of healthcare cost in the U.S., physician personnel costs are substantial, both in dollar and percentage terms. [Figure 2](#) visualizes the extent of these costs relative to overall U.S. healthcare costs.

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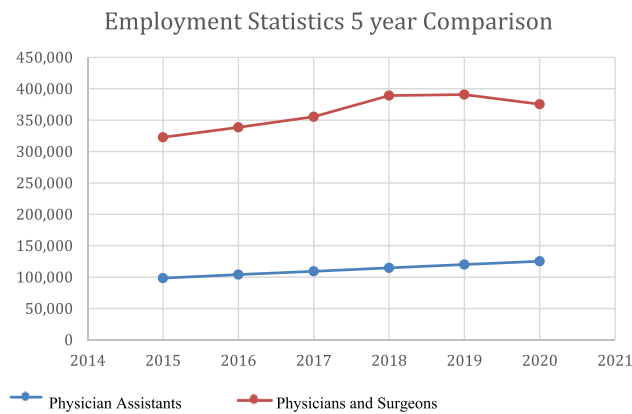


Figure 1. U.S. physician and physician assistant employment statistics BLS, 2015–20.

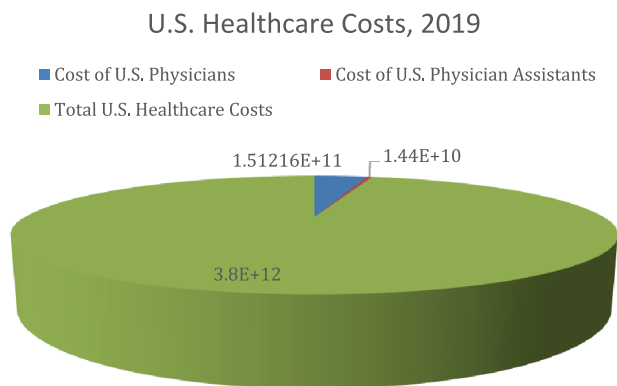


Figure 2. U.S. healthcare costs, 2019.

In expectation, the added use of PAs in clinical health will reduce cost and improve access given the large average wage/salary difference between PAs and physicians. That is, we expect labor cost savings to be partly passed onto patients according to standard firm optimization models. We also expect labor cost savings to increase quantity demanded (access) of healthcare under market equilibrium. Increased access is a tenet of the Affordable Care Act such that increased reliance on PAs can help realize part of the Act's vision. However, this increased reliance also has the potential to distort the qualitative nature of healthcare. Prior to the bulk of this shift toward PAs, it is therefore important to examine whether increased PA reliance entails a healthcare access-quality tradeoff. PAs typically receive 24–27 months of post-baccalaureate schooling, whereas physicians typically receive 4 years of medical schooling, often followed by a lengthy residency and fellowship. This inter-group training gap helps to drive

differences in pay among the two worker types and also suggests potential differences in how the groups practice medicine, on average, when employed as substitutes for one another, as often occurs [4].

Direct cost implications

Given the large average salary difference between PAs and physicians, it stands to reason that a shift toward PAs would have the direct effect of lowering healthcare costs. Given the stringent credentialing process of Ms in the U.S., there is strong reason to believe that the observed salary difference between PAs and physicians is not driven purely by healthcare productivity but also by a relatively short supply of practicing physicians. In fact, several studies find statistical evidence that an increased presence of PAs and nurse practitioners lowers healthcare costs (see, e.g., [5–8]).

Quality and indirect cost implications

PAs yield impressive performance relative to physicians in many respects. For example, PAs typically compare favorably to physicians in terms of post-diagnostic care outcomes (see, e.g., [9,10]). In other respects, physicians appear to have clear sources of absolute advantage. There is statistically significant evidence that physicians outperform PAs in minimizing diagnostic and treatment malpractice (see, e.g., [11,12]). With respect to these aspects of medical practice, then, research evidence suggests that there is an access-quality tradeoff inherent in shifting toward PAs. Results linking diagnostic and treatment-related medical error to malpractice risk to defensive medicine further support this latter finding. Then, increased reliance on PAs is expected to increase the prevalence of medical diagnostic error and defensive medicine.

Defensive medicine is, by definition, costly to the patient. Estimates from 2008 suggest that defensive medicine adds \$45 billion to the annual cost of U.S. healthcare [13] or approximately \$53 billion in 2019 U.S. dollars (or 1.2% of 2019 U.S. healthcare costs). Ironically, the cost/access advantage of shifting toward PAs is expected to be reduced by the aggregate defensive diagnostic practices of those same PAs. The estimated annual savings from increased PA reliance is approximately five times the total annual cost of defensive medicine in the U.S. such that cost/access advantages from increased PA reliance are expected to persist in reduced form. We also expect a lower quality of diagnosis and treatment in the healthcare system with this increased reliance. Given false negative and false positive errors in medical diagnostics, defensive medicine (i.e., ordering more tests) cannot compensate for inferior health worker knowledge in the areas of diagnosis and treatment. Tests with different levels of statistical sensitivity and power may often generate results that conflict with one another and therefore muddy the diagnostic waters [14]. A test that is, in fact, irrelevant to diagnosis but generates a false positive may further impair diagnosis. In medical testing, more is neither better nor compensatory of medical diagnostic knowledge.

Discussion & conclusion

This piece has presented data that suggests an access-quality tradeoff associated with increased reliance upon PAs in the U.S. healthcare system. PAs present substantial cost savings to the U.S. healthcare system, some of which are passed on to patients, and perform comparably relative to physicians across a number of work performance dimensions. As such, there are healthcare

access advantages inherent in increased reliance on PAs. These advantages do not come without a cost, however. The truncated training period of PAs relative to physicians contributes to a higher average diagnostic error rate, which in turn contributes to higher use of defensive medicine.

The tradeoff presented should be considered by healthcare administrators before fully undertaking what is projected to be a rapid shift toward PAs. Of course, how PAs are employed influences the nature of this tradeoff. If PAs are used primarily as substitutes for physicians, then we expect both their benefits and costs to be apparent. If they are employed primarily as complements to physicians, then we expect them to promote cost savings in the healthcare system, while also enhancing the productivity of physicians. As complements, we expect PAs and physicians to work together, but to their respective strengths. In such a team environment, physicians are expected to provide more discussion and oversight to PAs in the areas that represent relative strength areas for the physician (e.g., diagnosis). Therefore, the employment of PAs in complement to physicians may preserve the benefits that PAs bring to the healthcare system, while mitigating any quality drawbacks.

At the meta-analytic level, increased reliance on PAs raises an important issue for the medical community. Given the slow increase in the capacity of U.S. medical schools (e.g., relative to demand for care), it is inevitable that many applicants who are not admitted to a medical school subsequently enter a Physician Assistant program. Especially if used in substitute to physicians, these would-be physicians will be performing many of the duties that physicians perform, only with less training. In short, then, there is a revealed demand among healthcare suppliers for these individuals to perform physician-like healthcare. Further, such individuals have revealed a preference to be trained as physicians. As such, these are individuals who wish to be trained as individuals and that the healthcare system will employ in a physician-like capacity, but who are not granted the opportunity to train as physicians. In these cases, the physician training gates are completely closed, but the physician practice gates are not completely closed. By allowing these individuals to provide physician-like care but not to train as physicians, the healthcare system currently invites upon itself some level of unnecessary medical diagnostic error into the system. In the long run, then, the appropriate rate of medical school capacity expansion should be considered in determining the

appropriate balance between PA and physician reliance.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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