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GUEST EDITORIAL

The Primary Care Workforce Is Transitioning Away From a Physician-Dominated Model

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In the late 1800s, large cities like London and New York used a great number of horses for transportation of people and goods. There were thousands of horses in these cities. This created major problems, not the least of which was the tremendous amount of manure left behind on the streets. Besides being unsightly and smelly, the manure also attracted huge quantities of flies which then spread typhoid fever and other diseases. In 1894, *The Times* newspaper in London predicted that in 50 years, every street in London would be buried under nine feet of manure. This became known as the "Great Horse Manure Crisis of 1894".[1]

To address this situation, the problem was debated in 1898 at the world's first international urban planning conference in New York.[2] The great minds involved in developing policies could not find an adequate solution. Urban civilization seemed doomed to drown in horse manure.

So, what happened? The assumption that horses would always be the primary mode of transport was incorrect, as the world around changed. These discussions by policy makers assumed that the environment was static and did not consider that innovations could appear that would make those discussions only partially relevant to the new world.

The innovation that kept us from drowning in horse manure was not a policy position considered at an urban planning conference but rather a response to the problem from another sector: motorized transport. Electric trains, cars, and buses appeared on the streets, replacing the horse-drawn carriages and wagons. History has shown us that the environment isn't static and that policy decisions need to be nimble and account for innovations, even ones that opinion leaders do not initially consider.

THE DEBATE ON FAMILY MEDICINE LENGTH OF TRAINING

There has been significant discussion over the years about strategies to create a robust primary care workforce in the United States.[3] Some of the potential strategies discussed have focused on family medicine residency training. Since the late 1990s, opinion leaders and policy makers in family medicine have discussed a variety of models including (1) accelerated residencies where the last year of medical school is combined with the first year of a 3-year residency training, (2) 2-year residencies instead of 3 years, and (3) 4-year residencies instead of a 3-year residency.[4-8] In this issue of *Family Medicine*, Daniel Parente, MD, discuss the results of an evaluation of a 4-year residency training experience for family medicine residents.[9] All of these strategies around length of residency training suggest that their strategy will help to fill the primary care workforce in a better way (eg, 2-year residencies yield more rapid workforce creation; 4-year residencies yield a more skilled workforce). Yet, they are all based on an assumption that the primary care workforce will be primarily physicians.

Rather than asking the question, "Is a 4-year residency better than a 3-year residency?", it might be more useful to ask, "Where does the family physician fit in the new world order and how do we keep family physicians relevant?"

THE CURRENT HEALTH CARE ENVIRONMENT AND ITS RESPONSE TO PROVIDING A PRIMARY CARE WORKFORCE

It seems that the world has changed, and the assumptions underlying these discussions of family medicine length of training may be outdated and inconsistent with the current health care environment. It has been argued that market forces will make some of these discussions about training of a primary care physician workforce seem archaic.[10] In some

ways, these discussions about residency length of training are based on the antiquated assumption that the health care system will be built around a physician workforce. With current market forces, a primary care physician workforce may simply transition to a new-look primary care workforce with far fewer physicians. In fact, the recent National Academy of Medicine report, *Implementing High-Quality Primary Care*, focuses not on creating more primary care physicians for the workforce, but rather on creating primary care teams.[3]

NONPHYSICIAN PROVIDERS

A crucial change is that the majority of physicians in the United States are employees.[11] This was not the case in the late 1990s or even 20 years ago in 2005 when debates over length of residency training were underway. The health care industry has a substantial stake in dictating the composition of the health care workforce and seek to decrease costs and produce a readily accessible labor pool. Advanced practice providers (nurse practitioners [NPs] and physician assistants [PAs]) can be employed to fill the workforce much more rapidly, even as quickly as 2 years for a physician assistant. Compare this to the time needed to produce a family physician: 7 years, post college, and even longer if residency training is extended to 4 years.

This has led to a dramatic rise in the proportion of the primary care workforce that is composed of NPs and PAs compared to primary care physicians. According to the US Department of Health and Human Services, in 2022 there were 279,194 primary care physicians in the United States and 270,660 NPs delivering primary care.[12] In 2023, 28,282 PAs worked in primary care.[12] The proportion of visits delivered by NPs and PAs now accounts for one-quarter of all health care visits.[13] The transition away from a physician-based primary care workforce has already begun and every indication is that this transition will accelerate.

Because of the way that the health care industry is structuring the delivery of primary care it is becoming harder to conceptualize the delivery of care as physicians simply supported by advanced practice providers. The overlap in services performed by both nurse practitioners and physicians within the same practice account for more than 90% of all service volume.[14]

Regarding the desires of the health care industry to decrease costs, it is important to consider that advanced practice providers cost less to employ than physicians.[15] Evidence also indicates that primary care NPs use fewer and less expensive services than primary care physicians, thereby containing costs which, if alternative payment models from fee-for-service were implemented, would result in a workforce with more advanced practice providers and achieve even more savings.[15] Primary care physician shortages are being addressed by using alternative models to provide care rather than simply focusing on creating more primary care physicians.

There are legitimate concerns about restructuring the primary care workforce around providers with less training than family physicians. This transition may be happening as a way to backfill the workforce in the face of a primary care physician shortage, but the comparability of advanced practice providers in terms of training and expertise clearly engenders questions about perceived equivalence. The quality of care provided by a nonphysician workforce and what it can deliver to patients compared to family physicians in terms of differential diagnosis, understanding of pathophysiology, and pharmacology needs more study.

ARTIFICIAL INTELLIGENCE

Artificial intelligence (AI) in the realm of health care is a dawning phenomenon that was not considered in past discussions of family medicine residency length of training. It didn't exist then, but it exists now, and we shouldn't make assumptions about health care workforce development without factoring it in. Much like the discussions in the late 1890s around the problem of horse manure, automobiles and electric trams were being developed outside of the orbit of policy recommendations of urban planners. AI is acting in much the same way as it continues to move into health care workforce activities.

Assuming that the health care workforce models will build around primary care physicians and AI will just provide automated tasks to make physicians' lives easier seems naïve.[10] In fact, the Society of General Internal Medicine (SGIM) recently put forth a position statement that recognized that AI may remake the workforce.[16] The authors point out that the value set of both the health care and computing industries fundamentally differ from the values of the medical profession, and the position statement of SGIM urges the health care industry to avoid the inclination to rapidly displace the human clinical workforce with generative AI.

It may be that AI is not moving to completely replace primary care physicians, but it is possible that many of the labor-saving benefits of AI that make some physician tasks unnecessary (eg, differential diagnosis, note writing) will be recognized by the health care industry. Many of the skills that additional training provides will instead be delivered by AI, therefore it will be unnecessary to train humans to develop these skills. The financial officers in health care corporations could appropriately conclude that they are paying redundant providers who can do the same thing (physician and AI). Why pay for both? An alternative model would be to employ providers with less training than primary care physicians to work with AI to deliver triage and other aspects of routine primary care. This would leverage AI, decrease labor costs, and vastly enlarge the pool of providers. AI combined with an advanced practice provider human could help to fill in the primary care team that the National Academy of Medicine envisions. The quality of care delivered by this structure remains to be seen, but a new model of delivering care incorporating AI appears likely. As with the rise of advanced practice providers in the workforce, the substitution of personnel with less training may work adequately for common conditions but may have significant limitations in a truly undifferentiated patient population with a wide range

of diseases and comorbidities. More research is needed to establish that quality of care is not substantially damaged.

CONCLUSION

The Great Horse Manure Crisis of 1894 should sensitize us to the fact that the world is not static and that health care workforce problems may ultimately be addressed in ways other than through strategies focused on the development of the physician workforce. The health care industry is already moving to primary care delivery through teams that include personnel other than physicians and will ultimately incorporate AI. It is important to consider how to develop a better primary care physician workforce but it must be done in the context of societal change. Again, it seems the question at hand is "Where does the family physician fit in the new world order, and how do family physicians maintain their relevance?"

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