The COVID-19 pandemic continues to disrupt the nation's health care workforce. The Biden administration has responded by investing $1.5 billion from the American Rescue Act in programs and initiatives addressing deficits in the size, composition, and distribution of the current and future health care workforce, including a 27% increase in scholarship and loan repayment awards for primary care clinicians, dentists, nurses, and behavioral health professionals. While a welcome boost to expand and diversify the health care workforce, this funding should also target improvements in workforce forecasting models. Rigorous workforce modeling will allow for better evidence-based workforce policy in the future and is a logical complement to the funds allocated to the new Center for Disease Forecasting and Outbreak Analytics. In addition, while prior workforce models have focused on physicians, we believe modeling should also encompass the other health care professions targeted for investment.

Workforce projections of demand for and supply of health care professionals, starting at a minimum with an integrated model of physicians and nurses, are critical to informing policy solutions to workforce challenges over the longer term. A major shortcoming of current workforce models is their failure to incorporate the interconnectedness of health care professions. Consequently, they offer little guidance to policy makers considering the mix of health care professionals needed to achieve better health outcomes. The models also inadequately account for important changes in the organization of and payment for health care services. In essence, these workforce models largely project future demand and supply as if health care delivery remains static and physician driven. Evidence is mounting that postpandemic health care delivery and the ways the workforce will be used will be quite different from the prepandemic era.

Three deficits in modeling must be addressed to better project—and achieve—the goal of a workforce prepared to meet the health needs of society: improving the health care workforce data infrastructure; using modeling to help set a diversity, equity, and inclusion agenda for the health care workforce; and incorporating innovation and changes in health care delivery.

Data

Most national workforce data and projections come from the American Association of Medical Colleges (AAMC) Workforce Data Report and federal agencies such as the Health Resources and Services Administration (HRSA), with additional contributions from state and academic-based workforce centers.

Both the AAMC and the HRSA models use a microsimulation approach to project the supply and demand for health care services. Models are based on currently practicing physician characteristics, numbers of newly trained physicians, hours worked, and retirement patterns, and they incorporate basic factors like population characteristics, current care delivery patterns and utilization, and the availability of substitutes (ie, nurse practitioners). The validity of these predictions is limited by shortcomings in data completeness and granularity and gaps in research to inform key parameters.

Given the influx of funding to support the health care workforce, we believe it is crucial to use some of these dollars for improving modeling capabilities and enhancing workforce data collection. The gaps in data are so large that a conference of workforce experts should be convened to determine how richer and more timely data on training, race and ethnicity, geographic location, and
other characteristics could be obtained and better utilized. Additionally, funding the National Health Care Workforce Commission would help assure better data, modeling, and workforce policy decision-making.

**Equity**

Diversity in the health care workforce is a way to increase access and improve the quality of care for underserved populations. For example, patient-physician race concordance is consistently associated with improved communication. However, there are fewer Black Americans in the health care educational pipeline than in the existing health care workforce—meaning there will be a decline in their representation in the field over time. Salsberg and colleagues have advocated for tracking workforce diversity; both better data and better projections of trends in supply and demand are needed to inform workforce diversity policies.

The AAMC model has taken important steps in modeling scenarios of health equity, but they readily acknowledge that their projections “are not intended to describe what future demand for physicians is likely to be, but rather to highlight the large disparities in use of services between people.” More detailed modeling could help quantify the numbers and types of physicians needed to make up for existing health care disparities and as well as achieve the diversification needed for a more representative workforce. These projections could serve a vital role in informing policy on national, state, and institutional levels to achieve the workforce that is needed, rather than the one that exists.

**Innovation**

National initiatives through the Affordable Care Act, National Academy of Medicine, and interprofessional organizations seek to link care delivery innovations to evolving value-based payment systems. These innovations aim to reduce the use of specialty and inpatient care by emphasizing care management, team-based primary care, and home-based care. For example, Medicare Advantage plans, VA Primary Care Teams, and Federally Qualified Health Centers treat smaller panels of patients with robust primary care, embedding social and mental health services, and emphasizing each team member practicing at the top of their license.

On top of these existing trends, the pandemic caused many states to temporarily lift restrictions on nurse practitioner scope of practice. As lawmakers consider maintaining or rescinding these changes, their decisions would benefit from results of modeling the effects of these changes on system capacity and knowledge of which populations benefited from greater access to care. But because current workforce models lack information on how policies and market factors may change health care delivery patterns, policy makers are left guessing or relying on the views of groups with conflicting interests. Viewing workforce planning mainly from the perspective of a “physician shortage” neglects to account for the value and impact of other clinicians.

In addition, the COVID-19 pandemic necessitated rapid implementation of digital health solutions. Within weeks, practices nationwide converted to telehealth, facilitated by policy changes that vastly expanded coverage and lifted interstate restrictions on telehealth. New research showing that telehealth increases access and reaches underserved populations reveals tantalizing possibilities regarding application of this technology. However, the implications of such technologies for the health care professional mix are unclear, as neither the AAMC nor HRSA health care workforce models evaluate the effects of technology, including telehealth. While research is not yet definitive about the workforce effects of technologies such as telehealth, models should, at a minimum, present a range of scenarios regarding impacts of technology on workforce needs.
Conclusions

The COVID-19 pandemic has illuminated and exacerbated issues in the capacity, composition, and distribution of the health care workforce in the US. Health workforce analysts and modeling teams must take this opportunity to improve their projection models and increase the models’ usefulness in supporting meaningful progress. Recent legislation and Biden administration initiatives are directing billions of dollars to augment the health care workforce. Improving the workforce data collected and our modeling of the workforce we already need should be a priority.

Changes in health care delivery models, technology, and workforce diversity are challenging to assess. Nevertheless, to guide policy making on the workforce and the further research that is needed, these changes are increasingly important to model. Rather than precisely describing how to maintain the status quo, models should project the health care workforce needed to provide effective, efficient, and equitable care.

ARTICLE INFORMATION
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