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## **Introduction**

The US has enjoyed steady growth of the registered nurse (RN) workforce since the 1970s, providing the backbone of the nation's growing and evolving health care delivery systems. Now, three years into the COVID-19 pandemic the RN workforce is very much in flux. The acute needs of the first two years of the pandemic placed extraordinary demands on health care workers and health care institutions, with registered nurses often at the center of the crises. Reported shortages of key nursing personnel have been widespread, leading to cancellation of elective care, bed closures, and severe strain on the provision of both essential acute and long-term care services. These strains on the nursing workforce have led to reports of burnout, early retirement, and workplace dissatisfaction.

Developing effective strategies to strengthen the current and future RN workforce requires timely data on challenges facing the current workforce and forecasts of where the workforce is heading over the next decade. In the next three sections of this testimony, I summarize recent and ongoing research on the nursing workforce by me and others that is particularly relevant to understanding the state of the current RN workforce. In the final section, based on this evidence, I provide some recommendations on where we go from here.

The analyses that I discuss here focus on economic impacts using data collected in federal surveys of the nation's workforce that include RNs, including many analyses that are currently under way and not yet publicly available. This research describes the current nurse workforce, compares nurse workforce trends before and during the pandemic, identifies changes in where RNs were working during the pandemic, and builds on our 20-year record of forecasting the

future growth of the RN workforce. However, these federally collected surveys do not gather information about the non-economic impacts of the pandemic on RNs. The COVID-19 pandemic has exerted an enormous toll on nurses, physicians, and other health care workers, particularly in hospitals that were impacted initially by the pandemic and by ensuing strains and waves of the Corona virus. For that broader context, I defer to others to offer insights on the non-economic impact of the pandemic on the RN workforce in the US.

### **Employment and Earnings of RNs<sup>1</sup>**

Over the last four decades the RN workforce grew steadily from just over one million RNs in 1982 to 3.2 million in 2020. Today, the number of per capita RNs in the US is either on par with or higher than most other OECD countries, in contrast with the number of physicians, which is among the lowest of these nations. In 2000 there were projections of looming RN shortages as large numbers of RNs were nearing retirement age and few younger people were entering the profession.<sup>2</sup> In response to these projections numerous initiatives and public awareness campaigns generated increased interest in nursing as a career among younger people, resulting in continued steady growth of the workforce.

Since the start of the COVID-19 pandemic the RN workforce has been in flux. Recently published data found that the total employment of RNs declined by more than 100,000 between 2020 and 2021, the largest such decline since at least 1980. However, RN employment

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<sup>1</sup> This section draws largely from: Auerbach, Buerhaus, Donalan, and Staiger, "A worrisome Drop in the Number of Young Nurses," *Health Affairs Forefront*, April 13, 2022; Buerhaus, Staiger, Auerbach, Yates, and Donalan, "Nurse Employment During the First Fifteen Months of the COVID-19 Pandemic," *Health Affairs*, January 2022; and Auerbach, Buerhaus, and Staiger, "Implications of the COVID-19 pandemic for the future supply of registered nurses," unpublished manuscript, 2023.

<sup>2</sup> Buerhaus, Staiger, and Auerbach, "Implications of an Aging Registered Nurse Workforce," *JAMA*, June 14, 2000.

recovered dramatically in 2022 and is now nearly 5% above where it was in 2019. Hourly earnings of RNs (adjusted for inflation) were relatively unchanged in the decade before the pandemic, but have grown slightly faster than inflation since 2019, while earnings across all occupations have grown more slowly than inflation.<sup>3</sup> Thus, as of 2022, both RN employment and earnings have grown at or above their pre-pandemic trends.

The most notable development during the pandemic has been a shift of RN employment away from hospitals and into other settings such as outpatient clinics, MD offices, schools, etc.: All of the growth in RN employment between 2019 and 2022 occurred outside of hospitals. This helps to explain why hospitals continue reporting shortages of RNs despite robust growth of the overall RN workforce. Why this has occurred, and whether this trend will continue, is less clear. The shift away from hospital employment was particularly dramatic for older RNs, consistent with reports of increased stress and difficult working conditions exacerbated by the pandemic: A recent Medscape survey found that 40 percent of RNs said that COVID-19 had negatively impacted their career satisfaction. Actions will be needed to improve the workplace environment and attract RNs back to working in hospitals. Otherwise, hospitals will need to develop strategies to better utilize a smaller RN workforce.

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<sup>3</sup> The number of nurses working for employment agencies – including travel nurses – has nearly doubled during the pandemic. While these nurses are paid more than other nurses, they remain a small fraction of the workforce, accounting for less than 3% of the RN workforce in 2022.

## **The Nursing Pipeline<sup>4</sup>**

A key factor in understanding the future supply of RNs is the educational pipeline. The number of applications to baccalaureate nursing programs has risen rapidly over the past 20 years (more than doubling). While application growth slowed in 2020, it accelerated again in 2021, allaying concerns of declining interest in a nursing career. However, the pandemic decreased the academic preparedness of high school students entering nursing programs, which threatens to slow their educational progression and entry into the workforce.<sup>5</sup>

Similar patterns have occurred in annual graduations from nursing education programs and the number of NCLEX test-takers (the RN licensure exam), which have grown steadily through the pandemic and have never been higher. However, pass rates on the NCLEX declined sharply during the pandemic, from 88% in 2018 and 2019 to 81-82% in 2021 and 2022, again suggesting decreased preparedness of graduates to enter the workforce. Pass rates are likely to fall further with the introduction of the more difficult NextGen NCLEX coming later this year. Developing strategies to reverse these trends is essential.

## **Rural Nurses<sup>6</sup>**

Rural RNs play an integral role in providing care for an underserved population with worse health outcomes than urban counterparts. In contrast to physicians, the number of RNs per

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<sup>4</sup> Data on applications to BSN programs and NCLEX discussed in this section come from the National Council of State Boards of Nursing and the American Association of Colleges of Nursing.

<sup>5</sup> <https://www.prnewswire.com/news-releases/amid-a-national-nursing-shortage-prospective-nursing-students-say-lack-of-academic-preparedness-is-the-driving-decision-to-delay-or-forego-nursing-school-301621715.html>

<sup>6</sup> This section draws from Yates, Auerbach, Staiger & Buerhaus, "Characteristics of rural registered nurses and the implications for workforce policy," The Journal of Rural Health, 2023.

capita in rural areas is comparable to urban areas. While the number of physicians serving rural populations has decreased in recent years, and rural nurse practitioners (NPs) remain in short supply, rural RNs have steadily grown in numbers at a rate comparable to urban RNs.

Moreover, young rural nurses appear on pace with urban nurses to adequately replace older nurses and continue to grow the workforce.

While the numbers of rural RNs appear to be sufficient, the characteristics of the workforce do not align with the needs of the rural population. Rural RNs in 2019 were markedly more likely to be white, non-hispanic (89.1%) than either urban RNs (68.4%) or the rural population they serve (77.3%). In 2011, the Institute of Medicine recommended that 80% of RNs have a bachelor's degree by 2020, yet only half of rural RNs had a bachelor's degree or higher in 2019 compared to over 70% of urban RNs. The Department of Health and Human Services has recently announced "record-setting investments" to bolster the rural health workforce, including RNs, and to advance equity and ensure access to care. These burgeoning investments in the rural health workforce present opportunities to help diversify, increase educational access, and further rural readiness for RNs moving forward.

### **Where Do We Go from Here?**

While 100,000 RNs left the workforce in 2021, the RN workforce rebounded in 2022 and is back on track with pre-pandemic projections. In ongoing work with David Auerbach and Peter Buerhaus building on our 20-year record of forecasting the future growth of the RN workforce, we have estimated updated forecasts of growth in the RN workforce that incorporate these trends through 2022. Over the next decade we project the national RN workforce to not only

replace the expected retirement of an estimated 500,000 RNs but further expand by nearly 1 million RNs, with growth in RNs serving both rural and urban populations.

Nevertheless, there are three main concerns looking ahead:

1. Addressing the shift of the RN workforce away from the hospital. While the exact reasons for this shift are not yet clear, the trend is consistent with reports of increased stress and difficult working conditions in hospitals exacerbated by the pandemic. Improving the workplace environment will require constructive engagement with nurses to identify supportive characteristics of an organization's culture and reset trusting relationships with administrative and executive leaders. Much work has been done that hospitals and other organizations can draw from to frame and guide these conversations, particularly the National Academy of Medicine's National Plan for Health Workforce Well-Being (2022). Maximizing the services provided by the remaining RNs in the hospital will require redesigning of care delivery models and removal of unnecessary restrictions on nurses' scope of practice.
2. Addressing the decreased academic preparedness of students entering & exiting nursing schools. The decline in academic preparedness of students exiting nursing school may be short-lived if it is driven by remote instruction during the pandemic. However, it may continue for many years as students graduating from high school suffer the lingering effects of the pandemic. Recent estimates suggest that students in all grades, particularly those attending high poverty schools, lag roughly half a grade level behind

pre-pandemic achievement levels.<sup>7</sup> In either case, at least in the short term, nursing schools and employers will need to develop “booster” programs to provide their nursing students and new nurse employees with needed training. Otherwise, the pipeline of incoming nurses will be both fewer in number and less well prepared. It would be appropriate for the federal government to provide some support for this training through pandemic relief funds.

3. Addressing the need to diversify the rural workforce and increase bachelor’s degrees among rural RNs. The American Rescue Plan and CARES acts directed a new Health Workforce Strategic Plan from the Department of Health and Human Services, in which increased rural access to care and workforce diversity are critical goals. Because RNs represent a large and growing proportion of health care providers serving rural communities, policymakers should consider directing some of these resources toward the RN workforce to increase bachelor’s degrees among rural RNs and help achieve greater diversity among the RN providers in rural communities. For example, scholarships that require subsequent service in rural hospitals (like loan forgiveness but without the negative connotations associated with debt) could be used to encourage under-represented groups to become rural RNs or to encourage rural RNs with an associates degree to obtain a baccalaureate degree.

Finally, as I stated at the beginning, developing effective strategies to strengthen the current and future RN workforce requires timely data. One of the 4 key messages in the Institute of

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<sup>7</sup> <https://projects.iq.harvard.edu/cepr/education-recovery-scorecard>

Medicine's 2011 report *The Future of Nursing: Leading Change, Advancing Health* was that "Effective workforce planning and policy making requires better data collection and an improved information infrastructure." The ACA created the National Health Care Workforce Commission and the National Center for Workforce Analysis to, among other things, coordinate the collection of data and analysis of the health care workforce. This would be an opportune time to use those existing structures to support better data collection and continued analysis for monitoring the lingering effects of the COVID-19 pandemic on the health care workforce.