

DON'T WAIT FOR  
WASHINGTON



# DON'T WAIT FOR WASHINGTON

HOW STATES CAN REFORM  
HEALTH CARE TODAY

EDITED BY  
BRIAN C. BLASE, PhD

Paragon Health Institute

Copyright © 2021 Paragon Health Institute

All parts of this publication are protected by copyright and/or related rights. You are free to reproduce, store in a retrieval system, or transmit in any form or by any means—electronic, mechanical, photocopy, recording, or any other—as well as modify the work as long as proper attribution is given to the authors and the Paragon Health Institute as the original publication source, as well as a link to the Paragon Health Institute website ([www.paragoninstitute.org](http://www.paragoninstitute.org)) is provided.

Printed in the United States of America.

ISBN: 979-8-9850916-2-5 (Paperback)

ISBN: 979-8-9850916-1-8 (PDF)

ISBN: 979-8-9850916-0-1 (epub)

21 22 23 24 25      10 9 8 7 6 5 4 3 2 1



# Unshackle Providers

---

## Don't Waste Their Training

---

Robert F. Graboyes, PhD, and Darcy Nikol Bryan, MD

### KEY TAKEAWAYS

- Arbitrary restraints on America's health care workforce diminish access to care—especially in rural areas, lower-income urban neighborhoods, and minority communities.
- State licensure laws obstruct providers wishing to offer services across state lines and international medical graduates wishing to practice here.
- Scope-of-practice laws prevent advanced practice registered nurses (APRNs) and other health care providers from offering services for which they are trained and competent.
- Mandatory collaborative practice agreements foist unnecessary costs on, and restrict the mobility of, APRNs and other health care providers.

### PROBLEM

America's supply of health care resources is artificially constrained by a maze of laws and regulations. In 2020, *USA Today* reported that 218 U.S. counties have no doctors at all.<sup>1</sup> In some areas, physicians are present but patients must wait weeks to secure an appointment.<sup>2</sup> Many regions are critically short on specialists.<sup>3,4</sup> Scope-of-practice laws prohibit classes of health care professionals from offering services for which they are fully qualified,<sup>5</sup>

and such limitations often rest on political considerations rather than on professionals' competency, qualifications, and training.<sup>6</sup>

Rural health care is deteriorating at an alarming rate as hospitals close and health care providers leave communities or retire, most often without replacement. The majority of primary care Health Professional Shortage Areas (HPSAs) are in rural areas.<sup>7</sup> The poor in urban areas as well as those in rural communities suffer poor health outcomes, in part from an inability to access affordable health care in a timely manner.<sup>8</sup> Minorities account for more than half the uninsured population<sup>9</sup> and are disproportionately impacted by poor access to health care.<sup>10</sup>

Obtaining affordable, quality health care is a problem for many in the United States. The problem is even more frustrating because ballooning health care costs and poor access are self-inflicted by a regulatory apparatus that hinders competition and fosters monopolies. It is increasingly evident that the most vulnerable in our population are paying the price of health care provider scarcity brought about by regulatory barriers involving licensure, scope of practice, and collaborative practice agreement (CPA) mandates.

## LICENSURE RESTRICTIONS

While federalism and state sovereignty play an important role in American governance, state licensure laws often amount to government-enforced protectionism for established licensees.<sup>11</sup> One result is excessive limitations on health care providers' ability to migrate, permanently or temporarily, across state lines in order to respond to shifting demand patterns among patients.<sup>12</sup>

The need for international medical graduates (IMGs) is forecast to increase considerably in the coming decades. Already, nearly 25 percent of the physicians practicing in the United States received their training elsewhere.<sup>13</sup> In 2020, the American Association of Medical Colleges issued a paper forecasting that "the United States could see an estimated shortage of between 54,100 and 139,000 physicians, including shortfalls in both primary and specialty care, by 2033."<sup>14</sup>

The historical evolution of medical licensure places control with states, while national credentialing bodies, such as specialty boards, and licensing exams seek uniform competence across state lines. All states require passing the medical licensing exams called the United States Medical Licensing Examination for medical students or the Comprehensive Osteopathic

Medical Licensing Examination of the United States of America for osteopathic students.

Each state asks a licensing applicant similar questions during the application process, which takes several hours to complete. State licensing perversely ensures an immobile, slow-to-respond, fragmentary health care workforce. With the development of telemedicine, restricting health care provision within state boundaries seems increasingly arbitrary. For example, there are no medical reasons for preventing a psychiatrist in Oregon from counseling a patient in Nebraska. It is difficult to justify requiring the psychiatrist to pay for a separate license—and endure a repetitive application process—in each state where he or she provides care.

Many providers will not bear these redundant costs, further exacerbating access issues for patients in need. For an applicant seeking a license in a new state, the wait time for approval can range from two to nine months.<sup>15</sup> Fees for individual state applications range from \$35 to \$1,425 per state.<sup>16</sup>

Many states waived their medical licensure requirements in response to the COVID-19 crisis, provided the practitioner held a license in another U.S. state. This was sensible, as there are no real differences in screening processes among states. While federalism has many virtues, the promising evolution of telemedicine, care to the underserved, and the ability to respond to health emergencies will only be hindered by antiquated state-by-state licensing requirements. The success of telehealth during the COVID outbreak has led to calls to make cross-state licensing and other liberalization permanent.<sup>17,18</sup>

## **SCOPE-OF-PRACTICE LIMITATIONS**

Physicians are granted the privilege to practice medicine as defined by a particular state's medical board, with practical limitations determined mostly by credentialing bodies, including specialty boards and hospitals. For non-MDs, scope-of-practice laws and regulations legally define the extent of permissible practice privileges. All too often, scope-of-practice laws forbid a health care provider, such as a nurse practitioner (NP) or physician assistant (PA), from performing a service he or she was trained to do.

Although aligned, professional competence and legal scope of practice are different. Legal scope of practice is highly variable between states and is often arbitrary. For example, dental hygienists are routinely trained to administer local anesthesia, but some states forbid them from providing this service.<sup>19</sup>

In North Carolina, dental hygienists were prohibited from performing teeth-whitening procedures until the U.S. Supreme Court ended that prohibition in 2015.<sup>20</sup> Monica O'Reilly-Jacob and Jennifer Perloff called for permanent revision of NP laws, considering the experience during the pandemic.<sup>21</sup>

Non-MD providers often lack the political power to reform scope-of-practice laws. Physicians provide far more in political contributions than nonphysician providers.<sup>22</sup>

## **MANDATORY COLLABORATIVE PRACTICE AGREEMENTS**

Many states mandate physician supervision of non-MDs. This constricts the supply of care and increases its cost. These agreements purport to ensure quality by allowing a non-MD health professional to practice beyond their state-defined scope by requiring oversight from a supervisory physician, but evidence contradicts the notion that such supervision is necessary to uphold quality standards.

Christopher H. Stucky, William J. Brown, and Michelle G. Stucky argue that NPs have a unique role in health care and that “antiquated job titles pervasive in the workplace for NPs such as ‘midlevel provider,’ ‘physician extender,’ or ‘nonphysician provider’ are misleading and do not fully capture the importance of nursing.” They argue that the hierarchical aspects of medicine lead to higher costs and redundancy.<sup>23</sup>

Policies that eliminate mandates for physician supervision of non-MD health professionals while supporting non-MD health educational and training standards would expand the available health care workforce capable of providing quality, affordable care. For example, an independently practicing nurse practitioner, midwife, pharmacist, optometrist, or dental hygienist would be able to work in communities that have no doctor or dentist at the full capacity of their training—an obvious win for the underserved. Many states already grant autonomy to non-MD health professionals.<sup>24</sup> The opportunity to become an independent non-MD health practitioner, without the restrictions of scope-of-practice laws or CPAs, may inspire minorities in challenged communities to continue their educations and gain the skills needed to serve as non-MD providers, thereby increasing diversity in the health care workforce and access in places where people have difficulty obtaining care when they need it.

Judith Ortiz and colleagues found “strong indications that the quality of patient outcomes is not reduced when the scope of practice is expanded.”<sup>25</sup>

Similarly, Bo Kyum Yang and colleagues found “expanded state NP practice regulations were associated with greater NP supply and improved access to care among rural and underserved populations without decreasing care quality.”<sup>26</sup> Edward J. Timmons found that “permitting nurse practitioners to practice autonomously is associated with patients receiving more care without increasing cost” and “an 8 percent increase in the amount of care that Medicaid patients receive once nurse practitioners are granted autonomy and full practice authority.”<sup>27</sup> A Veterans Affairs (VA) study showed that “patients reassigned to NPs experienced similar outcomes and incurred less utilization at comparable cost relative to MD patients.”<sup>28</sup> Gina M. Oliver and colleagues found that “states with full practice of nurse practitioners have lower hospitalization rates in all examined groups and improved health outcomes in their communities. Results indicate that obstacles to full scope of APRN practice have the potential to negatively impact our nation’s health.”<sup>29</sup>

If a professional is fully trained and certified to provide a service, requiring the contractual mechanism of a collaborative agreement essentially gives a competing professional a piece of their practice and profit. This supervision, enforced via CPAs, adds to the cost of health care, with two practitioners (i.e., NP and supervising physician) billing for the same patient service. If all states allowed NPs to practice autonomously, the estimated annual cost savings would be \$810 million.<sup>30</sup>

Mandatory CPAs effectively place one class of health care professional under the control of another class. In some states, for example, nurse practitioners must be supervised by physicians and may have to pay the doctor for such services. Such agreements consume time and financial resources for practitioners involved.<sup>31</sup> Brendan Martin and Maryann Alexander wrote, “Required CPA fees, whether offset by a facility or not, emerged as particularly strong barriers to independent practice and, thereby, possible impediments to access in this analysis. In line with market research on provider compensation, out-of-pocket expenses to establish and maintain CPAs often exceeded \$6,000 annually, with numerous respondents reporting fees more than \$10,000 and up to a maximum of \$50,000 per year.”<sup>32</sup>

One company advises that “NPs can expect to pay a physician anywhere from \$5 to \$20 per chart reviewed. . . . As a flat, annual fee, [one legal advisor] most commonly sees MDs paid anywhere from five to fifteen thousand dollars per year.”<sup>33</sup> A number of states suspended mandatory CPAs during the COVID emergency.<sup>34</sup>

## PROPOSAL

There are many proposals to address the limits that government places on health care professionals—to allow them to provide services for which they are fully trained and qualified, in order to best meet patient need. Interstate licensure reforms include having states join the Interstate Medical Licensure Compact (IMLC)<sup>35</sup> or Arizona’s 2019 action that enables licensed professionals from other states to begin practicing as soon as they relocate to Arizona.<sup>36</sup> Many of these ideas have been embedded in state laws and regulations for years.<sup>37</sup> Policy options include allowing APRNs to practice “at the top of their license”<sup>38</sup> and without CPAs.<sup>39</sup> (Some have suggested using the term “top of education” or “top of skill set,” since actual licenses may forbid providers from performing certain services for which they are trained and qualified. With that caveat in mind, we will retain the term “top of license” here in the interest of familiarity.)

Relaxing the strictures of licensure, scope of practice, and CPAs can be cost-effective by, for example, enabling a patient to seek care from a less-expensive NP or PA rather than from a doctor. It can help expand access in communities where care is in short supply—especially in rural areas, inner cities, and among linguistic minorities. In essence, these reforms would expand the supply of health care without necessarily increasing the number of providers.

States should eliminate arbitrary restrictions on where providers may practice, which services they may provide, and how much autonomy the professionals may possess. States should consider the following policies:

1. Allow a provider with a valid license in another state to practice immediately upon relocating. In 2019, Arizona became the first state to pass such sweeping legislation (for all licensed professionals other than attorneys).<sup>40</sup>
2. Join the IMLC.<sup>41</sup> States that belong to this grouping agree to recognize medical licenses issued by all other members of the compact. Hence, a physician licensed (and in good standing) in one of these states may practice in any of the other member states. As of July 2021, 30 states, the District of Columbia, and Guam belonged to the IMLC, and others were in the process of joining.
3. Allow licensed physicians (and perhaps PAs and APRNs) to practice telehealth across state lines. During the COVID-19 pandemic,

licensed physicians nationwide have been allowed to treat patients via telemedicine in any state. As the pandemic recedes, a number of states have taken action or begun to make this interstate provision of telehealth permanent.<sup>42</sup> (See chapter 6 on telehealth.)

4. Simplify the process of offering licenses to IMGs—those who received their training outside the United States or Canada.<sup>43</sup>
5. Allow all providers—physicians, PAs, APRNs, and other non-MD health professionals (e.g., pharmacists, therapists, psychologists, optometrists, nurse midwives) to practice at the top of their respective licenses. That is, a health care professional could be allowed to provide any service that is a standard component of his or her profession's formal training.
6. Allow APRNs, PAs, and others to practice without CPAs that require them to be supervised or reviewed by a physician. Of course, APRNs or PAs are free to enter voluntarily into such agreements if they wish.

## RATIONALE

The inability to access our health care system in a timely fashion is a recognized problem in the United States, exacerbated by a worsening shortage in the health care workforce. As the U.S. population ages and consumes more medical care, providers are aging as well. According to the Association of American Medical Colleges, in 2017, 44 percent of U.S. doctors were over the age of 55.<sup>44</sup> In a 2017 survey, the National Council of State Boards of Nursing noted that 50 percent of the nursing workforce was 50 years old or older.<sup>45</sup> The World Health Organization (WHO) projects a shortage of 18 million health care workers worldwide by 2030—limiting America's capacity to rely on immigrant providers.<sup>46</sup>

In 2017, the U.S. Census Bureau estimated that the number of Americans over age 65 would increase from 56 million in 2020 to 73 million in 2030 and 81 million in 2040.<sup>47</sup> A 2009 Institute of Medicine paper also suggested that the number of doctor visits per person would increase.<sup>48</sup> We simply cannot train enough providers soon enough to meet the projected gap. Current bottlenecks include restrictive health care training (e.g., limited residency slots for physicians<sup>49</sup>), a shortage of community training sites in rural areas,<sup>50</sup> and a shortage of nursing school faculty.<sup>51</sup> Under current conditions, delayed access

to health care will only worsen in the United States as the existing health care workforce retires and health care needs grow.

The importance of health care access became more apparent during the COVID-19 pandemic. In a June 2020 KFF Health Tracking Poll, 27 percent of respondents who reported skipping or postponing care during the pandemic also reported worsening medical conditions.<sup>52</sup> States with high numbers of COVID-19 deaths also reported more deaths from non-COVID-related causes, such as diabetes and heart disease.<sup>53</sup> Older data, such as a VA study showing increased mortality among those waiting more than 31 days for an outpatient doctor's visit, also confirms the importance of access.<sup>54</sup>

The canary in the coal mine is the collapse of health care access in rural America, foreboding a disturbing national picture if we do not make aggressive policy changes soon. The recommendations for overturning scope-of-practice regulations, liberating medical licensure, welcoming foreign graduates, and expanding telemedicine (see chapter 6) have been echoed by the National Rural Health Association, inspired by the direct trauma of hemorrhaging resources.<sup>55</sup> To expand health care access and improve health, we must utilize our health care professionals to the full extent of their training, allow them free movement to areas of high demand across state borders, and liberate them from needless supervision that prevents patients from benefiting from their full skills and knowledge. According to the American Association of Nurse Practitioners, 23 states, the District of Columbia, and two U.S. territories have the best policy for NPs, allowing them “full practice authority.”<sup>56</sup> This means that they can “evaluate patients; diagnose, order and interpret diagnostic tests; and initiate and manage treatments, including prescribing medications and controlled substances, under the exclusive licensure authority of the state board of nursing.”<sup>57</sup>

## OVERCOMING OPPOSITION

Some physicians and other providers will oppose relaxation of these restrictions, many because they sincerely believe the restrictions improve patients' safety,<sup>58</sup> but states that exert a lighter touch on scope of practice, licensure, and CPAs ought to provide a beacon to other states. COVID-19 provoked a great loosening of restrictions. It is still too early for conclusive evidence, but there are indications that these actions were beneficial.<sup>59,60</sup> A 2020 paper found that telemedicine improved obstetric and gynecological care.<sup>61</sup>

Unleashing health care providers is not an easy or overnight task. After all, well over a century's effort went into restricting providers' ability to practice to the full extent of their capabilities. The advocates of such restrictions often have hidden motives—to protect the turfs and financial interests of established providers. Nobel Prize-winning economist Milton Friedman described the American Medical Association (AMA) as “the strongest trade union in the United States.” He argued that the AMA effectively had the means to limit the supply of physicians, thereby increasing doctors' incomes.

Some physician groups will argue against the relaxation of scope-of-practice laws, licensure procedures, and mandatory CPAs. Those who favor the unleashing of providers will need to have their counterarguments in order, including that:

1. Maintaining current restrictions is simply not feasible given that certain health care professionals are in short supply and that this situation is likely to worsen over the next few decades.
2. Many of the existing restrictions cannot be defended on the basis of patient well-being.
3. The restrictions are particularly damaging in rural areas, inner cities, and among certain minority groups, including linguistic minorities.
4. A substantial number of states have already loosened these strictures, with no apparent untoward effects on patients' well-being.
5. COVID-19 prompted a “great unleashing.” Scope-of-practice laws were temporarily eased, as were mandatory CPAs. Barriers to interstate practice of medicine were suspended—both for telemedicine and, to a lesser extent, for in-person services. The easing of these restrictions proved to be a great boon to the fight against COVID, again with few, if any, deleterious effects. If removing these restrictions made sense in the fight against COVID, then it follows that removing them makes sense generally.

## CONCLUSION

America's principal debate over health care has revolved around coverage—how many Americans have insurance coverage and how that coverage is paid for. But insurance cards do not assure that care will be available. Many

localities are short on providers or appointments to see those providers. Some states have now reduced the strictures imposed by scope of practice, professional licensure, and CPAs.

The COVID-19 pandemic vastly accelerated this trend. A leading health policy issue in the coming years will be whether this opening up will be permanent or ephemeral. Americans' access to care will greatly depend on the answer.

## ABOUT THE AUTHORS

Darcy Nikol Bryan, MD, is a senior affiliated scholar with the Mercatus Center at George Mason University and has an active practice in obstetrics and gynecology at Women's Care Florida. She earned an MD from Yale University School of Medicine and a master's in public administration from the University of Texas at Arlington. Her research is in technological and organizational innovation in health care, with a particular focus on public policy and women's health. She has authored a chapter in *The Economics of Medicaid: Assessing the Costs and Consequences* (Mercatus Center at George Mason University, 2014), and coauthored the medical humanities book *Women Warriors: A History of Courage in the Battle against Cancer* (AuthorHouse, 2002).

Robert F. Graboyes, PhD, is a senior research fellow at the Mercatus Center at George Mason University, where he focuses on technological innovation in health care. His work asks, "How can we make health care as innovative in the next 30 years as information technology was in the past 30 years?" He authored the monograph "Fortress and Frontier in American Health Care" and won the 2014 Bastiat Prize for Journalism. Previously, he worked for the National Federation of Independent Business, the University of Richmond, the Federal Reserve Bank of Richmond, and Chase Manhattan Bank. He has been an adjunct professor of health economics at Virginia Commonwealth University, the University of Virginia, George Mason University, and George Washington University. His work has taken him to Europe, sub-Saharan Africa, and central Asia. He earned his PhD in economics from Columbia University and also holds degrees from Virginia Commonwealth University, the College of William and Mary, and the University of Virginia.

## ENDNOTES

1. Douglas A. McIntyre, "Amid Coronavirus Pandemic, These 218 Mainly Rural Counties Do Not Have a Single Doctor," *USA Today*, updated April 23, 2020, <https://www.usatoday.com/story/money/2020/04/23/coronavirus-pandemic-218-us-rural-counties-without-a-single-doctor/111582818/>.
2. Medical Group Management Association, "How Long Are Patients Waiting for an Appointment?," June 21, 2018, <https://www.mgma.com/data/data-stories/how-long-are-patients-waiting-for-an-appointment>.
3. Ariel Hart, "Georgia Faces Rural Doctor Shortage," *Atlanta Journal-Constitution*, August 17, 2018, <https://www.ajc.com/news/state--regional-govt--politics/georgia-faces-rural-doctor-shortage/JqAwfs1SLiqCwVNronKScM/>.
4. Ken Terry, "80% of US Counties Have No ID Specialists," *Medscape*, June 9, 2020, <https://www.medscape.com/viewarticle/932041>.
5. National Academies of Sciences, Engineering, and Medicine, *Assessing Progress on the Institute of Medicine Report The Future of Nursing* (Washington, DC: National Academies Press, 2016).
6. Edward J. Timmons, "Healthcare License Turf Wars: The Effects of Expanded Nurse Practitioner and Physician Assistant Scope of Practice on Medicaid Patient Access" (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, 2016).
7. Rural Health Information Hub, "Healthcare Access in Rural Communities," updated January 18, 2019, <https://www.ruralhealthinfo.org/topics/healthcare-access>.
8. Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services, "Healthy People 2020 Social Determinants of Health," updated June 23, 2021, <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/access-to-health>.
9. Melissa Majerol, Vann Newkirk, and Rachel Garfield, *The Uninsured: A Primer, Key Facts about Health Insurance and the Uninsured in the Era of Health Reform*, Kaiser Commission on Medicaid and the Uninsured, report (Menlo Park, CA: Kaiser Family Foundation, November 2015).
10. Nambi Ndugga and Samantha Artiga, "Disparities in Health and Health Care: 5 Key Questions and Answers," Kaiser Family Foundation, May 11, 2021, <https://www.kff.org/racial-equity-and-health-policy/issue-brief/disparities-in-health-and-health-care-5-key-question-and-answers/>.
11. Robert Highsmith Jr., "Supreme Court Limits Protectionism by State Healthcare Licensing Boards," *JD Supra*, March 4, 2015, <https://www.jdsupra.com/legalnews/supreme-court-limits-protectionism-by-st-51332/>.
12. Robert Kocher, "Doctors without State Borders: Practicing across State Lines," *The Health Care Blog*, February 24, 2014, <https://thehealthcareblog.com/blog/2014/02/24/doctors-without-state-borders-practicing-across-state-lines/>.

13. Association of American Medical Colleges, “Active Physicians Who Are International Medical Graduates (IMGs) by Specialty, 2017,” Physician Specialty Data Report, December 2017, <https://www.aamc.org/data-reports/workforce/interactive-data/active-physicians-who-are-international-medical-graduates-imgs-specialty-2017>.
14. Association of American Medical Colleges, “New AAMC Report Confirms Growing Physician Shortage,” press release, June 26, 2020, <https://www.aamc.org/news-insights/press-releases/new-aamc-report-confirms-growing-physician-shortage>.
15. “How Long Does It Take to Get a Physician License in Each State?,” *Nomad Health* (blog), last modified October 16, 2018, <https://blog.nomadhealth.com/how-long-does-it-take-to-get-a-physician-license-in-each-state/>.
16. Robert Orr, “U.S. Health Care Licensing: Pervasive, Expensive, and Restrictive,” Niskanen Center, last modified May 12, 2020, <https://www.niskanencenter.org/u-s-health-care-licensing-pervasive-expensive-and-restrictive/>.
17. Anita Slomski, “Telehealth Success Spurs a Call for Greater Post-Covid-19 License Portability,” *Journal of the American Medical Association* 324, no. 11 (September 15, 2020): 1021–1022.
18. American Hospital Association, “AHA Statement on the Future of Telehealth: COVID-19 Is Changing the Delivery of Virtual Care,” testimony to U.S. House of Representatives, March 2, 2021, <https://www.aha.org/2021-03-02-aha-statement-future-telehealth-covid-19-changing-delivery-virtual-care>.
19. Catherine Dower, Jean Moore, and Margaret Langelier, “It Is Time to Restructure Health Professions Scope-of-Practice Regulations to Remove Barriers to Care,” *Health Affairs* 32, no. 11 (2013): 1971–1976.
20. Michael Doyle, “Supreme Court Says ‘Open Wide’ to North Carolina Teeth-Whitening Business,” *McClatchy DC*, February 25, 2015.
21. Monica O’Reilly-Jacob and Jennifer Perloff, “The Effect of Supervision Waivers on Practice: A Survey of Massachusetts Nurse Practitioners during the COVID-19 Pandemic,” *Medical Care* 59, no. 4 (2021): 283–287.
22. Benjamin J. McMichael, “The Demand for Health Care Regulation: The Effect of Political Spending on Occupational Licensing Laws,” *Southern Economic Journal* 84, no. 1 (2017): 297–316.
23. Christopher H. Stucky, William J. Brown, and Michelle G. Stucky, “COVID 19: An Unprecedented Opportunity for Nurse Practitioners to Reform Health Care and Advocate for Permanent Full Practice Authority,” *Nursing Forum* 56, no. 1 (2020): 222–227.
24. Jared Rhoads, Darcy Bryan, and Robert Graboyes, “Health Care Openness and Access Project 2020: Full Release” (Mercatus Research, Mercatus Center at George Mason University, Arlington, VA, 2020).
25. Judith Ortiz, Richard Hoffer, Angeline Bushy, Yi-Ling Lin, Ahmad Khanijahani, and Andrea Bitney, “Impact of Nurse Practitioner Practice Regulations on Rural Population Health Outcomes,” *Health Care* 6, no. 2 (2018): 65.

26. Bo Kyum Yang, Mary E. Johantgen, Alison M. Trinkoff, Shannon J. Idzik, Jessica Wince, and Carissa Tomlinson, "State Nurse Practitioner Practice Regulations and U.S. Health Care Delivery Outcomes: A Systematic Review," *Medical Care Research and Review* 78, no. 3 (2021): 183–196.
27. Edward J. Timmons, "The Benefits of Mobilizing Nurse Practitioners in Virginia" (Mercatus Testimony, Mercatus Center at George Mason University, Arlington, VA, 2021).
28. Chuan-Fen Liu, Paul L. Hebert, Jamie H. Douglas, Emily L. Neely, Christine A. Sulc, Ashok Reddy, Anne E. Sales, and Edwin S. Wong, "Outcomes of Primary Care Delivery by Nurse Practitioners: Utilization, Cost, and Quality of Care," *Health Services Research* 55, no. 2 (2020): 178–189.
29. Gina M. Oliver, Lila Pennington, Sara Revelle, and Marilyn Rantz, "Impact of Nurse Practitioners on Health Outcomes of Medicare and Medicaid Patients," *Nursing Outlook* 62, no. 6 (2014): 440–447.
30. Joanne Spetz, Stephen T. Parente, Robert J. Town, and Dawn Bazarko, "Scope-of-Practice Laws for Nurse Practitioners Limit Cost Savings That Can Be Achieved in Retail Clinics," *Health Affairs* 32, no. 11 (2013): 1977–1984.
31. Centers for Disease Control and Prevention, "Practical Implications of State Law Amendments Granting Nurse Practitioner Full Practice Authority," [https://www.cdc.gov/dhds/pubs/docs/Nurses\\_Case\\_Study-508.pdf](https://www.cdc.gov/dhds/pubs/docs/Nurses_Case_Study-508.pdf).
32. Brendan Martin and Maryann Alexander, "The Economic Burden and Practice Restrictions Associated with Collaborative Practice Agreements: A National Survey of Advanced Practice Registered Nurses," *Journal of Nursing Regulation* 94, no. 4 (2019): 2230.
33. ThriveAP, "How Much Should NPs Expect to Pay a Collaborating Physician?," April 27, 2017, <https://thriveap.com/blog/how-much-should-nps-expect-pay-collaborating-physician>.
34. American Association of Nurse Practitioners, "COVID-19 State Emergency Response: Temporarily Suspended and Waived Practice Agreement Requirements," updated July 16, 2021, <https://www.aanp.org/advocacy/state/covid-19-state-emergency-response-temporarily-suspended-and-waived-practice-agreement-requirements>.
35. Interstate Medical Licensure Compact, "U.S. State Participation in the Compact," <https://www.imlcc.org/>.
36. Jonathan J. Cooper, "Arizona Becomes 1st to Match Out-of-State Work Licenses," *AP News*, April 10, 2019.
37. Rhoads, Bryan, and Graboyes, "Health Care Openness and Access Project 2020."
38. Michael Brady, "CMS to Allow Providers to Practice at Top of License across States," *Modern Health Care*, April 9, 2020.
39. Amy Korte, "Rauner Signs Bill Expanding Practice Authority for Certain Nurses," *Illinois Policy*, September 28, 2017.

40. Ryan Randazzo and Mitchell Atencio, “Here’s What You Need to Know about Arizona’s New Law for Out-of-State Work Licenses,” *AZCentral*, April 22, 2019.
41. Interstate Medical Licensure Compact, “U.S. State Participation in the Compact.”
42. Federation of State Medical Boards, “U.S. States and Territories Modifying Requirements for Telehealth in Response to COVID-19,” updated July 28, 2021, <https://www.fsmb.org/siteassets/advocacy/pdf/states-waiving-licensure-requirements-for-telehealth-in-response-to-covid-19.pdf>.
43. Philip Sopher, “Doctors with Borders: How the U.S. Shuts Out Foreign Physicians,” *The Atlantic*, November 18, 2014.
44. Association of American Medical Colleges, “Active Physicians by Age and Specialty, 2017,” Physician Specialty Data Report, December 2017, <https://www.aamc.org/data-reports/workforce/interactive-data/active-physicians-age-and-specialty-2017>.
45. Richard A. Smiley and Cynthia Bienemy, “Results from the 2017 National Nursing Workforce Survey,” National Council of State Boards of Nursing, October 24, 2018, [www.ncsbn.org/2018SciSymp\\_Smiley-Bienemy.pdf](http://www.ncsbn.org/2018SciSymp_Smiley-Bienemy.pdf).
46. Matthew Limb, “World Will Lack 18 Million Health Workers by 2030 without Adequate Investment, Warns UN,” *BMJ* 354 (2016), <https://www.who.int/hrh/com-heeg/bmj.i5169.full.pdf>.
47. U.S. Census Bureau, “2017 National Population Projections Tables: Main Series,” last modified February 20, 2020, <https://www.census.gov/data/tables/2017/demo/popproj/2017-summary-tables.html>.
48. Institute of Medicine National Cancer Policy Forum, *Ensuring Quality Cancer Care through the Oncology Workforce: Sustaining Care in the 21st Century: Workshop Summary* (Washington, DC: National Academies Press, 2009), [www.ncbi.nlm.nih.gov/books/NBK215247](http://www.ncbi.nlm.nih.gov/books/NBK215247).
49. Patrick Boyle, “Medical School Enrollments Grow, but Residency Slots Haven’t Kept Pace,” Association of American Medical Colleges, September 3, 2020, [www.aamc.org/news-insights/medical-school-enrollments-grow-residency-slots-haven-t-kept-pace](http://www.aamc.org/news-insights/medical-school-enrollments-grow-residency-slots-haven-t-kept-pace).
50. Elizabeth Burrows, Ryung Suh, and Danielle Hamann, “Health Care Workforce Distribution and Shortage Issues in Rural America,” National Rural Health Association Policy Brief, January 2012, <https://www.ruralhealthweb.org/getattachment/Advocate/Policy-Documents/HealthCareWorkforceDistributionandShortageJanuary2012.pdf.aspx?lang=en-US>.
51. American Association of Colleges of Nursing, “Nursing Faculty Shortage,” fact sheet, updated September 2020, <https://www.aacnnursing.org/news-information/fact-sheets/nursing-faculty-shortage>.
52. Liz Hamel, Audrey Kearney, Ashley Kirzinger, Lunna Lopes, Cailey Muñana, and Mollyann Brodie, “KFF Health Tracking Poll—June 2020,” Kaiser Family Foundation, June 26, 2020.

53. Julius Chen and Rebecca McGeorge, “Spillover Effects of the COVID-19 Pandemic Could Drive Long-Term Health Consequences for Non-COVID-19 Patients,” *Health Affairs* (blog), October 23, 2020, [www.healthaffairs.org/doi/10.1377/hblog20201020.566558/full](http://www.healthaffairs.org/doi/10.1377/hblog20201020.566558/full).
54. Julia C. Prentice and Steven D. Pizer, “Delayed Access to Health Care and Mortality,” *Health Services Research* 42, no. 2 (2007): 644–662.
55. Burrows, Suh, and Hamann, “Health Care Workforce Distribution and Shortage Issues in Rural America.”
56. American Association of Nurse Practitioners, “State Practice Environment,” updated January 1, 2021, <https://www.aanp.org/advocacy/state/state-practice-environment>.
57. American Association of Nurse Practitioners, “State Practice Environment.”
58. American Medical Association, “AMA Successfully Fights Scope of Practice Expansions That Threaten Patient Safety,” 2020, <https://www.ama-assn.org/practice-management/scope-practice/ama-successfully-fights-scope-practice-expansions-threaten>.
59. Oliver T. Nguyen, Amir Alishahi Tabriz, Jinhai Huo, Karim Hanna, Christopher M. Shea, and Kea Turner, “Impact of Asynchronous Electronic Communication-Based Visits on Clinical Outcomes and Health Care Delivery: Systematic Review,” *Journal of Medical Internet Research* 23, no. 5 (2021).
60. Robert Graboyes, “Commentary: Toward Greater Access to Health Care in Maine,” *Central Maine*, May 18, 2021.
61. Nathaniel DeNicola et al., “Telehealth Interventions to Improve Obstetric and Gynecologic Health Outcomes: A Systematic Review,” *Obstetrics and Gynecology* 135, no. 2 (2020): 371–382.