# The Effectiveness of Policies to Improve Primary Care Access for Underserved Populations: An Assessment of the Literature

Funding for this report was provided by the National Institute for Health Care Reform.

### **JANUARY 2022**

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CENTER ON HEALTH INSURANCE REFORMS





### **TABLE OF CONTENTS**

EXECUTIVE SUMMARY	4
ntroduction 6	3
1ethodology	7
Defining Health Disparities	3
Defining Access	3
A Note on Terminology	3
The Availability Problem: Solving the Shortage of Primary Care Physicians	9
Encouraging the Selection of Primary Care as a Specialty by Increasing Payment for Primary Care Services	כ
State-Level Efforts to Increase the Number of Primary Care Residencies, Particularly in Underserved Areas11	
Using Public Policy and Financing to Diversify the Physician Workforce12	2
Using Federal Funding to Bring Primary Care Physicians to Underserved Areas14	4
Leveraging the Conrad-30 Program to Incentivize More Foreign Trained Physicians to Practice in Underserved Areas16	3
Increasing the Primary Care Nurse Practitioner Workforce by Easing Scope of Practice Restrictions	7
Increasing the Capacity of Existing Primary Care Workforce by Transitioning to Team-Based Care18	3
Discussion: Can Mandating Insurer Investment in Primary Care Services  Boost Access?	0
The Accessibility and Accommodation Problems: Bringing Primary Care Services Closer to the People2	0
Ensuring that Federally Qualified Health Centers and Rural Health Clinics  Are Achieving the Maximum Impact on Access	1
Scaling Up the School-Based Health Center Model2	3
Finding State-Level Solutions to Bring More Retail Clinics to Underserved Areas2	4
Using Tailored Solutions to Improve Accessibility to Telehealth Services for Underserved Populations	5

Public Payers Leveraging Ridesharing Technology to Reduce Transportation	
Barriers for Non-Emergency Services	27
Using Enhanced Payments to Incentivize Provision of After-Hours Primary Care	28
Discussion: Can Public Health Systems Bridge the Primary Care Physician Shortage Gap and Bring Necessary Services to the Community?	
The Affordability Problem: Removing Financial Barriers to Accessing Primary Care	30
Making Primary Care Services Available with Minimal to No Cost Sharing	31
Using Network Adequacy Laws to Improve Access	32
Discussion: The Potential of "Public Option" Plans	35
The Acceptability Problem: Ensuring Comfort and Communication in the Delivery of Primary Care Services	35
Alleviating Mistrust in Health Care Institutions Among Underserved Populations Through the Use of Patient-Centered Communication	36
Integrating Community Health Workers into Primary Care Delivery by Formalizing Their Role and Creating Reimbursement Pathways	37
Conclusion	40
NOTES	41
About the Authors	72

### **EXECUTIVE SUMMARY**

Primary care is a critical tool to prevent illness and death and to improve equitable distribution of health in populations. However, access to this important source of care is lacking, especially for many underresourced groups, such as communities of color and in rural areas. In 1981, researchers Roy Penchansky and J. William Thomas developed a model that breaks down the concept of primary care access into five composite and interconnected dimensions: availability of primary care clinicians; accessibility of primary care services geographically; accommodation in terms of appointment availability and hours; affordability; and acceptability in terms of comfort and communication between patient and clinician. The authors of this report reviewed the research literature to assess the evidence supporting whether policy initiatives targeting primary care access in each of these five dimensions have been effective in reducing health care disparities. The policy initiatives we considered vary widely in terms of the decision makers best suited to implement them and therefore will require multi-sector collaborative solutions to improve access to primary care in underserved areas.

### Availability

The United States is facing a significant shortage of primary care physicians. The first set of policy initiatives we reviewed is designed to increase and redistribute the supply of primary care physicians and nonphysician clinicians to address this problem. This section also includes an evaluation of efforts to increase workforce diversity; significant evidence shows that physicians from communities underrepresented in medicine are likely to practice in medically underserved areas.

While many provider groups and researchers have argued that increasing payment for primary care services could incentivize more physicians to choose primary care professions, this review found that there is a dearth of evidence to support that claim. Nevertheless, some state-led efforts have successfully created more primary care residency spots in underserved areas and diversified the physician workforce. Federal government student loan forgiveness programs incentivizing practice in underserved areas and grant-making programs supporting medical schools and health centers to develop and sustain recruitment and retention programs for primary care in underserved areas have also demonstrated some success, but the scale of these efforts have been insufficient to meet our nation's workforce needs.

Research shows that leveraging the skills of nonphysician clinicians by expanding their scope of practice could improve access, and more research is needed to evaluate the effects of transitioning to team-based care.

### Accessibility and Accommodation

To be successful, primary care services need to be embedded in the communities they serve. They must be responsive to their community's needs. Researchers found that expansion of nonhospital clinic sites like federally qualified health centers (FQHCs) and school-based health centers can significantly improve access for both rural and urban underserved

communities. The increase in government funding for the FQHC program has been one of the most effective primary care policy initiatives, but emerging evidence shows that newer sites have been less likely to open in the areas with the highest need. Although the school-based health center model has shown success over the past two decades, it needs significant community investment and institutional support in order to fully meet the needs of underresourced communities. This review further found that while retail clinics might be able to provide quick and convenient services for simple health issues without sacrificing quality, they are most likely today to be located in higher-income, lower-need communities and therefore less likely to improve access for communities that are most in need.

As a result of the COVID-19 pandemic, state and federal governments as well as physician practices have made significant investments in telehealth that are likely to change the landscape of access. Our review found that telehealth programs tailored to the needs of specific communities have been successful at making telehealth accessible to populations with lower levels of comfort with and access to technology. While FQHCs are able to meet the after-hours needs of the communities they serve, more research is needed to find ways to bring after-hours care to other kinds of clinical settings.

### Affordability

Removing cost-related barriers to primary care is essential to ensuring access. Some evidence suggests that making primary care available with low or no cost sharing can improve the utilization of these services, but administrative burdens, and in some cases, even enrollee pushback can act as significant barriers to the implementation of these solutions. For example, network adequacy requirements can be a tool to ensure that those covered under insurance have timely and affordable access to primary care physicians near them. However, current laws and regulations governing network adequacy may not be sufficient to meet this goal.

### Acceptability

One of the most challenging barriers to primary care access is that many individuals do not trust or feel comfortable engaging with the health care system. Interventions like practicing patient-centered communication and deploying community health workers show some promise in improving community trust and comfort, but this is an area where significantly more research is needed to develop the most effective programmatic and policy interventions.

### Conclusion

While the research literature suggests strong evidential support for several of the policy interventions discussed in this report, many of the most conceptually promising have been insufficiently studied to determine their effect on primary care access for underresourced communities. More research is needed before policymakers can effectively assess optimal and cost-effective approaches to expanding primary care access.

### INTRODUCTION

The Institute of Medicine defines primary care as "the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community." To achieve optimal health outcomes and patient experiences, the high-quality primary care must achieve what researchers have called four "cardinal functions," or the 4 Cs. These are (1) first contact, meaning the patient goes to primary care first for each health care issue; (2) continuity, so the practitioner is delivering person-focused care over time; (3) comprehensiveness, or delivering whole-person care; and (4) coordination with other clinicians when patients have to be seen elsewhere.<sup>2</sup>

It is hard to overstate the importance of primary care in ensuring robust health outcomes at the population level. Evidence shows that not only can primary care prevent illness and death,<sup>3</sup> but it is also associated with more equitable distribution of health in populations.<sup>4</sup> Countries with strong primary care systems experience better health outcomes such as reduced unnecessary hospitalization and less socioeconomic inequality,<sup>5</sup> as well as improved management of chronic diseases, than countries with weak primary care systems.<sup>6</sup> The United States falls short on a number of indicators that demonstrate the strength of a nation's primary care system. For example, the United States experiences higher than average hospitalizations for conditions that are considered preventable with access to primary care compared to other similarly high-income countries.<sup>7</sup> These hospitalizations and the number of premature deaths from preventable conditions are indicative of worse access to primary care in the United States than in other high-income countries.

Further, in the past 20 years, primary care visits have dropped steeply, <sup>8,9</sup> raising questions about whether these visits have been supplanted by new modalities like telehealth or retail clinics or whether people are simply forgoing vital care. The researchers studying this decline in primary care utilization have yet to answer these questions fully, but it is likely that a lack of access plays a significant role in it. Lack of access to primary care is especially a concern for underserved populations, primarily racial and ethnic minorities and rural populations. <sup>10</sup>

To strengthen a national primary care system, a threshold issue to consider is how to improve access. The federal government's efforts in this regard primarily fall into two major categories: workforce-related initiatives and funding federally qualified health centers (FQHCs) located in medically underserved areas. Despite these efforts, less than half of the 81.5 million people living in primary care health professional shortage areas (HPSAs) are having their needs met. 12

This literature review examines the evidence for the effectiveness of a variety of policy initiatives that seek to improve access to primary care in the United States, with a specific focus on initiatives that improve access for underserved populations. Other researchers have thoroughly evaluated primary care initiatives to assess their impact on clinical quality, patient outcomes, and cost. Most notably, the National Academies of Sciences, Engineering, and Medicine (NASEM) produced a detailed 400-page report in June 2021 that discusses policies

that promote high-quality, person-centered, integrated primary care. <sup>13,14</sup> Although the NASEM report makes some recommendations to ensure access, it leaves room for further evaluation of primary care–focused policy initiatives and the evidence of whether or not they improve access for underserved populations, specifically communities of color and those living in rural areas.

The policy initiatives considered in this report vary widely in terms of the decision makers best suited to implement them. Federal policymakers, state policymakers, and private actors like medical schools, health systems, and physician practices can each play a vital role in bridging this access gap. For the next phase of our research, we will conduct city- or county-level case studies to evaluate the impact of these policy interventions.

### **METHODOLOGY**

This literature review covers a wide range of English-language sources and perspectives that discuss, directly or indirectly, the issue of access to primary care in the United States and various initiatives to improve access for underserved populations. We gave preference to peer-reviewed articles, but when they were not available, we used gray literature such as issue briefs, fact sheets, and government reports. We prioritized studies published after 2011, but when recent literature was unavailable, we went as far back as necessary to find a relevant study on the topic.

We used a wide variety of search terms to account for the various dimensions of access, types of primary care clinicians, types of facilities and settings where primary care takes place, health disparities in access to primary care, and the effects of COVID-19 on primary care access. We conducted searches in databases such as PubMed and Google Scholar, as well as in individual journals such as Health Affairs and the Journal of the American Medical Association. We used the reference lists of our initial set of sources and lists of studies citing these sources to further expand our data sources. We also conducted searches for publications by think tanks and research institutions, including the Commonwealth Fund, the Kaiser Family Foundation, the Urban Institute, and the Robert Wood Johnson Foundation.

There were some key limitations to the scope of this literature review. First, many of the policy initiatives we considered had no recent independent, peer-reviewed evaluations, and we were limited to using internal program evaluations and anecdotal evidence where available. When we were unable to find even internal or informal evaluations, we state that there is insufficient evidence. We were also unable to assess the sources cited for conflicts of interest, particularly in terms of funding for the studies cited.

Second, we adopted the definitions of *primary care training, clinicians, settings*, and *practices* as used by the various sources cited, potentially resulting in some variance and inconsistency across the report. For example, studies frequently combine statistics for family medicine, internal medicine, and pediatrics residency programs, which are generally all considered primary care residency programs, but fail to account for the many primary care residents who specialize and pursue non-primary care career paths.

Third, the majority of the data reviewed about telehealth interventions was published before the COVID-19 pandemic, which forced a rapid evolution of the telehealth landscape and will most likely significantly change the shape of access. Although we discuss the potential for telehealth in this report, we were unable to fully account for the changes brought about by the pandemic and its effects on access.

Finally, the vast majority of interventions we analyzed are based on a foundation of fee-for-service payment models. Many government and private payers are trying to shift practitioners away from fee-for-service payment and toward alternative financing models that reward efficiency and quality. Although there has been some movement toward these new models, health care remains mostly reliant on fee-for-service payment, especially for physicians. It is hard to predict when a broader shift might occur. If and when these alternative payment models are widely adopted, the landscape of primary care delivery is likely to change significantly, altering or making obsolete some of the initiatives suggested in this report.

### **Defining Health Disparities**

For the purposes of this report, we use the definition of *health disparities* as outlined by the Health and Human Services Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020, which developed Healthy People 2020. Healthy People 2020 defines a health disparity as "a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health [care] based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion."<sup>16</sup>

### **Defining Access**

In 1981, researchers Roy Penchansky and J. William Thomas developed a model that breaks down the concept of "access" into five composite and interconnected dimensions. Still in use today, these dimensions are:

- Availability, or the adequacy of the supply of clinicians.
- Accessibility, or the relationship between the location of health care services and the location of patients, which takes into account transportation barriers, travel time, distance, and cost.
- Accommodation, or how clinicians are set up to accept and see their patients, which takes into account hours of operation and appointment systems.
- **Affordability,** or the relationships among insurance status, out-of-pocket costs, and the ability to obtain health care services.
- Acceptability, or patients' comfort with the clinicians available to them.

Improving access to primary care requires a focus on all five dimensions. For example, solely removing financial barriers will not improve access to primary care if no primary care clinicians are available nearby. Similarly, having clinicians available in underserved areas is insufficient if language barriers prevent the communities they serve from comfortably accessing their services.

In this report, we use Penchansky and Thomas's five dimensions to organize the initiatives we evaluated. We expand some of the concepts in the original model and modify others to make room for recent developments in primary care, such as the use of telehealth services, and to better analyze policy solutions with respect to their impact on health disparities. Although a number of the initiatives discussed can be categorized under more than one dimension, we chose to present each initiative under the dimension we deemed most directly affected by it.

Further, we focus on initiatives that seek to expand access to underserved populations rather than initiatives that solely increase convenience for populations that already have adequate access to health care services, such as retail clinics that provide after-hours care in affluent neighborhoods.

### A Note on Terminology

Given the evolving nature of the appropriateness of the terminology used to refer to the various subpopulations discussed in this report, we had to make some editorial decisions to ensure consistency while respecting the communities to which we refer. Where we referred to the findings from a specific study, we tried to use the same terminology as the study author as much as possible unless deemed unacceptable. Although we recognize that the term underserved might not be the universally accepted term for describing populations facing health disparities and a systemic lack of resources, 18 given its ubiquity in the literature and use in federal designations like "medically underserved areas," 19 we continue to use the term to avoid confusion.

In a recent report, the Association of American Medical Colleges forecasted a potential total shortfall of at least 21,400 and up to 55,200 primary care physicians by 2033.

# THE AVAILABILITY PROBLEM: SOLVING THE SHORTAGE OF PRIMARY CARE PHYSICIANS

Ensuring an adequate supply of primary care clinicians is the first dimension in the Penchansky and Thomas model of access. Even as the total number of primary care physicians in the United States rose between 2005 and 2015, because of population size increases and larger numbers of primary care physicians moving away from rural areas, the average number of primary care physicians per 100,000 people fell from 46.6 to 41.4 in the same time period, with rural areas suffering the greatest losses. <sup>20</sup> Approximately 209,000 primary care physicians are practicing today. <sup>21</sup> In a recent report, the Association of American Medical Colleges forecasted a potential total shortfall of at least 21,400 and up to 55,200 primary care physi-

cians by 2033.<sup>22</sup> A survey of FQHCs found that despite increased funding for these centers under the Affordable Care Act (ACA) and improved financial stability, 66% of health centers reported facing staffing shortages for funded primary care physician positions in 2018.<sup>23</sup>

The policy solutions in this section focus on ways to increase the numbers of the primary care workforce as well as ways to redistribute them for more equitable access. The first five policy solutions focus on primary care physician recruitment and retention, and the last two policy solutions consider the role nonphysician primary care practitioners can play in improving access for underserved populations.

# Policy Solution: Encouraging the Selection of Primary Care as a Specialty by Increasing Payment for Primary Care Services Background

Increasing the supply of primary care physicians is strongly correlated with improvements in population health outcomes. A recent study of US population data between 2005 and 2015 found that every 10 additional primary care physicians per 100,000 population was associated with a 51.5-day increase in life expectancy. The supply of primary care physicians is further associated with improved health outcomes for underserved communities. An analysis of 11 years of state-level data found that a greater supply of primary care physicians was 2.5 times more likely to result in lower mortality in the African American population than in the white population.

A model developed by one study found that it would take increasing the pay of primary care clinicians by as much as 50% and decreasing the pay of cardiologists by a politically infeasible 20% to even come close to achieving pay parity between the two.

Since 2011, the number of US-trained medical students who choose primary care residencies has declined.<sup>27</sup> A systematic review of curricular initiatives to promote primary care as a specialty choice showed that longitudinal primary care programs in medical schools are more effective than isolated modules and clerkships in attracting students to careers in primary care.<sup>28</sup> Despite curricular and programmatic efforts to promote primary care to medical students, the lower income potential of a primary care career when compared to those of other specialties serves as a barrier.<sup>29</sup>

For those in medical school, the prospect of educational debt acts as another barrier to a career in primary care. One study found evidence demonstrating an "inverse relationship between the total level of educational debt and the intention to enter primary care." Primary care physicians are generally compensated more favorably than those in nonphysician career tracks, but among physicians, specialists are likely to accrue about twice as much career wealth as primary care clinicians. A model developed by one study found that it would take increasing the pay of primary care clinicians by as much as 50% and decreasing the pay of cardiologists by a politically infeasible 20% to even come close to achieving pay parity between the two. However, as discussed later in the report, some attempts have been made to decrease this disparity.

### State of the Evidence

Although research is limited on how changes in primary care reimbursement affect medical student specialty choice, the ACA created opportunities to examine how reimbursement increases may impact primary care access. The ACA increased Medicaid reimbursement rates for primary care services to match Medicare rates in 2013 and 2014. This temporary bump resulted in a 73% average increase in Medicaid reimbursement for primary care services. <sup>32</sup> Congress failed to reauthorize the funding in 2014, but 19 states have continued to pay primary care clinicians higher Medicaid rates. <sup>33</sup>

A 2015 report by the Medicaid and CHIP Payment Access Committee (MACPAC) found insufficient evidence of the fee bump's impact on clinician participation and enrollee access. While one study showed a 7.7% increase in available primary care appointments, with the largest increases occurring in states experiencing the biggest increases in reimbursement rates, another study found that the fee bump failed to incentivize more primary care clinicians to accept Medicaid patients.

In 2020 the Centers for Medicare and Medicaid Services (CMS) substantially boosted Medicare reimbursement rates for primary care for the first time since the 1990s, while cutting rates for specialists.<sup>37</sup> It is too soon to say whether this shift in reimbursement is having an impact on either beneficiary access or the specialization decisions of medical students.

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# Policy Solution: State-Level Efforts to Increase the Number of Primary Care Residencies, Particularly in Underserved Areas

### Background

Each year the CMS provides funding through Medicare for hospitals to hire residents.<sup>38</sup> More than 20 years ago, the federal government imposed a cap on spending for graduate medical education, which has limited the number of medical residents.<sup>39</sup> After the spending cap was imposed, specialist residencies increased by a larger percentage than primary care residencies.<sup>40</sup> One study found that "[t] o eliminate projected shortages in 2035, primary care residency production must increase by 21%."<sup>41</sup> A US Government Accountability Office report identified four federal efforts to increase the number of primary care residencies, but found that the scale of these efforts was insufficient to meet projected primary care workforce needs.<sup>42</sup> Absent sufficient federal action, some states have found ways to leverage Medicaid's federal-state financing structure to direct funding to primary care residencies.<sup>43</sup>

### State of the Evidence

The evidence suggests these state-level programs are having a modest, but positive, impact. For example, New Mexico leveraged federal Medicaid funding and the regulations governing FQHCs to develop 10 additional primary care residencies in underserved locations across the state. <sup>44</sup> Although this is a small number of residencies, it represents one of the few examples of state action in this area.

States have also stepped up to directly fund programs to support hospitals without residency programs develop and implement these programs.

States have also stepped up to directly fund programs to support hospitals without residency programs develop and implement these programs. In 2013, the Texas legislature appropriated \$14 million to create a planning and partnership grant program for this purpose. This funding was subsequently increased, and in 2017, the focus of the program shifted to support the establishment of new residency programs in primary care, specifically in rural areas. A2019 report evaluating the program found that since the state legislature committed to expanding GME [graduate medical education] in Texas, almost 400 new first-year residency positions have been created, and 13 new residency programs have been established. Georgia established a similar program, offering to reimburse 50% of the start-up costs of establishing a new residency program and applying for accreditation, with a specific focus on primary care and general surgery programs, particularly in geographic areas lacking existing programs. Georgia is projected to increase its residency positions by 47% between 2013 and 2025. As of 2018, 64% of the new positions in Georgia were located in federally designated HPSAs.

Racial and ethnic minority physicians were more likely to practice in impoverished areas, those designated by the federal government as medically underserved or experiencing health professional shortages, and rural areas.

### Policy Solution: Using Public Policy and Financing to Diversify the Physician Workforce

### Background

In addition to generally increasing the number of primary care physicians to boost access, evidence suggests recruiting racial and ethnic minority students can reduce racial and ethnic disparities in primary care access. An analysis of data collected between 1980 and 2010 on physician specialty choice showed that certain racial and ethnic minority physicians were more likely to practice primary care than white physicians. <sup>51</sup> Further, racial and ethnic minority physicians were more likely to practice in impoverished areas, those designated by the federal government as medically underserved or experiencing health professional

shortages, and rural areas.<sup>52</sup> However, the representation of racial and ethnic minority physicians among all primary care physicians has remained low.<sup>53</sup> A 2015 report by the Association of American Medical Colleges found that the number of Black or African American male medical school applicants and graduates had decreased over 40 years.<sup>54</sup>

A significant number of attempts at increasing diversity in medical and other health professions' schools focus on reforming admissions processes, but some research indicates that medical schools' "holistic" admissions processes, meant to diversify the physician workforce by looking at criteria beyond test scores and grade-point averages, have been only marginally successful. 55 A 2019 study found that while schools that provided formal training to their staff on holistic admissions experienced a sustained increase in diversity for most racial and ethnic groups, they were unable to achieve the same with Black and African American students. 56 The authors speculated that the use of holistic admissions processes is still important, but more upstream interventions, like pipeline programs, that focus on recruiting diverse students into the applicant pool are even more essential to achieving the goal of diversity. For Pipeline programs target, recruit, and support underrepresented students at all levels of education in order to promote diversity in certain fields.

### State of the Evidence

Many medical schools have implemented pipeline programs, and some anecdotal evidence indicates that they have been effective in recruiting minority students. However, there is a lack of systematic, quantitative evaluation to accurately assess how successful these programs have been at expanding the number of practicing physicians of color or to develop a set of best practices for them. 59

Nonetheless, one example demonstrates that a pipeline program can drive change when it is implemented as part of a broader set of policy initiatives intended to increase diversity in the medical profession. In 1978, the Illinois General Assembly created and provided funding for the Urban Health Program (UHP) at the University of Illinois at Chicago with the goal of increasing recruitment and retention of minorities in health professions. UHP is a comprehensive pipeline program providing academic support and mentoring to middle school, high school, undergraduate, and health profession students. Between 1978 and 2011, University of Illinois at Chicago had the highest graduation rate for minority health care professionals in the country after historically black colleges and Latino-serving institutions. <sup>60</sup> A retrospective evaluation of the program found that one of the key factors contributing to this success is the UHP Community Advisory Council, which consists of business and community leaders, educators, and health professionals who together advocate for the mission of the UHP and hold both the university and state legislature accountable. <sup>61</sup>

In another example, a 2016 study found that state laws providing grants and scholarships to minority groups and requiring facilities that receive payments from Medicaid to submit a plan on recruiting and retaining professionals from minority backgrounds increased minority enrollment in the nursing workforce. 62 Although the study is about the nursing workforce and the relevance of its findings to the physician workforce has not been established, both this

study and the UHP program suggest that private sector recruitment efforts supported by public policy—and public financing—may have the greatest impact on increasing diversity.

### Policy Solution: Using Federal Funding to Bring Primary Care Physicians to Underserved Areas

### Background

A systematic review of 72 studies found that beyond physician characteristics like race/ethnicity or being from a rural area, financial factors such as debt and anticipated income play a significant role in determining whether primary care physicians practice in underserved areas. The Health Resources and Services Administration (HRSA) provides direct scholarships and loan repayment awards to medical students and graduates with the goal of incentivizing primary care practice in underserved areas. The National Health Service Corps scholarship and loan repayment programs directly reward medical students and licensed physicians who agree to practice in federally designated HPSAs for a certain period of time. HRSA also operates a number of grant-making programs that support medical schools and health centers in developing and sustaining recruitment and retention programs for primary care in underserved areas.

For fiscal year 2019, less than half of loan repayment applicants were awarded funding, and only 10% of applicants were awarded scholarships. When estimates are adjusted for inflation, the funding for National Health Service Corps programs has decreased over the past 10 years.

### State of the Evidence

A 2013 study by HHS on retention found that 85% of National Health Service Corps clinicians practice in a HPSA two years after the completion of their obligation, and more than half remain in HPSAs 10 years after the completion of their obligation, with long-term retention rates being higher for those who served in rural areas. <sup>65,66</sup> The evidence suggests that loan repayment and direct financial incentive programs that target physicians at the end of their training demonstrate a higher physician retention rate in underserved areas compared to other incentivized service-obligation programs like scholarships that target medical students earlier in their career. <sup>67,68</sup> Direct financial incentive programs also tend to benefit physicians who own their own practices, particularly in needy settings. <sup>69</sup>

However, the funding for the National Health Service Corps scholarship and loan repayment programs has been insufficient to meet the demand. For fiscal year 2019, less than half of loan repayment applicants were awarded funding, and only 10% of applicants were awarded scholarships. When estimates are adjusted for inflation, the funding for National Health Service Corps programs has decreased over the past 10 years.<sup>70</sup>

Federally designated HPSAs and medically underserved areas can be either rural or urban. Recruiting and retaining primary care clinicians in rural areas has been a particular concern for many states with large rural populations. These states have implemented three types of

financial incentive programs with some success:<sup>71</sup> state loan repayment programs,<sup>72</sup> community-state matching programs (which allow rural communities to receive state dollars to bring in a primary care physician as long they can match the state funds one to one),<sup>73</sup> and state tax credit programs.<sup>74</sup> However, as with other initiatives, there is a lack of systemic evaluation of how well these incentives have worked.

The literature on bringing primary care clinicians to urban underserved areas is even less clear. One study based in Los Angeles County attributes the motivations for practicing in urban underserved areas to "mission-based values," personal characteristics like race and ethnicity, and "training in underserved locations." Holistic admissions processes might be able to scan for mission-based values, and publicly supported or funded pipeline programs can help recruit from communities that are underrepresented in medicine. However, public funding can also play a role by enabling institutions like medical schools and health centers to create more opportunities for medical students and residents to train in underserved areas.

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Studies have shown that exposure to HRSA Title VII funding, which predominantly funds institutional grants, can attract more medical students and residents to practice in underserved areas. <sup>76,77</sup> Of the Title VII institutional grant programs, the Area Health Education Center (AHEC) program was specifically created "to develop and enhance education and training networks within communities, academic institutions, and community-based organizations" in underserved areas. Initially created in 1972 to target rural underserved areas, the AHEC program was expanded to include urban underserved areas in 1976. <sup>79</sup> Today, approximately 300 AHEC program offices and centers serve 85% of counties in the United States. <sup>80</sup>

Almost all AHEC programs make recruitment and retention of primary care clinicians in their communities an important goal, and there is some limited evidence that AHEC programs might be achieving this goal, particularly in rural underserved areas. 81,82 Additionally, at least one fully state-funded program with the same goals as federally funded AHEC programs has shown demonstrable success improving recruitment and retention in rural underserved areas through the provision of immersive training opportunities. 83,84 However, while urban-track AHEC programs exist,85 evaluation of the effectiveness of these programs in recruiting and retaining health professionals in urban underserved areas is mostly unavailable. More research is needed to fully establish the effectiveness of AHEC programs, both rural and urban, in bringing primary care physicians to underserved areas.

More recently, the Affordable Care Act created the Teaching Health Center Graduate Medical Education (THCGME) program to provide funding directly to community-based health centers like FQHCs to establish and expand primary care residency programs. 86 A 2016 study found that although THCs are not required to be located in underserved areas, "more than 70% of THC sites are located in a federally designated high-need area" such as a primary care HPSA

or a rural area.<sup>87</sup> A survey of all THC residents between 2013 and 2016 found that THCs "attract residents from rural and/or disadvantaged backgrounds,"<sup>88</sup> and a 2015 evaluation of the program found that 91% of the program's recent graduates are practicing primary care, while 76% are practicing primary care in an HPSA.<sup>89</sup>

# Policy Solution: Leveraging the Conrad 30 Program to Incentivize More Foreign-Trained Physicians to Practice in Underserved Areas Background

Foreign-trained physicians are more likely to choose primary care residencies and practices than US-trained physicians, and more than half of all foreign-trained physicians work in areas where the population has a per-capita income of \$30,000 or less. 90 However, thousands of foreign-trained physicians are unable to practice medicine in the United States because of burdensome visa requirements.

The Conrad 30 Visa Waiver program allows each state's Department of Health to sponsor up to 30 waivers of certain visa restrictions for international medical graduates in order to help states meet their health workforce needs.

The J-1 Visa program is a special sponsorship for immigrants who intend to teach, train, or study in the United States, but these visas generally require applicants to return to their home countries for two years upon completion of their program. The Conrad 30 Visa Waiver program allows each state's Department of Health to sponsor up to 30 waivers of this home residency requirement for international medical graduates in order to help states meet their health workforce needs. Some state Conrad programs require employers to try to recruit a US citizen or permanent resident for the position before they can employ an international medical graduate, which can serve as a barrier to fully utilizing this workforce.<sup>91</sup>

A Washington State study found that physicians recruited under the Conrad program "who remained in Washington State were more likely to have spent at least half of their time since completing their [Conrad program] obligations serving primarily underserved populations," but that retention of international medical graduates was significantly better in urban areas than rural ones.

### State of the Evidence

Evidence shows that the Conrad program can bring primary care physicians to underserved areas, particularly those in urban areas. One study found that "46 percent of physicians serving in HPSAs in Delaware are [international medical graduates] recruited through the [Conrad 30] program."<sup>92</sup> A Washington State study found that physicians recruited under the Conrad program "who remained in Washington State were more likely to have spent at least half of their time since completing their [Conrad program] obligations serving primarily

underserved populations," but that retention of international medical graduates was significantly better in urban areas than rural ones. 93 This finding is supported by two studies that compared the effectiveness of the Conrad program against that of a state loan repayment program 94 and medical school rural track programs 95 (see Section III(d)) in improving retention in rural underserved areas. Both studies concluded that Conrad programs were more effective.

The findings of these studies suggest that a number of interconnected factors could explain the shortage of foreign-born physicians in rural underserved areas, including inadequate employment conditions and cultural disconnect. In addition, it is important to note that the literature has not yet adequately considered the effects of attracting more foreign-trained physicians on their home countries.

### Policy Solution: Increasing the Primary Care Nurse Practitioner Workforce by Easing Scope-of-Practice Restrictions

### Background

One of the most discussed policy initiatives to improve access to primary care in the face of a primary care physician shortage is to reform licensing laws to allow nurse practitioners (NPs) to practice independently and give them authority to issue prescriptions. 96 NPs have reported that scope-of-practice restrictions in several states are limiting their ability to admit and treat patients independently. 97 One study found that states with more restrictive scope-of-practice laws were associated with twice as many late-stage cancer diagnoses for medically underserved (rural, minority, and poor) patients than those where NPs were allowed to practice within the full range of their license. 98 Another study found that restrictive state scope-of-practice laws combined with a lack of nurse practitioner workforce diversity and poor organizational structures in nurse practitioner-led practices served as barriers to reducing health disparities. 99

States that grant NPs greater authority to practice medicine individually experience an increase in the number of NPs and an increase in health care utilization among rural and vulnerable populations.

### State of the Evidence

Evidence shows that increasing the number of primary care NPs can expand access to primary care, particularly for underserved populations, and particularly in rural areas. A study on rural-urban differences in access to primary care found that "non-metro" populations were more likely to have a "usual source of care" than metro populations, and that they were more likely to identify nonphysician clinicians as their usual source of care than metro populations. The authors hypothesized that this might be a result of relaxation of scope-of-practice laws increasing the supply of NPs in rural areas. <sup>100</sup> Another study found that the highest supply of NPs practicing primary care was located in rural areas, helping offset physician shortages. <sup>101</sup> More research is needed to determine whether and how NPs can improve access in urban underserved areas.

Restrictions on nurse practitioner scope of practice has been associated with a reduction in the number of NPs. 102,103 Conversely, states that grant NPs greater authority to practice medicine individually experience an increase in the number of NPs and an increase in health care utilization among rural and vulnerable populations. 104 Further, states without physician oversight requirements and where NPs billed independently had a higher share of NPs practicing in rural areas. 105

One study found that NPs were more likely to work in primary care in states with relaxed scope-of-practice standards and that those odds further increased if the state paid NPs the same Medicaid payment rate as physicians. <sup>106</sup> In these states, practices with NPs were more likely to accept Medicaid patients than those without NPs. <sup>107</sup> However, at least one study found that removing scope-of-practice restrictions may only expand the capacity of the primary care workforce modestly in the short run. <sup>108</sup>

### Policy Solution: Increasing the Capacity of Existing Primary Care Workforce by Transitioning to Team-Based Care

### Background

The Institute of Medicine defines team-based care as "the provision of health services to individuals, families, and/or communities by at least two healthcare providers who work collaboratively with patients and their caregivers—to the extent preferred by each patient—to accomplish shared goals within and across settings to achieve coordinated high-quality care." In theory, reallocating certain preventive, chronic, and acute care work to nonclinicians in the team can open up the physician's time to expand capacity. A qualitative interview study found that family physicians were not only open to but supportive of converting to team-based care because of the potential for reduction in administrative work for the physician.

Although there is significant evidence that team-based care can improve health outcomes and quality of care while reducing utilization and costs, 116-118 there are few empirical studies establishing clear links between a shift to team-based care and increased access to primary care.

Team-based care is also an essential component of care delivery models like patient-centered medical homes, <sup>112</sup> which show promise in achieving better health outcomes, cost reduction, and patient satisfaction, as well as improving access. <sup>113</sup> The Bureau of Primary Health Care made the transformation of FQHCs into primary care medical homes a priority in 2011, offering grants and technical assistance to the centers. <sup>114</sup> As of 2018, 84% of FQHCs had transformed into primary care medical homes. <sup>115</sup> However, there is a lack of sustained and centralized effort to support the transformation of non-FQHC primary care practices into team-based practices.

#### State of the Evidence

Although there is significant evidence that team-based care can improve health outcomes and quality of care while reducing utilization and costs, <sup>116-118</sup> there are few empirical studies establishing clear links between a shift to team-based care and increased access to primary care. Expanding teams to include nonphysician clinicians might have the potential to offset primary care physician shortages. <sup>119</sup> A 2018 study demonstrated that implementing nurse practitioner–physician care teams in an urban safety–net primary care practice significantly reduced the average time to obtain an appointment, <sup>120</sup> but an evaluation of this study found that it had "very serious" limitations. <sup>121</sup>

Nevertheless, a handful of additional case studies hint at the promise of team-based care in improving availability of primary care services. A Cleveland Clinic practice reported adding one to four patients per half-day session after implementing a team-based approach to care delivery. <sup>122</sup> In 2014, Blue Shield of California Foundation launched a one-year program offering funding and technical assistance to health centers to improve care teams and expand access. They found that improvements in scheduling practices, and particularly the use of group appointments and flip appointments (where the nurse handles the majority of the appointment and the physician checks in toward the end), increased access at the participating practices. <sup>123</sup> Case studies conducted at a rural area community clinic <sup>124</sup> and a clinic predominantly serving those experiencing homelessness <sup>125</sup> also found that they were able to increase the number of patients they were able to see after shifting to a team-based delivery model.

More research is needed to evaluate the impact of team-based care on increasing the supply of clinicians, particularly in underserved areas, as well as how policymakers can best support and promote the transition toward team-based care.

### Takeaways on Improving the Availability of Primary Care

State- and federal-level efforts to (1) create more primary care residency spots in underserved areas, (2) diversify the physician workforce, and (3) provide grants to support medical schools and health centers to develop and sustain recruitment and retention programs for primary care in underserved areas have demonstrated success in improving the availability of primary care. Further, states that have expanded their scope-of-practice laws to allow more independent practice by nonphysician clinicians, the evidence shows, are better placed to combat the primary care physician shortage. The scale and financing of these efforts, however, have been insufficient to meet the nation's health care workforce needs.

### Can Mandating Insurer Investment in Primary Care Services Boost Access?

State officials have taken notice of the chronic underinvestment in primary care and are taking steps to make systemwide investments. For example, Rhode Island requires insurers to spend at least 9.7% of their total medical expenses on primary care in the form of reimbursement to primary care practices and 1% on indirect primary care expenses such as the administration of primary care medical homes. <sup>126</sup> As a result, total primary care spending in Rhode Island by both private and public payers increased from \$47 million to \$74 million between 2010 and 2017. <sup>127</sup>

Six other states—Oregon, West Virginia, Colorado, Maine, Vermont, and Delaware—have instituted similar mandates on insurers to invest in primary care. <sup>128</sup> Some argue that given the United States' underinvestment in primary care, policy measures directing more spending toward primary care are critical for improving access as well as other types of outcomes, <sup>129</sup> but there is as of yet limited empirical evidence to support this. The standards established by states like Rhode Island have been evaluated in terms of whether they generate a net reduction in health care spending, but not in terms of whether they have generated any increase in access to primary care. Although several states say that they intend for these investments to boost the number of primary care clinicians, they have not, to date, publicly evaluated their ongoing performance on this front.

# THE ACCESSIBILITY AND ACCOMMODATION PROBLEMS: BRINGING PRIMARY CARE SERVICES CLOSER TO THE PEOPLE

The second and third interconnected dimensions of the Penchansky and Thomas model of access focus on improving the ease with which primary care services can be accessed, whether in terms of geography or the ability to obtain appointments in a timely fashion. About 84 million people live in primary care HPSAs. Many consumers do not obtain primary care services because it is too challenging to get to and from the clinician's location. Many patients, particularly those in low-wage industries, have trouble accessing primary care because of inflexible work schedules and a lack of paid leave. People are also more likely to use emergency departments despite having a regular primary care clinician if the clinician's office is not open at the time they are able to seek treatment. Both those with private insurance and those with Medicaid or Medicare coverage reported that wait times for appointments and constraints due to conventional business hours were barriers to primary care.

This set of policy solutions aims to bring primary care closer to the communities that need it. The first three subsections consider three types of nonhospital settings that have the potential to bring primary care services into a wider range of communities: FQHCs and rural health

clinics, school-based health centers, and retail clinics. It is important to note that while we place policy initiatives related to FQHCs, rural health clinics, and school-based health centers in this section, they also contribute to other dimensions of the Penchansky and Thomas model by increasing the availability of primary care clinicians in underserved areas as well as improving acceptability by providing culturally sensitive care. The final three subsections discuss ways to improve the accessibility of all primary care settings: using telehealth, making nonemergency medical transportation more accessible, and enhancing the availability of after-hours primary care.

# Policy Solution: Ensuring That Federally Qualified Health Centers and Rural Health Clinics Are Achieving the Maximum Impact on Access Background

There are two primary types of federally recognized health centers that provide affordable primary care services for underserved populations, federally qualified health centers and rural health clinics.

### Types of Affordable Primary Care Providers 135-138

**Federally qualified health centers (FQHCs)** are a type of federally designated safety-net provider. FQHCs, which include community health centers, migrant health centers, Indian health centers providing outpatient services, and health centers for those experiencing homelessness, generally receive federal grant funding that requires them to provide care regardless of ability to pay. They also receive enhanced Medicaid and Medicare payment rates. FQHCs are required to serve medically underserved populations or areas, and can be located in either rural or urban settings. FQHC look-alikes are eligible for enhanced Medicare and Medicaid payment rates, but do not receive federal grant funding.

**Rural health clinics** are another type of federally designated safety-net provider. They are primarily designed to provide care to Medicare patients in rural areas, and are not statutorily required to see Medicaid or uninsured patients, although they frequently do. Like FQHCs, they receive enhanced Medicaid and Medicare payment rates, but unlike FQHCs, they receive no federal funding to provide care to uninsured populations.

**Free clinics** are generally charity-funded and volunteer-run clinics providing free or nearly free medical services primarily to the uninsured. These privately run organizations generally receive no federal government assistance aside from certain protections related to medical malpractice lawsuits.

FQHCs have been in existence since 1967, but significant investments in this model through the American Recovery and Reinvestment Act of 2009 and the Affordable Care Act in 2010 tripled the number of patients served since 2000.<sup>139</sup> As of 2021, there are about 1,400 FQHCs and look-alike health centers (42% of which are located in rural areas) operating 14,500 health care sites serving about 28 million people.<sup>140</sup>

Rural health clinics and free clinics play a smaller but still relevant role in the provision of primary care services in the country. As of 2021, about 4,300 rural health clinics provide care to around seven million people, <sup>141</sup> but one report found that 388 rural health clinics had shut down between 2012 and 2018. <sup>142</sup> In 2019, approximately 1,400 free or charitable clinics or pharmacies were operating in the United States, and they saw two million patients. <sup>143</sup>

### State of the Evidence

Both FQHCs and rural health clinics have demonstrated that they improve access to primary care services. One study showed that FQHCs are able to offer new patient appointments at a high rate, and Medicaid patients are 22% more likely to be able to obtain an appointment at an FQHC than at other primary care practices. Here, there is evidence that health center patients are more racially and ethnically diverse than the average patient population, had a study found no significant disparities in access to care at health centers among patients from different racial/ethnic groups when compared to the national population in general. Additionally, rural health clinics have been shown to be able to provide appointments quickly for both Medicare patients and new Medicaid patients.

One study showed that FQHCs are able to offer new patient appointments at a high rate, and Medicaid patients are 22% more likely to be able to obtain an appointment at an FQHC than at other primary care practices.

A Study examining the supply of FQHCs and rural health clinics during a period of growth between 2001 and 2011 found that new clinics of either type were less likely to open in areas with a higher percentage of minority residents.

Evidence indicates increasing funding for FQHCs can improve access; one study showed an additional \$500,000 in federal grant money funded treatment for 540 additional uninsured patients. <sup>149</sup> No similar study has been done to assess the effect of increased payments or other support for rural health clinics on access. It is worth noting that increasing funding alone is unlikely to significantly improve access given that, as of 2018, "more than 17 million people live(d) in rural counties without a rural health clinic, [and] more than 15 million [lived] in rural counties without a federally qualified health center."<sup>150</sup>

Additionally, a recent study examining the geographic locations of newer FQHCs established after the ACA increased their funding found that compared to older FQHCs, the newer ones were less likely to be in a rural or high-poverty area. Another study found that a number of the new FQHCs were opened by existing FQHCs within 30 minutes of the existing location, thus limiting their ability to expand access to the most disadvantaged populations. <sup>151</sup> A third study examining the supply of FQHCs and rural health clinics during a period of growth between 2001 and 2011 found that new clinics of either type were less likely to open in areas with a higher percentage of minority residents. <sup>152</sup> This suggests that current federal policy may not be sufficiently incentivizing new health centers to locate in areas with the greatest need.

# Policy Solution: Scaling Up the School-Based Health Center Model Background

Increasing the number of school-based health centers (SBHCs) has significant potential to improve accessibility and accommodation of primary care, particularly for underserved children. The 2016-17 School-Based Health Alliance Census identified 2,584 SBHCs in 48 of 50 states, the District of Columbia, and Puerto Rico. Forty-six percent of SBHCs serve communities in urban areas, thirty-six percent in rural areas, and eighteen percent in suburban areas. Given that more than half of Americans report living in a suburban neighborhood, SBHCs disproportionately serve rural and urban communities. SBHCs have provided access to primary care and other health services to 10,629 schools and more than 6.3 million students.

The number of SBHCs doubled between 1999 and 2017. As of 2017, about half of them were sponsored by FQHCs, a fifth by a hospital or medical center, and the rest by nonprofit organizations, local health departments, and school systems. <sup>157</sup> A study examining this two-decade expansion of SBHCs credited the success to foundation funding and state government funding of demonstration projects, as well as expansion of federal support for FQHCs. <sup>158</sup> Despite this growth in numbers, SBHCs serve just 10% of US public schools, approximately. Barriers to expansion include "misaligned missions of health and educational organizations," a lack of financing, and concerns about the privacy of student health information. <sup>159</sup>

The literature on the ways that policymakers and communities can best support the expansion of the SBHC model is limited.

### State of the Evidence

Studies show that SBHCs can significantly improve accessibility of primary care for schoolage children and their surrounding communities, particularly in underresourced communities. 

160,161 Specifically, SBHCs help children and their families overcome access barriers associated with transportation, time, and costs that may otherwise prevent them from receiving essential health care services. Extensive research documents the impact of SBHCs on physical and mental health care access and health outcomes for children and adolescents; SBHCs are linked with healthy eating, active living, increased school attendance, and improved health-related quality of life. 

162-169 SBHC use is also associated with improved patient experience of care and improved experiences of school life as well as feelings of connectedness to the learning environment for students, parents, and school personnel.

The literature on the ways that policymakers and communities can best support the expansion of the SBHC model is limited. One study evaluating the experiences of the Georgia SBHC Project's three grantee SBHCs found that "a planning phase" to increase community awareness about the benefits of SBHCs was a critical first step in expanding the number of SBHCs in Georgia. The study also found that being sponsored by an FQHC was key to the sustain-

ability of one SBHC given FQHCs' ability to receive enhanced Medicaid payments. Further, the study indicated that community support and trust was easier to build when the SBHC was staffed by people from the community and the sponsoring FQHC already had strong community ties in place before the creation of the SBHC. However, more evaluation of successful SBHCs is needed to establish best practices for expanding this model to more underserved communities across the country.

### Policy Solution: Finding State-Level Solutions to Bring More Retail Clinics to Underserved Areas

### Background

Retail clinics located in pharmacies and grocery stores offer basic medical care for a wide range of common issues such as sore throats and minor injuries while also providing preventive services such as vaccinations. They are usually open in the evenings and on weekends when many physician offices are closed (see section on after-hours care later in the report)

A RAND study analyzing data from 2014 found that "retail clinics tended to be located in higher-income urban and suburban settings, with higher concentrations of white residents and fewer Black and Hispanic residents." Only 12.5% of retail clinics were located in medically underserved areas.

and take walk-in patients. Prices are fixed and generally reasonable.<sup>174</sup> Some primary care professionals have raised concerns that these clinics do not provide the same quality of services or care coordination delivered by traditional physician practices,<sup>175</sup> but these concerns, specifically those about quality, have not been borne out by the evidence.<sup>176,177</sup> Although there is some evidence that retail clinics might negatively impact continuity of care (where the ongoing relationship between a primary care physician and the patient is disrupted),<sup>178</sup> visits to retail clinics were not found to negatively impact the receipt of preventive care or diabetes management.<sup>179</sup> Retail clinics have also been associated with reduced emergency room utilization and health care costs.<sup>180,181</sup> One study found that retail clinics were associated with lower costs per episode and that these costs were further lowered in states where nurse practitioners were allowed to practice independently (see previous section on scope-of-practice laws).<sup>182</sup>

However, a RAND study analyzing data from 2014 found that "retail clinics tended to be located in higher-income urban and suburban settings, with higher concentrations of white residents and fewer Black and Hispanic residents." 183 Only 12.5% of retail clinics were located in medically underserved areas, 184 and relatively few retail clinics were located in HPSAs. 185 While higher-income families (600% of federal poverty level or higher) are twice as likely to have used a retail clinic than those with income less than 200% of the federal poverty level, uninsured and low-income families who did choose retail clinics attributed their decision to not having a usual source of care and the lower cost of care at these sites. 186

### State of the Evidence

There is limited research on the ways that a state or local government can incentivize retail clinics to operate in their underserved areas. A RAND study published in 2010 found that profitability of retail clinics is a main concern for its operators, and Medicaid reimbursement rates for the services that retail clinics provide are low. 187 Idaho and Illinois both allow their Medicaid beneficiaries to use retail clinics but require prior authorization from their primary care providers. Retail clinic operators cited this as a significant barrier for them to operate in underserved areas in states where the proportion of Medicaid beneficiaries is higher. 188 Relaxing scope-of-practice requirements for NPs and increasing their reimbursement rates can also significantly incentivize the proliferation of retail clinics, which are primarily run by nonphysician primary care clinicians. 189

There is limited research on the ways that a state or local government can incentivize retail clinics to operate in their underserved areas.

The commissioner of the Massachusetts Department of Public Health has tried to encourage community health centers to open retail clinics (called "limited service clinics" in Massachusetts), but as of 2013 none had done so. The Massachusetts League of Community Health Centers said that it would want the retail clinic it operates to receive the enhanced Medicaid payment rates that FQHCs receive in order for the clinic to be viable. <sup>190</sup> However, one study warned that these efforts to attract more retail clinics to underserved areas could have unintended consequences, such as loss of federal medically underserved area or primary care shortage area designations, which could destabilize financing for existing FQHCs in the area. <sup>191</sup>

While telehealth services have the potential to significantly increase health care access, several studies show telehealth services can also perpetuate health disparities in the same way that in-person health care does.

### Policy Solution: Using Tailored Solutions to Improve Accessibility to Telehealth Services for Underserved Populations

### Background

While telehealth services have the potential to significantly increase health care access, several studies show telehealth services can also perpetuate health disparities in the same way that in-person health care does. 192 Studies have found that patients most commonly face three overlapping barriers to accessing telehealth: the absence of technology, digital literacy, and reliable internet coverage. 193 Together, these barriers comprise the "digital divide," which disproportionately affects rural populations, older adults, racial or ethnic minority populations, and those with low socioeconomic status, limited health literacy, and limited English proficiency. 194,195

Though substantial increases in telehealth use were observed during the onset of the COVID-19 pandemic in the United States, underserved populations were less likely to benefit from this change. 196,197 One study examining patients scheduled for telehealth visits at a large academic health system during the early phase of the COVID-19 pandemic found that older patients, Asian patients, and non-English-speaking patients were associated with fewer completed telehealth visits (audio and video); older patients, female patients, Black, Latino, and poorer patients were less likely to use video telehealth services. 198 The data on the utilization of audio-only telehealth services before the COVID-19 pandemic is limited; however, one study reviewing telehealth utilization by type during the pandemic found that nearly half of primary care telehealth visits were conducted over the phone and according to the researchers, these audio-only visits were instrumental in maintaining access to care. 199

Some providers have also found that implementing well-thought-out strategies specifically designed to reach a target population or subpopulation are more effective at reducing disparities than implementing a broad telehealth program.

### State of the Evidence

Some researchers argue that supporting adequate reimbursement policies for audio-only telehealth would reduce disparities in access, but more research is needed to determine the effectiveness of audio-only visits as well as ways to reduce the potential for fraud and over-utilization. Some providers have also found that implementing well-thought-out strategies specifically designed to reach a target population or subpopulation are more effective at reducing disparities than implementing a broad telehealth program. For example, a large Michigan health care system tailored its telehealth programs to improve access to the state's rural residents, 40% of whom lack access to broadband internet, by offering telephonic visits as a replacement for video visits and giving patients the option to drive to a designated location with reliable internet access to complete a video visit. A study assessing this approach showed that it helped providers respond effectively to the COVID-19 pandemic.

Another study found that the use of store-and-forward telehealth technology—collecting health information in one location and securely transmitting to another location—instead of live videoconferencing was effective in improving diagnosis and treatment for Alaska Native communities. <sup>204</sup> This approach attempts to solve for the lack of broadband needed for live videoconferencing and has "improved access to care, reduced the cost of care delivery, and improved the efficiency and productivity of providers."<sup>205</sup>

A 2013 report commissioned by the Office of the National Coordinator for Health Information Technology to assess the impact of health information technology in communities with disparities in health access found that a number of the sites they studied used "a peer-to-peer approach to encourage technology adoption among patients, often using a trusted intermediary." The report offers the example of St. Elizabeth's Health Center, which enhanced the comfort of Hispanic patients and reduced the stigma associated with mental health treat-

ment by providing telepsychiatry services at the same place they receive their primary care services, and Howard University Hospital's telehealth self-management intervention, which "used health navigators, including community and church leaders, to introduce the tool and explain its use to urban African American patients."<sup>207</sup>

Driven by the COVID-19 pandemic, several charitable foundations have funded efforts, primarily by FQHCs, to improve access to and quality of telehealth services, <sup>208</sup> with one foundation funding a project designed to reduce health disparities in hypertension control, specifically targeting patients in the Black community. <sup>209</sup> The outcomes of these efforts, when available, will help inform broader efforts to reduce health disparities in access to telehealth.

A 2005 study found that Americans who did not obtain care due to lack of access to nonemergency medical transportation were disproportionately female, poorer, and older, had less education, and were more likely to be members of a minority group than those who were able to obtain care.

# Policy Solution: Public Payers Leveraging Ridesharing Technology to Reduce Transportation Barriers for Nonemergency Services

### Background

Many consumers do not obtain primary care services because it is too challenging to get to and from the primary care practice's location. This can be because of unreliable public transport, the high cost of available transportation options, and insufficient disability accommodations. Studies show that transportation barriers can lead to rescheduled or missed appointments, delayed care, and missed or delayed medication use. 210 A 2005 study found that Americans who did not obtain care due to lack of access to nonemergency medical transportation were disproportionately female, poorer, and older, had less education, and were more likely to be members of a minority group than those who were able to obtain care. 211 Medicaid offers nonemergency medical transportation as a benefit to enrollees meant to help them overcome these barriers, 212 but because of stringent state-specific limits on the ways the benefit can be used, transportation barriers persist.<sup>213</sup> For example, one study of the residents of Lewiston, Maine, enrolled in MaineCare (the state Medicaid program) found that the state's nonemergency medical transportation vendor required 48-hour advance notice to schedule a ride, was unable to accommodate travel with the patient's children, and canceled rides for weather-related reasons, all of which created barriers to its services.214 The study also found that public transportation failed to serve as a viable alternative due to limited routes and times as well as unreliable schedules.

### State of the Evidence

Some state Medicaid programs have turned to rideshare services to improve accessibility of care, <sup>215</sup> and preliminary findings suggest that these strategies can be effective. Findings from a 2018 pilot program suggest that offering a rideshare-based transportation service can increase show rates to primary care appointments for Medicaid patients. <sup>216</sup> In addition,

several other studies have found that patients using rideshare-based nonemergency medical transportation had fewer missed primary care appointments, lower average wait times, higher rates of on-time pickup, and lower costs compared to those using other types of nonemergency medical transportation. Place However, at least one study found no improvement in appointment attendance even after provision of free rideshare-based nonemergency medical transportation. More research is needed to evaluate the impact of using this type of transportation to reduce barriers, particularly in rural areas where access to rideshare services can be far more limited.

### Can Home-Based Primary Care Improve Access?

Seven million adults struggle to leave their homes, <sup>220</sup> but fewer than 12% of them report having access to home-based primary care programs, <sup>221</sup> which coordinate and provide multidisciplinary care to homebound adults. Although these programs have shown promise in terms of outcomes, quality, <sup>222</sup> and costs, <sup>223</sup> they are limited in number and there is relatively limited evidence of their effectiveness at meeting the needs of people of color and other underserved populations. <sup>224, 225</sup> More evaluation of these programs is needed to determine whether they merit significant public investment.

# Policy Solution: Using Enhanced Payments to Incentivize Provision of After-Hours Primary Care

Background

Many patients, particularly those in low-wage industries, have trouble accessing primary care because of inflexible work schedules and a lack of paid leave, which prevent them from being able to see their primary care clinicians during regular office hours.

As mentioned, many patients, particularly those in low-wage industries, have trouble accessing primary care because of inflexible work schedules and a lack of paid leave, which prevent them from being able to see their primary care clinicians during regular office hours. <sup>226,</sup> <sup>227</sup> Although almost all FQHCs offer visits and telephone advice outside traditional office hours, <sup>228</sup> not all Americans in need of after-hours care have access to these centers. Without after-hours access to primary care clinicians, many patients are likely to overuse emergency departments. One study showed that "[a] mong respondents who tried to contact their regular primary care clinician after hours for a medical need, those with greater ease of access had significantly lower rates of emergency department use and unmet medical need." <sup>229</sup> For children enrolled in North Carolina's Medicaid managed care plan, the expanded availability of primary care physicians and the use of telephone triage systems were associated with reduced emergency department use. <sup>230</sup>

### State of the Evidence

Although the need for access to after-hours care and its benefits are well documented, effective strategies to best support primary care clinicians to deliver after-hours care are less understood. South Carolina's Medicaid program created an "After Hours Add-on Service Code" meant to encourage primary care clinicians to expand their office hours to the evenings, holidays, and weekends.<sup>231</sup> United Healthcare provides additional compensation

Although the need for access to after-hours care and its benefits are well documented, effective strategies to best support primary care clinicians to deliver after-hours care are less understood.

to participating primary care clinicians for seeing patients who would otherwise end up in urgent care or emergency room settings.<sup>232</sup> However, the effectiveness of these strategies in incentivizing after-hours care is yet to be established.

The recent significant investments in telehealth are likely to change the landscape of access; however, federal and state policymakers as well as grant makers who support telehealth innovation need to focus on tailoring telehealth programs to the needs of specific communities in order to make telehealth accessible to populations with lower levels of comfort with and access to technology.

# Takeaways on Improving Accessibility and Accommodation of Primary Care

Expansion of nonhospital clinic sites like FQHCs and school-based health centers can significantly improve access for both rural and urban underserved communities. The increase in government funding for the FQHC program has been one of the most effective policy initiatives in improving access, but emerging evidence shows that newer sites have been less likely to open in the areas with the highest need. In addition to expanding the FQHC program, federal policymakers might have to find ways to incentivize more equitable placement of these health centers. The SBHC model, although proven effective, needs significant community investment and institutional support in order to scale up and fully meet the needs of underresourced communities.

The recent significant investments in telehealth are likely to change the landscape of access; however, federal and state policymakers as well as grant makers who support telehealth innovation need to focus on tailoring telehealth programs to the needs of specific communities in order to make telehealth accessible to populations with lower levels of comfort with and access to technology.

# Can Public Health Systems Bridge the Primary Care Physician Shortage and Bring Necessary Services to the Community?

In the face of a looming primary care workforce shortage, state and local public health systems can play a significant role in closing the access gap. By bringing primary care services directly to the communities they serve in the form of public health initiatives, these public health systems can better meet the needs of underserved populations. Reno, Nevada, is one example. During the COVID-19 pandemic, recognizing the heightened need for accessible mental health services, the mayor of Reno made an online mental health subscription service, TalkSpace, available to all residents free of cost using federal COVID-19 relief funds.<sup>233</sup>

State and local public health departments can also develop targeted approaches to provide health services for vulnerable populations. For instance, Duke Medicine and the Durham County Health department partnered to create Durham Health Innovations. The program, which leverages the resources of both organizations, aims to improve the health status of Durham County residents and expand access to vulnerable populations by developing targeted, community-centered approaches to combat diseases like asthma, diabetes, and pain management.<sup>234</sup>

Public health departments can further provide preventive services such as flu shots, diabetes screenings, and blood pressure checks, free of cost and outside traditional health care settings. For example, at a San Francisco flu shot clinic, researchers found that offering at-home fecal occult blood test kits to eligible patients increased the rate of colorectal cancer screening for the community.<sup>235</sup>

# THE AFFORDABILITY PROBLEM: REMOVING FINANCIAL BARRIERS TO ACCESSING PRIMARY CARE

The fourth dimension of the Penchansky and Thomas model focuses on how the lack of insurance and prohibitive cost sharing can serve as a barrier to primary care access. Having health insurance coverage has a tremendous impact on an individual's ability to obtain primary care services. People who are uninsured have significantly more unmet health needs and experience preventable hospitalizations more often than those who are insured. <sup>236</sup> In an analysis of primary care access in the pediatric population, those who were uninsured were six times as likely as those who were insured to lack a usual source of care. <sup>237</sup>

Policies that facilitate enrollment in comprehensive health insurance plans and reduce out-of-pocket obligations can play a critical role in increasing access to primary care. The ACA's expansion of Medicaid eligibility has proven to be one of the most effective levers to increase health insurance enrollment and boost access to primary care. States that adopted Medicaid expansion have benefited from reduced preventable hospitalizations, a key measure of primary care access. States with the highest Medicaid income eligibility thresholds and

Medicaid payment rates have even lower rates of preventable hospitalizations.<sup>238</sup> Compared to adults who are uninsured, Medicaid enrollees are 70% more likely to have a usual source of care.<sup>239</sup>

# Policy Solution: Making Primary Care Services Available with Minimal to No Cost Sharing

### Background

Even small levels of cost sharing (one to five dollars) can cause reduced utilization of preventive and primary care services.  $^{240}$  Policies that reduce premium and cost sharing amounts are likely to improve access to primary care. Yet, from 2009 to 2018, health insurance deductibles have grown by more than  $150\%^{241}$  and individual out-of-pocket spending has increased by more than 50%, twice the growth in wages during the same period of time.  $^{242}$  Cost sharing can be harmful for patients, with one in four patients saying they have put off important medical care because of the cost.  $^{243}$ 

Even small levels of cost sharing (one to five dollars) can cause reduced utilization of preventive and primary care services.

#### State of Fyidence

The ACA's prohibition on cost sharing for preventive services can serve as a test case for how reducing or eliminating cost sharing for primary care services can impact access. Studies conducted after the prohibition went into effect show mixed evidence of the impact it has had on utilization. A study examining rates of mammograms and pap smears found the removal of cost sharing did not increase utilization rates. <sup>244</sup> However, some evidence suggests that removing cost sharing can increase utilization of preventive services by Hispanic and African American populations. <sup>245</sup> Utilization can serve as a proxy metric for access before and after the implementation of the ACA prohibition on cost sharing for preventive services, and this inconclusive evidence suggests that cost might be just one of the barriers that people face in accessing care.

The Connecticut state employee health plan saw a 75% increase in primary care visits after implementing a VBID program in 2011.

Value-based insurance design (VBID) reduces cost sharing for services that provide high value for patients, such as primary care or generic prescription drugs. According to a study published in 2017, five states required standardized benefit plans in the ACA marketplaces to provide nonpreventive primary care visits as a pre-deductible service. Several large employers have also implemented VBID programs to boost the use of primary care services. For example, IBM's VBID program eliminated all cost sharing for spending associated with primary care in 2010. The Connecticut state employee health plan saw a 75% increase in primary care visits after implementing a VBID program in 2011.

Some public payers have also implemented VBID programs. Healthy Michigan, the state's Medicaid program, utilizes VBID with a goal of cost savings and member engagement. For example, the program imposed an eight-dollar copay for nonemergency services utilized in the emergency department of a hospital in order to incentivize care in higher-value sites of care. <sup>249</sup> In another instance, CMS launched a new VBID program for Medicare Advantage plans in 2015. <sup>250</sup> A recent evaluation of the first three years of the program found a statistically significant increase in utilization for targeted high-value services, including diabetes monitoring and chronic obstructive pulmonary disease treatments. <sup>251</sup>

Enrollment in VBID plans is also associated with an increase in primary care visits for patients with diabetes<sup>252</sup> and children.<sup>253</sup> Further, evidence shows that VBID can prevent hospitalizations and inappropriate emergency room use,<sup>254</sup> because those without adequate access to primary care frequently use hospitals and emergency departments as their usual source of care.<sup>255</sup>

Although VBID programs offer promise in enhancing access to preventive and other high-value services, several barriers to its implementation persist. Oftentimes these kinds of benefit designs come with pushback from enrollees because it can restrict them from accessing certain providers or types of services they are accustomed to. Additionally, VBID programs can be complex and come with administrative burdens that make health plan administrators hesitant to take them on.<sup>256</sup>

Network adequacy refers to a health plan's ability to provide reasonable access to benefits by ensuring there are sufficient health care clinicians in a plan's network.

# Policy Solution: Using Network Adequacy Laws to Improve Access Background

Network adequacy refers to a health plan's ability to provide reasonable access to benefits by ensuring there are sufficient health care clinicians in a plan's network. When networks are inadequate, plan members may end up paying higher costs to use out-of-network providers. The ACA created network adequacy standards for health plans sold on the marketplace, and many states maintain their own network adequacy regulations for the plans they regulate. Medicare Advantage and Medicaid MCO plans are also subject to their own network adequacy standards.

### State of the Evidence

Network adequacy standards can be important tools for federal and state policymakers and officials to ensure that insurers are making affordable primary care easily accessible. Nevertheless, research indicates that these standards—and the oversight of insurer compliance—have been falling short.

State network adequacy standards for commercial plans were developed in response to the emergence of managed care plans in the late 1990s, and a 2017 report found that state regulators believe that these decades-old requirements need to be revisited. <sup>257</sup> As of 2014, most states did not use any quantitative standards to evaluate network adequacy for commercial plans, while the rest imposed some combination of the following quantitative standards: minimum ratios of providers to enrolled population; minimum time or distance for enrollees to travel to provider; and maximum wait times to secure an appointment. <sup>258</sup> A 2015 "secret shopper" survey of 743 primary care providers in California found that "new patients in either [a marketplace plan] or the comparable commercial plan had very low prospects—less than 30 percent—of securing an appointment with any randomly chosen provider," and those presenting with acute conditions had worse outcomes. <sup>259</sup> One issue is that, even in states with quantitative standards for network adequacy, insurance regulators often lack the capacity or authority to conduct robust oversight and enforcement. <sup>260</sup>

Medicare Advantage plans are required to cover a certain number of provider types within specified distance and travel time requirements, <sup>261</sup> and most state Medicaid managed care plans also face network adequacy requirements specific to travel time or distance for primary care providers. <sup>262</sup> However, often these quantitative standards do not sufficiently take into account which providers are accepting new patients or the way tiered and other benefit designs interact with network adequacy. <sup>263</sup>

Research indicates that current network adequacy standards for Medicare Advantage, Medicaid managed care, and commercial plans have done little to improve access to primary care.

A 2021 analysis of Medicare Advantage found that the highest-rated plans had the narrowest primary care networks. This happens because plans seek to maximize their quality ratings by contracting with a narrow set of high-quality providers. The study also found "substantial racial/ethnic disparities in access to wider [Medicare Advantage] networks for primary care among Hispanic and Asian enrollees." 264 Further, a 2014 report by the Office of the Inspector General at the Department of Health and Human Services studying the availability of Medicaid managed care providers found that "more than half of providers could not offer appointments to enrollees, . . . [and] primary care providers were less likely to offer an appointment than specialists." 265 The report raised questions about both the enforcement and sufficiency of state Medicaid managed care network adequacy standards. 266

Research indicates that current network adequacy standards for Medicare Advantage, Medicaid managed care, and commercial plans have done little to improve access to primary care. More research is needed on the comparative effectiveness of the different quantitative and qualitative network adequacy standards in order to understand how they can best be deployed to ensure access, particularly for underserved populations. To strengthen current standards, policymakers could consider steps such as an external physician review system to

determine whether patient needs are met by the network, enhanced access to outof-network providers when networks are inadequate, mandated inclusion of essential community providers, and stronger enforcement of existing network adequacy standards. However, it is important to note that while researchers have recommended these solutions for strengthening network adequacy,<sup>267</sup> their effectiveness in improving access has not been widely implemented or evaluated.

### Takeaways on Improving Affordability of Primary Care

Ensuring Americans have access to affordable health plans, whether through Medicaid or ACA marketplaces, should remain a top priority for policymakers at federal and state levels. For those with insurance coverage, network adequacy standards can ensure timely and affordable access to primary care physicians near them. Federal and state policymakers can work to strengthen both network adequacy standards and their oversight of these standards, particularly when it comes to primary care for underserved populations. Although reducing cost sharing for primary care has the potential to remove affordability barriers, health plan administrators need to be incentivized to educate their members on the benefits of creative benefit design as well as to take on the administrative burden associated with developing these programs.

### The Potential of "Public Option" Plans

Some state policymakers believe that a "public option" plan could help underserved communities obtain more affordable primary care services. A public option plan is generally defined as a government-sponsored health care plan. However, in the three states that have enacted "public option" legislation, these plans are run by private entities that are more closely regulated by the state than other commercial plans.

- Washington State explicitly stated that providing predictable access to preventive and primary care services is one of its policy goals in the development of its public option plan design, <sup>268</sup> and the law sets a minimum payment rate for primary care services at 135% of Medicare rates. <sup>269</sup>
- Colorado's public option plans, which must be offered by all carriers in the individual and small group markets, are required to be "designed to improve racial health equity and decrease racial health disparities through a variety of means," including "[p]roviding first-dollar, pre-deductible coverage for certain high-value services, such as primary and behavioral health care."<sup>270</sup> Colorado also requires public option plan networks to be "culturally responsive" and "reflect the diversity of its enrollees."<sup>271</sup>
- In selecting an entity to administer its public option plan, Nevada Department of Health and Human Services is required to prioritize applicants whose proposals include ways to strengthen the primary care workforce in the state and plans to contract with providers in a way that reduces disparities in terms of access to health care while supporting culturally competent care. Nevada also requires public option plan payments to FQHCs to match or exceed Medicare reimbursement rates. 273

# THE ACCEPTABILITY PROBLEM: ENSURING COMFORT AND COMMUNICATION IN THE DELIVERY OF PRIMARY CARE SERVICES

Our interpretation of the fifth and final dimension of the Penchansky and Thomas model of access focuses on the barriers that prevent comfort and communication during the delivery of primary care services. Although ensuring access based on the first four dimensions is necessary, it continues to be insufficient if patients are unable to fully accept the services being provided to them. To be sure, a number of the policy initiatives considered earlier—more and better-distributed FQHC locations, increasing diversity in the primary care clinician pipeline, creating graduate medical education programs in rural areas—contribute to building cultural competency. Relatively few of them, however, directly tackle acceptability issues. In

this section we discuss the efforts by providers to improve patient-centered communication as well as the vital role community health workers (CHWs) have been playing to bridge the gap between communities and providers.

### Policy Solution: Alleviating Mistrust in Health Care Institutions Among Underserved Populations Through the Use of Patient-Centered Communication

### Background

For some patients, long-standing and often well-placed mistrust in the health care system is a barrier to obtaining primary care. Although researchers have found several causes for patients' mistrust in clinicians, many studies cite negative interactions within health care settings, often the result of discrimination against patients, as a particularly important factor. The studies indicate that patients who are members of underserved populations, including low-income individuals, people of color, and LGBTQ+ individuals, experience difficulty in trusting their primary care clinicians. The several studies, African American patients have been shown to have lower trust in physicians than white patients. Other studies have found that Hispanic patients reported lower measures of trust compared with non-Hispanic white populations.

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Patient-physician trust has also been found to increase among patients who report that their physicians make an effort to understand their experiences, communicate clearly and completely, strive to build partnerships, and obtain referrals.

Research indicates that many of these patients worry that they may have medical care withheld, or that they may not receive the best quality care, as a result of discrimination from clinicians. For example, a study found that perceived discrimination is correlated with higher rates of medical mistrust for non-Hispanic Black adults and Hispanic adults compared to white adults.<sup>287</sup> In addition, nationally over half of LGBTQIA+ individuals report experiencing discrimination in health care, including having clinicians refuse to treat them.<sup>288</sup>

### State of the Evidence

To improve trust between patients and physicians, studies have found that it is important for physicians to improve patient perceptions of the physician's ability to provide care and comfort for them with technical competency and open verbal communication. Patient-physician trust has also been found to increase among patients who report that their physicians make an effort to understand their experiences, communicate clearly and completely, strive to build partnerships, and obtain referrals. 291,292 A 2019 study found that

"[p]hysicians may buffer the effects of mistrust by using patient-centered communication skills such as soliciting the patient's concerns and priorities and being responsive to the health care needs which patients identify."<sup>293</sup>

There are a few examples of clinicians using these strategies to gain the trust of their patients, but evidence of the effectiveness of these strategies is limited. For example, before appointments, the City of Hope cancer center invites patients to take a survey that asks them if they are experiencing social, emotional, or financial difficulties that may affect their ability to follow treatment.<sup>294</sup> The center then directs social workers, financial services staff, and other supportive care staff to offer help to patients with the goal of building trust between the center and its patients.<sup>295</sup> However, there is no publicly available evaluation of these efforts. To combat discrimination against LGBTQ individuals and build trust, UnityPoint Health system, a network of hospitals, clinics, and home care services in the Midwest, created its first clinic for LGBTQ patients in 2018 and required its staff to participate in training on LGBTQ identities and how to serve as allies. The effort received positive feedback and was followed by the opening of a second clinic.<sup>296</sup>

CHWs often live and work in the communities they serve, making them familiar and trust-worthy liaisons to patients for medical professionals and institutions. They are often trained to communicate with patients at the appropriate health literacy level, in plain terms, and in a more culturally competent way. Both patients and clinicians benefit from the cultural competency training and practices that CHWs bring to primary care.

# Policy Solution: Integrating Community Health Workers into Primary Care Delivery by Formalizing Their Role and Creating Reimbursement Pathways

#### Background

According to the American Public Health Association, a community health worker is a "front-line public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the worker to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery."297 The certification and licensure of these professionals vary by state and municipality.<sup>298</sup> The scope of work that CHWs do also varies depending on jurisdiction and type of health care setting. The Centers for Disease Control and Prevention has recommended states establish their own standards for CHW certification and scope of practice.<sup>299</sup>

Community health workers are often employed by a health care facility or institution but also maintain a strong connection to the community through home visits and community events. In general, their role spans from providing health education and screenings to delivering food and connecting patients to community resources. <sup>300</sup> CHWs often conduct assessments of various measures of access, including access to transportation, health insurance, or child care. <sup>301</sup>

CHWs often live and work in the communities they serve, making them familiar and trustworthy liaisons to patients for medical professionals and institutions. They are often trained to communicate with patients at the appropriate health literacy level, in plain terms, and in a more culturally competent way. Both patients and clinicians benefit from the cultural competency training and practices that CHWs bring to primary care. Because clinicians' training depends on the state, cultural competency training is not a given. However, common definitions of the role consistently emphasize the importance of a deep understanding of the communities in which they are serving.

CHWs are also more likely to speak the languages primarily spoken in a particular community, which has been demonstrated to improve health outcomes<sup>306</sup> and enhance the acceptability of care.<sup>307</sup> Evidence suggests that trust is one of the most important elements to ensure effectiveness of the services that community health workers provide. This can be built through maintaining membership in the same communities in which they are serving or identified shared lived experiences.<sup>308-310</sup>

Immigrants may also have difficulty accessing medical care in their preferred language. CHWs can play a crucial role in helping immigrant populations overcome some of these extra barriers to primary care.

Immigration status can have a significant impact on health and health outcomes, and undocumented immigrants may avoid medical care because of fear of deportation. These with a legal status may be reluctant to access assistance programs out of fear that it could adversely affect their path to citizenship. Immigrants may also have difficulty accessing medical care in their preferred language. CHWs can play a crucial role in helping immigrant populations overcome some of these extra barriers to primary care. To rexample, in south Texas, CHWs visit members of the community door-to-door to educate residents about community health care resources available to them regardless of immigration status. They have also been able to help improve acceptability of care among other vulnerable populations who maintain higher levels of mistrust in medical institutions, such as people who inject drugs.

In addition, CHWs have proven to be a valuable part of the solution to combatting racial health disparities, particularly with respect to women's health care and primary care. Alarming racial disparities in maternal health outcomes exist in the United States, even when controlling for income or health status. <sup>316</sup> In Washington, DC, one women's health clinic, Mamatoto Village, recruits CHWs from the community and trains them to provide residents with resources for housing and social services, to assist with breastfeeding, and to manage chronic conditions. The patients of Mamatoto Village have better than average health outcomes and higher levels of follow-up care. <sup>317</sup>

# Takeaways on Improving Acceptability of Primary Care

Significantly more research is needed to establish best practices in patient-centered communication, which requires funding support from federal and state policymakers. While some provider groups and practices are using a variety of methods to establish trust, more centralized support and systematic evaluation is needed to fully understand and expand the impact of these efforts. The evidence is much stronger when it comes to CHWs improving communication between communities and providers. However, more work is needed to develop the CHW workforce and to find ways to best incorporate them into teams alongside clinicians. State initiatives to develop a comprehensive CHW workforce, like Minnesota's, deserve further evaluation so that policymakers in other states can better determine how CHW programs can be brought to scale, while maintaining their unique connection to specific communities.

#### State of the Evidence

As of 2016, seven states had passed laws authorizing Medicaid or other insurer reimbursement for CHW services, while nine states authorized CHW certification and eight states authorized the use of CHWs in managed or team-based care models. Minnesota has done all three, and it can serve as a case study on the development of a CHW workforce. Minnesota enacted legislation authorizing Medicaid reimbursement for CHWs in 2009. Prior to enacting this legislation, Minnesota paved the way by establishing a CHW scope of

As of 2016, seven states had passed laws authorizing Medicaid or other insurer reimbursement for CHW services, while nine states authorized CHW certification and eight states authorized the use of CHWs in managed or team-based care models. Minnesota has done all three, and it can serve as a case study on the development of a CHW workforce.

practice and developing a standardized CHW curriculum. However, only about 600 CHWs had been certified in Minnesota as of 2016. A 2016 report attributed this low uptake to the need for "greater understanding of and support for CHW roles including CHW care coordination activities, addressing billing complexities, and improving coverage policies prior to launching the program." Minnesota is now using federal State Innovation Model funding to develop a toolkit for how practices can best integrate CHWs into their teams. 322

More research is needed to find the best ways to boost the number of CHWs and to integrate them into primary care practice. In particular, the existing evidence focuses on the impact of one-on-one interactions between CHWs and patients. There is a lack of evidence documenting the effectiveness of CHWs in team-based settings and how to better integrate them into teams.

# CONCLUSION

This environmental scan found evidence supporting the efficacy of a range of policy interventions to improve access for underserved populations, such as the use of public financing to support the recruitment of primary care clinicians in underserved areas, to diversify the physician workforce, and to expand the role of nurse practitioners. Federal and state policymakers, health systems, medical professionals, medical schools, and insurers all have a potential role to play in implementing these interventions. It is important that comprehensive solutions encompass policy interventions targeting all five dimensions of access discussed in this report, including the acceptability dimension, which is a harder but arguably more important problem to solve in order to achieve greater health equity. However, further research will be needed to establish the effectiveness of some popular policy interventions such as the use of network adequacy standards or team-based care to improve access.

#### **Acknowledgements**

The authors would like to thank the following Center on Health Insurance Reforms colleagues for their invaluable contributions: Sabrina Corlette, Jack Hoadley, Emma Walsh-Alker, Christine Monahan, and Madison Berry. They also thank Christopher F. Koller and Lisa Dulsky Watkins of the Milbank Memorial Fund and Robert Berenson of the Urban Institute for their review.

## **NOTES**

- <sup>1</sup> Institute of Medicine; Committee on the Future of Primary Care; Donaldson MS, Yordy KD, Lohr KN, Vanselow NA, eds. *Primary Care*: America's Health in a New Era. Washington, DC: Institute of Medicine; 1996. doi:10.17226/5152. Accessed November 11, 2021.
- <sup>2</sup> Starfield B. Primary care and equity in health: the importance to effectiveness and equity of responsiveness to peoples' needs. *Humanity Soc.* 2009;33(1-2):56-73. doi:10.1177/016059760903300105. Accessed November 11, 2021.
- <sup>3</sup> Basu S, Berkowitz SA, Phillips RL, Bitton A, Landon BE, Phillips RS. Association of primary care physician supply with population mortality in the United States, 2005-2015. 2019;179(4):506-514. doi:10.1001/jamainternmed.2018.7624. Accessed November 11, 2021.
- <sup>4</sup> Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. *Milbank Q.* 2005;83(3):457-502. doi:10.1111/j.1468-0009.2005.00409.x. Accessed November 11, 2021.
- <sup>5</sup> Kringos DS, Boerma W, van der Zee J, Groenewegen P. Europe's strong primary care systems are linked to better population health but also to higher health spending. *Health Aff* (*Millwood*). 2013;32(4):686-694. doi:10.1377/hlthaff.2012.1242. Accessed November 11, 2021.
- <sup>6</sup> Hansen J, Groenewegen P, Boerma W, Kringos DS. Living in a country with a strong primary care system is beneficial to people with chronic conditions. *Health Aff (Millwood)*. 2015;34(9):1531-1537. doi:10.1377/hlthaff.2015.0582. Accessed November 11, 2021.
- <sup>7</sup> Tikkanen R, Abrams MK. U.S. Health Care From a Global Perspective, 2019: Higher Spending, Worse Outcomes? New York, NY: Commonwealth Fund; 2020. doi:10.26099/7avy-fc29. Accessed November 11, 2021.
- <sup>8</sup> Ganguli I, Lee TH, Mehrotra A. Evidence and implications behind a national decline in primary care visits. *J Gen Intern Med*. 2019;34(10):2260-2263. doi:10.1007/s11606-019-05104-5. Accessed November 11, 2021.
- <sup>9</sup> Chou S, Venkatesh AK, Trueger NS, Pitts SR. Primary care office visits for acute care dropped sharply in 2002-15, while ED visits increased modestly. *Health Aff (Millwood)*. 2019;38(2):268-275. doi:10.1377/hlthaff.2018.05184. Accessed November 11, 2021.
- <sup>10</sup> Sheridan NF, Kenealy TW, Kidd JD, et. al. Patients' engagement in primary care: power-lessness and compounding jeopardy. A qualitative study. *Health Expect*. 2015;18(1):32-43. doi:10.1111/hex.12006. Accessed November 11, 2021.

- <sup>11</sup> Federal programs and policies improving access to quality health care services in underserved areas. Office of the Assistant Secretary for Planning and Evaluation, US Department of Health and Human Services website. https://aspe.hhs.gov/topics/health-health-care/federal-programs-policies-improving-access-quality-health-care-services-underserved-areas. Published September 2021. Accessed November 11, 2021.
- Primary care health professional shortage areas (HPSAs). Henry J. Kaiser Family Foundation website. https://www.kff.org/other/state-indicator/primary-care-health-professional-shortage-areas-hpsas/?currentTimeframe=0&sortModel=%7B%22colld%22:%-22Location%22,%22sort%22:%22asc%22%7D. Updated September 30, 2020. Accessed November 11, 2021.
- <sup>13</sup> National Academies of Sciences, Engineering, and Medicine; McCauley L, Phillips RL Jr., Meisnere M, Robinson SK, eds. *Implementing High-Quality Primary Care: Rebuilding the Foundation of Health Care.* Washington, DC: National Academies of Sciences, Engineering, and Medicine; 2021. doi:10.17226/25983. Accessed November 11, 2021.
- National Academies of Sciences, Engineering, and Medicine. *Implementing High-Quality Primary Care: Ensure Access.* Washington, DC: National Academies of Sciences, Engineering, and Medicine; 2021. https://www.nap.edu/resource/25983/High%20Quality%20Primary%20Care%20Policy%20Brief%202%20Access.pdf. Accessed November 11, 2021.
- <sup>15</sup> 2018 National Scorecard on Payment Reform 2.0. Catalyst for Payment Reform website. https://www.catalyze.org/product/2018-national-scorecard/. Published December 2019. Accessed November 11, 2021.
- The Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020. Section IV: Advisory committee findings and recommendations. In: US Department of Health and Human Services. *Phase I Report: Recommendations for the Framework and Format of Healthy People 2020.* Washington, DC: US Department of Health and Human Services; 2010. http://www.healthypeople.gov/sites/default/files/Phasel\_0.pdf. Accessed November 11, 2021.
- <sup>17</sup> Penchansky R, Thomas JW. The concept of access: definition and relationship to consumer satisfaction. *Med Care*. 1981;19(2):127-140. doi:10.1097/00005650-198102000-00001. Accessed November 11, 2021.
- <sup>18</sup> State Health and Value Strategies. Talking About Anti-Racism and Health Equity: Describing Identities and Experiences. Princeton, NJ: State Health and Value Strategies; 2021. https://www.shvs.org/wp-content/uploads/2021/08/Talking-About-Anti-Racism-Health-Equity\_Describing-Identities-3-of-3.pdf. Accessed November 11, 2021.

- <sup>19</sup> MUA find. Health Resources and Services Administration, US Department of Health and Human Services website. https://data.hrsa.gov/tools/shortage-area/mua-find. Published September 2021. Accessed November 11, 2021.
- <sup>20</sup> Basu S, Berkowitz SA, Phillips RL, Bitton A, Landon BE, Phillips RS. Association of primary care physician supply with population mortality in the United States, 2005-2015. 2019;179(4):506-514. doi:10.1001/jamainternmed.2018.7624. Accessed November 11, 2021.
- <sup>21</sup> The distribution of the U.S. primary care workforce: primary care workforce facts and stats, no. 3. Agency for Healthcare Research and Quality website. https://www.ahrq.gov/research/findings/factsheets/primary/pcwork3/index.html. Published September 2021. Accessed November 11, 2021.
- <sup>22</sup> IHS Markit Ltd for the Association of American Medical Colleges. *The Complexities of Physician Supply and Demand: Projections From 2018 to 2033*. Washington, DC: Association of American Medical Colleges; 2020. https://www.aamc.org/system/files/2020-06/stratcomm-aamc-physician-workforce-projections-june-2020.pdf. Accessed November 11, 2021.
- <sup>23</sup> Lewis C, Getachew Y, Abrams MK, Doty MM. *Changes at Community Health Centers, and How Patients Are Benefiting*. New York, NY: Commonwealth Fund; 2019. doi:10.26099/2yrd-pa13. Accessed November 11, 2021.
- <sup>24</sup> Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. Milbank Q. 2005;83(3):457-502. doi:10.1111/j.1468-0009.2005.00409.x. Accessed November 11, 2021.
- <sup>25</sup> Basu S, Berkowitz SA, Phillips RL, Bitton A, Landon BE, Phillips RS. Association of primary care physician supply with population mortality in the United States, 2005–2015. 2019;179(4):506–514. doi:10.1001/jamainternmed.2018.7624. Accessed November 11, 2021.
- <sup>26</sup> Shi L, Macinko J, Starfield B, Politzer R, Xu J. Primary care, race, and mortality in US states. Soc Sci Med. 2005;61(1):65-75. doi:10.1016/j.socscimed.2004.11.056. Accessed November 11, 2021.
- <sup>27</sup> Knight V. American medical students less likely to choose to become primary care doctors. *Kaiser Health News*. July 3, 2019. https://khn.org/news/american-medical-students-less-likely-to-choose-to-become-primary-care-doctors/. Accessed November 11, 2021.
- <sup>28</sup> Pfarrwaller E, Sommer J, Chung C, et al. Impact of interventions to increase the proportion of medical students choosing a primary care career: a systematic review. *J Gen Intern Med*. 2015;30(9):1349-1358. doi:10.1007/s11606-015-3372-9. Accessed November 11, 2021.
- <sup>29</sup> Leigh JP, Tancredi D, Jerant A, et al. Physician wages across specialties: informing the physician reimbursement debate. *Arch Intern Med.* 2010;170(19):1728-1734. doi:10.1001/archinternmed.2010.350. Accessed November 11, 2021.

- <sup>30</sup> Rosenblatt RA, Andrilla CHA. The impact of U.S. medical students' debt on their choice of primary care careers: an analysis of data from the 2002 Medical School Graduation Questionnaire. Acad Med. 2005;80(9):815. doi:10.1097/00001888-200509000-00006.
  Accessed November 11, 2021.
- <sup>31</sup> Vaughn BT, DeVrieze SR, Reed SD, Schulman KA. Can we close the income and wealth gap between specialists and primary care physicians? *Health Aff (Millwood)*. 2010; 29(5):933–940. doi:10.1377/hlthaff.2009.0675. Accessed November 11, 2021.
- <sup>32</sup> Decker SL. No association found between the Medicaid primary care fee bump and physician-reported participation in Medicaid. *Health Aff (Millwood)*. 2018;37(7):1092-1098. doi:10.1377/hlthaff.2018.0078. Accessed November 11, 2021.
- <sup>33</sup> Zuckerman S, Skopec L, Epstein M. *Medicaid Physician Fees After the ACA Primary Care Fee Bump.* Washington, DC: Urban Institute; 2017. https://www.urban.org/research/publication/medicaid-physician-fees-after-aca-primary-care-fee-bump/view/full\_report. Accessed November 11, 2021.
- <sup>34</sup> An update on the Medicaid primary care payment increase. Medicaid and CHIP Payment and Access Commission website. https://www.macpac.gov/publication/an-update-on-themedicaid-primary-care-payment-increase-3/. Published March 2015. Accessed November 11, 2021.
- <sup>35</sup> Polsky D, Richards M, Basseyn S, et al. Appointment availability after increases in Medicaid payments for primary care. *N Engl J Med.* 2015;372(6):537-545. doi:10.1056/NEJMsa1413299. Accessed November 11, 2021.
- <sup>36</sup> Decker SL. No association found between the Medicaid primary care fee bump and physician-reported participation in Medicaid. *Health Aff (Millwood)*. 2018;37(7):1092-1098. doi:10.1377/hlthaff.2018.0078. Accessed November 11, 2021.
- <sup>37</sup> Trump administration finalizes permanent expansion of Medicare telehealth services and improved payment for time doctors spend with patients. Centers for Medicare and Medicaid Services website. https://www.cms.gov/newsroom/press-releases/trump-administration-finalizes-permanent-expansion-medicare-telehealth-services-and-improved-payment. Published December 1, 2020. Accessed November 11, 2021.
- <sup>38</sup> Direct graduate medical education (DGME). Centers for Medicare and Medicaid Services website. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/DGME. Last modified December 1, 2021. Accessed November 11, 2021.

- <sup>39</sup> Boyle P. Medical school enrollments grow, but residency slots haven't kept pace. Association of American Medical Colleges Blog. September 3, 2020. https://www.aamc. org/news-insights/medical-school-enrollments-grow-residency-slots-haven-t-kept-pace. Accessed November 11, 2021.
- <sup>40</sup> Steinwald B, Ginsburg PB, Brandt C, Lee S, Patel K. *Medicare Graduate Medical Education Funding Is Not Addressing the Primary Care Shortage: We Need a Radically Different Approach*. Washington, DC: Brookings Institution; 2018. https://www.brookings.edu/research/medicare-graduate-medical-education-funding-is-not-addressing-the-primary-care-shortage-we-need-a-radically-different-approach/. Accessed November 11, 2021.
- <sup>41</sup> Petterson SM, Liaw WR, Tran C, Bazemore AW. Estimating the residency expansion required to avoid projected primary care physician shortages by 2035. *Ann Fam Med.* 2015;13(2):107–114. doi:10.1370/afm.1760. Accessed November 11, 2021.
- <sup>42</sup> US Government Accountability Office. *Physician Workforce: Locations and Types of Graduate Training Were Largely Unchanged, and Federal Efforts May Not Be Sufficient to Meet Needs.* GAO-17-411. Washington, DC: US Government Accountability Office; 2017. https://www.gao.gov/products/gao-17-411. Accessed November 11, 2021.
- <sup>43</sup> Rockey PH, Rieselbach RE, Neuhausen K, et al. States can transform their health care workforce. *J Grad Med Educ*. 2014;6(4):805-808. doi:10.4300/JGME-D-14-00502.1. Accessed November 11, 2021.
- <sup>44</sup> Kaufman A, Alfero C. A state-based strategy for expanding primary care residency. *Health Affairs Blog.* July 31, 2015. https://www.healthaffairs.org/do/10.1377/hblog20150731.049707/full. Accessed November 11, 2021.
- <sup>45</sup> Planning and partnership grant program. Texas Higher Education Coordinating Board website. https://www.highered.texas.gov/institutional-resources-programs/institutional-grant-opportunities/planning-and-partnership-grant-program/. Accessed November 11, 2021.
- <sup>46</sup> Rittenhouse D, Ament A, Grumbach K. Training Tomorrow's Physicians: Recommendations for Expanding Graduate Medical Education Funding in California. Oakland: California Health Care Foundation; 2019. https://www.chcf.org/wp-content/uploads/2019/02/TrainingTomorrowsPhysicians.pdf. Accessed November 11, 2021.
- 47 Ihid.
- <sup>48</sup> Kornegay D. *GME in Georgia: Growth, Funding, and Sustainability.* Augusta, GA: Augusta University; 2016. https://www.augusta.edu/ahec/documents/gme\_white\_paper.pdf. Accessed November 11, 2021.

- <sup>49</sup> Rittenhouse D, Ament A, Grumbach K. Training Tomorrow's Physicians: Recommendations for Expanding Graduate Medical Education Funding in California. Oakland: California Health Care Foundation; 2019. https://www.chcf.org/wp-content/uploads/2019/02/TrainingTomorrowsPhysicians.pdf. Accessed November 11, 2021.
- 50 Ibid.
- <sup>51</sup> Xierali IM, Nivet MA, Fair MA. Analyzing physician workforce racial and ethnic composition associations: physician specialties (part 1). *Analysis in Brief.* 2014;14:8. https://www.aamc.org/download/401798/data/aug2014aibpart1.pdf. Accessed November 11, 2021.
- <sup>52</sup> Xierali IM, Castillo-Page L, Conrad S, Nivet MA. Analyzing physician workforce racial and ethnic composition associations: physician specialties (part 2). *Analysis in Brief.* 2014;14(9). https://www.aamc.org/download/401814/data/aug2014aibpart2.pdf. Accessed November 11, 2021.
- <sup>53</sup> Diversity in medicine: facts and figures 2019, fostering diversity and inclusion. Association of American Medical Colleges website. https://www.aamc.org/data-reports/workforce/interactive-data/fostering-diversity-and-inclusion. Accessed November 11, 2021.
- <sup>54</sup> Association of American Medical Colleges. Altering the Course: Black Males in Medicine.
  Washington, DC: Association of American Medical Colleges; 2015. https://store.aamc.org/downloadable/download/sample/sample\_id/84/. Accessed November 11, 2021.
- <sup>55</sup> Jaschik S. Diversity standards and medical school admissions. *Inside Higher Ed.* December 10, 2018. https://www.insidehighered.com/admissions/article/2018/12/10/study-links-accreditors-diversity-standards-diversification-medical. Accessed November 11, 2021.
- <sup>56</sup> Grbic D, Morrison E, Sondheimer HM, Conrad SS, Milem JF. The association between a holistic review in admissions workshop and the diversity of accepted applicants and students matriculating to medical school. *Acad Med.* 2019;94(3):396-403. doi:10.1097/ ACM.000000000002446. Accessed November 11, 2021.
- 57 Ibid.
- <sup>58</sup> Pipeline programs and system reform: a path to improving health equity. Association of American Medical Colleges website. https://www.aamc.org/news-insights/pipeline-programs-and-system-reform-path-improving-health-equity. Published June 2018. Accessed November 11, 2021.
- <sup>59</sup> Brown DJ, DeCorse-Johnson AL, Irving-Ray M, Wu WW. Performance evaluation for diversity programs. *Policy Polit Nurs Pract*. 2005;6(4):331-334. doi:10.1177/1527154405283380. Accessed November 11, 2021.
- <sup>60</sup> Toney M. The long, winding road: one university's quest for minority health care professionals and services. *Acad Med.* 2012;87(11):1556-61. doi:10.1097/ACM.0b013e31826c97bd. Accessed November 11, 2021.

- 61 Ibid.
- <sup>62</sup> Travers J, Smaldone A, Cohn EG. Does state legislation improve nursing workforce diversity? *Policy Polit Nurs Pract*. 2015;16(3-4):109-116. doi:10.1177/1527154415599752. Accessed November 11, 2021.
- <sup>63</sup> Goodfellow A, Ulloa JG, Dowling PT. Predictors of primary care physician practice location in underserved urban or rural areas in the United States: a systematic literature review. *Acad Med.* 2016;91(9):1313-1321. doi:10.1097/ACM.000000000001203. Accessed November 11, 2021.
- <sup>64</sup> Congressional Research Service. *National Health Service Corps: Background, Funding, and Programs*. Washington, DC: Congressional Research Service; 2017. https://www.every-crsreport.com/reports/R43920.html. Accessed November 11, 2021.
- <sup>65</sup> US Department of Health and Human Services. National Health Service Corps Report to Congress for Year 2013. https://www.hrsa.gov/sites/default/files/archive/BHW/nhscrtc2013.pdf#page=16. Published 2013. Accessed November 11, 2021.
- <sup>66</sup> Negrusa S, Hogan P, Ghosh P, Watkins L. National Health Service Corps: An Extended Analysis. Falls Church, VA: Lewin Group; 2016. https://aspe.hhs.gov/sites/default/files/private/pdf/255496/NHSCanalysis.pdf. Accessed November 11, 2021.
- <sup>67</sup>US Government Accountability Office. *National Health Service Corps: Opportunities to Stretch Scarce Dollars and Improve Provider Placement.* Washington, DC: US Government Accountability Office; 1995. https://www.gao.gov/assets/hehs-96-28.pdf. Accessed November 11, 2021.
- <sup>68</sup> Pathman DE, Konrad TR, King TS, Taylor DH, Koch GG. Outcomes of states' scholarship, loan repayment, and related programs for physicians. *Med Care*. 2004;42(6):560–568. doi:10.1097/01.mlr.0000128003.81622.ef. Accessed November 11, 2021.
- 69 Ibid.
- Olson DP, Nunez F, Overback M, et. al. The National Health Service Corps at 50. Health Care Poor Underserved. 2020;31(2):542-548. doi:10.1353/hpu.2020.0042. Accessed November 11, 2021.
- <sup>71</sup> Lancaster C. Policy Options for Recruiting and Retaining Rural Primary Care Physicians in Maine [dissertation]. Portland: University of Southern Maine; 2015. https://digitalcommons.usm.maine.edu/cgi/viewcontent.cgi?article=1120&context=muskie\_capstones. Accessed November 11, 2021.

- O'Connell S. Montana's Medical Education, Training, and Incentive Programs. Billings, MT: Children, Families, Health, and Human Services Interim Committee; 2010. https://leg.mt.gov/content/Committees/Interim/2009\_2010/Children\_Family/Assigned\_Studies/SJR\_35/sjr35-medical-training-and-incentives-jan-2010.pdf. Accessed November 11, 2021.
- <sup>73</sup> Rahn D, Halverson PK. Arkansas Health Workforce Strategic Plan: A Roadmap to Change. Little Rock: Arkansas Center for Health Improvement; 2012. https://www.healthy.arkansas.gov/images/uploads/pdf/WorkforceStrategicPlan.pdf. Accessed November 11, 2021.
- National Organization of State Offices of Rural Health. Recruitment and Retention Resource by State List. https://nosorh.org/wp-content/uploads/2015/03/RR-Resources-By-State-List.pdf. Published 2015. Accessed November 11, 2021.
- <sup>75</sup> Walker KO, Ryan G, Ramey R, et al. Recruiting and retaining primary care physicians in urban underserved communities: the importance of having a mission to serve. *Am J Public Health*. 2010;100(11):2168-2175. doi:10.2105/AJPH.2009.181669. Accessed November 11, 2021.
- <sup>76</sup> Krist AH, Johnson RE, Callahan D, Woolf SH, Marsland. Title VII funding and physician practice in rural or low-income areas. *J Rural Health*. 2005;21(1):3-11. doi:10.1111/j.1748-0361.2005.tb00056.x. Accessed November 11, 2021.
- Fryer GE, Meyers DS, Krol DM, et al. The association of Title VII funding to departments of family medicine with choice of physician specialty and practice location. Fam Med. 2002;34(6):436-440. https://fammedarchives.blob.core.windows.net/imagesandpdfs/pdfs/FamilyMedicineVol34Issue6Fryer436.pdf. Accessed December 14, 2021.
- <sup>78</sup> National Center for Health Workforce Analysis, US Bureau of Health Workforce. Area Health Education Centers Program: Academic Year 2018-2019. https://bhw.hrsa.gov/sites/default/files/bureau-health-workforce/funding/area-health-education-centers-2019.pdf. Accessed November 11, 2021.
- <sup>79</sup> Gessert C, Jones C. Urban AHECs: a comparison with rural AHECs. *Public Health Rep.* 1986;101(6):637-43. https://stacks.cdc.gov/view/cdc/66402. Accessed December 14, 2021.
- <sup>80</sup> History and mission statement. National AHEC Organization website. https://www.nation-alahec.org/page/CopyofMissionHistoryBoard. Accessed November 11, 2021.
- <sup>81</sup> Workforce development: health care professionals, March 2019 legislative request for information—FY20 state budget. The Vermont AHEC Network website. https://ljfo.vermont.gov/assets/Uploads/d86df7d21e/FY20-Budget-Request-for-AHEC-Info-2019\_03\_07. pdf#page=3. Published March 2019. Accessed November 11, 2021.
- <sup>82</sup> Nottingham LD, Lewis MJ. AHEC in West Virginia: a case study. *J Rural Health*. 2003;19(1):42-46. doi:10.1111/j.1748-0361.2003.tb00540.x. Accessed November 11, 2021.

- <sup>83</sup> MacDowell M, Glasser M, Hunsaker M. A decade of rural physician workforce outcomes for the Rockford Rural Medical Education (RMED) Program, University of Illinois. *Acad Med*. 2013;88(12):1941-1947. doi:10.1097/ACM.000000000000031. Accessed November 11, 2021.
- 84 Rural Medical Education (RMED) Program. The University of Illinois College of Medicine website. https://ncrhp.uic.edu/programs/rural-health-professions-academic-programs/ rmed/. Accessed November 11, 2021.
- <sup>85</sup> Urban Service Track/AHEC Scholars Program. UConn Health, Connecticut Area Health Education Center Network website. https://health.uconn.edu/connecticut-area-health-education-center-network/urban-services-track-and-ahec-scholars/. Accessed November 11, 2021.
- <sup>86</sup> Chen C, Chen F, Mullan F. Teaching health centers: a new paradigm in graduate medical education. *Acad Med.* 2012;87(12):1752–1756. doi:10.1097/ACM.0b013e3182720f4d. Accessed November 11, 2021.
- <sup>87</sup> Barclift SC, Brown EJ, Finnegan SC, Cohen ER, Klink K. Teaching health center graduate medical education locations predominantly located in federally designated underserved areas. *J Grad Med Educ.* 2016;8(2):241–243. doi:10.4300/JGME-D-15-00274.1. Accessed November 11, 2021.
- <sup>88</sup> Talib Z, Jewers MM, Strasser JH, et al. Primary care residents in teaching health centers: their intentions to practice in underserved settings after residency training. *Acad Med.* 2018;93(1):98-103. doi:10.1097/ACM.0000000000001889. Accessed November 11, 2021.
- <sup>89</sup> Ku L, Mullan F, Serrano C, Barber Z, Shin P. Teaching Health Centers: A Promising Approach for Building Primary Care Workforce for the 21st Century. RCHN Community Health Foundation Research Collaborative. Policy research brief no. 40. https://publichealth.gwu. edu/pdf/elR/GGRCHN\_PolicyResearchBrief\_40.pdf. Published March 10, 2015. Accessed November 11, 2021.
- <sup>90</sup> American Immigration Council. Foreign-Trained Doctors Are Critical to Serving Many U.S. Communities. Washington, DC: American Immigration Council; 2018. https://www.americanimmigrationcouncil.org/research/foreign-trained-doctors-are-critical-serving-many-us-communities. Accessed November 11, 2021.
- <sup>91</sup> GA 30 policy and application. Georgia Department of Community Health website. https://dch.georgia.gov/document/document/ga30policyapplicationmay2021/download. Published May 2021. Accessed November 11, 2021.
- <sup>92</sup> Malayala SV, Vasireddy D, Atluri P, Alur RS. Primary care shortage in medically underserved and health provider shortage areas: lessons from Delaware, USA. *J Prim Care Community Health*. January 2021. doi:10.1177/2150132721994018. Accessed November 11, 2021.

- <sup>93</sup> Kahn TR, Hagopian A, Johnson K. Retention of J-1 visa waiver program physicians in Washington State's health professional shortage areas. Acad Med. 2010;85(4):614-621. doi:10.1097/ACM.0b013e3181d2ad1d. Accessed November 11, 2021.
- <sup>94</sup> Opoku ST, Apenteng BA, Lin G, Chen L, Palm D, Rauner T. A comparison of the J-1 visa waiver and loan repayment programs in the recruitment and retention of physicians in rural Nebraska. *J Rural Health*. 2015;31(3):300-309. doi:10.1111/jrh.12108. Accessed November 11, 2021.
- <sup>95</sup> Rabinowitz HK, Petterson S, Boulger J, et al. Medical school rural programs: a comparison with international medical graduates in addressing state-level rural family physician and primary care supply. *Acad Med.* 2012;87(4):488-492. doi:10.1097/ACM.0b013e3182488b19. Accessed November 11, 2021.
- <sup>96</sup> Naylor MD, Kurtzman ET. The role of nurse practitioners in reinventing primary care. *Health Aff (Millwood)*. 2010;29(5):893-899. doi:10.1377/hlthaff.2010.0440. Accessed November 11, 2021.
- <sup>97</sup> Buerhaus PI, DesRoches CM, Dittus R, Donelan K. Practice characteristics of primary care nurse practitioners and physicians. *Nurs Outlook*. 2015;63(2):144-153. doi:10.1016/j.outlook.2014.08.008. Accessed November 11, 2021.
- <sup>98</sup> Smith-Gagen J, White LL, Santos A, Hasty SM, Tung W, Lu M. Scope-of-practice laws and expanded health services: the case of underserved women and advanced cervical cancer diagnoses. *J Epidemiol Community Health*. 2019;73(3):278-284. doi:10.1136/jech-2018-210709. Accessed November 11, 2021.
- <sup>99</sup> Poghosyan L, Carthon JM. The untapped potential of the nurse practitioner workforce in reducing health disparities. *Policy Polit Nurs Pract*. 2017;18(2):84-94. doi:10.1177/1527154417721189. Accessed November 11, 2021.
- <sup>100</sup> Kirby JB, Yabroff KR. Rural-urban differences in access to primary care: beyond the usual source of care provider. Am J Prev Med. 2020;58(1):89-96. doi:10.1016/j.ame-pre.2019.08.026. Accessed November 11, 2021.
- <sup>101</sup> Xue Y, Smith JA, Spetz, J. Primary care nurse practitioners and physicians in low-income and rural areas, 2010-2016. *JAMA*. 2019;321(1):102-105. doi:10.1001/jama.2018.17944. Accessed November 11, 2021.
- <sup>102</sup> Reagan PB, Salsberry PJ. The effects of state-level scope-of-practice regulations on the number and growth of nurse practitioners. *Nurs Outlook*. 2013;61(6):392-399. doi:10.1016/j. outlook.2013.04.007. Accessed November 11, 2021.
- <sup>103</sup> Perry JJ. State-granted practice authority: do nurse practitioners vote with their feet? *Nurs Res Pract*. 2012;2012:482178. doi:10.1155/2012/482178. Accessed November 11, 2021.

- <sup>104</sup> Xue Y, Ye Z, Brewer C, Spetz J. Impact of state nurse practitioner scope-of-practice regulation on health care delivery: systematic review. *Nurs Outlook*. 2016;64(1):71-85. doi:10.1016/j.outlook.2015.08.005. Accessed November 11, 2021.
- <sup>105</sup> Spetz J, Skillman SM, Andrilla CH. Nurse practitioner autonomy and satisfaction in rural settings. *Med Care Res Rev.* 2017;74(2):227–235. doi:10.1177/1077558716629584. Accessed November 11, 2021.
- <sup>106</sup> Barnes H, Maier CB, Sarik DA, Germack HD, Aiken LH, McHugh MD. Effects of regulation and payment policies on nurse practitioners' clinical practices. *Med Care Res Rev.* 2017;74(4):431-451. doi:10.1177/1077558716649109. Accessed November 11, 2021.
- <sup>107</sup> Ibid.
- <sup>108</sup> Graves JA, Mishra P, Dittus RS, Parikh R, Perloff J, Buerhaus PI. Role of geography and nurse practitioner scope-of-practice in efforts to expand primary care system capacity: health reform and the primary care workforce. *Med Care*. 2016;54(1):81-89. doi:10.1097/MLR.0000000000000454. Accessed November 11, 2021.
- Mitchell P, Wynia M, Golden R, et al. Core Principles & Values of Effective Team-Based Health Care. Washington, DC: Institute of Medicine; 2012. https://nam.edu/wp-content/ uploads/2015/06/VSRT-Team-Based-Care-Principles-Values.pdf. Accessed November 11, 2021.
- Bodenheimer TS, Smith MD. Primary care: proposed solutions to the physician shortage without training more physicians. *Health Aff (Millwood)*. 2013;32(11):1881-1886. doi:10.1377/hlthaff.2013.0234. Accessed November 11, 2021.
- <sup>111</sup> Apaydin A. Administrative work and job role beliefs in primary care physicians: an analysis of semi-structured interviews. *SAGE Open.* 2020;10(1). doi:10.1177/2158244019899092. Accessed November 11, 2021.
- <sup>112</sup> Goldberg DG, Beeson T, Kuzel AJ, Love LE, Carver MC. Team-based care: a critical element of primary care practice transformation. *Popul Health Manag.* 2013;16(3):150-156. doi:10.1089/pop.2012.0059. Accessed November 11, 2021.
- Medical homes. County Health Rankings and Roadmaps, University of Wisconsin Population Health Institute website. https://www.countyhealthrankings.org/take-action-to-im-prove-health/what-works-for-health/strategies/medical-homes. Accessed November 11, 2021.
- Lewis C, Getachew Y, Abrams MK, Doty MM. Changes at Community Health Centers, and How Patients Are Benefiting. New York, NY: Commonwealth Fund; 2019. doi:10.26099/2yrd-pa13. Accessed November 11, 2021.

115 Ibid.

- <sup>116</sup> Proia KK, Thota AB, Nije GJ, et al. Team-based care and improved blood pressure control: a community guide systematic review. *Am J Prev Med*. 2014;47(1):86-99. doi:10.1016/j.ame-pre.2014.03.004. Accessed November 11, 2021.
- <sup>117</sup> Reiss-Brennan B, Brunisholz KD, Dredge C, et al. Association of integrated team-based care with health care quality, utilization, and cost. *JAMA*. 2016;316(8):826-834. doi:10.1001/jama.2016.11232. Accessed November 11, 2021.
- <sup>118</sup> Meyers DJ, Chien AT, Nguyen KH, Li Z, Singer SJ, Rosenthal MB. Association of team-based primary care with health care utilization and costs among chronically ill patients. *JAMA Intern Med.* 2019;179(1):54-61. doi:10.1001/jamainternmed.2018.5118. Accessed November 11, 2021.
- <sup>119</sup> Green LV, Savin S, Lu Y. Primary care physician shortages could be eliminated through use of teams, nonphysicians, and electronic communication. *Health Aff (Millwood)*. 2013;32(1):11–19. doi:10.1377/hlthaff.2012.1086. Accessed November 11, 2021.
- D'Afflitti J, Lee K, Jacobs M, et al. Improving provider experience and increasing patient access through nurse practitioner–physician primary care teams. *J Ambul Care Manag.* 2018;41(4):308-313. doi:10.1097/JAC.000000000000252. Accessed November 11, 2021.
- <sup>121</sup> Shekelle PG, Begashaw M. What Are the Effects of Different Team-Based Primary Care Structures on the Quadruple Aim of Care? A Rapid Review. Washington, DC: Department of Veterans Affairs; 2021. https://www.hsrd.research.va.gov/publications/esp/team-based-primarycare.pdf. Accessed November 11, 2021.
- <sup>122</sup> Hopkins K, Sinsky CA. Team-based care: saving time and improving efficiency. *Fam Pract Manag.* 2014;21(6):23-29. https://www.aafp.org/fpm/2014/1100/p23.html. Accessed November 11, 2021.
- 123 Center for Community Health and Evaluation. Expanding Access Through Team Care Program: Final Evaluation Report. San Francisco, CA: Blue Shield of California Foundation; 2015. https://blueshieldcafoundation.org/sites/default/files/covers/EATC\_Final\_Eval\_Report\_January2016.pdf. Accessed November 11, 2021.
- <sup>124</sup> Center for Community Health and Evaluation. Hill Country Community Clinic Case Study.
  San Francisco, CA: Blue Shield of California Foundation; 2015. https://www.careinnovations.org/wp-content/uploads/2017/11/Hill\_Country\_case\_study\_content\_FINAL\_\_092915.
  pdf. Accessed November 11, 2021.
- <sup>125</sup> Center for Community Health and Evaluation. LA Christian Health Centers. San Francisco, CA: Blue Shield of California Foundation; 2015. https://www.careinnovations.org/wp-content/uploads/2017/11/LACHC\_case\_study\_content\_FINAL\_092915.pdf. Accessed November 11, 2021.

- <sup>126</sup> Reform and policy: affordability standards. Office of the Health Insurance Commissioner, State of Rhode Island website. http://www.ohic.ri.gov/ohic-reformandpolicy-affordability. php. Accessed November 11, 2021.
- <sup>127</sup> Jabbarpour Y, Greiner A, Jetty A, et. al. *Investing in Primary Care: A State-Level Analysis*. Washington, DC: Patient-Centered Primary Care Collaborative and the Robert Graham Center; 2019. https://www.graham-center.org/content/dam/rgc/documents/publications-reports/reports/Investing-Primary-Care-State-Level-PCMH-Report.pdf. Accessed November 11, 2021.
- Primary care investment: state policy and spending maps. Milbank Memorial Fund Primary Care Transformation website. https://www.milbank.org/focus-areas/primary-care-transformation/other-resources/. Updated June 2021. Accessed November 11, 2021.
- Patient Centered Primary Care Collaborative. Spending for Primary Care. Washington, DC: Patient Centered Primary Care Collaborative; 2018. https://www.pcpcc.org/sites/default/files/resources/PCPCC%20Fact%20Sheet%20PC%20Spend%20Aug%202018.pdf. Accessed November 11, 2021.
- Designated health professional shortage areas statistics: quarterly summary, third quarter of fiscal year 2021. Bureau of Health Workforce, Health Resources and Services Administration website. https://data.HRSA.gov. Accessed November 11, 2021.
- <sup>131</sup> Butcher KF, Schanzenbach DW. Most Workers in Low-Wage Labor Market Work Substantial Hours, in Volatile Jobs. Washington, DC: Center on Budget and Policy Priorities; 2018. https://www.cbpp.org/research/poverty-and-inequality/most-workers-in-low-wage-labor-market-work-substantial-hours-in. Accessed November 11, 2021.
- <sup>132</sup> Brown EE, Schwartz M, Shi C, et al. Understanding why urban, low-income patients miss primary care appointments: insights from qualitative interviews of West Philadelphians. *J Ambul Care Manag.* 2020;43(1):30-40. doi:10.1097/JAC.000000000000316. Accessed November 11, 2021.
- <sup>133</sup> Rust G, Ye J, Baltrus P, Daniels E, Adesunloye B, Fryer GE. Practical barriers to timely primary care access: impact on adult use of emergency department services. *Arch Intern Med*. 2008;168(15):1705-1710. doi:10.1001/archinte.168.15.1705. Accessed November 11, 2021.
- Hefner JL, Wexler R, McAlearney AS. Primary care access barriers as reported by non-urgent emergency department users: implications for the US primary care infrastructure. Am J Med Qual. 2015;30(2):135-140. doi:10.1177/1062860614521278. Accessed November 11, 2021.

- Department of Health Policy, The George Washington University. Quality Incentives for Federally Qualified Health Centers, Rural Health Clinics and Free Clinics: A Report to Congress. Washington, DC: The George Washington University; 2012. https://hsrc.himmelfarb.gwu.edu/cgi/viewcontent.cgi?article=1047&context=sphhs\_policy\_facpubs. Accessed November 11, 2021.
- <sup>136</sup> Rosenbaum S, Sharac J, Shin P, Tolbert J. Community Health Center Financing: The Role of Medicaid and Section 330 Grant Funding Explained. San Francisco, CA: Kaiser Family Foundation; 2019. <a href="https://www.kff.org/medicaid/issue-brief/community-health-center-financing-the-role-of-medicaid-and-section-330-grant-funding-explained/">https://www.kff.org/medicaid/issue-brief/community-health-center-financing-the-role-of-medicaid-and-section-330-grant-funding-explained/</a>. Accessed November 11, 2021.
- <sup>137</sup> Health Resources and Services Administration, US Department of Health and Human Services. Comparison of the Rural Health Clinic and Federally Qualified Health Center Programs. Washington, DC: Health Resources and Services Administration; 2006. https://www.hrsa.gov/sites/default/files/ruralhealth/policy/confcall/comparisonguide.pdf. Accessed November 11, 2021.
- <sup>138</sup> The Henry J. Kaiser Family Foundation. Community Health Centers. https://www.kff.org/wp-content/uploads/2013/01/7877.pdf. Published March 2009. Accessed November 11, 2021.
- <sup>139</sup> Wakefield M. Federally qualified health centers and related primary care workforce issues. JAMA. 2021;325(12):1145–1146. https://doi.org/10.1001/jama.2021.1964. Accessed November 11, 2021.
- National Association of Community Health Centers. America's Health Centers. https://www.nachc.org/wp-content/uploads/2020/10/2021-Snapshot.pdf. Published August 2021. Accessed November 11, 2021.
- <sup>141</sup> About us. National Association of Rural Health Clinics website. https://www.narhc.org/nar-hc/ESX\_About\_Us\_2.asp. Accessed November 11, 2021.
- <sup>142</sup> Ollove M. Rural America's health crisis seizes states' attention. Stateline. January 31, 2020. https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2020/01/31/ru-ral-americas-health-crisis-seizes-states-attention. Accessed November 11, 2021.
- National Association of Free & Charitable Clinics. 2020 NAFC Annual Data Collection Report. Alexandria, VA: National Association of Free & Charitable Clinics; 2020. https://www.nafcclinics.org/sites/default/files/NAFC%20Data%20Collection%20Report%202020%20 Final.pdf. Accessed November 11, 2021.
- <sup>144</sup> Richards M, Saloner B, Kenney GM, Rhodes KV, Polsky D. Availability of new Medicaid patient appointments and the role of rural health clinics. *Health Serv Res.* 2016;51(2):570–591. doi:10.1111/1475-6773.12334. Accessed November 11, 2021.

- Nath JB, Costigan S, Hsia RY. Changes in demographics of patients seen at federally qualified health centers, 2005–2014. 2016;176(5):712–714. doi:10.1001/jamainternmed.2016.0705. Accessed November 11, 2021.
- <sup>146</sup> Shi L, Lebrun-Harris LA, Daly CA, et al. Reducing disparities in access to primary care and patient satisfaction with care: the role of health centers. *J Health Care Poor Underserved*. 2013;24(1):56-66. doi:10.1353/hpu.2013.0022. Accessed November 11, 2021.
- <sup>147</sup> Lahr M, Henning-Smith C, Hernandez AM, Neprash H. Access and capacity to care for Medicare beneficiaries in rural health clinics. University of Minnesota Rural Health Research Center policy brief. https://rhrc.umn.edu/wp-content/uploads/2019/12/UMNaccess-to-care-RHCS-policy-brief-12.10.19.pdf. Published December 2019. Accessed November 11, 2021.
- <sup>148</sup> Richards MR, Saloner B, Kenney GM, Rhodes KV, Polsky D. Availability of new Medicaid patient appointments and the role of rural health clinics. *Health Serv Res.* 2016;51(2):570–591. doi:10.1111/1475-6773.12334. Accessed November 11, 2021.
- <sup>149</sup> Sasso AT, Byck GR. Funding growth drives community health center services. *Health Aff* (*Millwood*). 2010;29(2):289-296. doi:10.1377/hlthaff.2008.0265. Accessed November 11, 2021.
- <sup>150</sup> Clawar M, Randolph R, Thompson K, Pink GH. Access to care: populations in counties with no FQHC, RHC, or acute care hospital. NC Rural Health Research Program findings brief. https://www.shepscenter.unc.edu/wp-content/uploads/dlm\_uploads/2018/01/Accessto-PrimaryCare.pdf. Published January 2018. Accessed November 11, 2021.
- <sup>151</sup> Chang CH, Bynum JP, Lurie JD. Geographic expansion of federally qualified health centers 2007–2014. *J Rural Health*. 2019;35(3):385–394. doi:10.1111/jrh.12330. Accessed November 11, 2021.
- <sup>152</sup> Ko M, Cummings JR, Ponce NA. Changes in the supply of US rural health centers, 2000–2011: implications for rural minority communities. *J Rural Health*. 2016;32(3):245–253. doi:10.1111/jrh.12147. Accessed November 11, 2021.
- What we do: school-based health care. National Census of School-Based Health Centers website. https://www.sbh4all.org/what-we-do/school-based-health-care/national-census-of-school-based-health-centers/. Accessed November 11, 2021.
- <sup>154</sup> Love H, Soleimanpour S, Panchal N, Schlitt J, Behr C, Even M. 2016-17 National School-Based Health Care Census Report. Washington, DC: School-Based Health Alliance; 2018. https://www.sbh4all.org/wp-content/uploads/2019/05/2016-17-Census-Report-Final.pdf. Accessed November 11, 2021.

- <sup>155</sup> Urban, suburban, rural, how do households describe where they live? US Department of Housing and Urban Development website. https://www.huduser.gov/portal/pdredge/pdredge-frm-asst-sec-080320.html. Accessed November 11, 2021.
- <sup>156</sup> Love HE, Schlitt J, Soleimanpour S, Panchal N, Behr C. Twenty years of school-based health care growth and expansion. *Health Aff (Millwood)*. 2019;38(5):755-764. doi:10.1377/hlthaff.2018.05472. Accessed November 11, 2021.
- <sup>157</sup> Ibid.
- <sup>158</sup> Ibid.
- Price OA. Strategies to encourage long-term sustainability of school-based health centers. Am J Med Res. 2017;4(1):61-83. https://www.ceeol.com/search/article-detail?id=649123. Accessed November 11, 2021.
- Wade TJ, Mansour ME, Guo JJ, Huentelman T, Line K, Keller KN. Access and utilization patterns of school-based health centers at urban and rural elementary and middle schools. Public Health Rep. 2008;123(6):739-750. doi:10.1177/003335490812300610. Accessed November 11, 2021.
- <sup>161</sup> Guo JJ, Wade TJ, Pan W, Keller KN. School-based health centers: cost-benefit analysis and impact on health care disparities. Am J Public Health. 2010;100(9):1617-1623. doi:10.2105/AJPH.2009.185181. Accessed November 11, 2021.
- <sup>162</sup> McNall MA, Lichty LF, Mavis B. The impact of school-based health centers on the health outcomes of middle school and high school students. Am J Public Health. 2010;100(9):1604-1610. doi:10.2105/ajph.2009.183590. Accessed November 11, 2021.
- <sup>163</sup> Walker SC, Kerns SEU, Lyon AR, Burns EJ, Cosgrove TJ. Impact of school-based health center use on academic outcomes. *J Adolesc Health*. 2010;46(3):251-257. doi:10.1016/j. jadohealth.2009.07.002. Accessed November 11, 2021.
- Wade TJ, Mansour ME, Line K, Huentelman T, Keller KN. Improvements in health-related quality of life among school-based health center users in elementary and middle school. Ambul Pediatr. 2008;8(4):241-249. doi:10.1016/j.ambp.2008.02.004. Accessed November 11, 2021.
- <sup>165</sup> Knopf JA, Finnie RKC, Peng Y, et al. School-based health centers to advance health equity. Am J Prev Med. 2016;51(1):114-126. doi:10.1016/j.amepre.2016.01.009. Accessed November 11, 2021.
- <sup>166</sup> Ethier KA, Dittus PJ, DeRosa CJ, Chung EQ, Martinez E, Kerndt PR. School-based health center access, reproductive health care, and contraceptive use among sexually experienced high school students. *J Adolesc Health*. 2011;48(6):562-565. doi:10.1016/j. jadohealth.2011.01.018. Accessed November 11, 2021.

- Jennings J, Pearson G, Harris M. Implementing and maintaining school-based mental health services in a large, urban school district. *J School Health*. 2000;70(5):201-205. doi:10.1111/j.1746-1561.2000.tb06473.x. Accessed November 11, 2021.
- Mansour EM, Rose B, Toole K, Luzader CP, Atherton HD. Pursuing perfection: an asthma quality improvement initiative in school-based health centers with community partners. *Public Health Rep.* 2008;123(6):717-730. doi:10.1177/003335490812300608. Accessed November 11, 2021.
- Webber MP, Carpiniello KE, Oruwariye T, Lo Y, Burton WB, Appel DK. Burden of asthma in inner-city elementary schoolchildren: do school-based health centers make a difference? Arch Pediatr Adolesc Med. 2003;157(2):125-129. doi:10.1001/archpedi.157.2.125. Accessed November 11, 2021.
- Ramos MM, Sebastian RA, Stumbo SP, McGrath J, Fairbrother G. Measuring unmet needs for anticipatory guidance among adolescents at school-based health centers. *J Adolesc Health*. 2017;60(6):720-726. doi:10.1016/j.jadohealth.2016.12.021. Accessed November 11, 2021.
- <sup>171</sup> Strolin-Goltzman J, Sisselman A, Melekis K, Auerbach C. Understanding the relationship between school-based health center use, school connection, and academic performance. *Health Soc Work*. 2014;39(2):83-91. doi:10.1093/hsw/hlu018. Accessed November 11, 2021.
- <sup>172</sup> Johnson V, Ellis RS, Hutcherson V. Evaluating a strategy for implementation and sustainability of school-based health centers in 3 disparate communities. *J School Health*. 2020;90(4):286-294. doi:10.1111/josh.12875. Accessed November 11, 2021.
- <sup>173</sup> Sprigg SM, Wolgin F, Chubinski J, Keller K. School-based health centers: a funder's view of effective grant making. *Health Aff (Millwood)*. 2017;36(4):768-772. doi:10.1377/hlthaff.2016.1234. Accessed November 11, 2021.
- <sup>174</sup> RAND Corporation. The evolving role of retail clinics. RAND Corporation research brief no. RB-9491-2. doi:10.7249/RB9491-2. Published 2016. Accessed November 11, 2021.
- <sup>175</sup> Ibid.
- <sup>176</sup> Shrank WH, Krumme AA, Tong AY, et al. Quality of care at retail clinics for 3 common conditions. *Am J Managed Care*. 2014;20(10):794-801. https://www.ajmc.com/view/quality-of-care-at-retail-clinics-for-3-common-conditions. Accessed November 11, 2021.
- <sup>177</sup> Mehrotra A, Liu H, Adams JL, et al. Comparing costs and quality of care at retail clinics with that of other medical settings for 3 common illnesses. *Ann Intern Med.* 2009;151(5):321-328. doi:10.7326/0003-4819-151-5-200909010-00006. Accessed November 11, 2021.

- <sup>178</sup> Rohrer JE, Angstman KB, Garrison GM, Maxson JA, Furst JW. Family medicine patients who use retail clinics have lower continuity of care. *J Prim Care Community Health*. 2013;4(2):150-153. doi:10.1177/2150131912471683. Accessed November 11, 2021.
- <sup>179</sup> Reid RO, Ashwood JS, Friedberg MW, Weber ES, Setodji CM, Mehrotra A. Retail clinic visits and receipt of primary care. *J Gen Intern Med*. 2013;28(4):504-512. doi:10.1007/s11606-012-2243-x. Accessed November 11, 2021.
- <sup>180</sup> Alexander D, Currie J, Schnell M. Check up before you check out: retail clinics and emergency room use. *J Public Econ.* 2019;178(104050):3-55. doi:10.3386/w23585. Accessed November 11, 2021.
- <sup>181</sup> Hoff T, Prout K. Comparing retail clinics with other sites of care. *Med Care*. 2019;57(9):734-741. doi:10.1097/MLR.0000000000001164. Accessed November 11, 2021.
- <sup>182</sup> Spetz J, Parente ST, Town RJ, Bazarko D. Scope-of-practice laws for nurse practitioners limit cost savings that can be achieved in retail clinics. *Health Aff (Millwood)*. 2013;32(11):1977-1984. doi:10.1377/hlthaff.2013.0544. Accessed November 11, 2021.
- <sup>183</sup> RAND Corporation. The evolving role of retail clinics. RAND Corporation research brief no. RB-9491-2. doi:10.7249/RB9491-2. Published 2016. Accessed November 11, 2021.
- <sup>184</sup> Ibid.
- <sup>185</sup> Rudavsky R, Mehrotra A. Sociodemographic characteristics of communities served by retail clinics. *J Am Board Fam Med*. 2010;23(1):42-48. doi:10.3122/jabfm.2010.01.090033. Accessed November 11, 2021.
- <sup>186</sup> Tu HT, Boukus ER. Despite rapid growth, retail clinic use remains modest. Center for Studying Health System Change research brief no. 29. http://www.hschange.org/CON-TENT/1392/. Published November 2013. Accessed November 11, 2021.
- <sup>187</sup> Weinick RM, Pollack CE, Fisher MP, Gillen EM, Mehrotra A. Policy implications of the use of retail clinics. RAND Health Q. 2010;1(3):1-76. https://www.rand.org/content/dam/rand/ pubs/technical\_reports/2010/RAND\_TR810.pdf. Accessed November 11, 2021.
- New York State Department of Health. Retail clinics: options for New York State. https://www.health.ny.gov/facilities/public\_health\_and\_health\_planning\_council/meetings/2013-09-13/docs/rc\_options\_pros\_cons.pdf. Published September 13, 2013. Accessed November 11, 2021.
- <sup>189</sup> Carthon JMB, Sammarco T, Pancir D, Chittams J, Nicely KW. Growth in retail-based clinics after nurse practitioner scope of practice reform. *Nurs Outlook*. 2017;65(2):195-201. doi:10.1016/j.outlook.2016.11.001. Accessed November 11, 2021.

- New York State Department of Health. Retail clinics: options for New York State. https://www.health.ny.gov/facilities/public\_health\_and\_health\_planning\_council/meetings/2013-09-13/docs/rc\_options\_pros\_cons.pdf. Published September 13, 2013. Accessed November 11, 2021.
- <sup>191</sup> Chang JE, Brundage SC, Burke GC, Chokshi DA. *Convenient Care: Retail Clinics and Urgent Care Centers in New York*. New York, NY: United Hospital Fund; 2015. https://nyshealthfoundation.org/wp-content/uploads/2017/11/united-hospital-fund-convenient-care-report.pdf. Accessed November 11, 2021.
- <sup>192</sup> Chunara R, Zhao Y, Chen J, et al. Telemedicine and healthcare disparities: a cohort study in a large healthcare system in New York City during COVID-19. *J Am Med Inform Assoc.* 2021;28(1):33-41. doi:10.1093/jamia/ocaa217. Accessed November 11, 2021.
- <sup>193</sup> Velasquez D, Mehrotra A. Ensuring the growth of telehealth during COVID-19 does not exacerbate disparities in care. *Health Affairs Blog.* May 8, 2020. https://www.healthaffairs.org/do/10.1377/hblog20200505.591306/full/.Accessed November 11, 2021.
- <sup>194</sup> Shah DS, Alkureishi L, Lee WW. Seizing the moment for telehealth policy and equity. Health Affairs Blog. September 13, 2021. https://www.healthaffairs.org/do/10.1377/ hblog20210909.961330/full. Accessed November 11, 2021.
- Nouri S, Khoong EC, Lyles CR, Karliner L. Addressing equity in telemedicine for chronic disease management during the Covid-19 pandemic. NEJM Catal Innov Care Deliv. 2020;1(3):1-13. https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0123. Accessed November 11, 2021.
- <sup>196</sup> Jaffe DH, Lee L, Huynh S, Haskell TP. Health inequalities in the use of telehealth in the United States in the lens of Covid-19. *Popul Health Manag.* 2020;23(5):368-377. doi:10.1089/pop.2020.0186. Accessed November 11, 2021.
- <sup>197</sup> Roberts ET, Mehrotra A. Assessment of disparities in digital access among Medicare beneficiaries and implications for telemedicine. *JAMA Intern Med.* 2020;180(10):1386-1389. doi:10.1001/jamainternmed.2020.2666. Accessed November 11, 2021.
- Eberly LA, Kallan MJ, Julien HM, et al. Patient characteristics associated with telemedicine access for primary and specialty ambulatory care during the COVID-19 pandemic. JAMA Netw Open. 2020;3(12):1-12. doi:10.1001/jamanetworkopen.2020.31640. Accessed November 11, 2021.
- <sup>199</sup> Uscher-Pines L, Sousa J, Jones M, et al. Telehealth use among safety-net organizations in California during the COVID-19 pandemic. *JAMA*. 2021;325(11):1106-1107. doi:10.1001/jama.2021.0282. Accessed November 11, 2021.

- <sup>200</sup> Uscher-Pines L, Jones M, Sousa J, Predmore Z, Ober A. The doctor will call me maybe: the uncertain future of audio-only visits and why we need them to address disparities. *Health Affairs Blog.* March 3, 2021. https://www.healthaffairs.org/do/10.1377/hblog20210225.26462/full/. Accessed November 11, 2021.
- <sup>201</sup> Hirsch Q, Davis S, Stanford M, Reiter M, Goldman M, Mallow J. Beyond broadband: equity, access, and the benefits of audio-only telehealth. *Health Affairs Blog*. September 20, 2021. https://www.healthaffairs.org/do/10.1377/hblog20210916.819969/full/. Accessed November 11, 2021.
- <sup>202</sup> Mapping broadband health in America. Federal Communications Commission website. https://www.fcc.gov/health/maps. Accessed November 11, 2021.
- <sup>203</sup> Hirko KA, Kerver JM, Ford S, et al. Telehealth in response to the COVID-19 pandemic: implications for rural health disparities. *J Am Med Inform Assoc.* 2020;27(11):1816-1818. doi:10.1093/jamia/ocaa156. Accessed November 11, 2021.
- <sup>204</sup> Carroll M, Cullen T, Ferguson S, Hogge N, Horton M, Kokesh J. Innovation in Indian health-care: using health information technology to achieve health equity for American Indian and Alaska Native populations. *Perspect Health Inf Manag.* 2011;8(1):1–9. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3035828/. Accessed November 11, 2021.
- <sup>205</sup> Ibid.
- NORC at the University of Chicago. Briefing Paper: Understanding the Impact of Health IT in Underserved Communities and those with Health Disparities. Washington, DC: US Department of Health and Human Services; 2010. https://www.healthit.gov/sites/default/files/pdf/hit-underserved-communities-health-disparities.pdf. Accessed November 11, 2021.
- <sup>207</sup> Ibid.
- <sup>208</sup> Prina LL. Foundation funding in telehealth. *Health Aff (Millwood)*. 2021;40(6):1009-1010. doi:10.1377/hlthaff.2021.00694. Accessed November 11, 2021.
- <sup>209</sup> Severin C, Curry M. Telehealth funding: transforming primary care and achieving digital health equity for underresourced populations. *Health Affairs Blog*. September 9, 2021. https://www.healthaffairs.org/do/10.1377/hblog20210908.121951. Accessed November 11, 2021.
- <sup>210</sup> Syed ST, Gerber BS, Sharp LK. Traveling towards disease: transportation barriers to health care access. *J Community Health*. 2013;38(5):976-993. doi:10.1007/s10900-013-9681-1. Accessed November 11, 2021.
- <sup>211</sup> Wallace R, Hughes-Cromwick P, Mull H, Khasnabis S. Access to health care and nonemergency medical transportation: two missing links. *Transp Res Rec.* 2005;1924(1):76-84. doi:1 0.1177/0361198105192400110. Accessed November 11, 2021.

- <sup>212</sup> Medicaid benefits: non-emergency medical transportation services. Kaiser Family Foundation website. 2018. https://www.kff.org/medicaid/state-indicator/non-emergency-medical-transportation-services/?currentTimeframe=0&sortModel=%7B%22colld%22%3A%22Location%22%2C%22sort%22%3A%22asc%22%7D. Accessed November 11, 2021.
- <sup>213</sup> Texas A&M Transportation Institute. Examining the Effects of Separate Non-Emergency Medical Transportation (NEMT) Brokerages on Transportation Coordination. Transit Cooperative Research Program working paper. https://transit-mobility.tti.tamu.edu/files/2015/12/TCRP-B-44-Review-and-Summary-of-Relevant-Literature-FinalR.pdf. Published 2014. Accessed November 11, 2021.
- <sup>214</sup> Caldwell J, Metsch-Ampel D, Moise I. Addressing barriers for new mainers in understanding and utilizing transportation resources to access medical care and finding culturally appropriate solutions for the barriers. *Community Engaged Research Reports* 2018;60. https://scarab.bates.edu/community\_engaged\_research/60/. Accessed November 11, 2021.
- <sup>215</sup> Fraade-Blanar L, Whaley CM. Non-emergency medical transportation in the time of Covid-19. *The RAND Blog.* May 5, 2020. https://www.rand.org/blog/2020/05/non-emergency-medical-transportation-in-the-time-of.html. Accessed November 11, 2021.
- <sup>216</sup> Chaiyachati KH, Hubbard RA, Yeager A, et al. Rideshare-based medical transportation for Medicaid patients and primary care show rates: a difference-in-difference analysis of a pilot program. *J Gen Intern Med.* 2018;33(6):863-868. doi:10.1007/s11606-018-4306-0. Accessed November 11, 2021.
- <sup>217</sup> Powers BW, Rinefort S, Jain SH. Nonemergency medical transportation: delivering care in the era of Lyft and Uber. *JAMA*. 2016;316(9):921-922. doi:10.1001/jama.2016.9970.
  Accessed November 11, 2021.
- <sup>218</sup> Thomas LV, Wede KR. Nonemergency medical transportation and health care visits among chronically ill urban and rural Medicaid beneficiaries. *Soc Work Public Health*. 2014;29(6):629-639. doi:10.1080/19371918.2013.865292. Accessed November 11, 2021.
- <sup>219</sup> Chaiyachati KH, Hubbard RA, Yeager A, et al. Association of rideshare-based transportation services and missed primary care appointments: a clinical trial. *JAMA Intern Med.* 2018;178(3):383-389. doi:10.1001/jamainternmed.2017.8336. Accessed November 11, 2021.
- <sup>220</sup> Zimbroff RM, Ornstein KA, Sheehan OC. Home-based primary care: a systematic review of the literature, 2010-2020. *J Am Geriatr Soc.* 2021;69(10):2963-2972. doi:10.1111/jgs.17365. Accessed November 11, 2021.
- <sup>221</sup> Ornstein KA, Leff B, Covinsky KE, et al. Epidemiology of the homebound population in the United States. *JAMA Intern Med.* 2015;175(7):1180-1186. doi:10.1001/jamaint-ernmed.2015.1849. Accessed November 11, 2021.

- <sup>222</sup> Smith KL, Ornstein K, Soriano T, Muller MD, Boal J. A multidisciplinary program for delivering primary care to the underserved urban homebound: looking back, moving forward. *J Am Geriatr Soc.* 2006;54(8):1283–1289. doi:10.1111/j.1532-5415.2006.00835.x. Accessed November 11, 2021.
- <sup>223</sup> Klein S, Hostetter M, McCarthy D. An Overview of Home-Based Primary Care: Learning From the Field. New York, NY: Commonwealth Fund; 2017. https://www.commonwealthfund.org/ publications/issue-briefs/2017/jun/overview-home-based-primary-care-learning-field. Accessed November 11, 2021.
- <sup>224</sup> Kramer BJ, Creekmur B, Mitchell MN, Saliba D. Expanding home-based primary care to American Indian reservations and other rural communities: an observational study. *J Am Geriatr Soc.* 2018;66(4):818-824. doi:10.1111/jgs.15193. Accessed November 11, 2021.
- <sup>225</sup> Smith KL, Ornstein K, Soriano T, Muller D, Boal J. A multidisciplinary program for delivering primary care to the underserved urban homebound: looking back, moving forward. *J Am Geriatr Soc.* 2006;54(8):1283-1289. doi:10.1111/j.1532-5415.2006.00835.x. Accessed November 11, 2021.
- <sup>226</sup> Butcher K, Schanzenbach DW. Most Workers In Low-Wage Labor Market Work Substantial Hours, in Volatile Jobs. Washington, DC: Center on Budget and Policy Priorities; 2018. https://www.cbpp.org/sites/default/files/atoms/files/7-24-18pov.pdf.
  Accessed November 11, 2021.
- <sup>227</sup> Brown EE, Schwartz M, Shi C, et al. Understanding why urban, low-income patients miss primary care appointments: insights from qualitative interviews of West Philadelphians. *J Ambul Care Manag.* 2020;43(1):30-40. doi:10.1097/JAC.000000000000316. Accessed November 11, 2021.
- <sup>228</sup> Lewis C, Getachew Y, Abram MK, Doty MM. *Changes at Community Health Centers, and How Patients Are Benefiting*. New York, NY: Commonwealth Fund; 2019. doi:10.26099/2yrd-pa13. Accessed November 11, 2021.
- <sup>229</sup> O'Malley A. After-hours access to primary care practices linked with lower emergency department use and less unmet medical need. *Health Aff (Millwood)*. 2013;32(1):175-183. doi:10.1377/hlthaff.2012.0494. Accessed November 11, 2021.
- Piehl MD, Clemens CJ, Joines JD. Narrowing the gap: decreasing emergency department use by children enrolled in the Medicaid program by improving access to primary care. Arch Pediatr Adolesc Med. 2000;154(8):791-795. doi:10.1001/archpedi.154.8.791. Accessed November 11, 2021.
- <sup>231</sup> After hour add on service codes. South Carolina Healthy Connections Medicaid website. https://www.scdhhs.gov/press-release/after-hour-add-service-codes. Accessed November 11, 2021.

- <sup>232</sup> After Hours and Weekend Care Policy, Professional. UnitedHealthcare Commercial Reimbursement Policy. https://www.uhcprovider.com/content/dam/provider/docs/public/policies/comm-reimbursement/COMM-After-Hours-Weekend-Care-Policy.pdf. Accessed November 11, 2021.
- <sup>233</sup> City of Reno rolls out free mental health services for residents to help with COVID-19 crisis.
  City of Reno website. https://www.reno.gov/Home/Components/News/News/19674/576.
  Published January 28, 2021. Accessed November 11, 2021.
- <sup>234</sup> Durham Health Innovations. Duke Division of Community Health website. https://sites. duke.edu/durhamhealthinnovations/. Accessed November 11, 2021.
- <sup>235</sup> Potter MB, Phengrasamy L, Hudes ES, McPhee SJ, Walsh JME. Offering annual fecal occult blood tests at annual flu shot clinics increases colorectal cancer screening rates. *Ann Fam Med.* 2009;7(1):17–23. doi:10.1370/afm.934. Accessed November 11, 2021.
- <sup>236</sup> Ayanian JZ, Weissman JS, Schneider EC, Ginsburg JA, Zaslavsky AM. Unmet health needs of uninsured adults in the United States. *JAMA*. 2000;284(16):2061–2069. doi:10.1001/jama.284.16.2061. Accessed November 11, 2021.
- <sup>237</sup> Newacheck PW, Stoddard JJ, Hughes DC, Pearl M. Health insurance and access to primary care for children. *N Engl J Med.* 1998;338(8):513–519. doi:10.1056/NEJM199802193380806. Accessed November 11, 2021.
- <sup>238</sup> Brown EA, White BM, Jones WJ, Gebregziabher M, Simpson KN. Measuring the impact of the Affordable Care Act Medicaid expansion on access to primary care using an interrupted time series approach. *Health Res Policy Syst.* 2021;19(77):1-10. doi:10.1186/s12961-021-00730-0. Accessed November 11, 2021.
- <sup>239</sup> Paradise J, Garfield R. What Is Medicaid's Impact on Access to Care, Health Outcomes, and Quality of Care? Setting the Record Straight on the Evidence. San Francisco, CA: Kaiser Family Foundation; 2013. https://www.kff.org/report-section/what-is-medicaids-impacton-access-to-care-health-outcomes-and-quality-of-care-setting-the-record-straight-onthe-evidence-issue-brief/. Accessed November 11, 2021.
- <sup>240</sup> Artiga S, Ubri P, Zur J. The Effects of Premiums and Cost Sharing on Low-Income Populations: Updated Review of Research Findings. San Francisco, CA: Kaiser Family Foundation; 2017. https://www.kff.org/medicaid/issue-brief/the-effects-of-premiums-and-cost-sharing-on-low-income-populations-updated-review-of-research-findings/view/print/#foot-note-220856-94. Accessed November 11, 2021.
- <sup>241</sup> Average general annual deductibles for single coverage. Henry J. Kaiser Family Foundation website. https://www.kff.org/report-section/2018-employer-health-benefits-survey-section-7-employee-cost-sharing/attachment/figure-7-10/. Published 2018. Accessed November 11, 2021.

- <sup>242</sup> Rae M, Copeland R, Cox C. Tracking the rise in premium contribution and cost-sharing for families with large employer coverage. Peterson-Kaiser Family Foundation Health System Tracker website. https://www.healthsystemtracker.org/brief/tracking-the-rise-in-premium-contributions-and-cost-sharing-for-families-with-large-employer-coverage/.
  Published August 14, 2019. Accessed November 11, 2021.
- <sup>243</sup> Saad L. More Americans delaying medical treatment due to cost. Gallup website. https://news.gallup.com/poll/269138/americans-delaying-medical-treatment-due-cost.aspx.
  Published December 9, 2019. Accessed November 11, 2021.
- <sup>244</sup> Alharbi A, Khan MM, Brandt H, Chapman C. Impact of removing cost sharing under the Affordable Care Act on mammography and pap test use. *BMC Public Health*. 2019;19(370):1–9. doi:10.1186/s12889-019-6665-9. Accessed November 11, 2021.
- <sup>245</sup> Agirdas C, Holding JG. Effects of the ACA on preventive care disparities. Appl Health Econ Health Policy. 2018;16:859-869. doi:10.1007/s40258-018-0423-5. Accessed November 11, 2021.
- <sup>246</sup> Ahn S, Corlette S. State Efforts to Lower Cost-Sharing Barriers to Health Care for the Privately Insured. Washington, DC: Urban Institute; 2017. https://www.urban.org/research/publication/state-efforts-lower-cost-sharing-barriers-health-care-privately-insured. Accessed November 11, 2021.
- <sup>247</sup> Frakt A. Health plans that nudge patients to do the right thing. *New York Times*. July 10, 2017. https://www.nytimes.com/2017/07/10/upshot/health-plans-that-nudge-patients-to-do-the-right-thing.html. Accessed November 11, 2021.
- <sup>248</sup> Connecticut Health Enhancement Program (HEP). Primary Care Collaborative website. https://www.pcpcc.org/initiative/connecticut-health-enhancement-program-hep. Accessed November 11, 2021.
- <sup>249</sup> V-BID in action: Michigan Medicaid expansion. Center for Value-Based Insurance Design website. https://vbidcenter.org/v-bid-in-action-michigan-medicaid-expansion/. Published August 2013. Accessed November 11, 2021.
- <sup>250</sup> Hanley S. Announcement of Medicare Advantage Value-Based Insurance Design Model Test. Center for Medicaid and Medicare Innovation, Centers for Medicaid and Medicare Services. https://innovation.cms.gov/files/reports/vbid-announcement-revised-10-9-15. pdf. Published September 1, 2015. Accessed November 11, 2021.
- <sup>251</sup> Eibner C, Khodyakov D, Taylor EA, et al. Evaluation Report of the First Three Years (2017–2019) of the Medicare Advantage Value-Based Insurance Design Model Test. Washington, DC: Center for Medicaid and Medicare Innovation, Centers for Medicaid and Medicare Services; 2020. https://innovation.cms.gov/data-and-reports/2020/vbid-yr1-3-evalrpt. Accessed November 11, 2021.

- <sup>252</sup> Gibson TB, Mahoney J, Ranghell K, Cherney BJ, McElwee N. Value-based insurance plus disease management increased medication use and produced savings. *Health Aff (Millwood)*. 2021;30(1):100-108. https://doi.org/10.1377/hlthaff.2010.0896. Accessed November 11, 2021.
- <sup>253</sup> Sepúlveda M, Roebuck MC, Fronstin P, Vidales-Calderon P, Parikh A, Rhee K. Elimination of the out-of-pocket charge for children's primary care visits: an application of value-based insurance design. *J Pediatr.* 2016;175:195-200. doi:10.1016/j.jpeds.2016.04.017. Accessed November 11, 2021.
- <sup>254</sup> Ma Q, Sylwestrzak G, Oza M, Garneau L, DeVries AR. Evaluation of value-based insurance design for primary care. Am J Managed Care. 2019;25(5):221-227. https://www.ajmc.com/view/evaluation-of-valuebased-insurance-design-for-primary-care. Accessed November 11, 2021.
- <sup>255</sup> Rocovich C, Patel T. Emergency department visits: why adults choose the emergency room over a primary care physician visit during regular office hours? *World J Emerg Med.* 2012;3(2):91–97 doi:10.5847/wjem.j.issn.1920-8642.2012.02.002. Accessed November 11, 2021.
- <sup>256</sup> McClellan M, Patel K, Latts L, Dang-Vu C. Implementing Value-Based Insurance Products: A Collaborative Approach to Health Care Transformation. Washington, DC: Brookings Institution Center for Health Policy; 2015. https://www.brookings.edu/wp-content/up-loads/2016/07/061615-Health-Policy-Brief-VBIP.pdf. Accessed November 11, 2021.
- <sup>257</sup> Hall MA, Ginsburg PB. A Better Approach to Regulating Provider Network Adequacy. Washington, DC: Brookings Institution Center for Health Policy; 2017. https://www.brookings.edu/wp-content/uploads/2017/09/regulatory-options-for-provider-network-adequacy.pdf. Accessed November 11, 2021.
- <sup>258</sup> Giovannelli J, Lucia KW, Corlette S. Implementing the Affordable Care Act: State Regulation of Marketplace Plan Provider Networks. New York, NY: Commonwealth Fund; 2015. https://www.commonwealthfund.org/publications/issue-briefs/2015/may/implementing-afford-able-care-act-state-regulation-marketplace. Accessed November 11, 2021.
- <sup>259</sup> Haeder SF, Weimar DL, Mukamel DB. Secret shoppers find access to providers and network accuracy lacking for those in marketplace and commercial plans. *Health Aff (Millwood)*. 2016;35(7):1160-1166. doi:10.1377/hlthaff.2015.1554. Accessed November 11, 2021.
- <sup>260</sup> Giovannelli J, Lucia KW, Corlette S. Implementing the Affordable Care Act: State Regulation of Marketplace Plan Provider Networks. New York, NY: Commonwealth Fund; 2015. https://www.commonwealthfund.org/publications/issue-briefs/2015/may/implementing-afford-able-care-act-state-regulation-marketplace. Accessed November 11, 2021.

- <sup>261</sup> Centers for Medicare and Medicaid Services. Medicare Advantage and Section 1876 Cost Plan Network Adequacy Guidance. Washington, DC: Centers for Medicare and Medicaid Services; 2020. https://www.cms.gov/files/document/medicareadvantageandsection-1876costplannetworkadequacyguidance6-17-2020.pdf. Accessed November 11, 2021.
- <sup>262</sup> Medicaid MCO access standards: primary care. Henry J. Kaiser Family Foundation website. https://www.kff.org/other/state-indicator/medicaid-mco-access-standards-prima-ry-care/. Updated 2013. Accessed November 11, 2021.
- <sup>263</sup> Haeder SF, Weimar D, Mukamel DB. A consumer-centric approach to network adequacy: access to four specialties in California's marketplace. *Health Aff (Millwood)*. 2019;38(11):1918–1926. doi:10.1377/hlthaff.2019.00116. Accessed November 11, 2021.
- <sup>264</sup> Meyers DJ, Rahman M, Trivedi A. Narrow primary care networks in Medicare Advantage. *J Gen Intern Med.* 2021; Jan 19:1–4. doi:10.1007/s11606-020-06534-2. Accessed November 11, 2021.
- <sup>265</sup> Levinson D. Access to Care: Provider Availability in Medicaid Managed Care. Washington, DC: Office of Inspector General, Department of Health and Human Services; 2014. https://oig.hhs.gov/oei/reports/oei-02-13-00670.pdf. Accessed November 11, 2021.
- <sup>266</sup> Ibid.
- <sup>267</sup> Hall MA, Ginsburg PB. A Better Approach to Regulating Provider Network Adequacy.
  Washington, DC: Brookings Institution Center for Health Policy; 2017. https://www.brookings.edu/wp-content/uploads/2017/09/regulatory-options-for-provider-network-adequacy.pdf. Accessed November 11, 2021.
- <sup>268</sup> Joint Select Committee on Health Care Oversight. Update on Cascade Care: standard plan designs & next steps. Washington Health Benefit Exchange. https://www.hca.wa.gov/assets/program/hbe-cascade-care-update-20191212.pdf. Published December 11, 2019. Accessed November 11, 2021.
- <sup>269</sup> WA S.B. 5526 Sec. 3 (2019) (codified at R.C.W. Sec. 41.05.410(2)(i)).
- <sup>270</sup> CO 10-16-1304(1)(d)(III).
- <sup>271</sup>CO 10-16-1304(1)(q)(I).
- <sup>272</sup> NV S.B. 420 Sec. 12(4)(a)-(e)(2021).
- <sup>273</sup> NV S.B. 420 Sec.14(4)(2021).
- <sup>274</sup> Nguyen AL, Schwei RJ, Zhao Y, Rathouz PJ, Jacobs EA. What matters when it comes to trust in one's physician: race/ethnicity, sociodemographic factors, and/or access to and experiences with health care? *Health Equity*. 2020;4(1):280–289. doi:10.1089/heq.2019.0101. Accessed November 11, 2021.

- <sup>275</sup> Bazargan M, Cobb S, Assari S. Discrimination and medical mistrust in a racially and ethnically diverse sample of California adults. *Ann Fam Med.* 2021;19(1):4–15. doi:10.1370/afm.2632. Accessed November 11, 2021.
- Namer Y, Razum O. Access to primary care and preventive health services of LGBTQ+ migrants, refugees, and asylum seekers. In: Aldo Rosano, ed. Access to Primary Care and Preventative Health Services of Migrants. New York, NY: Springer; 2018. https://link.springer.com/book/10.1007/978-3-319-73630-3. Accessed November 11, 2021.
- <sup>277</sup> Trinh NT, Cheung CJ, Velasquez EE, Alvarez K, Crawford C, Alegría M. Addressing cultural mistrust: strategies for alliance building. In: Medlock M, Shtasel D, Trinh NH, Williams D, eds. *Racism and Psychiatry: Current Clinical Psychiatry*. Totowa, NJ: Humana Press; 2018. doi:10.1007/978-3-319-90197-8\_9. Accessed November 11, 2021.
- <sup>278</sup> Jaiswal J, Halkitis PN. Towards a more inclusive and dynamic understanding of medical mistrust informed by science. *Behav Med.* 2019;45(2):79-85. doi:10.1080/08964289.2019.161 9511. Accessed November 11, 2021.
- <sup>279</sup> Cahill S, Taylor SW, Elsesser SA, Mena L, Hickson D, Mayer KH. Stigma, medical mistrust, and perceived racism may affect PrEP awareness and uptake in black compared to white gay and bisexual men in Jackson, Mississippi and Boston, Massachusetts. *AIDS Care*. 2017;29(11):1351-1358. doi:10.1080/09540121.2017.1300633. Accessed November 11, 2021.
- <sup>280</sup> Duke C, Stanik C. Overcoming lower-income patients' concerns about trust and respect from providers. *Health Affairs Blog*. August 11, 2016. https://www.healthaffairs.org/ do/10.1377/hblog20160811.056138/full/. Accessed November 11, 2021.
- <sup>281</sup> Boulware LE, Cooper LA, Ratner LE, LaViest TA, Powe NR. Race and trust in the health care system. *Public Health Rep.* 2003;118(4):358-365. doi:10.1016/S0033-3549(04)50262-5. Accessed November 11, 2021.
- <sup>282</sup> Doescher M, Saver BG, Franks P, Fiscella K. Racial and ethnic disparities in perceptions of physician style and trust. *Arch Fam Med*. 2000;9(10):1156-1163. doi:10.1001/archfami.9.10.1156. Accessed November 11, 2021.
- <sup>283</sup> LaVeist T, Nickerson KJ, Bowie JV. Attitudes about racism, medical mistrust, and satisfaction with care among African American and white cardiac patients. *Med Care Res Rev.* 2000;57(1):146-161. doi:10.1177/1077558700057001S07. Accessed November 11, 2021.
- <sup>284</sup> Gordon H, Street RL Jr, Sharf BF, Kelly PA, Souchek J. Racial differences in trust and lung cancer patients' perceptions of physician communication. *J Clin Oncol*. 2006;24(6):904–909. doi:10.1200/JC0.2005.03.1955. Accessed November 11, 2021.
- <sup>285</sup> Armstrong K, Ravenell KL, McMurphy S, Putt M. Racial/ethnic differences in physician distrust in the United States. Am J Public Health. 2007;97(7):1283-1289. doi:10.2105/AJPH.2005.080762. Accessed November 11, 2021.

- <sup>286</sup> Stepanikova I, Mollborn S, Cook KS, Thom DH, Kramer RM. Patients' race, ethnicity, language, and trust in a physician. *J Health Soc Behav.* 2006;47(4):390-405. doi:10.1177/002214650604700406. Accessed November 11, 2021.
- <sup>287</sup>Bazarga M, Cobb S, Assari S. Discrimination and medical mistrust in a racially and ethnically diverse sample of California adults. *Ann Fam Med.* 2021;19(1):4-15. doi:10.1370/afm.2632. Accessed November 11, 2021.
- <sup>288</sup> Human Rights Campaign. Healthcare Quality Index 2018—Rising to the New Standard of Promoting Equitable and Inclusive Care for Lesbian, Gay, Bisexual, Transgender & Queer Patients and Their Families. Washington, DC: Human Rights Campaign Foundation; 2018. https://assets2.hrc.org/files/assets/resources/HEI-2018-FinalReport.pdf. Accessed November 11, 2021.
- <sup>289</sup> Thom D, Campbell B. Patient-physician trust: an exploratory study. *J Fam Pract*. 1997;44(2):169-176. https://cdn.mdedge.com/files/s3fs-public/jfp-archived-is-sues/1997-volume\_44-45/JFP\_1997-02\_v44\_i2\_patient-physician-trust-an-exploratory-s. pdf. Accessed November 11, 2021.
- <sup>290</sup> Aruguete MS, Roberts CA. Participants' ratings of male physicians who vary in race and communication style. *Psychol Rep.* 2002;91(3):793-806. doi:10.2466/pr0.2002.91.3.793. Accessed November 11, 2021.
- <sup>291</sup> Grumbach K, Selby JV, Damber C, et al. Resolving the gatekeeper conundrum: what patients value in primary care and referrals to specialists. *JAMA*. 1999;282(3):261–266. doi:10.1001/jama.282.3.261. Accessed November 11, 2021.
- <sup>292</sup> Thom D, Campbell B. Patient-physician trust: an exploratory study. *J Fam Pract*. 1997;44(2):169-176. https://cdn.mdedge.com/files/s3fs-public/jfp-archived-is-sues/1997-volume\_44-45/JFP\_1997-02\_v44\_i2\_patient-physician-trust-an-exploratory-s. pdf. Accessed November 11, 2021.
- <sup>293</sup> Cuevas AH, O'Brien K, Saha S. Can patient-centered communication reduce the effects of medical mistrust on patients' decision making? *Health Psychol.* 2019;38(4):325–333. doi:10.1037/hea0000721. Accessed November 11, 2021.
- <sup>294</sup> Hostetter M, Klein S. Understanding and ameliorating medical mistrust among black Americans. *Transforming Care*. January 14, 2021. https://www.commonwealthfund.org/publications/newsletter-article/2021/jan/medical-mistrust-among-black-americans. Accessed November 11, 2021.

<sup>296</sup> Ibid.

- <sup>297</sup> Community health workers. American Public Health Association website. https://www.apha.org/apha-communities/member-sections/community-health-workers. Accessed November 11, 2021.
- <sup>298</sup> Cacal SL, Spock N, Quensell ML, Sentell TL, Stupplebeen DA. Legislative definitions of community health workers: examples from other states to inform Hawaii. *Hawaii J Med Public Health*. 2019;78(6 Suppl 1):23-29. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6603892/. Accessed November 11, 2021.
- <sup>299</sup> Centers for Disease Control and Prevention, Division for Heart Disease and Stroke Prevention. What Evidence Supports State Laws to Establish Community Health Worker Scope of Practice and Certification? Atlanta, GA: Centers for Disease Control and Prevention; 2017. https://www.cdc.gov/dhdsp/pubs/docs/CHW-PEAR.pdf. Accessed November 11, 2021.
- <sup>300</sup> Community health workers. American Public Health Association website. https://www.apha.org/apha-communities/member-sections/community-health-workers. Accessed November 11, 2021.
- <sup>301</sup>Hartzler A, Tuzzio L, Hsu C, Wagner EH. Roles and functions of community health workers in primary care. *Ann Fam Med.* 2018;16(3):240-245. doi:10.1370/afm.2208. Accessed November 11, 2021.
- <sup>302</sup> Klein S, Hostetter M. In focus: integrating community health workers into care teams.
  CommonwealthFundwebsite.https://www.commonwealthfund.org/publications/2015/dec/focus-integrating-community-health-workers-care-teams. Published December 17, 2015.
  Accessed November 11, 2021.
- <sup>303</sup> Landers SJ, Stover GN. Community health workers—practice and promise. *Am J Public Health*. 2011;101(12):2198. doi:10.2105/AJPH.2011.300371. Accessed November 11, 2021.
- Mobula LM, Okoye MT, Boulware LE, Carson KA, Masteller JA, Cooper LA. Cultural competence and perceptions of community health workers' effectiveness for reducing health care disparities. *J Prim Care Community Health*. 2015;6(1):10-5. doi:10.1177/2150131914540917. Accessed November 11, 2021.
- <sup>305</sup> Community health workers. American Public Health Association website. https://www.apha.org/apha-communities/member-sections/community-health-workers. Accessed November 11, 2021.
- Ohin K. Language access rights under threat. Health Affairs Blog. August 9, 2019. https://www.healthaffairs.org/do/10.1377/hblog20190809.457959/full/. Accessed November 11, 2021.
- <sup>307</sup> Bell TS, Branston LK, Newcombe RG, Barton GR. Interventions to improve uptake of breast screening in inner city Cardiff general practices with ethnic minority lists. *Ethn Health*. 1999;4(4):277-284. doi:10.1080/13557859998056. Accessed November 11, 2021.

- <sup>308</sup> Cohen Marill M. Community health workers, often overlooked, bring trust to the pandemic fight. *Kaiser Health News*. February 8, 2021. https://khn.org/news/article/community-health-workers-often-overlooked-bring-trust-to-the-pandemic-fight/.Accessed November 11, 2021.
- <sup>309</sup> Landers SJ, Stover GN. Community health workers—practice and promise. *Am J Public Health*. 2011;101(12):2198. doi:10.2105/AJPH.2011.300371. Accessed November 11, 2021.
- Javanparast S, Windle A, Freeman T, Baum F. Community health worker programs to improve healthcare access and equity: are they only relevant to low- and middle-income countries? *Int J Health Policy Manag.* 2018;7(10):943-954. doi:10.15171/ijhpm.2018.53. Accessed November 11, 2021.
- <sup>311</sup> Castañeda H, Holmes SM, Madrigal DS, DeTrinidad Young M, Beyeler N, Quesada J. Immigration as a social determinant of health. *Annu Rev Public Health*. 2015;36:375-392. doi:10.1146/annurev-publhealth-032013-182419. Accessed November 11, 2021.
- Thanges to "public charge" inadmissibility rule: implications for health and health coverage. Henry J. Kaiser Family Foundation website. https://www.kff.org/racial-equity-and-health-policy/fact-sheet/public-charge-policies-for-immigrants-implications-for-health-coverage/. Published August 12, 2019. Accessed November 11, 2021.
- <sup>313</sup> Logan RI, Castañeda H. Addressing health disparities in rural United States: advocacy as caregiving among community health workers and promotores de salud. *Int J Environ Res Public Health*. 2020;17(24):9223. doi:10.3390/ijerph17249223. Accessed November 11, 2021.
- 314 Ibid.
- <sup>315</sup> Javanparast S, Windle A, Freeman T, Baum F. Community health worker programs to improve healthcare access and equity: are they only relevant to low- and middle-income countries? *Int J Health Policy Manag.* 2018;7(10):943-954. doi:10.15171/ijhpm.2018.53. Accessed November 11, 2021.
- <sup>316</sup> Tucker MJ, Berg CJ, Callaghan WM, Hsia J. The black-white disparity in pregnancy-related mortality from 5 conditions: differences in prevalence and case-fatality. *Am J Public Health.* 2007;97(2):247-251. https://doi.org/10.2105/AJPH.2005.072975. Accessed November 11, 2021.
- 317 Klein S, Hostetter M. In focus: integrating community health workers into care teams. Commonwealth Fund website. https://www.commonwealthfund.org/publications/2015/ dec/focus-integrating-community-health-workers-care-teams. Published December 17, 2015. Accessed November 11, 2021.
- <sup>318</sup> State law fact sheet: a summary of state community health worker laws. Centers for Disease Control and Prevention website. https://www.cdc.gov/dhdsp/pubs/docs/SLFS-Summary-State-CHW-Laws.pdf. Updated June 30, 2016. Accessed November 11, 2021.

- <sup>319</sup> Community health worker. Minnesota Department of Health website. https://www.health.state.mn.us/facilities/ruralhealth/emerging/chw/index.html. Accessed November 11, 2021.
- <sup>320</sup> Association of State and Territorial Health Officials. Case Study: Minnesota Workforce Innovations. Washington, DC: Association of State and Territorial Health Officials; 2015. https://www.astho.org/Health-Systems-Transformation/Medicaid-and-Public-Health-Partnerships/Case-Studies/Minnesota-Workforce-Innovations/. Accessed November 11, 2021.

<sup>321</sup> lbid.

<sup>322</sup> lbid.

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