Closing the Distance in Rural Primary Care

Evidence, Stories and Solutions

Prepared by

pcc primary care collaborative

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Dear Colleagues,

Most of the increasingly prolific headlines about rural health care focus on hospital closures.

And while these are unfortunate and will create gaps in care, policymakers need to broaden their aperture and also consider how strengthening primary care in rural communities could be a lower cost, more effective solution to improving health in the heartland.

And we absolutely do need to improve the health of our rural neighbors, who constitute about 20% of the US population.

Rural residents have higher rates of chronic conditions, poorer behavioral health and higher mortality, along with a greater risk of opioid overdoses. This is due to economic and social factors and less access to care — driven, in part, by 15% fewer primary care clinicians on a population basis than other geographies.

On the positive side of the ledger, the way primary care is practiced in rural America already reflects many of the assets that the National Academies of Science Engineering and Medicine (NASEM) describe as high quality, whole-person primary care. These include a team-based care delivery model, offering a comprehensive set of services in an array of settings and, in many cases, tackling social drivers of health. Rural practices also know their patients — outside of clinical encounters and even across generations — and have rich connections within their communities.

Yet, these effective rural primary care practice models are not adequately financed. In fact, they rely on serial re-invention, cash-pay services and even incorporation of 340B pharmacies to keep their doors open. And many value-based models providing more flexibility and resources for primary care in urban settings do not translate into rural communities.

Federal and state policymakers committed to improving health in the heartland have some clear policy levers to pull.

At the state level, policymakers should participate in efforts to measure and increase primary care spending, with a focus on more investment in "rural friendly" value-based models. State legislators must also refrain from making cuts to primary care in Medicaid, a pressure they will encounter in light of reductions in spending due to the passage of H.R. 1.

At the federal level, policymakers should prioritize applications for the Rural Health Transformation Program (RHTP) that provide enhanced financial support for the team-based, whole-person primary care practices that already exist in the community and channel more funding to proven delivery models (CHCs, RHCs, independent primary care) and training programs (THCGME).

Our rural neighbors — who are fortunate to reside in some of the most physically striking environments that exist across our expansive country — also deserve to enjoy better health and longer lives in those amazing communities.

Best,

Ann Greiner
President and CEO
Primary Care Collaborative

Executive Summary

I might be in the grocery store in the produce aisle, and we'll talk about your [chronic conditions]. I mean we're touchable. They see us in the community, so it's not just this person in the background that wears the white coat and you have that every three-month visit or whatever. They see us active within the community and are very comfortable in coming up and talking to us."

– Nurse practitioner in Tucumcari, NM

Rural health care in the U.S. is struggling with headwinds, including aging populations, a shrinking physician workforce and consolidation of health care services. Some rural communities can access major health systems by interstate travel, while others are isolated by many miles, mountains and rough terrain, and lack adequate broadband and emergency services.[1,2] When a rural hospital closes, it is an economic blow to a community as well as a blow to local health care access.

The 2025 passage of H.R. 1 — a large federal tax and reconciliation legislative package — creates more challenges for rural communities by reducing Medicaid coverage and spending. A KFF analysis suggests that federal Medicaid spending could fall by $137 billion in rural areas over the next decade.[3]

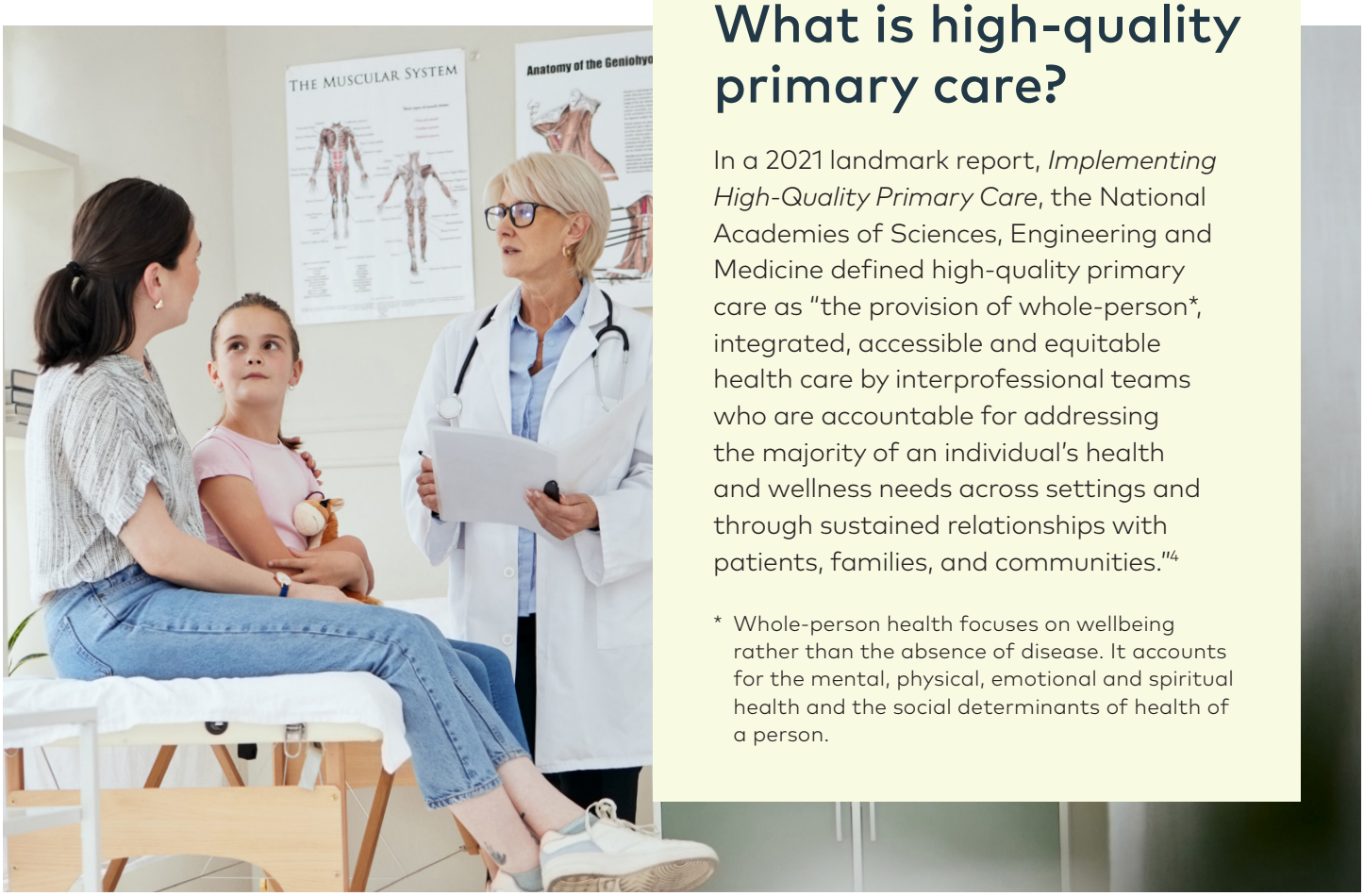
Researchers and policymakers have generally not focused on factors that sustain rural primary care, with most attention focused on the availability of rural hospitals. Strengthening access to whole-person primary care — that supports chronic care, behavioral health, maternal and women's health, and oral health, and connects residents to healthy food, self-care options and other resources — is a more attainable goal for many rural communities than sustaining a full-service hospital. Access to whole-person primary care, together with access to a pharmacy and integration with hospital care in larger rural communities, is likely to be the most cost-effective path to improving lagging rural health outcomes.

This report is a snapshot of the state of rural primary care in the U.S. It includes a literature review, a description of federal legislative trends affecting rural primary care, a quantitative analysis of primary care trends (comprehensiveness, primary care spending, and primary care workforce) and five case studies that describe current rural practice models. The report concludes with policy recommendations to strengthen and sustain rural primary care so that all types of rural communities can thrive with better health.

The report's five case studies highlight rural primary care practices in a range of geographies and practice models, including federally qualified health centers (FQHCs), a Direct Primary Care (DPC) private practice supported financially by patient membership fees, a private practice led by nurse practitioners (NPs) and a rural hospital perspective.

By using a mixed-methods approach — quantitative and qualitative — that includes in-depth interviews of practice leaders and other rural health leaders, the report provides insights for stakeholders and policymakers as they consider strategies for strengthening rural health and the key role played by primary care.

Unfortunately, although also critical to rural health, we could not capture the full richness of rural communities and unique role of the Indian Health Services, nor many innovative, home-grown primary care solutions that leverage schools, emergency medical services, tribal traditions, and pastors and congregations to expand the opportunities for providing prevention and primary care in rural America.



What is high-quality primary care?

In a 2021 landmark report, *Implementing High-Quality Primary Care*, the National Academies of Sciences, Engineering and Medicine defined high-quality primary care as "the provision of whole-person*, integrated, accessible and equitable health care by interprofessional teams who are accountable for addressing the majority of an individual's health and wellness needs across settings and through sustained relationships with patients, families, and communities."[4]

* Whole-person health focuses on wellbeing rather than the absence of disease. It accounts for the mental, physical, emotional and spiritual health and the social determinants of health of a person.

Key Findings

Rural primary care services are more comprehensive than non-rural primary care services

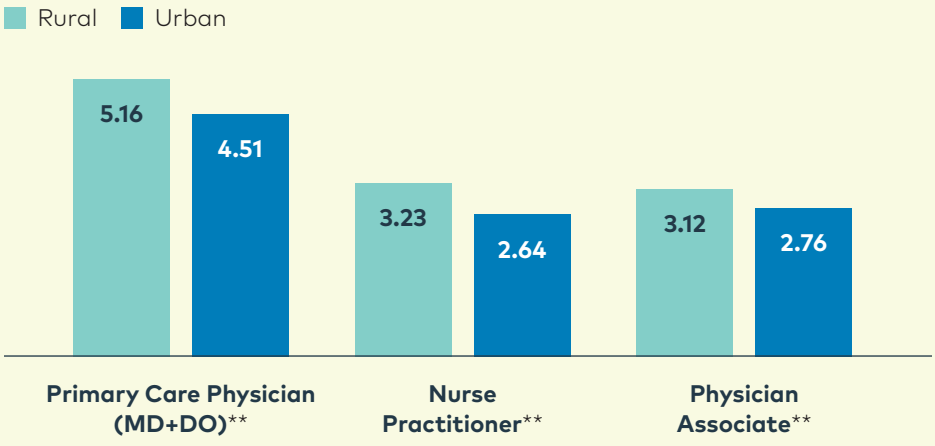
An analysis of the mix of services delivered by primary care in rural and urban areas finds that, on average, rural primary care physicians (PCPs) provide more comprehensive services than urban primary care (see Figure ES1), and those differences carry over to NPs and physician associates (PAs), albeit to a smaller degree. The comprehensive measure is limited to Medicare fee-for-service claims and captures the complexity and breadth of care delivered in rural primary care practices. For example, rural primary care clinicians (PCCs) are more likely to perform minor skin procedures and endoscopies. Those practicing in FQHCs are more likely to deliver behavioral health services, including treating substance-use disorders, addressing social determinants including nutrition, and coordinating care with specialists and facilities. It also reflects that rural primary care is available in a broader array of settings, including nursing facilities and hospitals. However, the comprehensiveness of rural primary care services has been declining recently.

On a population basis, the analysis finds there are 15% more primary care clinicians in cities and surrounding suburbs than in rural communities.

Although the more robust set of services rural primary care delivers is a positive, rural residents have less access to all health care services — including primary care — than their urban counterparts. On a population basis, the analysis finds there are 15% more PCCs in cities and surrounding suburbs than in rural communities.

FIGURE ES1

Comprehensiveness Among Primary Care Clinicians by Specialty, Rural vs. Urban, 2016–2022*



* As defined by Mean Berenson-Eggers. ** p<.001

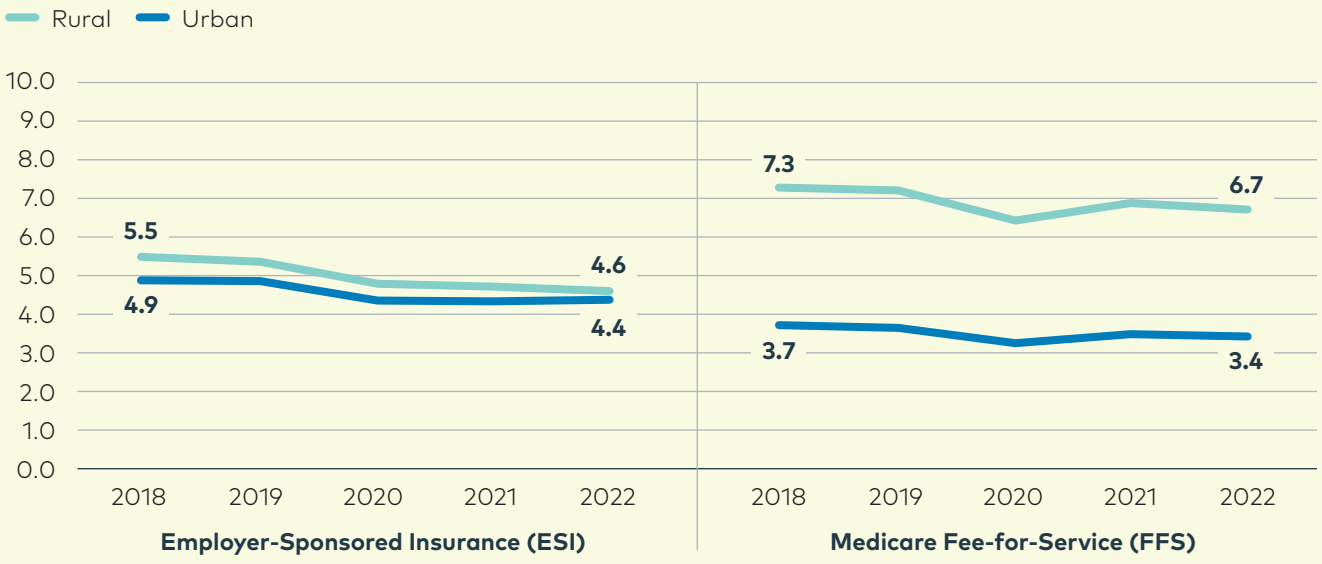
Spending on primary care is falling in rural and urban areas

When primary care spending is measured separately as a share of total spending in rural and urban areas, primary care's share of total spending in rural areas in the aggregate is higher than primary care's share of total spending in urban areas.

Disturbingly, primary care spending is falling in rural and urban areas (see Figure ES2). The declines are seen in commercially insured populations enrolled in employer-sponsored plans and those enrolled in traditional Medicare. In addition, the decline is observed when analyzing primary care services delivered by physicians only and when using a broader measure of the primary care workforce that includes NPs and PAs.

FIGURE ES2

National Share of Primary Care Spending to Total Medical Spending, Rural vs. Urban, 2018–2022 — Narrow Definition



Excludes lump payments for federal health centers, such as HRSA-funded CHCs.

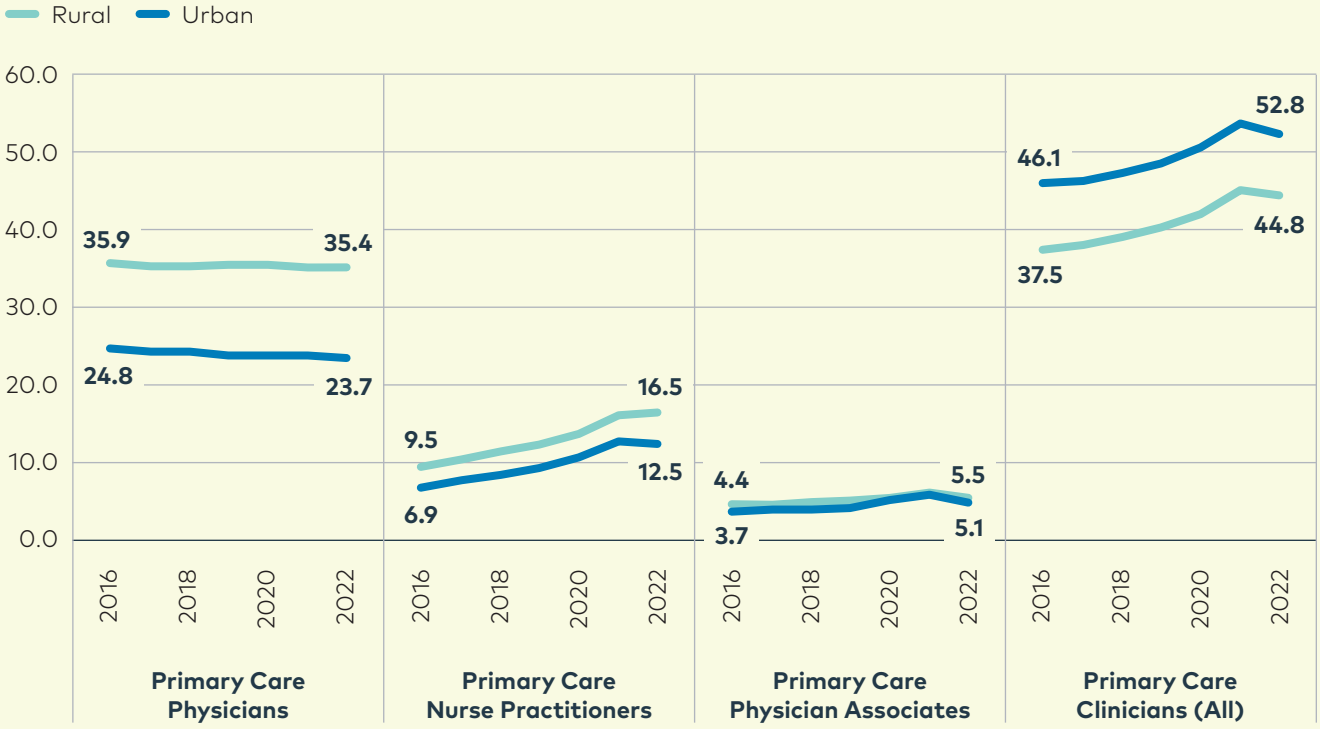
The rural primary care workforce is changing; the share of physicians is declining

An analysis of workforce trends between 2016 and 2022 generated similar findings to the primary care spending analysis. A longstanding gap remains in the number of PCPs relative to population in rural areas compared to urban areas — with measures for both indicating declines — and the gap growing slightly over this period.

Over the same period, while the number of rural PCPs has declined, a broader definition of the primary care workforce that includes NPs and PAs suggests the total number of PCCs as a share of the population in urban and rural areas has grown over this six-year period (see Figure ES3). This is due primarily to a marked increase in NPs practicing primary care in urban and rural areas. While positive, the rise of NPs needs to be seen in light of growing chronic care needs in rural communities. Team-based inter-professional models are needed to deliver comprehensive primary care.

FIGURE ES3

Number of Primary Care Clinicians per 50,000 People, Rural vs. Urban, 2016–2022



Primary care makes care more affordable

When a rural primary care physician leaves practice, patients experience an economic loss as well as a loss of regular care from a trusted, local professional who knows them and their community. The report estimates that a family of four could experience almost $5,600 more in annual costs due to utilizing care in higher-cost settings if its primary care physician is not replaced after leaving practice in the local community.

Key takeaways from the case studies and literature and legislative reviews

- Two federal programs — rural health clinics (RHCs) and FQHCs — are key enablers for sustaining the finances of rural primary care: 90% of rural counties have either an RHC or FQHC, with 41% having both.
- Rural primary care practices face challenges to participating in value-based payment (VBP) models, including lower volumes and slim financial margins.
- Broad-scope, comprehensive primary care builds trust with patients and is cost effective and convenient for the community.
- Financial sustainability requires support from public payers such as Medicare and Medicaid, team-based delivery models and diversified revenue streams, including the 340B Drug Pricing Program.
- Workforce development and retention require local rural training pathways, nontraditional pathways, scholarships and academic partnerships.
- Continued investment in rural training and education tracks that focus on broad-scope and whole-person primary care and embed trainees in rural settings and communities is necessary.
- Access to many specialties is limited in rural areas, with specific shortages of psychiatrists and behavioral health professionals.

“There’s so many problems in value-based care, one being the 12-month financial cycle. I mean, in primary care we do things in a 2-year old’s life. You know, educating parents or vaccination to help them live beyond sixty... And so the measuring savings feels foolish because we’re not doing the work in order to glean one year savings or glean one-year outcomes. We’re doing the work because we want that person to live to a good, long, rich, thriving life...innovation, social determinants of health is an area that we’ve taken pride in.”

– Primary care physician at a FQHC in Waco, TX

Policy recommendations

The policy recommendations below reflect the findings from the entire report. The timeliness of the case studies reflects uncertainty and concern across rural primary care practices with expected loss of Medicaid coverage in their communities due to the 2025 federal legislation, H.R. 1.

Federal and state policymakers should measure primary care spending regularly and establish benchmarks and targets for increasing primary care investment. Specifically, benchmarking and trending within and across states, subpopulations, and payers can ensure accountability for Medicaid and Medicare resources. Measuring spending in rural areas separately from urban geographies can provide important feedback to policymakers and be used to also hold private sector partners accountable for prioritizing spending to produce improved health outcomes at lower costs.

Federal policymakers should immediately increase investment in the proven programs that sustain rural primary care. These include RHCs and rural FQHCs. At the time this report went to press, the federal government was shut down and funding had expired for critical programs funded by the Public Health Service Act that benefit rural health, including Section 330 grant funding and mandatory funding from the Community Health Center Fund for CHCs, the National Health Service Corps, and Teaching Health Centers Graduate Medical Education.

Despite facing federal Medicaid reductions, states should refrain from reducing primary care reimbursement rates and ensure Medicaid managed care plans are incentivized to strengthen primary care services delivered by the range of primary care practices serving rural areas of their states.

Federal and state policymakers should ensure that programs and resources intended for rural health are supporting care and training in and for people in rural communities. Special federal designations for rural providers and Medicare-funded residency and training programs intended to expand primary care and the rural workforce must benefit these communities. Programs that emphasize interprofessional training, particularly for teams of physicians, NPs, behavioral health professionals and community health workers, are needed to deliver comprehensive whole-person primary care in rural communities.

Federal and state policymakers should put comprehensive, whole-person primary care at the foundation of rural health transformation when launching initiatives funded by the $50 billion Rural Health Transformation Program (RHTP) included in the 2025 H.R. 1 legislation. The Centers for Medicare and Medicaid Services (CMS) leaders should select state RHTP proposals that will ensure whole-person primary care plays the foundational role that a large body of evidence supports.

Federal and state policymakers should ensure VBP models are "rural friendly" and consider the unique characteristics of rural primary care, which include lack of capital and capacity to fund infrastructure for population health, while at the same time demonstrating a more comprehensive approach to care delivery. A new option, known as Primary Care Flex, became available in 2024 to support rural and safety-net practices that want to form or join Medicare accountable care organizations (ACOs). Many rural primary care practices prioritize their independence and responsiveness to their communities. ACOs, clinically integrated networks and other entities that support VBP should have incentives to integrate independent practices and FQHCs in rural communities.

The report reveals that a brighter future for rural primary care is possible. However, policymakers must take bold steps to accelerate the capacity of rural primary care to deliver whole-person primary care in order to deliver that future. This is especially important in the wake of Medicaid spending reductions and coverage restrictions that rural communities will face in the wake of H.R. 1. Ensuring that rural residents have a convenient usual source of comprehensive primary care who also knows their community will contribute to better health outcomes.

Introduction

Approximately 20% of the American population lives in a rural area, accounting for 60 million individuals. "Rural" has varying meanings and interpretations. For some, it evokes farms, rolling hills and a slower pace of daily life, while others envision remote living. For this report, we define rural areas in alignment with the Rural-Urban Community Area (RUCA) codes from the Economic Research Service of the U.S. Department of Agriculture. Rural geographies have lower population density as per the RUCA codes.

Rural residents face significant health challenges. Rural communities have higher rates of chronic comorbidities and preventable conditions, poorer behavioral health and higher mortality rates than their urban and suburban peers. Rural residents are at greater risk of motor vehicle crashes and opioid overdoses than their urban and suburban peers.

The factors that lead to these poor outcomes encompass health, economic and social factors including geographic isolation from care, low incomes, health behaviors such as smoking, a workforce shortage and lack of access to healthy foods and exercise. Additionally, rural residents heavily rely on having reliable access to a vehicle, lacking access to public transportation. Health insurance coverage and costs for rural residents can be a barrier to access. Health literacy lags in rural communities.

However, rural areas are rich in connection and sense of community, on average have low crime rates and have access to the outdoors and nature. While health outcomes lag for rural residents, there are opportunities for leveling up health outcomes between rural and urban communities.

Rural health is shaped by rural community characteristics. Rural health clinics (RHCs), federally qualified health centers (FQHCs) and critical access hospitals (CAHs) provide infrastructure for health care in rural communities. Telehealth offers opportunities to increase access to care, but only where broadband is accessible.

Each rural community has unique characteristics and primary care capacity, and solutions for one community may not fit others. Importantly, rural health policies, infrastructure and care are not static. This report, while including case studies and a literature review, cannot encompass the full breadth of U.S. rural health.

This report is framed into three sections, as follows:

Section 1

Background: Legislative History and Literature

We review the past ten years of federal legislation that may have an impact on rural primary care and the health care access and outcomes of rural residents. This is complemented by a literature review of the research that was conducted about primary care and health outcomes in rural communities.

Section 2

Quantitative and Qualitative Analysis

This section highlights the analysis of new data about rural health, and features two subsections. We lead with the quantitative section, addressing trends in rural primary care including analyses of rural primary care spend, rural primary care workforce and rural care comprehensiveness. The qualitative section features interviews with leaders in rural communities and in rural health care. In each of the five case studies, respondents were prompted with similar questions about their experience. The interviews complement the quantitative analysis to provide a more complete view of rural primary care.

Section 3

Policy Recommendations

Finally, we offer policy considerations for strengthening rural primary care that are informed by our analytic findings in Section 2 and our review of the literature and legislation in Section 1.

Appendices

Appendix 1: Legislation 2015-2025 and Rural Health Care

Appendix 2: Search String Parameters, Background

Appendix 3: Quantitative Methods and Data Sources

Appendix 4: State PC Spend, Rural vs. Urban

Section 1

Background

Federal Legislation and Rural Primary Care

Federal legislation has a significant impact on the health of rural America. To assess the impact legislation has on rural health outcomes, the research team first assessed the policies passed in the past decade with a direct or indirect effect on rural primary care. Overall, we evaluated 48 laws and their impact on rural primary care over the past decade (Appendix 1). These bills were separated into six categories, which overlap at times: reimbursement, Veteran's health, telehealth, workforce, whole-person health and infrastructure.

Some legislation has provided financial support or infrastructure that has improved opportunities for health and access to primary care; some bills have harmed rural health.

While "ranking" bills is a fraught effort, the analysis below demonstrates the five bills that had the largest impact on rural health (in no specific order): The American Rescue Plan Act of 2021, the Infrastructure Investment and Jobs Act of 2021, One Big Beautiful Bill Act (H.R. 1) of 2025, the Consolidated Appropriations Act of 2018, and the Medicare Access and CHIP Reauthorization Act (MACRA) of 2015. Three of these bills responded to clear needs from rural communities: support during the COVID pandemic, expansion of broadband and support for efforts to combat the opioid epidemic. H.R. 1 is the only one of these significant laws that is projected to be a clear negative for rural health; MACRA has had more mixed effects.

The American Rescue Plan, enacted in 2021, offered temporary support for rural health during the pandemic; specifically, the plan injected $8.5 billion to support hospitals, clinics and clinicians facing revenue losses due to the pandemic. Many CAHs were able to keep their doors open. The bill also extended Medicaid and CHIP postpartum coverage from 60 days to 12 months, bolstering maternal and infant

health. Rural areas have disproportionately high maternal mortality and maternity deserts. Behavioral health support was allocated $3 billion through crisis hotlines, rural telepsychiatry and substance abuse programs. Broadband infrastructure was improved with funding for rural communities and flexible telehealth reimbursement policies from the American Rescue Plan improved access to rural residents.

Also in 2021, the Infrastructure Investment and Jobs Act expanded broadband access to rural communities; $65 billion was dedicated to improving internet access. The expansion of broadband offered subsidies to low-income households to afford monthly internet service. Unfortunately, this funding was abruptly ended in spring 2025.

Rural health was positively impacted by the **Consolidated Appropriations Act of 2018** that offered $3.3 billion in funding to address the opioid epidemic. These funds were distributed through Substance Abuse and Mental Health Services Administration, the Centers for Disease Control and Prevention, Health Resources and Services Administration, the Department of Veterans Affairs, and law enforcement.

MACRA, passed in 2015, was intended to provide financial stability to clinicians. Specifically, MACRA ended the annual formula that threatened large physician reimbursement cuts and introduced two new payment tracks for Medicare Part B participating clinicians. The Merit-based Incentive Payment System, commonly referred to as MIPS, adjusted payments based on quality, cost, quality improvement processes and electronic health record, or EHR, "meaningful use" implementation. Advanced alternative payment models (APMs) offered incentives to clinicians that took on financial risk for quality and cost outcomes.

However, MACRA's added administrative costs fell disproportionately on small rural practices and contributed to the loss of independent practices (despite an exemption for clinicians with less than $90,000 in Medicare payments or fewer than 200 beneficiaries per year). The added administrative burden to rural clinicians prevented "meaningful use" and quality metrics from being reported at a standardized level. Additionally, rural participation in APMs was low, and thus, reimbursement remained at lower levels. This may have inadvertently widened the rural-urban inequities in financial stability. MACRA's requirements continue to have an impact on primary care practice today.

Finally, **H.R. 1 of 2025** harms rural health with large Medicaid cuts, estimated to cost states nearly $800 billion. To mitigate, the legislation offers a proportionally smaller Rural Health Transformation (RHT) Fund of $50 billion.[5] Rural primary care is eligible to participate in RHT. However, with Medicaid cuts, reduced insurance coverage for patients and work requirements, there is an estimated reduction of nearly $1 trillion and the Congressional Budget Office estimates that 10 million Americans will lose health insurance.

A full description of the exhaustive catalog of federal legislation affecting rural health and primary care, along with the methods, can be found in Appendix 1.

Literature Review

General Rural Health

This section will review the past 10 years of literature regarding rural health. While many health disparities exist, a stark difference between rural and urban populations is life expectancy. Rural populations die earlier than suburban and urban populations; in large urban areas, life expectancy was 79.1 years, compared to 76.9 in small urban towns and 76.7 in rural areas.[6] Preventable premature death due to most causes is higher in rural communities.

Importantly, the gap between rural and urban preventable deaths continues to increase.[7] Suicide rates are higher in rural versus metropolitan areas (17.3 vs. 14.9),[8] smoking rates are greater, physical activity lower and obesity higher.[9] The opioid epidemic and COVID-19 pandemic had a disproportionate impact on rural communities compared to suburban and urban communities.[10] Recovery has not been equitable — opioid treatment programs are less common in the most rural, deprived locations, and many communities had a minimum of a 2-hour drive to receive therapy.[11] Insurance coverage in rural communities increased with the Medicaid expansion provision of the Affordable Care Act (ACA); in expansion states, coverage increased from 21% to 26% of the population, while in non-expansion states, Medicaid coverage only increased from 20% to 21%.[12] Approximately 12% of the rural population is uninsured.[13]

Methods

To conduct a robust literature review of rural primary care the RGC assessed peer-reviewed publications and the grey literature from the past 10 years (2015-2025). The search strings for the review of PubMed, CINAHL and Embase can be found in **Appendix 1, Table A1**. Based on knowledge of rural researchers and institutions, we also reviewed white papers and other publications released by the Sheps Center, National Association of Rural Health Clinics, Bipartisan Policy Center, NHRA, Rural Health Information Hub, RTT Collaborative and Rural Health Research Gateway. We connected with expert researchers in the rural health space to ensure adequacy of included materials. The literature review was conducted between May 1, 2025, and May 30, 2025. Non-U.S. studies were removed from analysis. In parallel with the legislative review, articles were separated into six categories: reimbursement, veterans' health, telehealth, workforce, comprehensiveness and infrastructure. A full text review of the articles was completed, and a summary of findings from each theme is provided here.

Infrastructure

Health centers, including CHCs, FQHCs and rural health clinics, are essential to maintaining the health of rural communities. They care for the majority of rural residents. Health centers funded by the Health Resources & Services Administration (HRSA) care for 1-in-5 rural residents and RHCs care for nearly one-third of rural residents. A detailed description of the RHC model and a comparison between RHC and FQHC requirements can be found here.[14] A history of RHCs and analysis of their costs and staffing patterns can be found here.[15] In 2024, the Congressional Budget Office found that increases in federal funding for health centers are offset in part by savings in Medicare and Medicaid. There is more preventive care delivered by health centers, and less emergency care, fewer hospitalizations, and decreased overall high-cost care.[16]

Practice ownership and autonomy have transformed in the past decade. Rural practices are more likely to be hospital and corporate owned than in prior years, coinciding with a loss of thousands of rural physicians. One report using IQVIA OneKey data cites a 45% (9,500 practices) decrease in independent medical practices and a 17% drop in independent physicians between 2019 and 2024.[17] Most physicians transitioned from self-employed practices to employed physicians once acquired. In Medicare, RHCs can be organized as provider-based or freestanding. After two decades of growth in the clinician-based model, freestanding RHCs grew faster than clinician-based RHCs in 2022. The growth in freestanding RHCs is attributed to reforms and updates to Medicare's payment model in 2020.[18] RHCs are eligible for prospective payments, often a more favorable reimbursement method than fee-for-service (FFS); they also benefit from tax credits, the 340B Drug Pricing Program provider-based to a parent facility with 340B eligibility, federal grants, scholarships and stipends for physicians, and malpractice support.[19,20]

There is some evidence that FQHCs are emerging to serve primary care needs of rural communities that experience hospital closures.[21] However, while FQHCs can function as a primary care home for rural residents and provide additional specialty offerings with telehealth, they cannot extend to inpatient care. Patients must travel farther for subspecialty and inpatient care. Some models of home-based acute care (as a substitute for inpatient care) have been tested but have not reached scale to accommodate for hospital closures.

Rural Primary Care Workforce

Rural patients encounter long wait times, significant travel distances or lack of access to see a clinician. The rural primary care workforce (family medicine, general internal medicine, general pediatrics and primary care NPs and PAs) are challenged to meet the needs of rural communities.[22] Training in rural areas often leads to continued work in rural areas. Specifically, teaching health centers have demonstrated excellent retention in underserved and rural areas. Family physicians who train in rural programs are more likely to practice in rural programs. Recruitment of staff from a rural background, or those that have lived in rural areas, may also increase retention.

Insurance coverage affects a patient's ability to see a clinician. Medicaid beneficiaries had lower rates of access to PCPs and some specialists; they had greater access to NPs and PAs providing primary care in rural and urban communities. The gaps in access to primary care for those on Medicaid were greatest for rural communities as compared to those in urban communities.

The National Health Service Corps (NHSC), established in 1970, was designed to bring clinicians into practice in health professional shortage areas (HPSAs). While the HPSA designation has some shortfalls and may not best represent areas with the most need for clinicians and resources, the initiative to improve the workforce in HPSAs was somewhat successful. The NHSC's budget was expanded in 2009, and the total number of NHSC clinicians increased from 900 individuals in 2000 to 15,637 individuals in 2020.[23,24] However, the density of clinicians to patients in rural areas continues to fall behind urban areas.

Several studies have attempted to codify policy options that may increase the health workforce in rural communities. For example, studies in Washington state identified successful policies including: opening a new medical school, increased residency positions, increased loan repayment, improvement in primary education, retention of rural hospitals, increased Medicaid reimbursement through FFS and inclusion of APMs.[25] No single policy was shown to independently offset the attrition of rural clinicians in the state.

Integrated care teams that address the needs of rural communities may promote more comprehensive and tailored primary care. Specifically, social work, transitional care models and practice ownership improves rural health outcomes. RHCs and FQHCs can engage in these models to improve community health. Many studies have demonstrated the positive outcomes of interprofessional teams in the primary care space.

Social workers can have a positive impact on hospital admissions and emergency department (ED) visits. ECHO programs (initiatives that connect primary care settings to additional resources) that offer technology-enabled collaboration between urban and rural clinicians can also strengthen interprofessional care.

The 2010 ACA authorized teaching health centers (THCs) to support graduate medical education (GME) training sites in rural and underserved communities, primarily at FQHCs. The THCs have been effective. Since 2008-2009, the number (and share) of residency programs with rural training sites rose from 120 (6.18%) to 412 in 2023-2024 (14.34%). The new programs include family medicine, internal medicine, psychiatry, surgery, obstetrics-gynecology, geriatrics, pediatrics and preventive medicine. Federal investments in Teaching Health Centers Graduate Medical Education (THCGME) and Rural Residency Planning and Development programs have supported a large share of this growth. More than 1,000 residents were funded in 2023-2024 with $175 million from the THCGME program. In contrast, Medicare spent $18 billion in total for GME, primarily for hospital-based training conducted outside rural areas.

Reimbursement

Primary care for rural residents is available at health centers, private practices, direct primary care (DPC) practices, and more. The financial stability of these practices varies based on their reimbursement model.

RHCs are primarily financed through Medicare and Medicaid cost-based and prospective payment systems (PPSs). Medicare reimburses RHCs at an all-inclusive rate; Medicaid varies by state but uses a PPS per-visit rate for Medicaid patients. Medicaid recipients in rural communities are more likely to receive a primary care appointment than those with Medicaid in non-rural areas. This difference is significant and even greater for RHCs, which offer appointments to Medicaid recipients nearly 95% of the time as compared to non-RHCs, where this rate is less than 75% of the time.[26]

FQHCs are HRSA CHC award recipients and look-alikes, certified by CMS, and receive grant funding from the Public Health Service Act (PHSA). Often, they receive prospective payments under Medicare and engage in APMs with Medicaid. Because FQHCs see a large proportion of uninsured patients, Medicaid expansion increases revenue for these clinics. In a 2018 analysis, FQHCs in Medicaid expansion states demonstrated an 11.44% decrease in patients without insurance and 13.15% increase in patients with Medicaid.[27]

Accountable care organizations (ACOs) offer rural primary care additional opportunities for financial growth and viability. Many rural practices relied on ACO enabler entities for data reporting and claims analysis.[28] Sustainable rural hospitals benefit from classification as rural centers for Medicare purposes (through the Federal Office of Rural Health Policy criteria). However, over the course of 7 years, more urban hospitals have reclassified themselves as rural based on several court cases and administrative loopholes; three were dual classified in 2017, while 425 hospitals were dual classified in 2023.[29]

Veterans

The Veterans Health Administration (VHA) cares for more than 9 million veterans and is the largest health care delivery system in the U.S. There are approximately 4.4 million rural-residing veterans, of which 2.8 million receive care at the VHA.[30] Rural veterans struggle with higher rates of chronic diseases such as high blood pressure and diabetes, and are more likely to have behavioral health concerns — including suicidality — as compared to non-rural veterans.

To improve rural access for veterans, the VHA has initiated several pathways for increasing primary care access. The Mission Act of 2018 expanded access for veterans to receive care in community settings, outside of the VHA system, but still use their VA benefits. Overall, uptake of primary care increased, more so in community settings than in VHA settings. However, there were longer wait times in rural settings for veterans and some groups, including Black residents.[31]

Additionally, immersive training models — in which residents live and practice in rural settings — have been explored. VHAs are important training grounds for primary care clinicians. By providing an immersive training experience, medical residents who participated in outpatient primary care rotations were more likely to enter primary care careers.[32]

Telehealth

Telehealth offers opportunities for rural residents and their caregivers where broadband is available. Telehealth increases access to primary care, improves asynchronous care opportunities and reduces travel for rural residents who may experience long commutes to primary care clinics. The uptake of telehealth dramatically increased during the COVID-19 pandemic (at a higher rate for urban than rural residents), and the impact of telehealth on health outcomes continues to be studied but appears positive. The overall use of telehealth in rural communities remains lower than that of urban communities; various clinical and patient-centered barriers (such as broadband access) contribute to low uptake.

Benefits of Telehealth in Rural Communities

A 2024 randomized controlled trial evaluated the use of technology-enabled transitional post-hospital care (specifically, palliative care) in rural communities. Caregivers were randomized to receive an 8-week telehealth intervention in which video visits conducted by a registered nurse were offered after a patient was discharged.[33] On average, the caregivers in the study received 9.2 visits — most of which were virtual or by telephone — indicating the acceptability of telehealth in this population. For veterans, telehealth through the VHA offers improved blood pressure outcomes,[34] and geriatric patients and their caregivers perceive telehealth comprehensiveness as positive.[35] Telehealth can be particularly useful for treating obesity, opioid-use disorder and major depressive disorder in rural communities.[36–39]

Telehealth also aids clinicians in rural communities; studies have shown that clinician consults on ill newborns via telemedicine (as compared to telephone) consultation had a lower transfer rate.[40] Telepsychiatric consultation among rural clinicians improved their capacity to identify and treat psychiatric disorders, keeping patients close to home and reducing the number of visits required for rural residents.[41]

Medicare telehealth reimbursement rules were relaxed during the COVID-19 Public Health Emergency but have not been made permanent, leaving uncertainty among clinicians and perhaps affecting uptake despite broad consensus that telehealth is effective and useful in primary care. Audio-only telehealth is specifically fruitful for psychiatric and therapy use. Many primary care services can be delivered via video and/or audio-only telehealth options.[42]

Broadband access is critical to equitable telehealth uptake. Nearly 26 million Americans still lack broadband accessibility, most of whom are living in rural communities.[43] One-third of Americans do not subscribe to broadband due to cost, privacy and literacy barriers, even when it is available. Overall, 32% of Americans live without a laptop or high-speed internet, 21.5% without a smartphone and 14.02% without any digital access.[44] A survey of Black rural residents reported that broadband availability and inadequate equipment prevented their use of telehealth.[45]

Comprehensive, Broad Scope of Care

Chronic disease prevalence is high among rural residents as compared to their non-rural peers. Approximately 22.6% of rural residents live with two or three chronic conditions and 5.1% live with four or more as compared to 18.9% and 4.2% respectively for urban residents.[46] Specifically, rural communities experience higher rates of hyperlipidemia, hypertension, arthritis, mood disorders, diabetes, chronic obstructive pulmonary disease and heart disease. These comorbidities lead to a lower quality of life, higher cost of health care and earlier mortality.

However, rural clinicians often have a broader scope of care to enhance the health of rural residents. Rural family physicians specifically offer a broad swath of services (nearly all services surveyed), which is unique to these areas.[47,48] Family clinicians working in rural areas are more likely to provide inpatient care, see patients in nursing facilities, provide perinatal and delivery care, including cesarean sections and newborn hospital care. Additionally, they are more likely to offer office procedures such as endometrial biopsies, joint injections and fracture care.[49]

Rural residents have higher rates of substance-use disorders and would benefit from medication-assisted therapy, or MAT, prescribing in primary care. A 2024 study interviewed rural health staff within the VHA and found that clinical mentorship, buprenorphine training and education were needed to support medication-assisted therapy prescribing in rural settings.[50] These findings have been reproduced in several studies.[51]

Section 2

Quantitative Analysis

Summary of Quantitative Findings

This section analyzed primary care comprehensiveness, primary care spending, primary care workforce changes and the economic impact of the loss of a primary care clinician in rural communities. Consistent with findings in the literature, our results demonstrate that rural communities struggle with access to primary care clinicians (PCCs), yet have a higher rate of spending on primary care and higher rates of comprehensiveness in rural communities as compared to their urban counterparts. It is encouraging that rural primary care can still provide robust and thoughtful management of a patient's conditions, despite a much smaller workforce than their urban counterparts. This section is composed of a high-level summary and methods followed by details and charts of study outcomes.

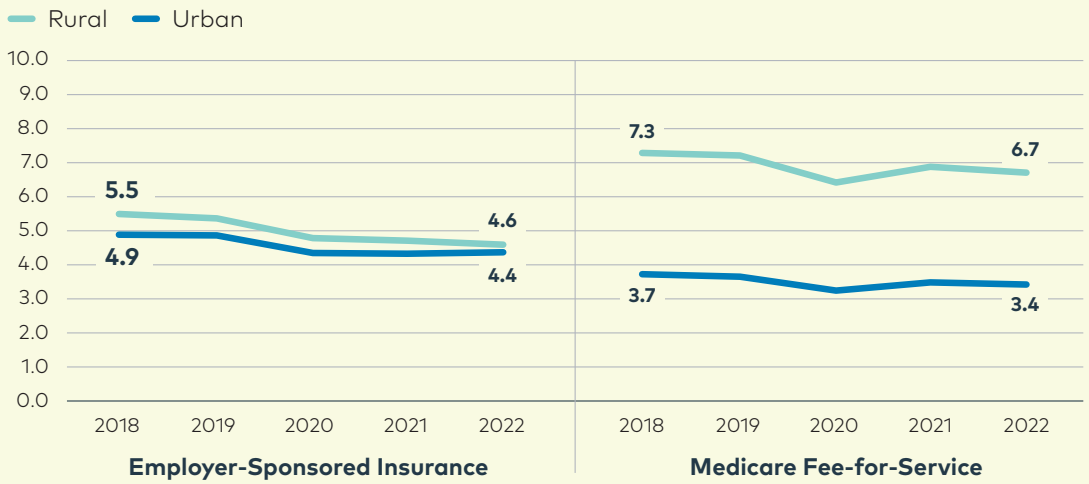
Specifically, the primary care (PC) spend for the Medicare FFS population in rural communities is nearly double the spending for urban settings. Between 2018 and 2022, the rural PC spend decreased from 7.3% to 6.7%, but outpaced urban PC spend at 3.7% and 3.4% (see Figure 1). This higher percentage of spending in rural areas is likely due to the services received in the outpatient setting in rural communities for these older patients who are often sicker, whereas urban areas rely on more inpatient care. Rural Medicare beneficiaries may benefit from more services provided in the outpatient setting rather than the inpatient setting and may see their primary care clinician for more specialized services that may be referred to specialists in urban settings.

While a trend of higher rural spending is present for individuals with employer-sponsored insurances, rural PC spend only outpaces urban PC spend 0.2% in 2022. This may be due to the age of the cohort insured by employers or may be due to increased use of specialists for those with private insurance coverage.

Primary care spend is a percentage of total expenditures in a community. Because rural communities do not have as much access to subspecialists and often receive some hospital-based care in the outpatient setting as compared to their urban counterparts, primary care has subsequent higher spend on a percentage basis. This may not be an intentional

FIGURE 1

National Share of Primary Care Spending to Total Medical Spending, Rural vs. Urban, 2018–2022 — Narrow Definition



Excludes lump payments for federal health centers, such as HRSA-funded CHCs.

increase in PC spend in rural primary care. Rather, this could be a consequence of the community environment — primary care is expected to do more and has higher comprehensiveness in these communities.

One might anticipate that states with more rural designations have a higher PC spend, but that is not necessarily the case. However, state-by-state analyses are available in Appendix 4. Some states with considerably larger urban centers, such as California, have high rural PC spend. Similarly, Mississippi has relatively low PC spend. These results are similar to the Health Care Cost Institute (HCCI) results released on primary care spend in September 2025. Variation in the rural proportion of PC spend per state can vary based on state total primary care spend and should be interpreted accordingly.

The rural workforce continues to lag in rural communities. While there is a slight upward trend for all clinicians over time, including physicians, NPs and PAs, there was a sharp downward trend between 2021 and 2022. While physicians (MDs and DOs) are the most common clinicians found in rural communities, there is a sharper downward trend in physicians practicing in rural communities (see Figure 2). This is codified by the low number of physician entrants into rural primary care such that only 1% of new graduates practice in rural settings (see Figure 3). NPs and PAs began to increase their capacity in rural areas, rising from 9.5 to 16.5 per 50,000 people and 4.4 to 5.5 per 50,000 residents respectively in rural communities. However, these trends seemed to have slowed and there is

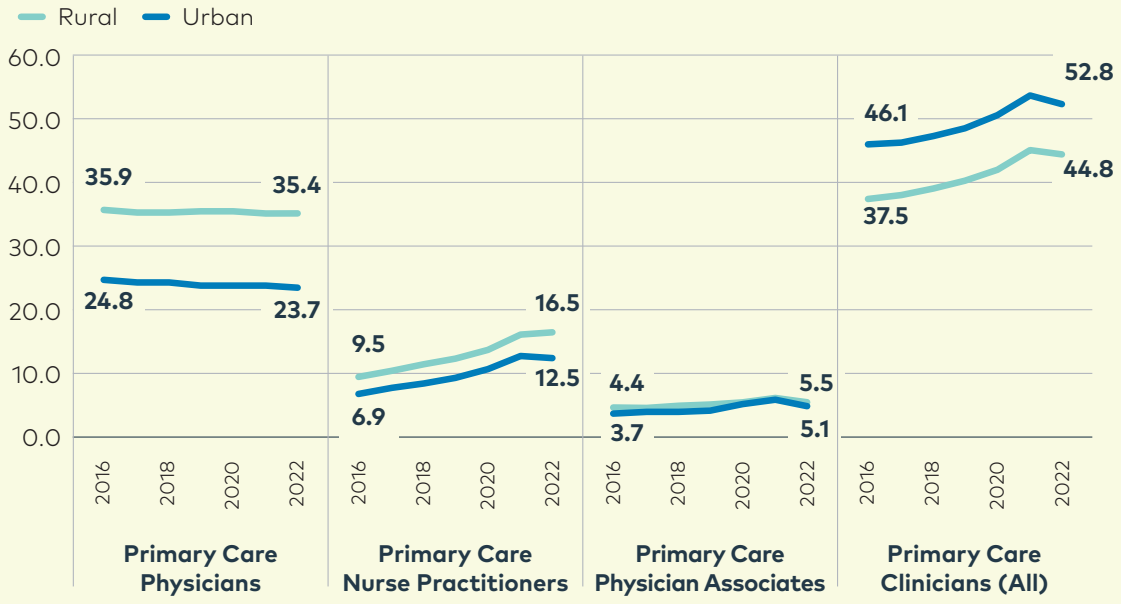
a downward trend as of 2022. While there is yet to be a definitive optimal clinician-to-patient ratio, the average rural community currently has approximately one primary care clinician per 1,116 individuals, while urban communities have one primary care clinician per 946 residents, which is approximately 15% higher.

Encouragingly, primary care comprehensiveness (as measured by billed services) is higher in rural settings for all clinician types than it is in urban communities. Clinicians are tackling more complex disease together, managing a wider breadth of conditions and offering a large scope of services to patients. However, over time, PCCs in both urban and rural settings are practicing less comprehensive care.

When rural communities lose a primary care physician, it not only takes a toll on health in a community but also has a financial impact. Patients tend to seek more urgent and emergent care, which is more expensive care, in the absence of a primary care home. As such, we calculated the increased cost in the use of these services when a single primary care physician is lost. For each individual that a physician cared for, a patient would increase their health care spend by $1,400 annually. If one physician cared for 1,200 patients, their loss would account for nearly $1.7 million in additional health care expenses for their panel over one year.

FIGURE 2

Number of Primary Care Clinicians per 50,000 People, Rural vs. Urban, 2016–2022



Methods

Using a combination of secondary datasets, we created the key primary care measures and compared them by area rurality. A rural area is defined as a zip code or county with rural-urban commuting area codes of 4 through 10. The full methods and data source information for this quantitative analysis can be found in Appendix 3.

Comprehensiveness
Using Centers for Medicare and Medicaid Services Physician and Other Practitioners Public Use File (Medicare Part B public use file [PUF], 2016-2022), we summed up the total number of Berenson-Eggers Type of Service (BETOS) evaluation and management, procedural and test services (Appendix 3, Table A3). The score represents a clinician's involvement in care of a patient's conditions.

Primary care spending, ESI and Medicare FFS
We used HCCI's employer-sponsored insurance (ESI) claims and Medicare FFS claims between 2018 and 2022. We defined the percentage of primary care spending as the portion of ambulatory spending rendered by primary care clinicians relative to total medical and prescription spending. In the narrow definition, primary care clinicians include physicians in family medicine, general practice, geriatrics, internal medicine, pediatrics and osteopathy. In the broad definition, primary care clinicians include all the previously mentioned descriptions, as well as obstetricians/gynecologists, psychiatrists, psychologists, nurses, NPs, PAs, counselors, school nurses and social workers.

PCPs, PCNPs, and PCPAs per 50,000 people
Using the 2016-2022 AMA Masterfile, we identified PCPs in direct patient care, excluding residents, retirees and hospitalists. We used Medicare's Provider Enrollment, Chain, and

Ownership System in conjunction with National Plan and Provider Enumeration System data and Medicare Part B PUF to identify NPs and PAs working in primary care based on the relative share of PCPs in the same practice with the assumption that the characteristics of the physicians in a practice can be used to infer the likely specialty of NPs and PAs in the same practice. NPs and PAs working in RHCs and FQHCs were classified as primary care, while those working in retail clinics, CAHs and skilled nursing facilities were classified as non-primary care. For the nation and each state, we then determined the total population and the number of PCPs, PCNPs, PCPAs and total PCCs in rural vs. urban areas. With these totals, we then calculated the number of PCPs, PCNPs, PCPAs and total PCCs per 50,000 people in rural vs. urban areas.

Methods (continued)

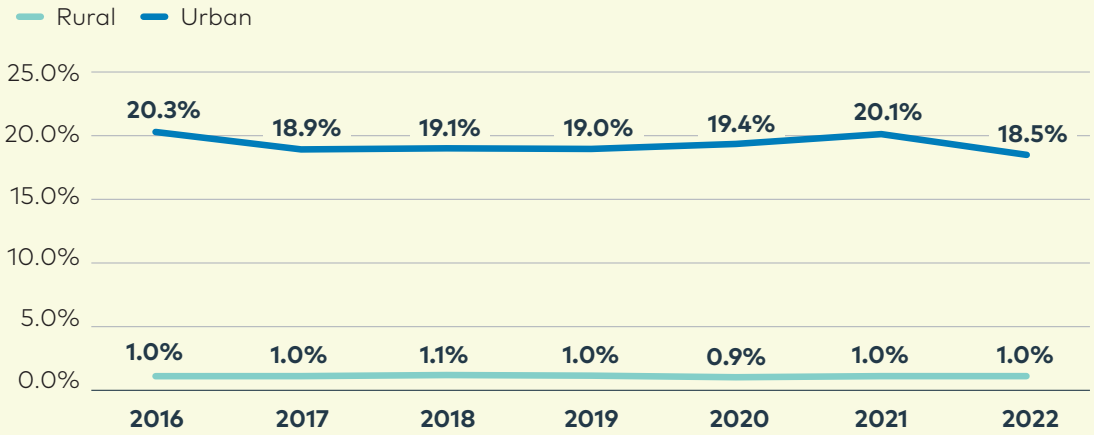
Percentage of PCPs, PCNPs and PCPAs
In calculating the percentage of PCPs, PCNPs and PCPAs, we used the total number of clinicians (each clinician type and combined) aggregated to either the state or national level by county-level rurality as the denominators. The numerators represent those clinicians working in primary care.

Percentage of new physicians entering primary care
Using the 2024 AMA Historical Residency File, we identified the end years of PCPs' training as a proxy for when they entered the workforce (end year + 1) and examined trends using end years from 2015-2021. In calculating the percentage of new physicians entering primary care, we used as the denominator the number of physicians who completed their training in primary care each year and as the numerator, the number of new non-hospitalist PCPs by county-level rurality.

The economic impact of a loss of rural PCPs
Using the 2022 MEPS data, we first calculated the average number of PCP, ED, and hospital visits and per-visit expenses. We estimated the economic impact of losing a rural PCP, i.e., how much a patient must spend more on EDs and/or hospitals due to a loss of rural PCP.

FIGURE 3

Percentage of New Physicians Entering Primary Care (as compared to those entering specialty care), Rural vs. Urban, 2016–2022



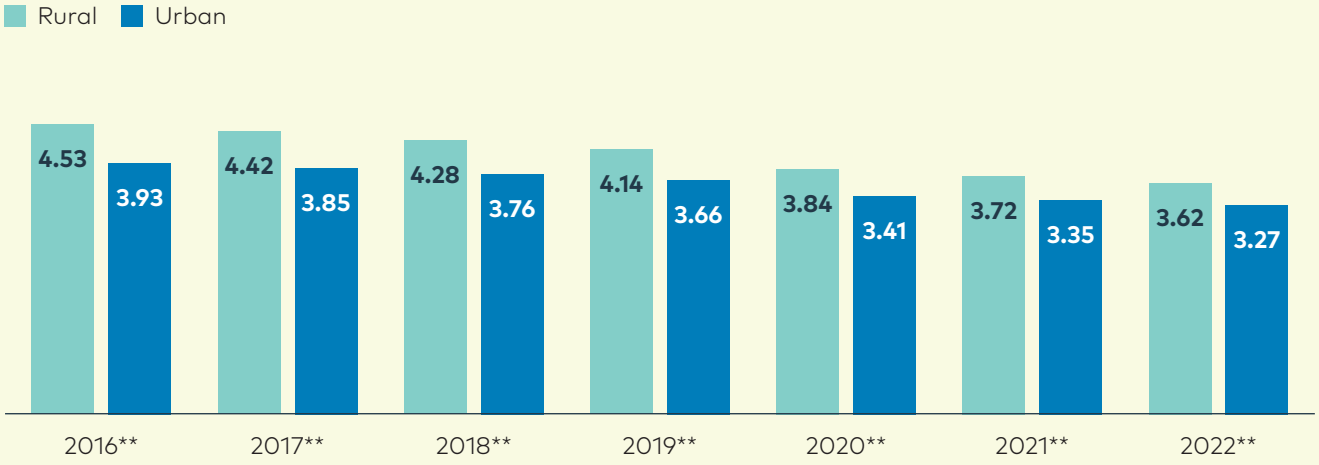
Quantitative Results

Comprehensiveness

The study sample included in this measure is drawn from the 2016–2022 Medicare Part B PUF. Overall, PCCs in rural areas provided more comprehensive care than those in urban areas (see Figure 4). During the study period, the mean BETOS scores for comprehensiveness among PCCs in rural areas was 4.07, while the mean score in urban areas was 3.59 (p<.001). However, the scores in both areas decreased over time.

FIGURE 4

Comprehensiveness Among Primary Care Clinicians, Rural vs. Urban, 2016–2022*

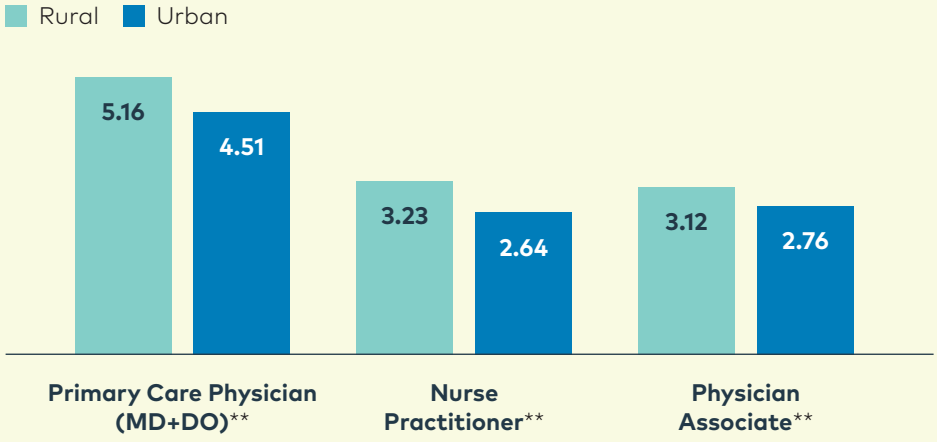


* As defined by Mean Berenson-Eggers types of service codes. ** p<.001

In rural communities, all types of clinicians have a broader comprehensiveness than in urban communities. Among different specialties, physicians had the highest BETOS scores as compared to NPs and PAs (see Figure 5). NPs and PAs have relatively similar rate of comprehensiveness in rural communities. These scores do not account for provision of inpatient care.

FIGURE 5

Comprehensiveness Among Primary Care Clinicians by Specialty, Rural vs. Urban, 2016–2022*



* As defined by Mean Berenson-Eggers types of service codes. ** p<.001

Primary care spending: ESI and Medicare FFS

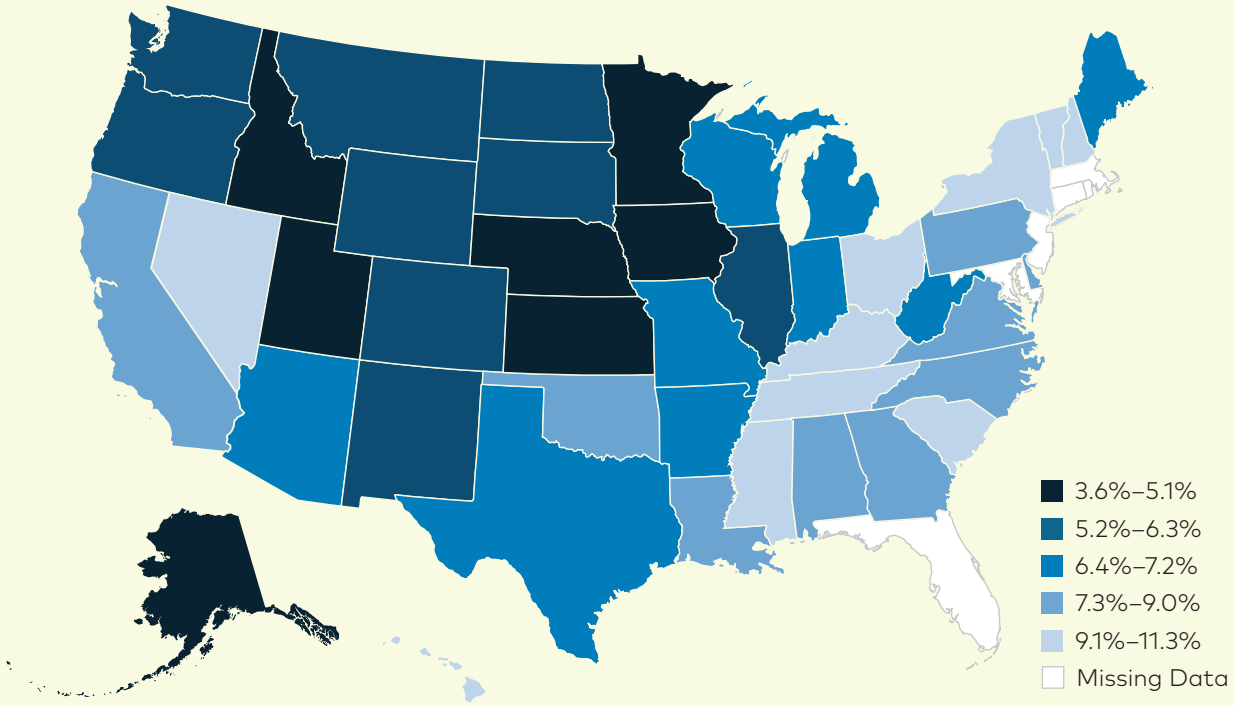
Using a narrow definition of primary care that includes only PCPs, primary care spending nationally has declined between 2018 and 2022 in the part of the population that has ESI (see Figure 1). While the difference between rural and urban primary care is relatively small among the ESI population, the difference is larger in the Medicare FFS population. This likely reflects a larger difference in utilization of non-primary care services in Medicare beneficiaries in rural areas relative to urban areas. See Map 1 for a state-by-state depiction of PC spend, or Appendix 4 for a detailed analysis.

We conducted the same analysis using an expanded list of specialties that met the broad definition of primary care. As expected, the share of primary care spending was higher in both rural and urban areas using the broader definition (see Figure 6). However, the decline in both rural and urban PC spending observed in Figure 1 looking only at services provided by PCPs was not observed as clearly when looking at spending on services delivered by a broader group of clinicians.

MAP 1

Percentage of Primary Care Spend in Rural Communities by State, 2022 — Narrow Definition

Medicare Fee-for-Service



Employer-Sponsored Insurance

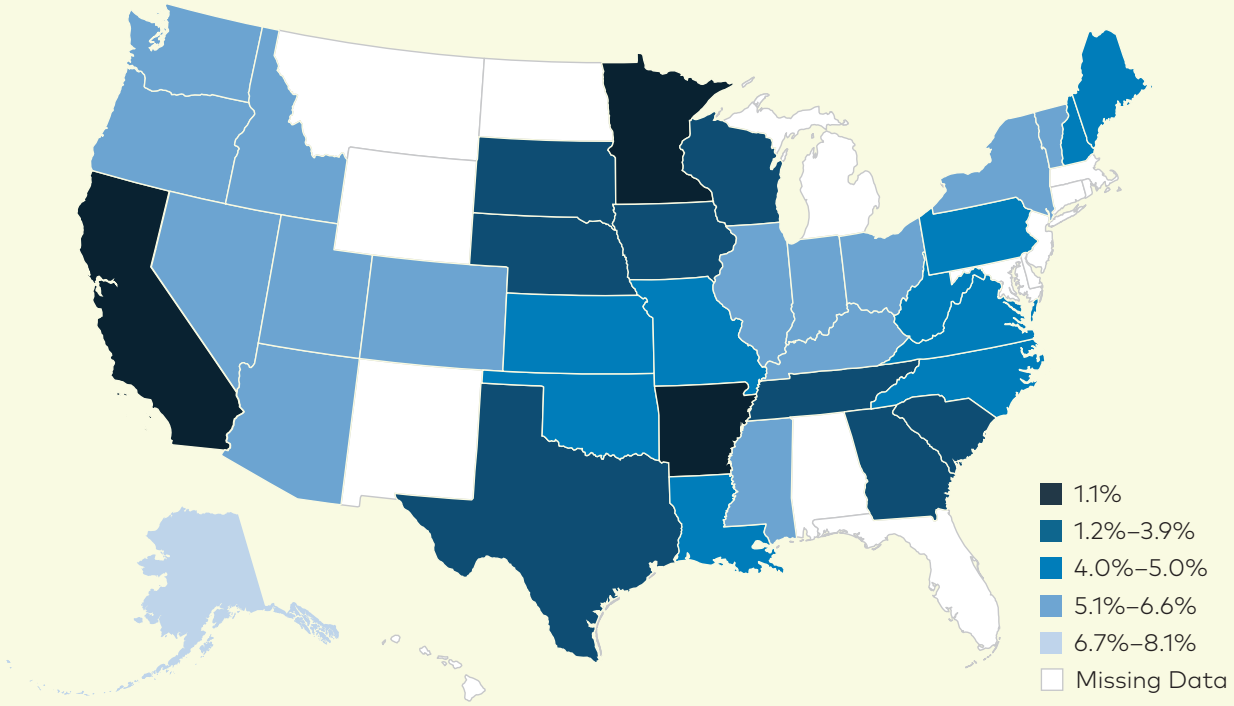
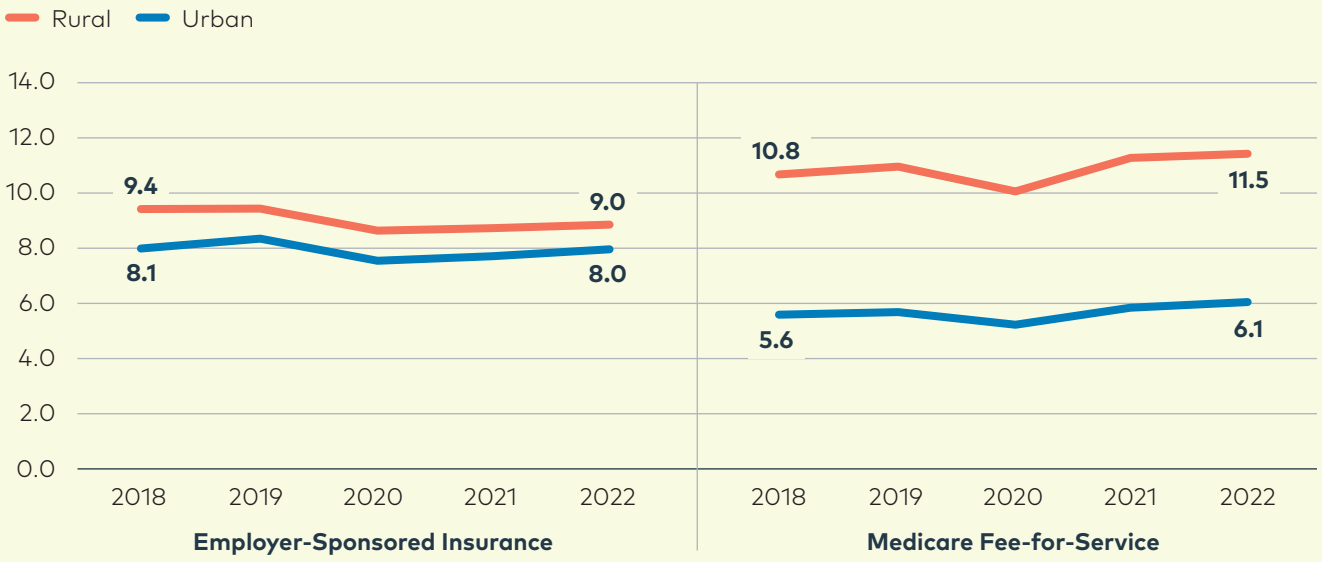


FIGURE 6

National Share of Primary Care Spending to Total Medical Spending, Rural vs. Urban, 2018–2022 — Broad Definition



Primary care clinicians per 50,000 people

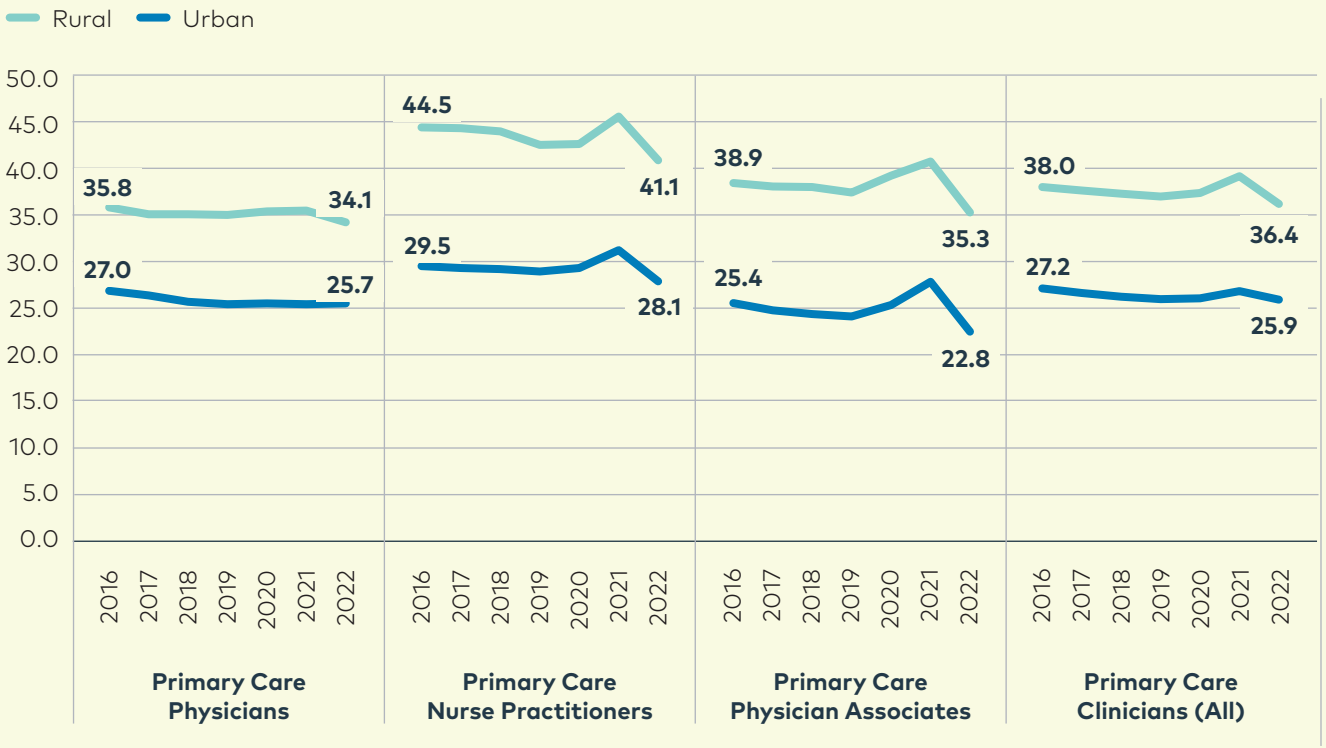
The availability of PCCs within a given area is an important component of access. Between 2016 and 2022, the number of PCPs per 50,000 people in rural areas decreased slightly, but the PCNP and PCPA supply in rural areas rose slightly. Even though NPs and PAs play a crucial role in bridging gaps in rural access, overall, primary care access continues to lag in rural areas. As of 2022, there were 44.8 PCCs per 50,000 people in rural areas, well below the rate of 52.8 PCCs per 50,000 people in urban areas (see Figure 2).

Percentage of primary care clinicians

As shown in Figure 7, across different clinician types, the percentage of PCCs practicing in rural areas is higher, compared to urban areas. In 2022, the percent of rural physicians that are primary care was 34.1%; 65.9% of physicians in rural areas were other specialists. Similarly, 36.4% of all clinicians in rural communities were primary care, and 63.6% were specialists. There is a markedly higher proportion of other specialists in rural and urban communities as compared to any type of primary care clinician.

FIGURE 7

Percentage of Primary Care Clinicians as a Percent of All Clinicians in Each Profession, Rural vs. Urban, 2016-2022



Between 2016 and 2022, approximately 37% of PCCs work in rural areas, whereas 26% work in urban areas. Specifically, more than 40% of PCNPs are in rural areas, with a higher percentage of NPs than PCPs working in these areas. Along with PCPs, NPs and PAs are core members of the primary care workforce. However, the percentage of PCNPs and PCPAs in rural areas is declining over time. While NPs and PAs are a vital part of the primary care team, they have different skill sets than physicians, so one cannot replace another in the workforce.

While rural areas are more likely to have higher proportions of PCCs than their urban counterparts, they still have a low overall proportion to the population, as shown in Figure 2.

Percentage of new physicians entering primary care

Between 2016 and 2022, the rates of physicians entering primary care remained static in rural areas (1%) and were lower compared to urban areas (20%) (see Figure 3). There is a drastically low percentage of physicians entering rural PC practice.

The economic impact of a loss of rural PCPs

We first calculated the average number of PCP (including ED and hospital) visits and per-visit expenses (see Table 1). All measures were adjusted by rural utilization and costs difference.

A = [Avg. no. of PCP visits × per PCP visit expenses] per patient per year

B = [Avg. no. of ED visits × per ED visit expenses] per patient per year

C = [Avg. no. of hospital visits × per hospital visit expenses] per patient per year

Thus, Economic Loss = Δ [A – [(B + C) × Multiplier]]

TABLE 1

Health Care Utilization and Expenses in Rural Areas, 2022

		MEPS, 2022	Rural Multiplier	MEPS, 2022 (Rural Adj.)
A	PC visits, mean	2.53	0.85	2.15
	PC expenses, per visit	$224	1.02	$228
B	ED visits, mean	0.18	0.85	0.15
	ED expenses, per visit	$1,233	1.02	$1,258
C	ACSC hospital visits, mean	0.32	0.85	0.27
	ACSC hospital expenses, per visit	$9,024	1.02	$9,204

Data: Medical Expenditure Panel Survey (MEPS), 2022

Notes: 1. Ambulatory care sensitive conditions (ACSCs) are health conditions that can be effectively managed in an outpatient setting (e.g., doctor's office, clinic) to prevent unnecessary hospitalizations. 2. Rurality adjustment: Rural areas often experience lower health care utilization compared to urban areas (0.85:1). While total health care expenditures may be slightly higher for the rural population, this is not a consistent finding (1.02:1).

Our analysis finds that the loss of a rural PCP results in an average $1,348 increase in health care expenditures for each rural patient, if 50% of total ED and hospital visits were caused by a loss of rural PCP (see Table 2). This means that health care costs for a family of four will be approximately $5,600 higher than if a family physician was in the community.

TABLE 2

Health Care Utilization and Expenses in Rural Areas, 2022

Multiplier	A	B	C	A – [(B + C) × Multiplier]	Economic Loss
0%	$490	$192	$2,504	–$2,206	$0
10%	$490	$212	$2,754	–$2,475	–$270
20%	$490	$231	$3,004	–$2,745	–$539
30%	$490	$250	$3,255	–$3,014	–$809
40%	$490	$269	$3,505	–$3,284	–$1,078
50%	$490	$289	$3,755	–$3,554	**–$1,348**
60%	$490	$308	$4,006	–$3,823	–$1,618
70%	$490	$327	$4,256	–$4,093	–$1,887
80%	$490	$346	$4,507	–$4,362	–$2,157
90%	$490	$366	$4,757	–$4,632	–$2,426
100%	$490	$385	$5,007	–$4,902	–$2,696

Qualitative Analysis

Summary of Findings from Case Reports

To illustrate the range of care delivery across rural primary care settings, this work highlights different practices and health systems to showcase the diverse environments in which people seek and access care. The following case studies demonstrate that rural primary care is vital to the health and wellbeing of communities, each with local needs and resource constraints. Case studies were selected based on a variety of factors such as location, practice type, number of clinicians and payer mix, among others. Study staff conducted interviews and asked questions pertaining to costs and finances, recruitment and retention, referrals, resource challenges, innovative solutions, policy, patient needs and community engagement. As rural primary care adapts to changing health care landscapes, its strengths and limitations influence its capacity to care for patients. Case study themes include comprehensiveness, financial sustainability, workforce development and retention, access gaps, and training and education.

1. **Comprehensiveness** — Rural PCCs offer broad-scope services to their patients. Not only does comprehensiveness build patient trust, but a range of services also support community health and cost effectiveness. In turn, comprehensiveness decreases the need for specialists through early treatment and expanded scope of services.
2. **Financial sustainability** — Rural primary care faces financial pressures, and value-based care (VBC) models — which lag in uptake — need to be better tailored to specific contexts. Health systems and practices examine ways to diversify their revenue streams and reduce operational costs.
3. **Workforce development and retention** — For some rural primary care practices, higher salaries in urban areas challenge recruitment efforts. Local training pathways, scholarships and university partnerships contribute toward securing a primary care workforce.

4. **Access gaps** — Limited access to psychiatrists and other behavioral health service professionals remains a major barrier. Community organizations help address behavioral and social needs, but access gaps remain.
5. **Training and education** — Continued investment in rural training tracks and broad-scope primary care training is needed. It is critical for residency programs, post-graduate fellowship programs and clinician training (NPs and PAs) to offer sound mentorship, skilled rural preceptors and community-based experiences, both of which need financial support.

Case Study 1: Rural Clinical Practice

How One Rural FQHC Supports Their Community, Despite Financial Pressures

Characteristics

Practice

Waco Family Medicine

Location

13 clinics across McLennan County, TX, and extends to Hillsboro, McGregor and Temple, TX (13 counties overall)

Number of clinicians

129 including physicians, NPs and PAs, dentists

Current staff

7 OB/GYNs, 66 FM/IM, 15 FM faculty, 26 NPs and PAs, 6 midwives, 2 pediatricians, 7 dentists, 3 dental hygienists, 17 IBH/counselors, 1 clinical psychologist

Annual patient volume

75,000 individual patients and 278,393 visits; 1/5 residents in McLennan County, 1/4 children

Patient characteristics

29% uninsured
31% Medicaid
13% Medicare
27% commercial
66% below poverty level
42% Hispanic
19% Black
33% white
6% other

Serving Local Communities with Extensive Services

Waco Family Medicine's (WFM) FQHC is highly attuned to the needs of the underserved in their community, the necessity for training the future generation of physicians and other members of the care team, and sustainability as a community practice. WFM has served the McLennan County community for more than 50 years and follows its mission to "improve the health and wellness of the underserved residents of the Heart of Texas…" They became an FQHC in 1999.

WFM clinicians offer extensive services, such as pharmacy, dental and behavioral health and are connected to a variety of social and economic supports. Clinicians provide perinatal, labor and delivery care, in-office procedural care and hospital care along with preventive, acute and chronic care management. The organization prides itself in providing on-site comprehensive care, which includes an award-winning integrated behavioral health (IBH) initiative. The organization continues to deliver high-quality care, even in an environment that is fraught with severe shortages of psychiatrists and clinical psychologists. Its residency program strengthens recruitment of clinicians, retention, and quality of care. Telehealth has the potential to bridge gaps in access but is underutilized due to many patients preferring in-person visits.

Financial Stabilizers: Diverse Payer Mix and 340B Participation

The two financial components that account for FQHC financial solvency are payer mix and 340B Drug Pricing Program participation. WFM benefits from a diversified payer mix, which reduces reliance on a single source of reimbursement. In rural settings, patients may have fewer options for clinics to attend, and this may benefit some rural primary care practices. WFM is the only option for care in remote areas. The current demographics of the area include a relatively equal reliance on Medicaid and commercial insurance. One-third of the patients are uninsured, and less than 15% of WFM's patients receive Medicare benefits. Medicaid eligibility for adults in Texas is very limited, leaving many low-income individuals without coverage. Notably, children and pregnant women have coverage on par with other states according to KFF.[52,53]

The 340B Drug Pricing Program is a key benefit that provides patients with prescriptions at discounted rates. FQHCs such as Waco qualify for medications at a discounted rate and may bill insurance at the standard cost of the medication; thus, the program helps to sustain financial operations. WFM has three in-house pharmacies at its largest teaching campus and second-largest clinic. These pharmacies are more cost effective than contract pharmacies which have additional costs. The 340B program helps to subsidize uninsured patient costs; however, pharmacy benefit managers in Texas engage in practices that decrease 340B revenue for clinics, such as exorbitant fees and lowered reimbursement rates.

With cost-based reimbursement for Medicaid and the 340B program, the clinic currently remains solvent. It receives Medicaid funding in the form of a PPS. Given that some costs are fixed, PPS aids in financial predictability for the practice. However, reimbursement rates from the PPS highlight primary care's

chronic underfunding. PPS rates are required to cover the whole cost of Medicaid visits and ancillaries, but they are not intended to cover costs for patients not covered by Medicaid, so other revenue streams are needed (e.g., 340B and health center federal grant) to cover uninsured patient costs.

For primary care to adequately meet the needs of low-income people in Texas, more support is needed to provide high-quality care to local communities, particularly in light of anticipated cuts to Medicaid due to H.R. 1. For FQHCs such as WFM to transform primary care, they would greatly benefit from higher reimbursement rates or expanded coverage for currently uninsured patients. Waco and the surrounding area continue to struggle with infrastructure, food security, poverty and job security. The need for care is high among low-income people, and WFM has collaborations and programming to address drivers of health.

The Need for More Sophisticated VBC Arrangements Tailored to Rural Primary Care

While WFM participates in several VBC arrangements, many models are underdeveloped in rural primary care. Financial models that do not account for long-term health of a patient are misaligned with longitudinal primary care. Outcomes measured in months or one to two years do not correspond with the prevention and management of many individuals seen in primary care. Additionally, rural factors such as hospital closures and long travel distances for patients to access care limit the collaboration opportunities for VBC, which often means the clinics and specialty patients are responsible for the total cost of care.

VBC models could offer solutions to the financial strain posed by these rural factors. Yet, many VBC models have metrics and timelines that are poorly aligned with the needs of rural health care because they use metrics geared toward urban populations. Shared savings plans have proven difficult to implement due to benchmarks that fail to align with rural patient profiles. Using metrics that are compared to peers — other rural clinics and populations — provides a more accurate representation of performance. For example, comprehensiveness is a focus for care access in rural primary care. Diabetes and hypertension control, as well as other chronic disease conditions, are also emphasized in rural primary care population health metrics. Importantly, these metrics should evolve with the organization and patient population. With tailored metrics that fit rural health, mission-driven practices such as WFM would be able to expand access in underserved areas, emphasize management of the social determinants of health and provide full-scope primary care.

Takeaways

- Defining features of primary care, which are crucial in rural environments, are its ability to provide both continuity and comprehensiveness.
- FQHCs and CHCs need more support to increase access and ease financial burdens for low-income patients.
- To better meet patient needs, more flexible VBC design and implementation is needed; rural practices would benefit from increased investment.
- Mission-driven health care organizations prioritize decision-making to benefit current and long-term community impact.
- Benchmarks must be set realistically to account for the unique conditions in which primary care operates in rural areas.
- The 340B program plays a vital role in the success of FQHCs offering discounted prescriptions for patients and supporting operational costs for organizations.

Case Study 2: Rural Clinical Practice

Rural Communities: DPC Makes a Difference

Characteristics

Practice

Reliant Direct Primary Care

Clinicians

4 DOs, 2 PAs, 2 Advanced Practice RNs

Location

Enid, OK, with sites in Cherokee, Fairview and Altus, OK

Population

51,308 people

Resident characteristics

75% white
2% Black
8% multiracial
15% Hispanic

Age

25% under 18
14.8% over 65

Average household income

$63,472

Geography

Eastern edge of the Great Plains, home to Chisholm Trail

Payer

No commercial, Medicare or Medicaid billing; does not accept insurance

Community Ties

For Dr. Bushman, practice owner, going into DPC was an opportunity to become closer to patients and families. With a patient panel of more than 600 people (which is smaller than a typical primary care panel of 1,700 people), he provides timely, responsive care to patients. The clinic sees patients that reside in Enid, but two-thirds of their patients travel from more rural locations outside of Enid to receive care, often traveling more than an hour. Taking adequate time to see patients allows Dr. Bushman and his team to address not only the acute concern, but also to form assessments based on factors that surround the patient such as transportation, social networks and finances.

Keeping ties with the local hospital systems also offers benefits — Reliant DPC is able to refer patients to specialists in the community. As an independent practice, the local health systems vie for referrals and collaboration, giving their practice more access to care that the community needs. The practice continues to build trust with specialists and systems as accountability partners.

> **"And I could talk all day about the reasons why I [joined a direct primary care practice], but primarily it was just me getting closer to patients. It wasn't an anti-hospital, anti-insurance or anti-establishment sort of thing. It was the thing that continues to get in the way of me and my patient care is these third parties, whether it's my employer, whatever. And I'm just sick of it. And so I decided I'm going to be accountable to my patients and that's what I did."**

Financial Sustainability

Each clinic that is part of Reliant functions in a similar way financially. But functionally, each clinic adapts to its patients and community. The clinics set monthly membership fees for patients, with tiered pricing for families that may vary by clinic, and each clinic adapts its visit schedule and workflow to meet its patients' needs. With knowledge of its overhead costs, the clinic knows the minimum threshold for patient volume and panel size; the largest costs for most DPCs are salary and benefits, followed by rent and technology overhead costs. Additionally, they follow the market to ensure that they are charging a reasonable price for their community. Since the clinic's opening nearly seven years ago, the cost for membership has gone up twice, once by $5 and once by $9, totaling about $120 per family member per year. Typical services are included in the cost of membership: in-house labs, joint injections, abscess and cyst management, laceration repairs and other skin procedures. While they do not provide OB, many of the services that would be seen in urgent care or the ED are able to be treated in the DPC office.

> **I think if DPC makes family medicine more attractive, more people will go into it. And if you're paid appropriately, if the dollars are invested in primary care appropriately through that different payment model, you'll see more primary care availability — more comprehensive care, easier access, lower total costs of care and better outcomes long-term."**

Retaining Rural Leadership and Staff

Relationships matter most. Dr. Bushman came to Enid because, as a medical student, he lunched with a rural health director at Oklahoma State University who encouraged him to rotate in Enid. He had no intention of landing there; however, the $10 lunch paid off and brought him back to practice years later. The model of DPC is its own recruitment strategy for clinicians — the type of care provided brings clinicians to practice. Additionally, for clinicians at Reliant, autonomy is key. Clinicians set their own schedules and get support from their peers without mandates of volume. Finally, Oklahoma has a primary care physician loan repayment program that offers repayment of $200,000 tax-free over four years, which offers an excellent avenue for rural communities to recruit a physician.

Many of the staff members that work for Reliant are local and have seen and heard about the culture of the practice from community members. The DPC culture also contributes to staff retention.

Takeaways

- Relationships matter — less administrative burden between the clinician and patient improves clinician wellbeing and promotes patient wellness.
- Local hospital collaboration is necessary for referrals, but working outside the system also has advantages as DPCs may not be a guaranteed referral basis but rather a relationship that relies on trust.
- Making ends meet financially, while balancing patient affordability and no insurance billing, is possible with patients that have disposable income for subscription and other modest fees.
- Comprehensiveness drives patient trust.
- Staff and clinician retention improves with autonomy, respect and some financial incentives.

Case Study 3: Rural Clinical Practice

Cross Arrow Medical Providing Care on the Frontier

Characteristics

Location

Tucumcari, NM; Other cities in Quay County include San Jon, Logan, Nara Visa, and House, with a total population of 8,403. Tucumcari is 167 miles southeast of Santa Fe, 176 miles east of Albuquerque, and 112 miles west of Amarillo, TX

Population

5,278 people

Resident characteristics

75% white
1% Black
1% Native American
1% Asian
0.2% Pacific Islander
20% other

Age

26% under 18
17% over 65

Geography

Along Route 66, part of Quay County; former railroad transit point; many cattle ranches

Health care

Quay County: 4 clinics, 2 physicians, 9 NPs, and 1 dentist

Hospital: Trigg Memorial Hospital

Payer mix

Medicare 32%;
Medicaid 36%

Context and Operations

Tucumcari is a farming and ranching community located on the historic Route 66. It attracted tourism in the past, but the construction of I-40 diverted visitors. Several businesses closed. Remaining businesses include a hospital, pharmacy, bank, grocery store, two dollar stores, gas stations, churches and a handful of restaurants. The town also has an elementary school, a middle school and a high school. The lack of industry means few employment opportunities, and illicit drug use and a transient population are present. Many grandparents are raising their grandchildren due to drug use or incarceration of the children's parents. Additionally, many adult children are coming back to live with their parents because they can't afford to live on their own.

Cross Arrow Medical (CAM) is co-owned by Linda Sims, who has been an NP for 19 years and has a master's in Family Practice and a post-master's in Urgent Care. The practice started in 2018 and is the only independent clinic in Quay County not affiliated with a medical group or an FQHC. Sims and her partner, who is also an NP, see patients from birth to death. Their patient panel is approximately 3,500 with 32% Medicare, 36% Medicaid and the remaining are commercially insured and uninsured patients. The practice schedules 18 patients per day for each NP. The two NPs and the medical assistant rotate among the three rooms. The practice is open Monday through Friday, and each NP works four days a week, with different days off. They also participate in a school-based clinic two days a month in the nearby town of San Jon, 25 miles away.

> **"The practice mantra is 'We love what we do. We do what we love.'"**

The practice employs a front desk clerk, a medical assistant, and an RN (a phone nurse who does authorizations). It operates lean and with minimal overhead costs. The NP owners divide office work, such as IT and finances, making it a truly team-based effort.

Their revenue — disproportionately from Medicaid and Medicare — stems from seeing patients. Revenue also comes from lab tests and immunizations. Financial margins "aren't great," but Sims and her partner are making it work. They are, however, concerned with the recent passage of the H.R. 1 legislation because more than one-third of their patient panel is covered by Medicaid and the 2025 legislation adds work requirements for many adults to qualify for Medicaid. In addition, many immigrants will no longer qualify for Medicaid. This creates unknowns for the clinic's financial viability and patient access. To better prepare for upcoming changes, Sims and her partner are joining an ACO.

Comprehensiveness and Community Needs

CAM has a comprehensive approach to care, offering a wide range of services such as immunizations, women's health services (pap smears and contraception), and dermatology procedures, among others. Comprehensiveness is a necessity for whole-person care and CAM is often the only local option for care. According to Sims, there are no specialists in Tucumcari or Quay County; patients travel 90 miles one way and wait lists are long. For example, an appointment in rheumatology and neurology takes six to nine months at University of New Mexico in Albuquerque, 176 miles away. In a more extreme example, a behavioral health neuropsychiatric evaluation is two to three years out. Transportation and lodging costs in cities compound care barriers for some patients. Lack of access to specialty care means that CAM cares for patients the best they can. The clinic can access the university's Physician Access Line resource for a consultation, transfer or referral service. This service, however, does not expedite appointments, so patients continue to rely on local primary care while they wait.

In Sims' view, access to psychiatry and other behavioral health services is the community's most pressing need. There are professional counselors and a clinician that prescribes medications for opioid-use disorder, yet more support is needed. Two other areas of need include urgent care and locally-based physicians to staff the ER, which relies on rotating temporary staff.

The doctors, they fly in here from all over the United States to support our emergency room. Back in the day, 20 years ago, our local physicians, which we don't have anymore, worked our ERs. And so do these guys have any value in us or do they just clock in, do their shift, clock out, and go home? Like radiology, we ordered a stat CT and took two days to get the results. A liver ultrasound that was done last week and I had to call to ask for somebody to read it because everything's read in Albuquerque, not locally."

Community Connections

Sims was born in Tucumcari, left for a period of time, then returned 25 years ago to be with family. Sims met her business partner when they both worked at a hospital and have known each other for more than 25 years. They live and work in the community and know their patients through their social networks. Sims, her partner, and staff have an intimate connection to the community. Whether going to events, county fairs or the grocery store, they are willing to help people in and around the community. While not an FQHC, CAM functions as a trusted safety-net clinic, with high Medicaid and Medicare shares in its payer mix and patients who require support for accessing social services and dealing with economic crises.

Takeaways

- Access to specialists is limited, requiring long drives and waits; local access and comprehensive services are greatly needed.
- Behavioral health continues to be a concern in the community; funding for more infrastructure for behavioral health support would benefit the area.
- Clinicians who work and live in the community bring value to relationships, which promotes health and improves trust.
- Investing in health care is investing in the community.

Case Study 4: Rural Clinical Practice

Rooted in Rural Virginia, Strengthening Clinician Recruitment and Retention Through Local Pathways

Characteristics

Location

Smyth County, VA; Southwest corner of VA, including Marion, Chilhowie and Saltville

Population

29,216 people
75% rural
24% urban

Resident characteristics

93% white
1% Black
3% multiracial
2% Hispanic

Age

19% under 18
22% over 65
Median age 40

Median household income

$45,061

Geography

Mount Rogers National Recreation Area, Hungry Mother State Park

Health Care

Smyth County Hospital (Ballad Health): 44 bed acute care hospital, 109 bed nursing care facility; One of 8 hospitals in VA to receive 5 stars from CMS

Workforce (clinicians per 100,000 people, compared to national average [NA]): substance abuse 3.36 (NA 27.85), dental health 16.78 (NA 39.06), behavioral health 100.67 (NA 178.73), primary care 104.03 (NA 112.36)

Primary care practices: 2 family medicine clinics, 2 pediatric clinics

Recruitment and Retention

In Smyth County, recruitment and retention of health care professionals remains a focus. There are only two primary care practices in the area to care for patients. Due to a dearth of primary care, the local urgent care and hospital work to meet the basic health needs of its population. Not only is there a shortage of PCCs, but there is also a shortage of other specialists. To help fill this void, two initiatives were created. First, the county partnered with the Smyth County Community Foundation to develop scholarships for those pursuing careers in health care. Second, it collaborated with local schools and universities to establish a pathway for clinician training.

> **"They just don't have primary care. I'd guess it's as many as 30 or 40% that pass through. They've not seen a primary care physician. They don't have any routine care."**

As of fall 2025, local university Emory and Henry ran a nursing program with projected enrollment of 160 students for local medical staff training. Even though not all will complete their training or practice in the county, these programs have strong interest and support from community members. Tapping into local talent is a win-win for graduates and the county, providing jobs while making health care more accessible for residents. Recruiting locally aligns with the principle that individuals often work where they train, with most nurses coming from nearby community college programs. This established pathway has contributed to filling nursing positions, and the nursing turnover rate at Smyth County Hospital is 12.6%, well below the national average.

While local medical staff recruitment is on the rise, physician recruitment remains challenging. Lifestyle considerations such as access to entertainment, restaurants and activities may dissuade some. Spouses who also work in medicine may have conflicting schedules due to few other physicians, and therefore experience childcare challenges. Finally, some subspecialty clinicians may worry about the low volume of some conditions, leading them away from rural care.

Compensation is another barrier in recruitment efforts, as rural hospitals struggle to compete with higher salaries offered in suburban or urban areas. Likewise, rural clinics have difficulty matching hospital salaries. One primary care clinic in Smyth County reports that high volume may lead to clinician burnout and leaving practice. Without physician ties to the area, tending to a large, complex panel can be challenging. Additionally, balancing staffing needs within budget constraints can be frustrating, particularly when financial margins are tight. The hospital and primary care clinics work in tandem to promote physician and clinician retention; enticing new graduates, while maintaining a positive bottom line, requires a delicate balance.

Community Resources

Emphasis on efforts to recruit and retain clinicians is not the only initiative that Smyth County supports; they also serve patients through resource outreach services. In the most recent community-needs assessment, equity was determined to be a top priority for its residents. The Mountain Community Action Program provides many needed social services such as transportation for medical appointments. Additionally, the Community Service Board plays an essential role in behavioral health. In fact, the number of patients receiving services is approximately 11% of the county's population. The Mount Rogers Community Service Board continues to expand its resources, with a nurse practitioner on staff 24 hours a day, 7 days a week. This has decreased the number of emergency room visits, improving both capacity and costs. Other social services based in the county exist alongside medical care to augment health outcomes.

Rural health care is more than health care. It's social services. It's a whole lot of things like making sure that folks are healthy when they get home after they've been treated at the hospital here. They've got a program focused on that. The food boxes that we give are to battle food insecurity issues. It's not just health care, it's person care."

Interactions with Clinical Teams and Patients

Health care institutions take great pride in patient care, quality and outcomes, which are well-regarded and contribute toward recruiting and retaining a local workforce. Beyond clinical accolades, interactions among physicians, staff and patients contribute to a positive environment. The principle, "Treating people like you would your own family," is a standard that is practiced on a day-to-day basis, which fuels trust and care. Trust and care are also reinforced outside the walls of a hospital or health care clinic, where compassion is nurtured to foster a healthier community.

Takeaways

- Rural hospital leaders help address health care workforce gaps by partnering with community organizations and local universities, but they cannot be the sole source of solutions.
- Establishment of a clinician training pathway and local scholarships have led to an increase in training health care professionals.
- Attracting physician talent remains a challenge.
- Rural hospitals and clinics face challenges competing with urban salaries for both primary care and specialist positions, affecting physician and clinic staff retention.
- Behavioral health needs are supplemented through the Community Service Board, reducing emergency room visits. Other nonprofits offer support for the social determinants of health, improving health access and wellbeing.
- The county values patient care and strives to instill trust and a positive health care environment for staff and patients.

Case Study 5 — Educating Rural Clinicians

Full Circle Health, Boise, ID — A Clinic to Train, Retain, and Provide Scope for Rural Physicians

Characteristics

FQHC has 10 clinics, 5 residencies as part of a teaching health center (4 family medicine, 1 pediatric) with rural training sites; 42,000 unique patients and 165,000 patient visits/year. Operating budget of $70.1 million

Payer mix

35% Medicaid
35% commercial
20% Medicare
10% uninsured

Hospital partners

Saint Alphonsus, St. Lukes, West Valley Medical Center

Specific areas of education and care

hypertension, addiction medicine, IBH, HIV care

Geography

Extending across Boise, Kuna, Nampa, Meridian and Caldwell

Residency and Learner Support

Even though Boise itself is not rural, the Full Circle Health (FCH) Teaching Health Center residency prepares residents for rural practice. Idaho is a rural state, and the residency has several practice locations, providing residents with ample opportunities to work in a variety of settings. FCH's residency program has four family medicine sites and one pediatric site. Outside of FCH's residency program, there are only two internal medicine programs and one psychiatric program in Idaho. A collaborative environment makes the training more robust, preparing residents to care for patients in a variety of circumstances. Idaho is also part of Washington, Wyoming, Alaska, Montana, and Idaho's (WWAMI) medical education program — a unique collaborative academic network serving rural and western state health needs. It provides faculty and residents with access to resources and best practices, which includes continuing professional development. Residents, therefore, receive the training that is most relevant and beneficial for their career needs.

> **"Our ICU docs say, 'Of course, I want to train a family medicine resident because that is the person who's going to be calling me with a transfer from 5 hours away when it's snowing, and they've got to stabilize the person before they get here.'"**

Recruiting for residency begins early. To give learners real-world experience staying and serving in a rural community, the Targeted Rural Underserved Track (TRUST) is one such opportunity. It is offered through WWAMI's regional network. In Idaho, seven learners match every year, one per site. Over the course of four years, sites have four learners in different stages of training. Once applicants are selected, they visit their matched site before they start medical school. Recipients learn about the community, meet people and visit organizations. Recipients return to the site several times while in medical school, spending a significant amount of time there during their clinical rotation. Many of these learners choose FCH for residency. Then after residency training, they will ideally go back to their TRUST site and practice.

Path to High-Quality Primary Care

FCH prides itself on high-quality primary care. Comprehensiveness stands out because they see patients in many different settings, practice broad-scope care and care for patients in the ED and in clinics. They are also adept at coordination because of the system's reliance on primary care to arrange for access and continuity — even organizing transportation or rescheduling appointments with a specialist. It is a team-based effort: case managers help with coordination across care needs; nursing

teams help with transitions of care; and one person is dedicated to referrals and transportation needs for non-English speaking populations. Continuity and access are a bit more complex.

Generally, clinic staff stay because of the mission, which appeals to those who want to serve populations with less access to care. Even though many physicians stay after residency completion, nursing and other staff turnover exists. This turnover, however, is not specific to FCH; it occurs in all health care. Even so, the loss goes beyond recruitment and training costs as institutional knowledge is also affected. Additionally, access suffers due to a lack of wraparound services. Social determinants of health affect patient populations; affordable housing and transportation are issues that need attention in order to provide better access to care. Even though community health workers are on staff, they are limited by local resource constraints.

Financial Support of the Residency and Program and Payment Structure

Throughout FCH's history, the organization has had to remain nimble. Their journey began as a 501c3 nonprofit organization, evolved into an FQHC look-alike and changed once more to an FQHC. Clinical revenue and a 340B pharmacy are the two main sources of financial stability for FCH. FFS accounts for a significant portion of patient care (65%, with three-fourths as outpatient and one-fourth as inpatient) and other revenue streams make up the remaining, such as pharmacy (30%) and a mix of quality payments and federal and state grants (5%).

> **"When I first took over, we were underwater and if we hadn't gotten to a better payment structure, I'm not sure we would have survived. And so we started the transition process [to CHC status], took us several years."**

Pharmacies were incorporated within the clinics intentionally; colocation of the pharmacies streamlined operations and patient access. Currently, there are five pharmacy sites housed within five clinics, with the goal of having pharmacies in all 10 clinics. FCH participates in the 340B Drug Pricing Program, which is extremely beneficial because savings from discounted medication costs not only cover pharmacists and pharmacy staff, but also the lower medication costs are passed on to patients.

FCH also participates in APMs, specifically, an ACO. The bulk of the ACO contracting is through the Community Health Center Network of Idaho (CHCNI) — a collection of FQHCs with goals of helping organizations achieve financial sustainability. CHCNI advocates for commercial, Medicare and Medicaid value-based contracting. Additionally, FCH has seven contracts with several commercial plans that aren't covered though CHCNI. These contracts are minimal, but the organization has established itself in these payment models and could pivot toward a capitated system, if needed.

Diversifying payment models and revenue streams is essential for FCH's future stability, especially as upcoming Medicaid cuts are expected to affect their bottom line. Idaho implemented Medicaid expansion in 2020, covering 90,000 additional lives, from 270,000 to 360,000 beneficiaries. Expansion positively affected patient access and the organization's financials since Medicaid paid better rates than other lines of business.

Yet, with the passage of H.R. 1, FCH is expected to incur a lot of uncompensated costs — more uninsured patients will need care. RHTP funding is not expected to cover the losses that will be incurred through the contraction of Medicaid services.

FCH is constantly looking for internal savings and shoring up processes for better efficiency and effectiveness. They are evaluating their no-show policy, scheduling, balanced staffing load and third next available wait times. These areas have the potential for operational savings that will need to be harnessed to offset upcoming changes through H.R. 1.

Takeaways

- Initiate financial transformation when projects fall short and sustainability is threatened, recognizing that the process takes time but is essential.
- Leverage the 340B program to enhance cost efficiency across services, operations and patient cost.
- Focus on internal systems to capture savings because external factors are outside of one's control.
- Diversify funding sources to better navigate unpredictable external factors.
- Continue to prioritize rural programs or rural training track programs to prepare learners in full spectrum care and for situations in which there are minimal resources.
- Provide financial support for broad-scope primary care training — billing alone will not generate the revenue needed to effectively train residents.
- Support rural residencies by supplementing time to offset indirect costs of mentorship, resident salaries and different community-based training options.

Training Fellows in Rural Health

Mountain Area Health Education Center's (MAHEC) Rural Fellowship program was launched in 2017 to address growing gaps in the rural health care workforce by retaining our graduates in western North Carolina. The program is structured to give participants the tools, connections and resources necessary to plant roots in their community during their first year of professional practice. The program components are built around our "6 Ps" model which includes: Placement in a rural area, Project work, Preceptor skill development, Protected (non-clinical) time, Practice of clinical skills, and Partnerships with other early career rural clinicians.

MAHEC provides 20% salary support to each fellow's practice in exchange for one day per week of non-clinical, dedicated fellowship time. The ability to work a four-day work week during their entire first year of practice while preserving a full-time salary has been a major success of the program. MAHEC also provides each fellow with virtual didactics, in-person gatherings throughout the year, project support and $3,000 per year in continuing medical education funds. Since 2017, they have supported 45 rural fellows in the region, nearly 90% of whom are still in rural practice here.

– Kylie Agee, Program Director, Rural Health Initiative MAHEC

Section 3

Policy Recommendations

Proven Strategies to Strengthen Rural Health and Primary Care

Section 1 of the report highlighted worsening health disparities of U.S. residents living in rural areas compared to residents in urban and suburban areas, reviewed recent legislation that is likely to have an impact on rural primary care, primary care access, and health outcomes of rural residents, and summarized recent research on rural primary care.

Quantitative analysis in Section 2 found that rural primary care is more comprehensive than primary care delivered outside of rural areas, and spending on primary care as a share of total health care spending has declined across both rural and urban geographies. More specifically, primary care spending has declined in both Medicare and ESI in recent years.

The quantitative analysis also found that the availability of PCPs in rural communities has dropped in recent years. More NPs and PAs (to a lesser degree) are practicing in rural communities, somewhat offsetting the decline in rural-based physicians; however, there continues to be more availability of PCCs in urban communities as a share of the population — 15% more — as compared to rural settings.

The qualitative analysis of Section 2 summarizes timely interviews of PCCs, educators and leaders across five different rural communities and programs that serve them. As rural primary care adapts to changing health care landscapes and legislation and public policies, its strengths and limitations influence its capacity to care for patients. Case study themes include comprehensiveness, financial sustainability, workforce development and retention, access gaps, transportation challenges and training and education.

Below are high-level policy recommendations consistent with the report's findings. They are also aligned with action steps recommended by the National Academies of Sciences, Engineering, and Medicine (NASEM) in the 2021 report, *Implementing High-Quality Primary Care: Rebuilding the Foundation of Health Care*.

1 Measure and report primary care spending, avoid reducing Medicaid reimbursement to primary care

The decline in primary care spending across both rural and urban areas and across payers reported here and elsewhere is a clear call to action for policymakers and health care leaders. Several states, including California, Colorado, Connecticut, Delaware, Minnesota, Oklahoma, Oregon, Rhode Island, Vermont and Washington have established primary care spending measures *and* set targets for increasing primary care spending. Primary care spending is an important measure for accountability of health system effectiveness. Measuring primary care spending across payers and across rural and urban geographies provides important feedback about whether decision-makers are investing in the only part of the health care system, according to NASEM, where an increased supply is associated with better population health and more equitable outcomes.

As states grapple with fewer federal Medicaid resources over the next several years due to H.R. 1, any reductions they make in primary care reimbursement will likely exacerbate the burden of chronic disease and behavioral health conditions in rural communities. Greater investment is needed in rural community-based primary care teams that can support prevention, chronic disease care, behavioral health services and wellness in their practices and via local partnerships.

2 Increase federal support for FQHCs and RHCs in rural communities

Congress should increase support for two proven primary care models that together serve almost all rural counties, FQHCs and RHCs. FQHCs are found in all types of underserved communities, both rural and urban, while RHCs are located in rural communities. Medicare and Medicaid use reimbursement approaches for RHCs and FQHCs that enable rural primary care to be more comprehensive and team-based, and in the case of FQHCs, to offer wraparound services for patients and sliding scale fees for uninsured patients. The 340B Drug Pricing Program is also a critical source of revenue, and pharmacy services add to the

comprehensive care these primary care models deliver. FQHCs and RHCs are already serving on the front lines in the fight to prevent and control chronic disease. Rural communities need more access points for the whole-person care these models can deliver when well resourced with interdisciplinary teams.

At the time this report went to press, the federal government was shut down and appropriations had expired for critical programs funded by the PHSA that benefit rural health, including Section 330 grant funding and mandatory funding from the Community Health Center Fund for CHCs, the NHSC and THCGME.

3 Transition primary care payment to a hybrid model; support RHC, FQHC and other rural primary care participation in APMs and ACOs

As noted in the 2021 NASEM report,[4] hybrid payment that includes both patient-based prospective payment and FFS would better support team-based, comprehensive services and population health management than FFS payment alone. Fortunately, CMS has begun taking steps to bolster chronic care management in Medicare with bundled monthly fees for ongoing chronic care outside of visits. Beginning in 2025, both RHCs and FQHCs and all PCCs who participate in Medicare are eligible to bill Medicare under new Advanced Primary Care Management (APCM) codes.

The APCM codes are intended to support care coordination activities, are not time-based and can be billed monthly.[54] CMS will expand the codes further in 2026 to include behavioral health integration to reduce the administrative complexity of billing for and providing behavioral health integration services.[55] With continued investment and refinement, APCM codes could serve as a foundation for a more robust hybrid primary care payment model in traditional Medicare.

The case studies suggest APMs currently do not accommodate the realities of rural primary care practices. Some Medicare ACOs support rural primary care participation in APMs, such as shared savings models, by aggregating beneficiaries and lowering financial risk while providing tools, data, and shared services for population health management and quality reporting. In 2024, the CMS Innovation Center launched the voluntary Primary Care Flex model within the largest Medicare ACO program, with features intended to address barriers that RHCs, FQHCs and other small rural practices face. It is too soon to determine whether this new model will attract more rural primary care participation in ACOs.

4 Increase federal support for rural primary care workforce education and training in rural training sites

Congress has acted to bolster the primary care workforce and should monitor results in rural areas, while continuing to invest in expanding workforce capacity. In addition to the important programs funded by the PHSA, such as THCGME, and the NHSC, Congress has recognized the important role the VHA plays in rural communities, and the role it plays in workforce training. Congress has funded new residencies in Medicare, prioritizing primary care, psychiatry and rural training sites. Physician graduate training takes place overwhelmingly in urban hospital settings, yet most primary care is delivered in community settings — urban and rural.

Congress should continue to fund Title VII and Title VIII of the PHSA at levels that, at minimum, keep pace with inflation. These programs support education of the broad interdisciplinary teams needed for whole-person rural primary care, including behavioral health professionals, nurses, dentists and physicians.

Medicaid is a significant payer for GME. More research is needed on the effectiveness of state Medicaid GME efforts to address critical workforce shortages such as primary care and behavioral health and to support rural and safety-net-oriented training programs.

5 Put primary care at the center of the $50 billion Rural Health Transformation Program included in the 2025 H.R. 1 legislation

CMS leaders should approve state transformation proposals that prioritize prevention, chronic care and wellness for rural communities by anchoring transformation in community-based primary care models.

6 Ensure that programs and resources intended to support rural health and primary care reach rural communities

Unfortunately, some federal programs and funding intended for rural health are being diverted to providers that do not primarily serve rural populations. In recent years, the number of geographically urban hospitals that have obtained dual classification as both urban and rural under Medicare has grown from 3 in 2017 to 425 in 2023. Dual classification allows hospitals to qualify for more Medicare-funded

GME slots and related funding, and to qualify for the 340B Drug Pricing Program by meeting a lower threshold designated for rural hospitals. At the same time, they can enjoy a higher Medicare wage index as an urban hospital. This dual-classification mechanism diverts resources intended for rural areas to large urban hospitals and health systems.[29]

7 Ensure workforce and payment policies strengthen rural community assets

Case studies revealed intangible factors that strengthen rural primary care and the leadership role it plays in rural communities. PCPs and other clinicians describe regular interactions with patients outside of their offices, in places of worship, on the sports field and at the grocery store — building relationships and providing PCCs with important insights into the lives of their patients. Some clinicians identified childhood connections with their own PCPs that inspired their ambition to practice in rural communities or their hometown. Strong social ties are less likely to develop in rural care models that rely on temporary staffing agencies.

The decline of independent primary care practices in rural areas may weaken these kinds of social ties and care continuity that are hallmarks of rural primary care. Payment policies that favor hospital-based practice may undermine independent practice. Policymakers should instead promote data-driven site-neutral policies and avoid costly mandates and administrative burdens that fall disproportionately on independent practice.

Rural primary care is remarkably resilient. It also demonstrates the capacity to meet many whole-person needs in communities that lack the behavioral health professionals, physician specialists and acute care capacity found in larger towns and metropolitan areas. Due to its understanding of and responsiveness to community needs, rural primary care is *the* foundation on which to build partnerships and collaborations that foster better health and wellness for all residents in rural communities.

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Appendix 1

Legislation 2015-2025 and Rural Health Care

Methods

We searched congress.gov for laws passed since the start of the 114th Congress (01/03/2015) which contained both the words "health" and "rural" in the language of the bill. We tallied those search results that were directly related to rural health. (For example, bills that did not address health, but were referred to the Senate Committee on Health, Education, Labor and Pensions and contained the word "rural" were returned in the search on congress.gov and were not included in this analysis.) Inclusion resulted in 49 distinct pieces of legislation.[1] One which addressed rural drinking water supply but did not relate to primary care or health was excluded.

Results

In the past decade, 48 distinct laws passed by Congress have directly addressed rural health (see Table A1). We further characterized these policies by coding them according to their area or areas they address based on six themes. These are as follows:

- **Reimbursement:** how primary care providers, clinics and hospitals are paid and how to make this financially sustainable

  Examples include regulation of the rates at which rural and low-volume hospitals are reimbursed, incentives to transition to alternative payment models and creation of new reimbursement categories such as Rural Emergency Hospitals

- **Veterans' health:** provisions that allow for beneficiaries in the Veterans Affairs (VA) system to receive care if they live in rural areas or far from VA resources

  Examples include appropriations for veterans to receive care outside the VA system if they live far from a VA facility, appropriations for transporting veterans or reauthorizing programs dedicated to serving veterans that live in rural areas

- **Telehealth:** efforts to increase the use of technology and connectivity to improve access to care

  Examples include requiring Medicare to reimburse for telehealth, appropriations for telehealth expansion in the VA system and rural telecommunications connectivity

- **Workforce development:** incentives and strategies to recruit and retain more providers to work in rural places

  Examples include loan repayment for clinicians providing care in rural areas or with rural veterans and increasing the number of residency slots located in rural areas

- **Comprehensiveness:** legislation supporting access to a broad range of necessary care provided by rural primary care providers

  Examples include appropriations for substance use disorder treatment, resources for people with autism or COVID-19 response directed specifically at rural areas

- **Infrastructure:** funding or authorization for programs that provide grants, technical assistance or other support to rural hospitals, clinics and clinicians

  Examples include reauthorization of funding for state offices of rural health and appropriations to HRSA for distribution to states for quality improvement or technical assistance

TABLE A1

Federal policies affecting rural health per congressional session by category. Policies may overlap in content and thus be counted in multiple categories.

Congress	114	115	116	117	118	Total
Date	**2015–2016**	**2017–2018**	**2019–2020**	**2021–2022**	**2023–2024**	
Reimbursement	3	2	3	5	2	**15**
Veterans' Health	5	5	1	4	2	**17**
Telehealth	1	2	2	4	0	**9**
Workforce	1	4	5	2	4	**16**
Comprehensiveness	1	1	4	1	1	**8**
Infrastructure	2	2	1	1	0	**6**

The area addressed by the greatest number of laws was veterans' health with 17, followed closely by workforce with 16 and reimbursement with 15 (see Table A1). The total number of laws passed decreased slightly over each subsequent Congress, with the exception of the 117th Congress of 2021-2022. The federal response to the COVID-19 pandemic resulted in a significant amount of funding and support to health care systems across the country; rural hospitals and clinicians had specific appropriations within these larger support efforts. Many of the changes that originated as a response to the pandemic have been reauthorized in the years since the height of COVID-19, including those regarding Medicare reimbursement rates, emphasis on rural graduate medical education (GME) funding, telehealth authorization and grants to rural health clinicians.

In the main report and here, we highlight eight of these laws that have a particularly significant impact on federal rural health policy. A greater number of bills addressing rural health are active in Congress in the 2025 session than were passed in the past decade; as this session continues at the time of report publication, only legislation that has been passed is included in this report.

*A Note on Veterans' Health

Veterans make up 6-7% of the U.S. population and are eligible to be served by the Veterans Health Administration (VHA); one-quarter of these veterans live in rural areas.[2,3] Many laws passed by Congress in the past decade related to rural health address veterans' health (see Table A2). We posit this is due to several factors. First and foremost, the VHA is directly administered by the federal government, thus legislation is the most common means to have an impact on veterans' health. Connecting veterans — who disproportionately live in rural areas — with care even when they live far from VA facilities, represents a challenge that falls to the federal government to solve. Congress has legislated several solutions, including covering transportation, supporting telehealth and making connections with non-VA sites of care.[4] Supporting veterans is a largely uncontroversial and bipartisan topic and thus legislation addressing these challenges is perhaps more likely to pass than other, less universally supported health policy innovations. Innovations in behavioral health, substance use disorder, trauma and telehealth care implemented in the VA system could potentially benefit all people living in rural areas. Increasingly, rural health clinics and non-VA sites of care are eligible to care for veterans living in rural places.[5]

TABLE A2

Total federal policies affecting rural health per congressional session with and without veterans' health-related bills. Some laws, especially larger appropriations bills, address multiple areas.

Congress	114	115	116	117	118	Total
Date	2015-2016	2017-2018	2019-2020	2021-2022	2023-2024	
Legislation per session	12	10	8	11	7	**48**
Without Veterans' Health	7	7	8	11	6	**39**

Medicare Access and CHIP Reauthorization Act, 2015

Category: Reimbursement, Workforce, Infrastructure

Appropriations over 10 years: $175.4 billion for payment modernization, $200 million for rural home health add-on, $400 million for Medicare-dependent hospital program, $1 billion for increased inpatient hospital payment adjustment for certain low-volume hospitals[6]

Goal: Overall, this legislation adjusted the Medicare reimbursement with the goal of emphasizing value rather than volume. It also attempted to streamline quality measures and incentivize alternative payment models (APMs).[7]

Regarding rural health, this legislation required the Government Accountability Office to study and encourage systems and clinicians in rural and health professional shortage areas to participate in APMs and to streamline the process for participation. It also directed the Government Accountability Office to study telehealth, reauthorized programs to support small rural hospitals and rural ambulances, and increased payments for rural home health services.[8]

21st Century Cures Act, 2016

Category: Reimbursement

Appropriations over 10 years: $21 for extension of rural community hospital demonstration project for five years[9]

Goal: Broadly, this legislation was designed to stimulate medical innovation and bring advances to patients more quickly.[10]

Regarding rural health, it extended the Rural Community Hospital Demonstration Program for five years, which started in 2004 to provide cost-based reimbursement to hospitals that are too large to be critical access hospitals yet in underserved areas. It also continued the provision not to enforce requirements for direct physician supervision for trainees at critical access and small rural hospitals.[9,11]

VA MISSION Act, 2018

Category: Veterans, Telehealth, Workforce

Appropriations: $5.2 billion for Veterans Choice Fund (No Congressional Budget Office cost estimate as of 5/12/2025)[4]

Goal: The VA MISSION Act attempted to create more streamlined and efficient access to non-VA care for veterans and to tackle workforce shortages in underserved VA locations. It encouraged making access to care easier for all veterans, including those who live in rural areas, by removing geographic restrictions on telehealth and establishing Veterans Care Agreements with non-VA entities. It also emphasized redistribution of VA resources to rural and underserved locations and allocated funding for a pilot program for GME positions paid by the VA that could train in non-VA facilities such as Federally Qualified Health Centers and tribal settings, loan repayment and incentives for clinicians working with the VA with the hope of improving shortages of clinicians in these areas.[12]

Consolidated Appropriations Act, 2019

Category: Telehealth, Comprehensiveness

Appropriations: $16 million for telehealth in rural areas[13]

Goal: This legislation funded multiple federal departments for fiscal year 2019. It included specific instructions for telehealth funding and distance learning to address the opioid crisis in rural America.[14]

Coronavirus Aid, Relief, and Economic Security Act or the CARES Act, 2020

Category: Telehealth, Reimbursement, Infrastructure

Appropriations over 10 years: $200 billion in stimulus across the whole bill; $2 billion for increased telehealth flexibility; $10 billion specifically targeted to rural areas, including critical access hospitals, independent rural health clinics and rural community health centers[15,16]

Goal: This legislation was the federal government's first response to the COVID-19 pandemic. The CARES Act expanded eligibility for existing assistance programs and created new programs during the pandemic. It established loans for small businesses, grants for local, state and tribal governments, expanded eligibility for unemployment payments, increased Medicare reimbursement rates and increased appropriations to federal agencies responding to the pandemic. Specifically relevant to rural areas, it required Medicare to reimburse for telehealth and specified grant funding for rural health development and services outreach, and to support rural hospitals and clinics with COVID testing and emergency response.[17,18]

Consolidated Appropriations Act, 2021

Category: Reimbursement, Workforce

Appropriations over 10 years: $2.3 trillion in total, $1.1 billion for Medicare Provisions in Health Extenders (includes all programs below)[19]

Goal: The Consolidated Appropriations Act funded a wide range of federal government services and agencies through fiscal year 2021. It established several new investments in rural health infrastructure. These included a new rural emergency hospital designation to allow hospitals that were not operating in a financially sustainable way to transition to an arrangement without inpatient beds (skilled nursing beds allowed) but still offer 24/7 emergency care. In addition, this legislation established new funding for 1,000 GME slots at rural hospitals, encouraged establishing rural training tracks, increased reimbursement rates for rural health clinics and emphasized the importance of telemedicine for access to specialty care.[20–22]

American Rescue Plan Act, 2021

Category: Reimbursement, Workforce

Appropriations over 10 years: $8.5 billion for rural clinics lost revenue, $500 million for emergency rural development health grants, $2 million for behavioral health programs for health care workers[23]

Goal: This legislation aimed to provide ongoing relief to businesses, governments and individuals related to the COVID-19 pandemic.[24] Within this bill, specific allocations were made specifically for rural hospitals through increased Medicare, Medicaid and CHIP reimbursement to combat lost revenue due to COVID-19, grants establishing programs to address COVID-19 in rural areas and callouts for consideration of rural locations for support with behavioral health and burnout for health care workers.[25]

Examples of these grants include programs through HRSA to create a rural public health workforce training network, expand virtual care and support community paramedic training and cross training of nurses in rural communities.[18]

Infrastructure Investment and Jobs Act, 2021

Categories: Reimbursement, Telehealth, Infrastructure

Appropriations: $1.2 trillion total, $550 billion in new federal spending annually (FY2022-2026)[26]

Goal: This act was created to modernize U.S. infrastructure (roads, bridges, highways), create jobs and close equity gaps in rural communities by investing in transportation, broadband, water, energy and the environment.

Consolidated Appropriations Act, 2023

Category: Reimbursement, Telehealth, Veterans

Appropriations over 10 years: $317 million for Medicare-dependent hospitals, $2.3 billion for Medicare telehealth extensions, $258 million for residency positions, $1 million for extension of rural home health provisions[27]

Goal: The CAA extended telehealth for Medicare beneficiaries as well as payments for small rural hospitals that have a high proportion of Medicare patients. Additionally, it extended program support for rural GME through FY 2025. It also reauthorized programs for transporting veterans in rural areas and use of telehealth in the VA system.[28]

H.R. 1 — One Big Beautiful Bill Act, 2025

Category: Reimbursement, Telehealth, Workforce, Infrastructure

Appropriations over 10 years: Increase outlays by $90 billion, Decrease revenues by $20 billion, Increase deficits by $110 billion, $50 billion for rural hospitals[29]

Impact:

- **Medicaid** — requires states to condition Medicaid eligibility for individuals aged 19-64 applying for coverage or enrolled through the Affordable Care Act expansion group on working or participating in qualifying activities for at least 80 hours per month. Eligibility must be verified every 6 months. Provider taxes were decreased to 3.5% by 2032.
- **Rural Health Transformation Fund** — Establishes a rural health transformation program that will provide $50 billion in grants to states between FY26-30. These grants may be used for payments to health care providers and for other purposes such as paying for health care services, expanding the rural health workforce and providing technical or operational assistance. Stand-alone physician practices are not eligible for grants.
- **Telehealth** — permanently extends the COVID-era flexibility for sponsors of high-deductible health plans to provide pre-deductible coverage of telehealth services for enrollees.
- **Workforce** — Limits lifetime caps on unsubsidized professional loans at $200,000. Eliminates Grad PLUS loans.

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Appendix 2

Search String Parameters, Background

PubMed

((rural health[MeSH Terms] OR rural health services[MeSH Terms] OR rural)

AND (General internal medicine [MeSH Terms] OR primary health care[MeSH Terms] OR Pediatrics [MeSH Terms]))

AND (("health policy"[MeSH Terms] OR "health* policy"[All Fields] OR "policies" OR "policy"[All Fields]))

AND (y_10[Filter])

Returns 1112 (not eventually used)

((rural health[MeSH Terms] OR rural health services[MeSH Terms] OR rural)

AND (General internal medicine [MeSH Terms] OR primary health care[MeSH Terms] OR Pediatrics [MeSH Terms]))

AND (("health policy"[MeSH Terms] OR "health* policy"[All Fields] OR "policies" OR "policy"[All Fields]))

AND (y_10[Filter])

AND (United States [mh] OR "United States" OR USA OR "U.S.A." OR "U.S." OR Appalachia* OR "Great Lakes" OR mid-Atlantic-state* OR mid-Atlantic-region* OR middle-Atlantic-state* OR middle-Atlantic-region* OR "midwestern US" OR "midwestern U.S." OR midwestern-state* OR Midwest-state* OR "Midwest US" OR "Midwest U.S." OR "Great Plains" OR heartland OR "New England" OR "northeastern US" OR "northeastern U.S." OR northeastern-state* OR northeast-state* OR "northeast US" OR "northeast U.S." OR "Pacific Northwest" OR "northwest* US" OR "northwest* U.S." OR northwestern-state* OR northwest-state* OR Pacific-state* OR southeast-state* OR southeastern-state* OR southeast-region OR southeastern-region OR "southeast US" OR "southeastern US" OR "southeast U.S." OR "southeastern U.S." OR southern-state* OR "southern US" OR "southern U.S." OR southwest-state* OR southwestern-state* OR "southwest US" OR "southwestern US" OR "southwest U.S." OR "southwestern U.S." OR "deep South" OR "Black Belt" OR "Rust Belt" OR "District of Columbia" OR "Washington DC" OR Washington-D.C. OR Alabama OR (Birmingham [ad] AND AL [ad]) OR Huntsville [ad] OR (Montgomery [ad] AND AL [ad]) OR Alaska OR Anchorage [ad] OR Fairbanks [ad] OR Arizona OR Phoenix [ad] OR Tucson [ad] OR Flagstaff [ad] OR Arkansas OR "Little Rock" OR California OR "Los Angeles" OR "San Diego" OR "San Francisco" OR Berkeley [ad] OR Stanford [ad] OR Colorado OR Vail [ad] OR Denver [ad] OR Connecticut OR Farmington [ad] OR "New Haven" [ad] OR Hartford [ad] OR Delaware OR Wilmington [ad] OR Newark [ad] OR Florida OR Miami [ad] OR Gainesville OR Jacksonville OR Tampa OR Tallahassee OR Georgia OR Atlanta OR (Athens [ad] AND GA [ad]) OR (Augusta [ad] AND GA [ad]) OR Hawaii OR Hawai'i OR Honolulu OR Idaho OR Boise [ad] OR Illinois OR Chicago OR Urbana [ad] OR Evanston [ad] OR Indiana OR Indianapolis OR "West Lafayette" OR Iowa OR Kansas OR Wichita OR Kentucky OR Lexington [ad] OR Louisville [ad] OR Bardstown [ad] OR Louisiana OR "New Orleans" OR "Baton Rouge" OR Shreveport OR Maine OR Orono OR (Scarborough [ad] AND ME [ad]) OR Maryland OR Bethesda [ad] OR Baltimore [ad] OR Rockville [ad] OR "Johns Hopkins" OR Massachusetts OR Boston OR Harvard OR (Worcester [ad] AND MA [ad]) OR Burlington [ad] OR Michigan OR Detroit OR "Ann Arbor" OR "East Lansing" OR Minnesota OR Minneapolis OR Rochester OR "St Paul" [ad] OR "Saint Paul" [ad] OR Mississippi OR (Jackson [ad] AND MS [ad]) OR Missouri OR (Columbia [ad] AND MO [ad]) OR Montana OR Bozeman [ad] OR Missoula OR Nebraska OR Omaha [ad] OR Lincoln [ad] OR Nevada OR "Las Vegas" OR "New Hampshire" OR "New Jersey" OR "New Mexico" OR "New York" OR "North Carolina" OR "North Dakota" OR Ohio OR Columbus [ad] OR Cleveland [ad] OR Cincinnati OR Oklahoma OR Oregon OR Portland [ad] OR Pennsylvania OR Philadelphia OR Hershey [ad] OR "Rhode Island" OR Providence [ad] OR "South Carolina" OR "South Dakota" OR Tennessee OR Nashville OR Memphis OR Texas OR Houston OR Utah OR Vermont OR Virginia OR Richmond [ad] OR Washington [tiab] OR Washington [ad] OR Seattle OR "West Virginia" OR Wisconsin OR Wyoming)

Returns 793 (attempted restriction to the united states though still with some international results) (not eventually used)

***Used the search below

((rural health[MeSH Terms] OR rural health services[MeSH Terms] OR rural)

AND (General internal medicine [MeSH Terms] OR primary health care[MeSH Terms] OR Pediatrics [MeSH Terms]))

AND (("health policy"[MeSH Terms] OR "health* policy"[All Fields] OR "health care policy"[All Fields]))

AND (y_10[Filter])

AND (United States [mh] OR "United States" OR USA OR "U.S.A." OR "U.S." OR Appalachia* OR "Great Lakes" OR mid-Atlantic-state* OR mid-Atlantic-region* OR middle-Atlantic-state* OR middle-Atlantic-region* OR "midwestern US" OR "midwestern U.S." OR midwestern-state* OR Midwest-state* OR "Midwest US" OR "Midwest U.S." OR "Great Plains" OR heartland OR "New England" OR "northeastern US" OR "northeastern U.S." OR northeastern-state* OR northeast-state* OR "northeast US" OR "northeast U.S." OR "Pacific Northwest" OR "northwest* US" OR "northwest* U.S." OR northwestern-state* OR northwest-state* OR Pacific-state* OR southeast-state* OR southeastern-state* OR southeast-region OR southeastern-region OR "southeast US" OR "southeastern US" OR "southeast U.S." OR "southeastern U.S." OR southern-state* OR "southern US" OR "southern U.S." OR southwest-state* OR southwestern-state* OR "southwest US" OR "southwestern US" OR "southwest U.S." OR "southwestern U.S." OR "deep South" OR "Black Belt" OR "Rust Belt" OR "District of Columbia" OR "Washington DC" OR Washington-D.C. OR Alabama OR (Birmingham [ad] AND AL [ad]) OR Huntsville [ad] OR (Montgomery [ad] AND AL [ad]) OR Alaska OR Anchorage [ad] OR Fairbanks [ad] OR Arizona OR Phoenix [ad] OR Tucson [ad] OR Flagstaff [ad] OR Arkansas OR "Little Rock" OR California OR "Los Angeles" OR "San Diego" OR "San Francisco" OR Berkeley [ad] OR Stanford [ad] OR Colorado OR Vail [ad] OR Denver [ad] OR Connecticut OR Farmington [ad] OR "New Haven" [ad] OR Hartford [ad] OR Delaware OR Wilmington [ad] OR Newark [ad] OR Florida OR Miami [ad] OR Gainesville OR Jacksonville OR Tampa OR Tallahassee OR Georgia OR Atlanta OR (Athens [ad] AND GA [ad]) OR (Augusta [ad] AND GA [ad]) OR Hawaii OR Hawai'i OR Honolulu OR Idaho OR Boise [ad] OR Illinois OR Chicago OR Urbana [ad] OR Evanston [ad] OR Indiana OR Indianapolis OR "West Lafayette" OR Iowa OR Kansas OR Wichita OR Kentucky OR Lexington [ad] OR Louisville [ad] OR Bardstown [ad] OR Louisiana OR "New Orleans" OR "Baton Rouge" OR Shreveport OR Maine OR Orono OR (Scarborough [ad] AND ME [ad]) OR Maryland OR Bethesda [ad] OR Baltimore [ad] OR Rockville [ad] OR "Johns Hopkins" OR Massachusetts OR Boston OR Harvard OR (Worcester [ad] AND MA [ad]) OR Burlington [ad] OR Michigan OR Detroit OR "Ann Arbor" OR "East Lansing" OR Minnesota OR Minneapolis OR Rochester OR "St Paul" [ad] OR "Saint Paul" [ad] OR Mississippi OR (Jackson [ad] AND MS [ad]) OR Missouri OR (Columbia [ad] AND MO [ad]) OR Montana OR Bozeman [ad] OR Missoula OR Nebraska OR Omaha [ad] OR Lincoln [ad] OR Nevada OR "Las Vegas" OR "New Hampshire" OR "New Jersey" OR "New Mexico" OR "New York" OR "North Carolina" OR "North Dakota" OR Ohio OR Columbus [ad] OR Cleveland [ad] OR Cincinnati OR Oklahoma OR Oregon OR Portland [ad] OR Pennsylvania OR Philadelphia OR Hershey [ad] OR "Rhode Island" OR Providence [ad] OR "South Carolina" OR "South Dakota" OR Tennessee OR Nashville OR Memphis OR Texas OR Houston OR Utah OR Vermont OR Virginia OR Richmond [ad] OR Washington [tiab] OR Washington [ad] OR Seattle OR "West Virginia" OR Wisconsin OR Wyoming)
Filters: in the last 10 years

EMBASE

('rural health care'/exp OR 'rural health'/exp OR 'rural area'/exp OR 'rural population'/exp OR rural)

AND

('primary medical care'/exp OR 'primary health care'/exp OR 'primary care access'/exp OR 'family medicine'/exp OR 'general practice'/exp)

AND

('health care policy'/exp)

AND

('United States'/exp OR "United States" OR USA OR U.S.A. OR U.S. OR Appalachia* OR "Great Lakes" OR mid-Atlantic-state* OR mid-Atlantic-region* OR middle-Atlantic-state* OR middle-Atlantic-region* OR midwestern-US* OR midwestern-U.S* OR midwestern-state* OR Midwest-state* OR Midwest-US* OR Midwest-U.S* OR "Great Plains" OR heartland OR "New England" OR northeastern-US* OR northeastern-U.S* OR northeastern-state* OR northeast-state* OR northeast-US* OR northeast-U.S* OR "Pacific Northwest" OR northwestern-US* OR northwestern-U.S* OR northwest-U.S* OR northwest-US* OR northwestern-state* OR northwest-state* OR Pacific-state* OR southeast-state* OR southeastern-state* OR southeast-region OR southeastern-region OR southeast-US* OR

southeastern-US* OR southeast-U.S* OR southeastern-U.S* OR southern-state* OR southern-US* OR southern-U.S* OR southwest-state* OR southwestern-state* OR southwest-US* OR southwestern-US* OR southwest-U.S* OR southwestern-U.S* OR "deep South" OR "Black Belt" OR "Rust Belt" OR "District of Columbia" OR "Washington DC" OR Washington-D.C. OR Alabama OR (Birmingham AND AL):ad OR Huntsville:ad OR (Montgomery AND AL):ad OR Alaska OR Anchorage:ad OR Fairbanks:ad OR Arizona OR Phoenix:ad OR Tucson:ad OR Flagstaff:ad OR Arkansas OR "Little Rock" OR California OR "Los Angeles" OR "San Diego" OR "San Francisco" OR Berkeley:ad OR Stanford:ad OR Colorado OR Vail:ad OR Denver:ad OR Connecticut OR Farmington:ad OR "New Haven":ad OR Hartford:ad OR Delaware OR Wilmington:ad OR Newark:ad OR Florida OR Miami:ad OR Gainesville OR Jacksonville OR Tampa OR Tallahassee OR Georgia OR Atlanta OR (Athens AND GA):ad OR (Augusta AND GA):ad OR Hawaii OR Hawai`i OR Hawai'i OR Honolulu OR Idaho OR Boise:ad OR Illinois OR Chicago OR Urbana:ad OR Evanston:ad OR Indiana OR Indianapolis OR "West Lafayette" OR Iowa OR Kansas OR Wichita OR Kentucky OR Lexington:ad OR Louisville:ad OR Bardstown:ad OR Louisiana OR "New Orleans" OR "Baton Rouge" OR Shreveport OR Maine OR Orono OR (Scarborough AND ME):ad OR Maryland OR Bethesda:ad OR Baltimore:ad OR Rockville:ad OR "johns Hopkins" OR Massachusetts OR Boston OR Harvard OR (Worcester AND MA):ad OR Burlington:ad OR Michigan OR Detroit OR "Ann Arbor" OR "East Lansing" OR Minnesota OR Minneapolis OR Rochester OR "St Paul":ad OR "Saint Paul":ad OR Mississippi OR (Jackson AND MS):ad OR Missouri OR (Columbia AND MO):ad OR Montana OR Bozeman:ad OR Missoula OR Nebraska OR Omaha:ad OR Lincoln:ad OR Nevada OR "Las Vegas" OR "New Hampshire" OR "New Jersey" OR "New Mexico" OR "New York" OR "North Carolina" OR "North Dakota" OR Ohio OR Columbus:ad OR Cleveland:ad OR Cincinnati OR Oklahoma OR Oregon OR Portland:ad OR Pennsylvania OR Philadelphia OR Hershey:ad OR "Rhode Island" OR Providence:ad OR "South Carolina" OR "South Dakota" OR Tennessee OR Nashville OR Memphis OR Texas OR Houston OR Utah OR Vermont OR Virginia OR Richmond:ad OR Washington:ti,ab,kw OR Washington:ad OR Seattle OR "West Virginia" OR Wisconsin OR Wyoming)

Filtered by last 10 years returns 217 with a lot of international results which were removed in the spreadsheet

CINAHL

(MH "Rural Health" OR MH "Rural Health Services" OR MH "Rural Health Personnel" OR MH "Rural Health Centers" OR MH "Rural Nurses" OR MH "Rural Population" OR MH "Hospitals, Rural" OR MH "Rural Areas" OR MH "Rural Nursing"

OR rural)

AND

(MH "Primary Health Care" OR MH "Primary Care Nurse Practitioners" OR MH "Access to Primary Care")

AND

(MH "Health Policy+" OR MH "Health Policy Studies")

AND

((MH "United States+") OR ZZ(USA) OR "United States" OR USA OR U.S.A. OR U.S. OR Appalachia* OR "Great Lakes" OR mid-Atlantic-state* OR mid-Atlantic-region* OR middle-Atlantic-state* OR middle-Atlantic-region* OR midwestern-US* OR midwestern-U.S* OR midwestern-state* OR Midwest-state* OR Midwest-US* OR Midwest-U.S* OR "Great Plains" OR heartland OR "New England" OR northeastern-US* OR northeastern-U.S* OR northeastern-state* OR northeast-state* OR northeast-US* OR northeast-U.S* OR "Pacific Northwest" OR northwestern-US* OR northwestern-U.S* OR northwest-U.S* OR northwest-US* OR northwestern-state* OR northwest-state* OR Pacific-state* OR southeast-state* OR southeastern-state* OR southeast-region OR southeastern-region OR southeast-US* OR southeastern-US* OR southeast-U.S* OR southeastern-U.S* OR southern-state* OR southern-US* OR southern-U.S* OR southwest-state* OR southwestern-state* OR southwest-US* OR southwestern-US* OR southwest-U.S* OR southwestern-U.S* OR "deep South" OR "Black Belt" OR "Rust Belt" OR "District of Columbia" OR "Washington DC" OR Washington-D.C. OR Alabama OR Alaska OR Arizona OR Arkansas OR "Little Rock" OR California OR "Los Angeles" OR "San Diego" OR "San Francisco" OR Colorado OR Connecticut OR Delaware OR Florida OR Gainesville OR Jacksonville OR Tampa OR Tallahassee OR Georgia OR Atlanta OR Hawaii OR Hawai'i OR Hawai`i OR Honolulu OR Idaho OR Illinois OR Chicago OR Indiana OR Indianapolis OR "West Lafayette" OR Iowa OR Kansas OR Wichita OR Kentucky OR Louisiana OR "New Orleans" OR "Baton Rouge" OR Shreveport OR Maine OR Orono OR Maryland OR "johns Hopkins" OR Massachusetts OR Boston OR Harvard OR Michigan OR Detroit OR "Ann Arbor" OR "East Lansing" OR Minnesota OR Minneapolis OR Rochester OR Mississippi OR Missouri OR Montana OR Missoula OR Nebraska OR Nevada OR "Las Vegas"

OR "New Hampshire" OR "New Jersey" OR "New Mexico" OR "New York" OR "North Carolina" OR "North Dakota" OR Ohio OR Cincinnati OR Oklahoma OR Oregon OR Pennsylvania OR Philadelphia OR "Rhode Island" OR "South Carolina" OR "South Dakota" OR Tennessee OR Nashville OR Memphis OR Texas OR Houston OR Utah OR Vermont OR Virginia OR Seattle OR "West Virginia" OR Wisconsin OR Wyoming OR TI(Washington) OR AB(Washington) OR AF((Birmingham AND AL) OR Huntsville OR (Montgomery AND AL) OR Anchorage OR Fairbanks OR Phoenix OR Tucson OR Flagstaff OR Berkeley OR Stanford OR Vail OR Denver OR Farmington OR "New Haven" OR Hartford OR Wilmington OR Newark OR Miami OR (Athens AND GA) OR (Augusta AND GA) OR Boise OR Urbana OR Evanston OR Lexington OR Louisville OR Bardstown OR (Scarborough AND ME) OR Bethesda OR Baltimore OR Rockville OR (Worcester AND MA) OR Burlington OR "St Paul" OR "Saint Paul" OR (Jackson AND MS) OR (Columbia AND MO) OR Bozeman OR Omaha OR Lincoln OR Columbus OR Cleveland OR Portland OR Hershey OR Providence OR Richmond OR Washington))

Filtered by last 10 years; 36 results, a fair number of which were international and were removed in the spreadsheet

PubMed Rural Primary Care Title Abstract Search

("rural primary care"[Title/Abstract] OR ("family physician"[Title/Abstract] AND "rural"[Title/Abstract])) AND (y_10[Filter])

670 search results, including international results that were removed from the spreadsheet and 24 that were duplicated and were included in the policy search and were removed

EMBASE Rural Primary Care Title Abstract Search

("rural primary care"):ab,ti OR (("family physician" AND "rural"):ab,ti) AND [2015-2025]/py

Returned 240 results that did not overlap with PubMed Search; International were removed in the spreadsheet

CINAHL Rural Primary Care Title Abstract Search

XB "rural primary care" OR XB ("family physician" AND "rural")

And limited to the last 10 years returned 379 results that did not overlap with PubMed search; International results were removed in the spreadsheet

Appendix 3

Quantitative Methods and Data Sources

Data Sources and Methods

Our objective was to gain insight into the factors and trends affecting rural primary care and to inform areas for further research and policy development.

Using a combination of secondary datasets, we created measures of primary care capacity and compared them by area rurality. We calculated measures of primary care spending in both employer-sponsored insurance (ESI) and traditional Medicare at the state level and between rural and urban areas. We also calculated measures of primary care workforce, comprehensiveness, and the economic impact of the loss of primary care across rural and non-rural geographies. Small sample sizes limited our analysis for several states. Below is a summary of data files and key measures for analysis.

Data Sources

Health Care Cost Institute Health Care Employer-Sponsored Insurance Claims (HCCI ESI, 2018-2022)

Health Care Cost Institute Health Care Employer-Sponsored Insurance Claims (HCCI ESI, 2018-2022) cover one-third of the ESI population in the U.S. More than 1 billion employer-sponsored health insurance claims per year are ingested annually, representing more than 50 million members per year in all 50 states and DC from 2018-2022. These data — contributed by Aetna, Humana, and Blue Health Intelligence — consist of fully adjudicated, paid, de-identified medical and pharmacy claims, including patients' and clinicians' geography, clinician specialty and encrypted ID, service dates, diagnostic and procedure codes, prescription national drug codes, and allowed amounts — which are the actual amounts paid to health care clinicians by an insurer — plus any co-payments, deductibles, or co-insurance paid by the insured person.

Health Care Cost Institute Health Care Medicare Fee-for-Service Claims (HCCI Medicare FFS, 2018-2022)

Medicare Fee-for-Service Claims (Medicare FFS, 2018-2022) cover Medicare Parts A and B services rendered to beneficiaries by clinicians. This includes inpatient, outpatient and professional claims. This **does not** include pharmacy benefits (part D) or Medicare part C costs. The allowed amount on a claim was used to calculate primary care spending by the Medicare FFS system.

Workforce Analysis and Comprehensiveness

American Medical Association Physician Masterfile (AMA Masterfile, 2016-2022 and 2024) includes detailed information about a nearly complete listing of all physicians in the U.S. The AMA Masterfile was used for estimating primary care physicians (PCPs) and new physicians entering primary care each year.

Provider Enrollment, Chain, and Ownership System (PECOS, 2016-2022) is a list of all providers enrolled in Medicare, including physicians, nurse practitioners (NPs), and physician associates (PAs). The PECOS was used to estimate the number of NPs and PAs in primary care and this dataset was also used to create an alternative measure of physicians in primary care.

National Plan and Provider Enumeration System (NPPES, 2016-2022) is an administrative dataset that captures all providers and organizations with a National Provider Identifier (NPI). The NPPES was used, along with other data sources, to estimate NPs and PAs in primary care.

Centers for Medicare and Medicaid Services (CMS) Physician and Other Practitioners Public Use File (Medicare Part B PUF, 2016-2022) includes information on health care utilization, payments, and submitted charges organized by NPI, the Healthcare Common Procedure Coding System (HCPCS) code and place of service. The Medicare Part B PUF was used to estimate physicians, NPs and PAs working in ambulatory primary care settings. It was also used to create a measure of comprehensiveness by summarizing various codes used to bill for services in Medicare.

American Community Survey (ACS, 2016-2022) is a population-level survey that updates U.S. Census estimates of the U.S. population annually. The ACS summary files were used to obtain rural and other area populations from 2016 to 2022.

Rural-Urban Commuting Area codes (RUCA, 2010) are a classification scheme allowing for census track- or zip code-level delineation of rural and urban areas. Codes 1-3 are assigned to primarily metropolitan areas. A rural area is generally defined as a census tract or zip code with a RUCA of 4 through 10.

Economic Impact of Loss of Rural PCPs
The 2022 Medical Expenditure Panel Survey (MEPS) data were used to estimate the patient reported cost of care.

Measures

Primary care spending, ESI and Medicare FFS
In conjunction with HCCI, the Robert Graham Center analyzed data between 2018 and 2022 to determine primary care spend. For this analysis, we used HCCI's ESI claims and Medicare FFS claims between years 2018 and 2022. We limited our sample to enrollees with ESI and Medicare FFS (Parts A & B). The denominator is defined as the sum of allowed amounts among all facility, physician, and prescription claims of the eligible enrollees. We weighted spending and utilization using ESI weights to develop estimates representative of the national ESI population younger than 65. ESI weights were calculated using the ACS 2021 five-year estimates Public Use Microdata Sample.

Narrow and broad definitions were used to define primary care. In the narrow definition, primary care includes family medicine, general practice, geriatrics, internal medicine, pediatrics and osteopathy, excluding physicians with specialization that are not primary care (e.g., oncology). In the broad definition, primary care includes all the previously mentioned clinicians, as well as obstetricians/gynecologists, psychiatrists, psychologists, nurses, NPs, PAs, counselors, school nurses and social workers. Additionally, our analysis was restricted to services that were rendered in an ambulatory setting, defined as either in physician's offices or hospital outpatient departments. Services such as evaluation visits rendered by an internalist during the course of a hospitalization were excluded from our numerator.

We defined the percentage of primary care spending as the portion of ambulatory spending rendered by primary care providers relative to total medical and prescription spending for people with ESI and separately for those with traditional Medicare FFS.

For the nation and each state, a rural area was defined based on zip codes of providers with a RUCA of 4 through 10. Several states were excluded from different levels of analysis. Alabama (AL), Hawaii (HI), North Dakota (ND), Montana (MT), Wyoming (WY) and New Mexico (NM) were excluded from the state-level analysis due to small samples. These same states, along with Washington D.C., Rhode Island (RI), New Jersey (NJ), Florida (FL), Connecticut (CT), Massachusetts (MA) and Maryland (MD), were excluded from the state-rural level analysis due to having fewer than 15% rural zip codes. Medicare FFS reported data for all states, but excluded the previous states from the state-level rural analysis.

Identification of PCPs

For each year from 2016 to 2022, we started with data from the AMA Masterfile to identify PCPs in direct patient care, excluding residents and retirees. We also adjusted status based on age to allow for the likelihood that physicians listed as being in direct contact with patients have retired. Primary care includes physicians in family medicine, general practice, geriatrics, general internal medicine, pediatrics, and combined internal medicine and pediatrics.

Physicians identified as primary care in the AMA Masterfile were reclassified as non-primary care if they billed 90% or more of their evaluation and management services from a hospital or an emergency departments (ED) rather than an office setting based on Medicare Part B PUF.

Identification of primary care nurse practitioners (PCNPs) and primary care physician associates (PCPAs)

Since there is no national workforce database comparable to the AMA Masterfile for NPs and PAs, we used the PECOS in conjunction with the NPPES data and Medicare Part B PUF to identify NPs and PAs working in primary care. First, using the PECOS data, NPs and PAs in primary care were identified based on the relative share of PCPs in the same practice with the assumption that the characteristics of the physicians in a practice can be used to infer the likely specialty of NPs and PAs in the same practice. NPs and PAs working in rural health clinics and federally qualified health centers were reclassified as primary care, while those working primarily with social workers and psychologists or working in retail clinics, critical access hospitals, and skilled nursing facilities were reclassified as non-primary care.

Second, the Medicare Part B PUF was used to identify NPs and PAs in non-primary care settings such as hospitals, EDs, nursing homes, assisted living facilities, home health and behavioral health facilities based on billing codes.

Third, in cases in which NPs and PAs were not in a practice with physicians, we used the *x-y* coordinates of their NPPES address to determine whether they were colocated with physicians.

Link county-level rurality and population

Census tracts and zip codes are building blocks for RUCA codes instead of counties. Using a geographic crosswalk, we defined county-level rural and urban areas. We linked the county-level rurality data and population data with the geocoded PCPs, PCNPs and PCPAs files. For the nation and each state, we then determined the total population and the number of PCPs, PCNPs, PCPAs and total primary care clinicians (PCCs) in rural vs. urban areas. With these totals, we then calculated the number of PCPs, PCNPs, PCPAs, and total PCCs per 50,000 people in rural vs. urban areas.

Percentage of primary care clinicians

For this measure, we identified NPs and PAs working in primary care using the same method and the same data described above. As for physicians in primary care, instead of using the AMA Masterfile, we used the PECOS in conjunction with the Medicare Part B PUF to create an alternative measure of physicians in primary care from 2016 to 2022. PCPs were identified using the provider type description measure that includes information about the provider enrollment and enrollment specialty type description in the PECOS data. Primary care specialties included family medicine, family practice, general practice, internal medicine, and pediatric medicine. All other specialties were considered non–primary care.

In calculating the percentage of PCPs, PCNPs and PCPAs, we used the total number of clinicians (each clinician type and combined) aggregated to either the state or national level by county-level rurality as the denominators. The numerators represent those clinicians working in primary care.

Percentage of new physicians entering primary care

For this measure, we used the 2024 AMA Historical Residency File, the 2024 AMA Masterfile, and the 2016-2022 Medicare Part B PUF data. The Historical Residency File allowed us to identify the end years of PCPs' training as a proxy for when they entered the workforce (end year + 1). We examined trends using end years from 2015 to 2021. Because we used the 2024 AMA data instead of 2022 data, we are confident that nearly all had completed their training by 2022. Primary care includes physicians in family medicine, general practice, geriatrics, internal medicine, pediatrics, and combined internal medicine and pediatrics. The Medicare Part B PUF data were used to identify hospitalists with a primary care specialty and reclassify them as non-primary care.

In calculating the percentage of new physicians entering primary care by county-level rurality, we used as the denominator the number of physicians who completed their training in primary care each year and as the numerator, the number of new non-hospitalist PCPs by county-level rurality.

Comprehensiveness

We first created a crosswalk between BETOS codes (Appendix, Table A3) and CPT/HCPCS codes. We summed up the total number of different BETOS evaluation and management, procedural and test services provided by a PCC that accounted for 90% of the total number of services they provided to Medicare beneficiaries in each year. The score represents a clinician's involvement in care of patient's conditions measured as a summative scale based on the number of services provided by the primary care clinician. Possible BETOS scores for comprehensiveness range from 1 to 37. We examined the difference in providing comprehensive care between rural and urban primary care clinicians.

The Economic Impact of a Loss of Rural PCP

Using the 2022 MEPS data, we estimated the economic impact of losing a rural PCP. The approach is very limited only from a patient perspective, i.e., how much more they must spend on EDs and/or hospitals due to a loss of rural PCP.

We first calculated the average number of PCP (including ED and hospital) visits and per visit expenses (see Table A4). All measures were adjusted by rural utilization and costs difference.

TABLE A3

Berenson-Eggers Type of Service Codes for Comprehensiveness

Evaluation and Management
M1A = Office visits - new
M1B = Office visits - established
M2A = Hospital visit - initial
M2B = Hospital visit - subsequent
M2C = Hospital visit - critical care
M3 = Emergency room visit
M4A = Home visit
M4B = Nursing home visit
M5D = Specialist - other
Procedures
P1G = Major procedure - other
P2F = Major procedure, cardiovascular - other
P3D = Major procedure, orthopedic - other
P4E = Eye procedure - other
P5A = Ambulatory procedures - skin
P5B = Ambulatory procedures - musculoskeletal
P5E = Ambulatory procedures - other
P6A = Minor procedures - skin
P6B = Minor procedures - musculoskeletal
P6C = Minor procedures - other (Medicare fee schedule)
P6D = Minor procedures - other (non-Medicare fee schedule)
P7B = Oncology - other
P8B = Endoscopy - upper gastrointestinal
P8C = Endoscopy - sigmoidoscopy
P8D = Endoscopy - colonoscopy
P8I = Endoscopy - other
Tests
T1A = Lab tests - routine venipuncture (non-Medicare fee schedule)
T1B = Lab tests - automated general profiles
T1C = Lab tests - urinalysis
T1D = Lab tests - blood counts
T1E = Lab tests - glucose
T1F = Lab tests - bacterial cultures
T1G = Lab tests - other (Medicare fee schedule)
T1H = Lab tests - other (non-Medicare fee schedule)
T2A = Other tests - electrocardiograms
T2B = Other tests - cardiovascular stress tests
T2C = Other tests - EKG monitoring
T2D = Other tests - other

TABLE A4

Health Care Utilization and Expenses in Rural Areas, 2022

		MEPS, 2022	Rural Multiplier	MEPS, 2022 (Rural Adj.)
A	PC visits, mean	2.53	0.85	2.15
	PC expenses, per visit	$224	1.02	$228
B	ED visits, mean	0.18	0.85	0.15
	ED expenses, per visit	$1,233	1.02	$1,258
C	ACSC hospital visits, mean	0.32	0.85	0.27
	ACSC hospital expenses, per visit	$9,024	1.02	$9,204

Data: Medical Expenditure Panel Survey (MEPS), 2022

Notes: 1. Ambulatory care sensitive conditions (ACSCs) are health conditions that can be effectively managed in an outpatient setting (e.g., doctor's office, clinic) to prevent unnecessary hospitalizations. 2. Rurality adjustment: Rural areas often experience lower health care utilization compared to urban areas (0.85:1). While total health care expenditures may be slightly higher for the rural population, this is not a consistent finding (1.02:1).

A = [Avg. no. of PCP visits × per PCP visit expenses] per patient per year

B = [Avg. no. of ED visits × Per ED visit expenses] per patient per year

C = [Avg. no. of hospital visits × per hospital visit expenses] per patient per year

Thus, Economic Loss = Δ [A – [(B + C) × Multiplier]], for example, A – [(B + C) × 1.5], if 50% of total ED/hospital visits were caused by the loss of a rural PCP.

Appendix 4

State PC Spend, Rural vs. Urban

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2018	AK	Rural	7.46%	3.02%	ESI
2018	AK	Urban	3.03%	1.57%	ESI
2018	AR	Rural	11.29%	6.84%	ESI
2018	AR	Urban	15.61%	10.77%	ESI
2018	AZ	Rural	7.47%	4.34%	ESI
2018	AZ	Urban	6.58%	4.08%	ESI
2018	CA	Rural	7.21%	5.32%	ESI
2018	CA	Urban	6.42%	5.19%	ESI
2018	CO	Rural	7.47%	4.68%	ESI
2018	CO	Urban	7.18%	4.40%	ESI
2018	GA	Rural	7.89%	5.63%	ESI
2018	GA	Urban	7.18%	5.60%	ESI
2018	IA	Rural	12.08%	6.41%	ESI
2018	IA	Urban	12.93%	7.37%	ESI
2018	ID	Rural	10.97%	4.18%	ESI
2018	ID	Urban	10.94%	4.54%	ESI
2018	IL	Rural	9.53%	4.82%	ESI
2018	IL	Urban	8.44%	4.57%	ESI
2018	IN	Rural	5.88%	3.35%	ESI
2018	IN	Urban	6.90%	4.00%	ESI
2018	KS	Rural	7.83%	4.81%	ESI
2018	KS	Urban	10.42%	6.00%	ESI
2018	KY	Rural	7.99%	4.34%	ESI
2018	KY	Urban	8.08%	4.17%	ESI
2018	LA	Rural	7.98%	4.98%	ESI
2018	LA	Urban	11.09%	7.64%	ESI
2018	ME	Rural	7.76%	5.10%	ESI

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2018	ME	Urban	9.19%	6.00%	ESI
2018	MI	Rural	9.69%	5.85%	ESI
2018	MI	Urban	10.84%	6.00%	ESI
2018	MN	Rural	12.24%	5.97%	ESI
2018	MN	Urban	16.09%	8.37%	ESI
2018	MO	Rural	6.77%	4.26%	ESI
2018	MO	Urban	8.07%	5.64%	ESI
2018	MS	Rural	9.64%	4.36%	ESI
2018	MS	Urban	10.30%	4.50%	ESI
2018	NC	Rural	9.97%	5.61%	ESI
2018	NC	Urban	9.88%	5.56%	ESI
2018	NE	Rural	11.98%	6.74%	ESI
2018	NE	Urban	10.49%	5.61%	ESI
2018	NH	Rural	9.76%	5.50%	ESI
2018	NH	Urban	6.96%	3.42%	ESI
2018	NV	Rural	6.56%	3.89%	ESI
2018	NV	Urban	6.23%	4.24%	ESI
2018	NY	Rural	8.38%	4.60%	ESI
2018	NY	Urban	9.49%	5.00%	ESI
2018	OH	Rural	6.20%	3.66%	ESI
2018	OH	Urban	7.13%	4.12%	ESI
2018	OK	Rural	7.81%	4.30%	ESI
2018	OK	Urban	11.07%	6.06%	ESI
2018	OR	Rural	11.31%	5.75%	ESI
2018	OR	Urban	10.35%	5.12%	ESI
2018	PA	Rural	7.05%	4.71%	ESI
2018	PA	Urban	8.89%	6.56%	ESI
2018	SC	Rural	10.37%	6.06%	ESI
2018	SC	Urban	10.53%	6.68%	ESI
2018	SD	Rural	8.55%	4.28%	ESI
2018	SD	Urban	14.15%	6.93%	ESI
2018	TN	Rural	8.94%	5.13%	ESI
2018	TN	Urban	11.89%	6.33%	ESI
2018	TX	Rural	7.44%	5.05%	ESI
2018	TX	Urban	9.99%	7.17%	ESI
2018	UT	Rural	7.82%	4.60%	ESI

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2018	UT	Urban	8.27%	5.98%	ESI
2018	VA	Rural	8.60%	5.98%	ESI
2018	VA	Urban	8.82%	7.07%	ESI
2018	VT	Rural	8.74%	3.46%	ESI
2018	VT	Urban	8.65%	3.45%	ESI
2018	WA	Rural	9.59%	4.92%	ESI
2018	WA	Urban	9.92%	5.02%	ESI
2018	WI	Rural	10.38%	6.19%	ESI
2018	WI	Urban	12.29%	6.80%	ESI
2018	WV	Rural	6.44%	3.79%	ESI
2018	WV	Urban	8.51%	5.31%	ESI
2019	AK	Rural	7.25%	2.73%	ESI
2019	AK	Urban	2.60%	1.23%	ESI
2019	AR	Rural	10.87%	6.21%	ESI
2019	AR	Urban	14.96%	9.92%	ESI
2019	AZ	Rural	7.60%	4.20%	ESI
2019	AZ	Urban	6.93%	4.21%	ESI
2019	CA	Rural	8.48%	6.20%	ESI
2019	CA	Urban	10.75%	8.30%	ESI
2019	CO	Rural	7.33%	4.42%	ESI
2019	CO	Urban	6.74%	4.10%	ESI
2019	GA	Rural	7.87%	5.55%	ESI
2019	GA	Urban	7.13%	5.33%	ESI
2019	IA	Rural	12.34%	6.43%	ESI
2019	IA	Urban	12.88%	7.11%	ESI
2019	ID	Rural	10.86%	3.81%	ESI
2019	ID	Urban	10.33%	4.15%	ESI
2019	IL	Rural	9.54%	4.65%	ESI
2019	IL	Urban	8.44%	4.39%	ESI
2019	IN	Rural	6.10%	3.37%	ESI
2019	IN	Urban	7.23%	3.94%	ESI
2019	KS	Rural	7.52%	4.54%	ESI
2019	KS	Urban	10.08%	5.55%	ESI
2019	KY	Rural	7.90%	4.18%	ESI
2019	KY	Urban	7.75%	3.90%	ESI
2019	LA	Rural	7.97%	4.81%	ESI

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2019	LA	Urban	10.94%	7.26%	ESI
2019	ME	Rural	7.79%	4.91%	ESI
2019	ME	Urban	9.05%	5.73%	ESI
2019	MI	Rural	9.91%	5.76%	ESI
2019	MI	Urban	10.85%	5.79%	ESI
2019	MN	Rural	12.08%	5.73%	ESI
2019	MN	Urban	15.81%	8.14%	ESI
2019	MO	Rural	6.79%	4.17%	ESI
2019	MO	Urban	7.61%	5.07%	ESI
2019	MS	Rural	9.57%	4.18%	ESI
2019	MS	Urban	10.86%	4.33%	ESI
2019	NC	Rural	9.84%	5.13%	ESI
2019	NC	Urban	9.59%	4.97%	ESI
2019	NE	Rural	11.86%	6.46%	ESI
2019	NE	Urban	10.27%	5.44%	ESI
2019	NH	Rural	9.32%	5.12%	ESI
2019	NH	Urban	7.85%	4.80%	ESI
2019	NV	Rural	6.39%	3.75%	ESI
2019	NV	Urban	6.32%	4.06%	ESI
2019	NY	Rural	8.53%	4.45%	ESI
2019	NY	Urban	9.38%	4.82%	ESI
2019	OH	Rural	6.21%	3.52%	ESI
2019	OH	Urban	7.32%	4.08%	ESI
2019	OK	Rural	7.76%	4.12%	ESI
2019	OK	Urban	11.06%	5.87%	ESI
2019	OR	Rural	11.28%	5.46%	ESI
2019	OR	Urban	9.94%	4.46%	ESI
2019	PA	Rural	6.58%	4.19%	ESI
2019	PA	Urban	8.68%	6.34%	ESI
2019	SC	Rural	11.37%	6.31%	ESI
2019	SC	Urban	12.08%	7.71%	ESI
2019	SD	Rural	8.87%	4.41%	ESI
2019	SD	Urban	15.57%	7.40%	ESI
2019	TN	Rural	8.79%	4.69%	ESI
2019	TN	Urban	11.41%	5.21%	ESI
2019	TX	Rural	7.28%	4.74%	ESI

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2019	TX	Urban	9.81%	6.86%	ESI
2019	UT	Rural	8.08%	4.37%	ESI
2019	UT	Urban	8.22%	5.41%	ESI
2019	VA	Rural	8.71%	5.82%	ESI
2019	VA	Urban	8.60%	6.85%	ESI
2019	VT	Rural	14.84%	10.47%	ESI
2019	VT	Urban	8.09%	4.71%	ESI
2019	WA	Rural	10.00%	4.94%	ESI
2019	WA	Urban	10.16%	4.93%	ESI
2019	WI	Rural	10.31%	5.99%	ESI
2019	WI	Urban	12.30%	6.54%	ESI
2019	WV	Rural	6.34%	3.60%	ESI
2019	WV	Urban	8.47%	5.18%	ESI
2020	AK	Rural	6.38%	2.38%	ESI
2020	AK	Urban	2.08%	0.92%	ESI
2020	AR	Rural	9.70%	5.46%	ESI
2020	AR	Urban	13.20%	8.28%	ESI
2020	AZ	Rural	6.69%	3.62%	ESI
2020	AZ	Urban	6.38%	3.66%	ESI
2020	CA	Rural	7.08%	4.90%	ESI
2020	CA	Urban	9.69%	7.13%	ESI
2020	CO	Rural	6.89%	3.97%	ESI
2020	CO	Urban	6.49%	3.85%	ESI
2020	GA	Rural	7.45%	5.25%	ESI
2020	GA	Urban	6.73%	5.08%	ESI
2020	IA	Rural	11.67%	6.05%	ESI
2020	IA	Urban	11.99%	6.38%	ESI
2020	ID	Rural	9.81%	3.46%	ESI
2020	ID	Urban	9.87%	4.02%	ESI
2020	IL	Rural	9.49%	4.44%	ESI
2020	IL	Urban	8.05%	4.03%	ESI
2020	IN	Rural	5.55%	2.96%	ESI
2020	IN	Urban	6.39%	3.34%	ESI
2020	KS	Rural	6.90%	4.17%	ESI
2020	KS	Urban	9.53%	5.32%	ESI
2020	KY	Rural	7.05%	3.72%	ESI

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2020	KY	Urban	6.99%	3.44%	ESI
2020	LA	Rural	7.33%	4.19%	ESI
2020	LA	Urban	9.81%	6.33%	ESI
2020	ME	Rural	7.05%	4.37%	ESI
2020	ME	Urban	7.20%	4.59%	ESI
2020	MI	Rural	9.44%	5.23%	ESI
2020	MI	Urban	9.82%	5.18%	ESI
2020	MN	Rural	11.30%	5.31%	ESI
2020	MN	Urban	15.20%	7.63%	ESI
2020	MO	Rural	6.45%	4.00%	ESI
2020	MO	Urban	6.82%	4.54%	ESI
2020	MS	Rural	9.52%	3.90%	ESI
2020	MS	Urban	10.54%	3.95%	ESI
2020	NC	Rural	8.58%	4.46%	ESI
2020	NC	Urban	9.04%	4.54%	ESI
2020	NE	Rural	10.45%	5.71%	ESI
2020	NE	Urban	9.02%	4.64%	ESI
2020	NH	Rural	8.53%	4.64%	ESI
2020	NH	Urban	6.53%	3.88%	ESI
2020	NV	Rural	5.99%	3.39%	ESI
2020	NV	Urban	6.28%	3.84%	ESI
2020	NY	Rural	7.51%	4.17%	ESI
2020	NY	Urban	8.06%	4.16%	ESI
2020	OH	Rural	5.63%	3.22%	ESI
2020	OH	Urban	6.77%	3.64%	ESI
2020	OK	Rural	7.48%	3.74%	ESI
2020	OK	Urban	10.89%	5.61%	ESI
2020	OR	Rural	10.49%	4.96%	ESI
2020	OR	Urban	9.34%	4.06%	ESI
2020	PA	Rural	5.50%	3.63%	ESI
2020	PA	Urban	7.25%	5.48%	ESI
2020	SC	Rural	11.20%	5.84%	ESI
2020	SC	Urban	12.02%	7.14%	ESI
2020	SD	Rural	8.67%	4.26%	ESI
2020	SD	Urban	14.38%	6.71%	ESI
2020	TN	Rural	8.23%	4.26%	ESI

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2020	TN	Urban	11.56%	5.58%	ESI
2020	TX	Rural	6.88%	4.28%	ESI
2020	TX	Urban	9.06%	6.24%	ESI
2020	UT	Rural	7.97%	4.05%	ESI
2020	UT	Urban	7.44%	4.57%	ESI
2020	VA	Rural	7.70%	4.98%	ESI
2020	VA	Urban	6.93%	5.05%	ESI
2020	VT	Rural	11.10%	8.19%	ESI
2020	VT	Urban	6.04%	3.84%	ESI
2020	WA	Rural	9.20%	4.41%	ESI
2020	WA	Urban	8.81%	4.25%	ESI
2020	WI	Rural	9.85%	5.58%	ESI
2020	WI	Urban	11.70%	6.13%	ESI
2020	WV	Rural	5.72%	3.20%	ESI
2020	WV	Urban	7.60%	4.71%	ESI
2021	AK	Rural	6.44%	2.43%	ESI
2021	AK	Urban	2.05%	1.14%	ESI
2021	AR	Rural	10.10%	5.51%	ESI
2021	AR	Urban	14.42%	8.75%	ESI
2021	AZ	Rural	6.99%	3.37%	ESI
2021	AZ	Urban	6.39%	3.56%	ESI
2021	CA	Rural	7.17%	4.98%	ESI
2021	CA	Urban	9.91%	7.21%	ESI
2021	CO	Rural	6.93%	3.80%	ESI
2021	CO	Urban	7.20%	3.80%	ESI
2021	GA	Rural	7.59%	5.28%	ESI
2021	GA	Urban	6.94%	5.24%	ESI
2021	IA	Rural	12.06%	6.10%	ESI
2021	IA	Urban	12.78%	6.30%	ESI
2021	ID	Rural	9.84%	3.42%	ESI
2021	ID	Urban	10.31%	3.98%	ESI
2021	IL	Rural	9.72%	4.31%	ESI
2021	IL	Urban	8.43%	4.26%	ESI
2021	IN	Rural	5.71%	2.83%	ESI
2021	IN	Urban	6.45%	3.26%	ESI
2021	KS	Rural	7.02%	3.93%	ESI

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2021	KS	Urban	9.61%	5.14%	ESI
2021	KY	Rural	7.12%	3.66%	ESI
2021	KY	Urban	7.34%	3.46%	ESI
2021	LA	Rural	7.61%	4.05%	ESI
2021	LA	Urban	8.79%	5.13%	ESI
2021	ME	Rural	7.26%	4.64%	ESI
2021	ME	Urban	7.08%	4.38%	ESI
2021	MI	Rural	9.90%	5.16%	ESI
2021	MI	Urban	9.76%	5.02%	ESI
2021	MN	Rural	11.47%	5.43%	ESI
2021	MN	Urban	15.49%	7.54%	ESI
2021	MO	Rural	6.25%	3.69%	ESI
2021	MO	Urban	6.59%	4.20%	ESI
2021	MS	Rural	10.23%	4.08%	ESI
2021	MS	Urban	11.19%	4.01%	ESI
2021	NC	Rural	8.88%	4.51%	ESI
2021	NC	Urban	9.19%	4.50%	ESI
2021	NE	Rural	10.66%	5.49%	ESI
2021	NE	Urban	9.31%	4.58%	ESI
2021	NH	Rural	8.31%	4.44%	ESI
2021	NH	Urban	6.85%	3.98%	ESI
2021	NV	Rural	6.14%	3.27%	ESI
2021	NV	Urban	6.75%	4.30%	ESI
2021	NY	Rural	7.60%	4.12%	ESI
2021	NY	Urban	7.98%	4.07%	ESI
2021	OH	Rural	5.86%	3.15%	ESI
2021	OH	Urban	6.80%	3.50%	ESI
2021	OK	Rural	7.77%	3.65%	ESI
2021	OK	Urban	11.32%	5.43%	ESI
2021	OR	Rural	10.60%	4.96%	ESI
2021	OR	Urban	9.12%	3.87%	ESI
2021	PA	Rural	6.16%	3.66%	ESI
2021	PA	Urban	8.00%	5.18%	ESI
2021	SC	Rural	11.50%	6.09%	ESI
2021	SC	Urban	12.18%	6.81%	ESI
2021	SD	Rural	9.14%	4.06%	ESI

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2021	SD	Urban	15.73%	6.84%	ESI
2021	TN	Rural	8.38%	4.14%	ESI
2021	TN	Urban	12.15%	6.20%	ESI
2021	TX	Rural	7.25%	4.37%	ESI
2021	TX	Urban	10.10%	6.48%	ESI
2021	UT	Rural	7.94%	3.78%	ESI
2021	UT	Urban	7.28%	4.19%	ESI
2021	VA	Rural	7.92%	4.83%	ESI
2021	VA	Urban	7.24%	4.62%	ESI
2021	VT	Rural	11.71%	9.07%	ESI
2021	VT	Urban	5.84%	3.82%	ESI
2021	WA	Rural	8.30%	4.15%	ESI
2021	WA	Urban	8.14%	3.93%	ESI
2021	WI	Rural	9.79%	5.44%	ESI
2021	WI	Urban	11.48%	5.81%	ESI
2021	WV	Rural	6.13%	2.97%	ESI
2021	WV	Urban	8.73%	4.76%	ESI
2022	AK	Rural	6.22%	2.16%	ESI
2022	AK	Urban	2.21%	1.11%	ESI
2022	AR	Rural	10.41%	5.28%	ESI
2022	AR	Urban	13.69%	8.06%	ESI
2022	AZ	Rural	7.20%	3.37%	ESI
2022	AZ	Urban	6.40%	3.31%	ESI
2022	CA	Rural	7.38%	5.13%	ESI
2022	CA	Urban	9.52%	7.04%	ESI
2022	CO	Rural	7.32%	3.85%	ESI
2022	CO	Urban	6.66%	3.61%	ESI
2022	GA	Rural	7.69%	5.37%	ESI
2022	GA	Urban	7.61%	5.76%	ESI
2022	IA	Rural	12.36%	5.95%	ESI
2022	IA	Urban	12.83%	5.88%	ESI
2022	ID	Rural	10.26%	3.21%	ESI
2022	ID	Urban	10.52%	3.68%	ESI
2022	IL	Rural	9.95%	4.29%	ESI
2022	IL	Urban	8.27%	3.85%	ESI
2022	IN	Rural	6.04%	3.01%	ESI

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2022	IN	Urban	6.57%	3.28%	ESI
2022	KS	Rural	7.37%	3.85%	ESI
2022	KS	Urban	9.60%	4.82%	ESI
2022	KY	Rural	7.86%	3.90%	ESI
2022	KY	Urban	7.20%	3.25%	ESI
2022	LA	Rural	7.64%	4.04%	ESI
2022	LA	Urban	8.37%	4.83%	ESI
2022	ME	Rural	7.51%	4.60%	ESI
2022	ME	Urban	7.65%	4.62%	ESI
2022	MI	Rural	10.60%	5.42%	ESI
2022	MI	Urban	10.31%	4.98%	ESI
2022	MN	Rural	11.80%	5.36%	ESI
2022	MN	Urban	15.70%	7.38%	ESI
2022	MO	Rural	6.76%	3.77%	ESI
2022	MO	Urban	6.82%	4.17%	ESI
2022	MS	Rural	10.18%	3.92%	ESI
2022	MS	Urban	10.84%	3.65%	ESI
2022	NC	Rural	9.59%	4.89%	ESI
2022	NC	Urban	9.69%	4.74%	ESI
2022	NE	Rural	11.68%	5.69%	ESI
2022	NE	Urban	10.53%	5.51%	ESI
2022	NH	Rural	8.56%	4.48%	ESI
2022	NH	Urban	7.47%	4.33%	ESI
2022	NV	Rural	6.56%	3.32%	ESI
2022	NV	Urban	6.38%	3.70%	ESI
2022	NY	Rural	7.75%	4.19%	ESI
2022	NY	Urban	8.06%	3.94%	ESI
2022	OH	Rural	6.30%	3.26%	ESI
2022	OH	Urban	6.98%	3.48%	ESI
2022	OK	Rural	7.99%	3.52%	ESI
2022	OK	Urban	10.28%	4.52%	ESI
2022	OR	Rural	10.17%	4.65%	ESI
2022	OR	Urban	9.39%	3.78%	ESI
2022	PA	Rural	6.95%	4.18%	ESI
2022	PA	Urban	8.11%	4.70%	ESI
2022	SC	Rural	10.92%	5.58%	ESI

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2022	SC	Urban	11.74%	6.21%	ESI
2022	SD	Rural	9.32%	3.70%	ESI
2022	SD	Urban	15.48%	6.62%	ESI
2022	TN	Rural	8.90%	4.26%	ESI
2022	TN	Urban	12.06%	5.91%	ESI
2022	TX	Rural	7.27%	4.28%	ESI
2022	TX	Urban	10.13%	6.44%	ESI
2022	UT	Rural	7.79%	3.69%	ESI
2022	UT	Urban	7.10%	3.92%	ESI
2022	VA	Rural	8.32%	4.90%	ESI
2022	VA	Urban	7.88%	4.62%	ESI
2022	VT	Rural	13.05%	9.18%	ESI
2022	VT	Urban	6.57%	3.79%	ESI
2022	WA	Rural	8.14%	4.03%	ESI
2022	WA	Urban	7.94%	3.50%	ESI
2022	WI	Rural	9.77%	5.29%	ESI
2022	WI	Urban	11.50%	5.56%	ESI
2022	WV	Rural	6.32%	2.94%	ESI
2022	WV	Urban	8.50%	4.27%	ESI
2012	AK	Rural	5.12%	2.60%	ESI
2012	AK	Urban	2.10%	1.33%	ESI
2012	AR	Rural	10.41%	7.64%	ESI
2012	AR	Urban	16.80%	14.49%	ESI
2012	AZ	Rural	4.96%	3.52%	ESI
2012	AZ	Urban	5.97%	4.65%	ESI
2012	CA	Rural	4.00%	3.12%	ESI
2012	CA	Urban	5.30%	4.33%	ESI
2012	CO	Rural	5.48%	4.02%	ESI
2012	CO	Urban	5.36%	3.79%	ESI
2012	GA	Rural	7.03%	5.23%	ESI
2012	GA	Urban	8.28%	6.69%	ESI
2012	IA	Rural	10.11%	7.05%	ESI
2012	IA	Urban	11.92%	9.01%	ESI
2012	ID	Rural	9.55%	4.89%	ESI
2012	ID	Urban	10.29%	5.96%	ESI
2012	IL	Rural	8.43%	5.20%	ESI

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2012	IL	Urban	9.08%	6.43%	ESI
2012	IN	Rural	5.57%	3.82%	ESI
2012	IN	Urban	8.37%	6.55%	ESI
2012	KS	Rural	7.99%	5.42%	ESI
2012	KS	Urban	11.18%	7.60%	ESI
2012	KY	Rural	7.94%	5.07%	ESI
2012	KY	Urban	11.01%	8.01%	ESI
2012	LA	Rural	6.27%	4.36%	ESI
2012	LA	Urban	10.75%	8.98%	ESI
2012	ME	Rural	3.21%	2.12%	ESI
2012	ME	Urban	3.62%	2.54%	ESI
2012	MI	Rural	9.04%	6.26%	ESI
2012	MI	Urban	11.07%	7.81%	ESI
2012	MN	Rural	8.47%	5.79%	ESI
2012	MN	Urban	10.25%	8.66%	ESI
2012	MO	Rural	5.29%	3.73%	ESI
2012	MO	Urban	8.49%	6.92%	ESI
2012	MS	Rural	8.75%	5.15%	ESI
2012	MS	Urban	9.35%	6.23%	ESI
2012	NC	Rural	9.52%	6.80%	ESI
2012	NC	Urban	10.71%	8.08%	ESI
2012	NE	Rural	9.38%	5.81%	ESI
2012	NE	Urban	9.62%	6.51%	ESI
2012	NH	Rural	8.20%	5.20%	ESI
2012	NH	Urban	5.29%	3.21%	ESI
2012	NV	Rural	4.40%	3.17%	ESI
2012	NV	Urban	2.83%	2.25%	ESI
2012	NY	Rural	5.11%	3.16%	ESI
2012	NY	Urban	8.81%	5.93%	ESI
2012	OH	Rural	4.41%	3.11%	ESI
2012	OH	Urban	5.76%	4.34%	ESI
2012	OK	Rural	6.34%	4.48%	ESI
2012	OK	Urban	10.02%	7.60%	ESI
2012	OR	Rural	8.06%	5.12%	ESI
2012	OR	Urban	11.13%	7.04%	ESI
2012	PA	Rural	6.30%	4.46%	ESI

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2012	PA	Urban	10.17%	8.18%	ESI
2012	SC	Rural	8.37%	6.16%	ESI
2012	SC	Urban	8.46%	6.91%	ESI
2012	SD	Rural	5.94%	N/A	ESI
2012	SD	Urban	14.73%	10.39%	ESI
2012	TN	Rural	8.69%	6.14%	ESI
2012	TN	Urban	13.64%	9.73%	ESI
2012	TX	Rural	6.77%	5.12%	ESI
2012	TX	Urban	12.08%	9.76%	ESI
2012	UT	Rural	4.91%	3.64%	ESI
2012	UT	Urban	8.34%	7.01%	ESI
2012	VA	Rural	5.55%	4.35%	ESI
2012	VA	Urban	9.72%	8.21%	ESI
2012	WA	Rural	8.69%	5.65%	ESI
2012	WA	Urban	11.10%	7.83%	ESI
2012	WI	Rural	9.28%	6.52%	ESI
2012	WI	Urban	11.21%	7.90%	ESI
2012	WV	Rural	6.76%	4.83%	ESI
2012	WV	Urban	9.83%	7.36%	ESI
2018	AK	Rural	10.27%	4.98%	Medicare FFS
2018	AK	Urban	17.22%	12.52%	Medicare FFS
2018	AL	Rural	5.27%	4.02%	Medicare FFS
2018	AL	Urban	7.89%	6.49%	Medicare FFS
2018	AR	Rural	6.03%	4.12%	Medicare FFS
2018	AR	Urban	10.31%	8.31%	Medicare FFS
2018	AZ	Rural	6.41%	4.25%	Medicare FFS
2018	AZ	Urban	10.68%	6.98%	Medicare FFS
2018	CA	Rural	4.37%	3.12%	Medicare FFS
2018	CA	Urban	9.13%	6.74%	Medicare FFS
2018	CO	Rural	6.17%	3.48%	Medicare FFS
2018	CO	Urban	14.26%	10.72%	Medicare FFS
2018	DE	Rural	5.23%	3.81%	Medicare FFS
2018	DE	Urban	10.08%	7.15%	Medicare FFS
2018	GA	Rural	5.01%	3.56%	Medicare FFS
2018	GA	Urban	9.29%	6.55%	Medicare FFS
2018	HI	Rural	5.28%	4.03%	Medicare FFS

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2018	HI	Urban	7.49%	5.52%	Medicare FFS
2018	IA	Rural	7.98%	4.58%	Medicare FFS
2018	IA	Urban	18.81%	12.04%	Medicare FFS
2018	ID	Rural	7.52%	3.53%	Medicare FFS
2018	ID	Urban	14.56%	10.50%	Medicare FFS
2018	IL	Rural	5.88%	4.31%	Medicare FFS
2018	IL	Urban	11.24%	8.04%	Medicare FFS
2018	IN	Rural	5.47%	3.56%	Medicare FFS
2018	IN	Urban	10.21%	7.48%	Medicare FFS
2018	KS	Rural	6.21%	3.90%	Medicare FFS
2018	KS	Urban	15.65%	10.28%	Medicare FFS
2018	KY	Rural	5.64%	3.31%	Medicare FFS
2018	KY	Urban	8.62%	5.39%	Medicare FFS
2018	LA	Rural	5.63%	3.48%	Medicare FFS
2018	LA	Urban	9.32%	7.09%	Medicare FFS
2018	ME	Rural	6.56%	3.26%	Medicare FFS
2018	ME	Urban	14.79%	8.41%	Medicare FFS
2018	MI	Rural	5.83%	4.25%	Medicare FFS
2018	MI	Urban	11.50%	7.66%	Medicare FFS
2018	MN	Rural	7.00%	3.65%	Medicare FFS
2018	MN	Urban	19.06%	12.49%	Medicare FFS
2018	MO	Rural	5.54%	3.56%	Medicare FFS
2018	MO	Urban	11.22%	7.63%	Medicare FFS
2018	MS	Rural	6.65%	3.76%	Medicare FFS
2018	MS	Urban	9.06%	5.27%	Medicare FFS
2018	MT	Rural	7.50%	3.71%	Medicare FFS
2018	MT	Urban	15.05%	8.54%	Medicare FFS
2018	NC	Rural	6.24%	3.89%	Medicare FFS
2018	NC	Urban	8.29%	5.41%	Medicare FFS
2018	ND	Rural	9.44%	3.85%	Medicare FFS
2018	ND	Urban	16.72%	8.66%	Medicare FFS
2018	NE	Rural	7.08%	4.49%	Medicare FFS
2018	NE	Urban	17.40%	11.64%	Medicare FFS
2018	NH	Rural	7.93%	4.41%	Medicare FFS
2018	NH	Urban	10.11%	5.32%	Medicare FFS
2018	NM	Rural	6.41%	3.99%	Medicare FFS

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2018	NM	Urban	12.26%	8.46%	Medicare FFS
2018	NV	Rural	5.44%	3.56%	Medicare FFS
2018	NV	Urban	11.78%	7.91%	Medicare FFS
2018	NY	Rural	4.57%	2.82%	Medicare FFS
2018	NY	Urban	8.14%	4.99%	Medicare FFS
2018	OH	Rural	5.79%	3.94%	Medicare FFS
2018	OH	Urban	8.00%	5.45%	Medicare FFS
2018	OK	Rural	5.37%	3.59%	Medicare FFS
2018	OK	Urban	9.47%	6.55%	Medicare FFS
2018	OR	Rural	6.40%	3.65%	Medicare FFS
2018	OR	Urban	14.16%	9.17%	Medicare FFS
2018	PA	Rural	5.54%	3.86%	Medicare FFS
2018	PA	Urban	9.40%	6.53%	Medicare FFS
2018	SC	Rural	6.68%	4.57%	Medicare FFS
2018	SC	Urban	6.54%	5.07%	Medicare FFS
2018	SD	Rural	8.21%	3.36%	Medicare FFS
2018	SD	Urban	16.69%	9.43%	Medicare FFS
2018	TN	Rural	5.87%	3.39%	Medicare FFS
2018	TN	Urban	9.02%	5.64%	Medicare FFS
2018	TX	Rural	5.44%	3.57%	Medicare FFS
2018	TX	Urban	8.90%	6.96%	Medicare FFS
2018	UT	Rural	6.00%	3.61%	Medicare FFS
2018	UT	Urban	13.49%	9.65%	Medicare FFS
2018	VA	Rural	5.95%	4.10%	Medicare FFS
2018	VA	Urban	8.77%	6.15%	Medicare FFS
2018	VT	Rural	5.12%	2.20%	Medicare FFS
2018	VT	Urban	9.26%	5.05%	Medicare FFS
2018	WA	Rural	7.14%	3.95%	Medicare FFS
2018	WA	Urban	14.74%	9.57%	Medicare FFS
2018	WI	Rural	6.42%	3.68%	Medicare FFS
2018	WI	Urban	13.69%	9.10%	Medicare FFS
2018	WV	Rural	6.47%	4.61%	Medicare FFS
2018	WV	Urban	9.52%	6.67%	Medicare FFS
2018	WY	Rural	7.18%	4.09%	Medicare FFS
2018	WY	Urban	13.94%	9.28%	Medicare FFS
2019	AK	Rural	10.07%	4.77%	Medicare FFS

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2019	AK	Urban	16.40%	11.67%	Medicare FFS
2019	AL	Rural	5.22%	3.82%	Medicare FFS
2019	AL	Urban	8.32%	6.69%	Medicare FFS
2019	AR	Rural	6.19%	3.94%	Medicare FFS
2019	AR	Urban	10.66%	8.18%	Medicare FFS
2019	AZ	Rural	6.45%	4.14%	Medicare FFS
2019	AZ	Urban	10.95%	6.94%	Medicare FFS
2019	CA	Rural	4.36%	3.06%	Medicare FFS
2019	CA	Urban	8.98%	6.60%	Medicare FFS
2019	CO	Rural	6.38%	3.41%	Medicare FFS
2019	CO	Urban	14.41%	10.10%	Medicare FFS
2019	DE	Rural	5.35%	3.70%	Medicare FFS
2019	DE	Urban	10.63%	7.45%	Medicare FFS
2019	GA	Rural	5.04%	3.43%	Medicare FFS
2019	GA	Urban	9.44%	6.42%	Medicare FFS
2019	HI	Rural	5.37%	4.11%	Medicare FFS
2019	HI	Urban	7.79%	5.22%	Medicare FFS
2019	IA	Rural	7.95%	4.60%	Medicare FFS
2019	IA	Urban	18.99%	11.75%	Medicare FFS
2019	ID	Rural	7.61%	3.50%	Medicare FFS
2019	ID	Urban	14.55%	10.35%	Medicare FFS
2019	IL	Rural	6.00%	4.21%	Medicare FFS
2019	IL	Urban	11.46%	7.95%	Medicare FFS
2019	IN	Rural	5.60%	3.49%	Medicare FFS
2019	IN	Urban	10.45%	7.29%	Medicare FFS
2019	KS	Rural	6.42%	3.91%	Medicare FFS
2019	KS	Urban	16.34%	10.41%	Medicare FFS
2019	KY	Rural	6.02%	3.30%	Medicare FFS
2019	KY	Urban	8.93%	5.38%	Medicare FFS
2019	LA	Rural	5.70%	3.43%	Medicare FFS
2019	LA	Urban	9.33%	6.98%	Medicare FFS
2019	ME	Rural	6.60%	2.98%	Medicare FFS
2019	ME	Urban	15.08%	8.43%	Medicare FFS
2019	MI	Rural	5.95%	4.22%	Medicare FFS
2019	MI	Urban	11.45%	7.43%	Medicare FFS
2019	MN	Rural	7.52%	3.82%	Medicare FFS

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2019	MN	Urban	19.63%	12.49%	Medicare FFS
2019	MO	Rural	5.67%	3.49%	Medicare FFS
2019	MO	Urban	11.14%	7.37%	Medicare FFS
2019	MS	Rural	6.98%	3.79%	Medicare FFS
2019	MS	Urban	9.32%	5.23%	Medicare FFS
2019	MT	Rural	7.33%	3.25%	Medicare FFS
2019	MT	Urban	14.74%	8.05%	Medicare FFS
2019	NC	Rural	6.27%	3.69%	Medicare FFS
2019	NC	Urban	8.40%	5.30%	Medicare FFS
2019	ND	Rural	9.67%	3.72%	Medicare FFS
2019	ND	Urban	17.14%	8.89%	Medicare FFS
2019	NE	Rural	7.00%	4.42%	Medicare FFS
2019	NE	Urban	17.94%	11.69%	Medicare FFS
2019	NH	Rural	7.80%	4.29%	Medicare FFS
2019	NH	Urban	10.08%	5.07%	Medicare FFS
2019	NM	Rural	6.56%	3.84%	Medicare FFS
2019	NM	Urban	12.24%	8.34%	Medicare FFS
2019	NV	Rural	5.46%	3.58%	Medicare FFS
2019	NV	Urban	11.07%	6.82%	Medicare FFS
2019	NY	Rural	4.63%	2.78%	Medicare FFS
2019	NY	Urban	8.26%	4.84%	Medicare FFS
2019	OH	Rural	5.94%	3.87%	Medicare FFS
2019	OH	Urban	8.08%	5.28%	Medicare FFS
2019	OK	Rural	5.35%	3.42%	Medicare FFS
2019	OK	Urban	9.27%	6.27%	Medicare FFS
2019	OR	Rural	6.62%	3.63%	Medicare FFS
2019	OR	Urban	14.46%	8.99%	Medicare FFS
2019	PA	Rural	5.75%	3.90%	Medicare FFS
2019	PA	Urban	9.90%	6.58%	Medicare FFS
2019	SC	Rural	7.00%	4.53%	Medicare FFS
2019	SC	Urban	6.93%	5.22%	Medicare FFS
2019	SD	Rural	8.51%	3.24%	Medicare FFS
2019	SD	Urban	16.69%	9.23%	Medicare FFS
2019	TN	Rural	6.21%	3.24%	Medicare FFS
2019	TN	Urban	8.87%	5.24%	Medicare FFS
2019	TX	Rural	5.51%	3.53%	Medicare FFS

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2019	TX	Urban	8.92%	6.86%	Medicare FFS
2019	UT	Rural	6.53%	3.54%	Medicare FFS
2019	UT	Urban	13.60%	9.72%	Medicare FFS
2019	VA	Rural	6.06%	4.05%	Medicare FFS
2019	VA	Urban	8.84%	6.01%	Medicare FFS
2019	VT	Rural	5.21%	2.12%	Medicare FFS
2019	VT	Urban	8.66%	4.69%	Medicare FFS
2019	WA	Rural	7.14%	3.78%	Medicare FFS
2019	WA	Urban	15.02%	9.44%	Medicare FFS
2019	WI	Rural	6.72%	3.61%	Medicare FFS
2019	WI	Urban	14.08%	8.96%	Medicare FFS
2019	WV	Rural	6.65%	4.45%	Medicare FFS
2019	WV	Urban	9.50%	6.44%	Medicare FFS
2019	WY	Rural	7.73%	4.15%	Medicare FFS
2019	WY	Urban	14.10%	9.01%	Medicare FFS
2020	AK	Rural	9.13%	4.16%	Medicare FFS
2020	AK	Urban	14.17%	9.84%	Medicare FFS
2020	AL	Rural	4.74%	3.35%	Medicare FFS
2020	AL	Urban	7.31%	5.50%	Medicare FFS
2020	AR	Rural	5.67%	3.47%	Medicare FFS
2020	AR	Urban	9.41%	6.91%	Medicare FFS
2020	AZ	Rural	6.43%	3.76%	Medicare FFS
2020	AZ	Urban	10.95%	6.11%	Medicare FFS
2020	CA	Rural	3.91%	2.65%	Medicare FFS
2020	CA	Urban	8.23%	5.97%	Medicare FFS
2020	CO	Rural	6.27%	3.18%	Medicare FFS
2020	CO	Urban	13.35%	8.61%	Medicare FFS
2020	DE	Rural	4.84%	3.19%	Medicare FFS
2020	DE	Urban	9.76%	6.59%	Medicare FFS
2020	GA	Rural	4.83%	3.10%	Medicare FFS
2020	GA	Urban	8.27%	5.52%	Medicare FFS
2020	HI	Rural	4.85%	3.72%	Medicare FFS
2020	HI	Urban	6.90%	4.59%	Medicare FFS
2020	IA	Rural	7.43%	4.13%	Medicare FFS
2020	IA	Urban	17.14%	10.19%	Medicare FFS
2020	ID	Rural	6.97%	3.22%	Medicare FFS

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2020	ID	Urban	13.37%	9.36%	Medicare FFS
2020	IL	Rural	5.56%	3.73%	Medicare FFS
2020	IL	Urban	10.80%	7.23%	Medicare FFS
2020	IN	Rural	5.19%	3.04%	Medicare FFS
2020	IN	Urban	9.50%	6.31%	Medicare FFS
2020	KS	Rural	6.13%	3.76%	Medicare FFS
2020	KS	Urban	15.31%	9.64%	Medicare FFS
2020	KY	Rural	5.56%	3.09%	Medicare FFS
2020	KY	Urban	8.46%	4.87%	Medicare FFS
2020	LA	Rural	5.13%	2.93%	Medicare FFS
2020	LA	Urban	8.19%	5.72%	Medicare FFS
2020	ME	Rural	5.44%	2.34%	Medicare FFS
2020	ME	Urban	13.69%	7.51%	Medicare FFS
2020	MI	Rural	5.24%	3.64%	Medicare FFS
2020	MI	Urban	10.52%	6.55%	Medicare FFS
2020	MN	Rural	6.94%	3.35%	Medicare FFS
2020	MN	Urban	18.33%	11.50%	Medicare FFS
2020	MO	Rural	5.33%	3.11%	Medicare FFS
2020	MO	Urban	9.97%	6.43%	Medicare FFS
2020	MS	Rural	6.39%	3.20%	Medicare FFS
2020	MS	Urban	8.17%	4.47%	Medicare FFS
2020	MT	Rural	7.02%	2.96%	Medicare FFS
2020	MT	Urban	14.05%	7.58%	Medicare FFS
2020	NC	Rural	5.84%	3.32%	Medicare FFS
2020	NC	Urban	8.10%	4.96%	Medicare FFS
2020	ND	Rural	10.14%	3.19%	Medicare FFS
2020	ND	Urban	15.88%	7.93%	Medicare FFS
2020	NE	Rural	7.01%	4.15%	Medicare FFS
2020	NE	Urban	16.90%	10.38%	Medicare FFS
2020	NH	Rural	7.03%	4.04%	Medicare FFS
2020	NH	Urban	9.26%	4.19%	Medicare FFS
2020	NM	Rural	5.60%	3.22%	Medicare FFS
2020	NM	Urban	10.35%	6.70%	Medicare FFS
2020	NV	Rural	5.03%	3.27%	Medicare FFS
2020	NV	Urban	10.85%	6.13%	Medicare FFS
2020	NY	Rural	4.38%	2.54%	Medicare FFS

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2020	NY	Urban	7.16%	4.10%	Medicare FFS
2020	OH	Rural	5.45%	3.41%	Medicare FFS
2020	OH	Urban	7.13%	4.54%	Medicare FFS
2020	OK	Rural	4.96%	3.10%	Medicare FFS
2020	OK	Urban	8.38%	5.59%	Medicare FFS
2020	OR	Rural	6.10%	3.15%	Medicare FFS
2020	OR	Urban	13.58%	8.15%	Medicare FFS
2020	PA	Rural	5.26%	3.50%	Medicare FFS
2020	PA	Urban	8.84%	5.83%	Medicare FFS
2020	SC	Rural	7.06%	4.17%	Medicare FFS
2020	SC	Urban	6.43%	4.56%	Medicare FFS
2020	SD	Rural	7.90%	2.77%	Medicare FFS
2020	SD	Urban	15.52%	8.00%	Medicare FFS
2020	TN	Rural	5.88%	2.92%	Medicare FFS
2020	TN	Urban	7.83%	4.52%	Medicare FFS
2020	TX	Rural	5.03%	3.04%	Medicare FFS
2020	TX	Urban	7.86%	5.99%	Medicare FFS
2020	UT	Rural	6.27%	3.17%	Medicare FFS
2020	UT	Urban	13.36%	9.36%	Medicare FFS
2020	VA	Rural	5.51%	3.60%	Medicare FFS
2020	VA	Urban	7.98%	5.44%	Medicare FFS
2020	VT	Rural	3.67%	1.77%	Medicare FFS
2020	VT	Urban	8.37%	4.29%	Medicare FFS
2020	WA	Rural	6.70%	3.34%	Medicare FFS
2020	WA	Urban	13.86%	8.54%	Medicare FFS
2020	WI	Rural	6.34%	3.11%	Medicare FFS
2020	WI	Urban	13.06%	8.22%	Medicare FFS
2020	WV	Rural	6.13%	3.94%	Medicare FFS
2020	WV	Urban	8.98%	5.91%	Medicare FFS
2020	WY	Rural	7.76%	3.85%	Medicare FFS
2020	WY	Urban	13.11%	8.11%	Medicare FFS
2021	AK	Rural	9.77%	4.48%	Medicare FFS
2021	AK	Urban	14.91%	10.46%	Medicare FFS
2021	AL	Rural	5.46%	3.61%	Medicare FFS
2021	AL	Urban	8.44%	6.08%	Medicare FFS
2021	AR	Rural	6.35%	3.69%	Medicare FFS

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2021	AR	Urban	10.41%	7.54%	Medicare FFS
2021	AZ	Rural	7.37%	3.89%	Medicare FFS
2021	AZ	Urban	11.91%	6.59%	Medicare FFS
2021	CA	Rural	4.35%	2.92%	Medicare FFS
2021	CA	Urban	8.71%	6.10%	Medicare FFS
2021	CO	Rural	7.11%	3.40%	Medicare FFS
2021	CO	Urban	14.34%	9.11%	Medicare FFS
2021	DE	Rural	5.36%	3.39%	Medicare FFS
2021	DE	Urban	10.08%	6.58%	Medicare FFS
2021	GA	Rural	5.55%	3.38%	Medicare FFS
2021	GA	Urban	9.32%	6.06%	Medicare FFS
2021	HI	Rural	5.48%	4.04%	Medicare FFS
2021	HI	Urban	7.29%	4.74%	Medicare FFS
2021	IA	Rural	8.66%	4.59%	Medicare FFS
2021	IA	Urban	19.18%	10.93%	Medicare FFS
2021	ID	Rural	7.91%	3.44%	Medicare FFS
2021	ID	Urban	14.50%	9.26%	Medicare FFS
2021	IL	Rural	6.38%	4.18%	Medicare FFS
2021	IL	Urban	12.08%	7.67%	Medicare FFS
2021	IN	Rural	6.03%	3.41%	Medicare FFS
2021	IN	Urban	10.99%	7.10%	Medicare FFS
2021	KS	Rural	7.06%	4.07%	Medicare FFS
2021	KS	Urban	16.86%	10.42%	Medicare FFS
2021	KY	Rural	6.42%	3.36%	Medicare FFS
2021	KY	Urban	9.18%	5.09%	Medicare FFS
2021	LA	Rural	5.89%	3.37%	Medicare FFS
2021	LA	Urban	9.20%	6.23%	Medicare FFS
2021	ME	Rural	5.89%	2.50%	Medicare FFS
2021	ME	Urban	14.54%	7.71%	Medicare FFS
2021	MI	Rural	5.88%	4.02%	Medicare FFS
2021	MI	Urban	11.60%	6.98%	Medicare FFS
2021	MN	Rural	7.98%	3.82%	Medicare FFS
2021	MN	Urban	19.88%	11.99%	Medicare FFS
2021	MO	Rural	6.23%	3.42%	Medicare FFS
2021	MO	Urban	11.27%	6.89%	Medicare FFS
2021	MS	Rural	7.25%	3.54%	Medicare FFS

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2021	MS	Urban	9.44%	4.90%	Medicare FFS
2021	MT	Rural	7.89%	3.43%	Medicare FFS
2021	MT	Urban	15.01%	7.83%	Medicare FFS
2021	NC	Rural	6.73%	3.61%	Medicare FFS
2021	NC	Urban	9.24%	5.45%	Medicare FFS
2021	ND	Rural	10.21%	3.18%	Medicare FFS
2021	ND	Urban	17.44%	8.06%	Medicare FFS
2021	NE	Rural	7.79%	4.48%	Medicare FFS
2021	NE	Urban	18.72%	11.22%	Medicare FFS
2021	NH	Rural	7.94%	4.48%	Medicare FFS
2021	NH	Urban	10.46%	4.44%	Medicare FFS
2021	NM	Rural	6.26%	3.44%	Medicare FFS
2021	NM	Urban	12.41%	7.70%	Medicare FFS
2021	NV	Rural	5.82%	3.46%	Medicare FFS
2021	NV	Urban	11.41%	5.69%	Medicare FFS
2021	NY	Rural	4.76%	2.71%	Medicare FFS
2021	NY	Urban	7.63%	4.33%	Medicare FFS
2021	OH	Rural	6.14%	3.67%	Medicare FFS
2021	OH	Urban	8.04%	5.01%	Medicare FFS
2021	OK	Rural	5.92%	3.45%	Medicare FFS
2021	OK	Urban	9.50%	6.13%	Medicare FFS
2021	OR	Rural	6.85%	3.42%	Medicare FFS
2021	OR	Urban	14.06%	7.92%	Medicare FFS
2021	PA	Rural	5.70%	3.71%	Medicare FFS
2021	PA	Urban	9.66%	5.87%	Medicare FFS
2021	SC	Rural	7.83%	4.53%	Medicare FFS
2021	SC	Urban	7.69%	5.01%	Medicare FFS
2021	SD	Rural	8.81%	2.83%	Medicare FFS
2021	SD	Urban	17.20%	8.36%	Medicare FFS
2021	TN	Rural	6.79%	3.16%	Medicare FFS
2021	TN	Urban	8.53%	4.65%	Medicare FFS
2021	TX	Rural	5.66%	3.35%	Medicare FFS
2021	TX	Urban	9.12%	6.72%	Medicare FFS
2021	UT	Rural	6.89%	3.27%	Medicare FFS
2021	UT	Urban	14.77%	10.04%	Medicare FFS
2021	VA	Rural	6.26%	3.95%	Medicare FFS

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2021	VA	Urban	9.39%	6.17%	Medicare FFS
2021	VT	Rural	3.87%	1.75%	Medicare FFS
2021	VT	Urban	8.56%	4.10%	Medicare FFS
2021	WA	Rural	7.09%	3.54%	Medicare FFS
2021	WA	Urban	15.39%	9.26%	Medicare FFS
2021	WI	Rural	7.25%	3.50%	Medicare FFS
2021	WI	Urban	14.17%	8.44%	Medicare FFS
2021	WV	Rural	7.00%	4.13%	Medicare FFS
2021	WV	Urban	10.29%	6.54%	Medicare FFS
2021	WY	Rural	9.26%	4.39%	Medicare FFS
2021	WY	Urban	13.63%	7.99%	Medicare FFS
2022	AK	Rural	9.49%	4.52%	Medicare FFS
2022	AK	Urban	14.11%	9.64%	Medicare FFS
2022	AL	Rural	5.77%	3.53%	Medicare FFS
2022	AL	Urban	8.84%	6.08%	Medicare FFS
2022	AR	Rural	6.51%	3.55%	Medicare FFS
2022	AR	Urban	10.41%	7.24%	Medicare FFS
2022	AZ	Rural	7.37%	3.71%	Medicare FFS
2022	AZ	Urban	13.38%	6.70%	Medicare FFS
2022	CA	Rural	4.27%	2.78%	Medicare FFS
2022	CA	Urban	8.66%	5.76%	Medicare FFS
2022	CO	Rural	7.12%	3.22%	Medicare FFS
2022	CO	Urban	15.16%	9.00%	Medicare FFS
2022	DE	Rural	5.66%	3.31%	Medicare FFS
2022	DE	Urban	9.54%	6.27%	Medicare FFS
2022	GA	Rural	5.59%	3.37%	Medicare FFS
2022	GA	Urban	9.38%	6.04%	Medicare FFS
2022	HI	Rural	5.21%	3.83%	Medicare FFS
2022	HI	Urban	6.10%	3.59%	Medicare FFS
2022	IA	Rural	9.49%	4.58%	Medicare FFS
2022	IA	Urban	19.15%	10.53%	Medicare FFS
2022	ID	Rural	8.02%	3.24%	Medicare FFS
2022	ID	Urban	14.91%	9.38%	Medicare FFS
2022	IL	Rural	6.50%	4.14%	Medicare FFS
2022	IL	Urban	12.59%	7.44%	Medicare FFS
2022	IN	Rural	6.12%	3.33%	Medicare FFS

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2022	IN	Urban	10.80%	6.70%	Medicare FFS
2022	KS	Rural	7.28%	4.08%	Medicare FFS
2022	KS	Urban	17.18%	10.35%	Medicare FFS
2022	KY	Rural	6.72%	3.38%	Medicare FFS
2022	KY	Urban	9.50%	5.02%	Medicare FFS
2022	LA	Rural	6.30%	3.51%	Medicare FFS
2022	LA	Urban	9.98%	5.95%	Medicare FFS
2022	ME	Rural	6.06%	2.46%	Medicare FFS
2022	ME	Urban	14.27%	7.05%	Medicare FFS
2022	MI	Rural	6.09%	4.00%	Medicare FFS
2022	MI	Urban	11.34%	6.84%	Medicare FFS
2022	MN	Rural	8.43%	3.97%	Medicare FFS
2022	MN	Urban	19.39%	11.28%	Medicare FFS
2022	MO	Rural	6.47%	3.45%	Medicare FFS
2022	MO	Urban	11.89%	6.73%	Medicare FFS
2022	MS	Rural	7.54%	3.69%	Medicare FFS
2022	MS	Urban	10.23%	4.93%	Medicare FFS
2022	MT	Rural	8.09%	3.29%	Medicare FFS
2022	MT	Urban	15.94%	7.85%	Medicare FFS
2022	NC	Rural	7.07%	3.62%	Medicare FFS
2022	NC	Urban	9.76%	5.48%	Medicare FFS
2022	ND	Rural	10.63%	3.12%	Medicare FFS
2022	ND	Urban	17.63%	7.51%	Medicare FFS
2022	NE	Rural	8.16%	4.70%	Medicare FFS
2022	NE	Urban	18.95%	11.20%	Medicare FFS
2022	NH	Rural	8.28%	4.09%	Medicare FFS
2022	NH	Urban	10.81%	4.51%	Medicare FFS
2022	NM	Rural	6.85%	3.49%	Medicare FFS
2022	NM	Urban	12.45%	7.58%	Medicare FFS
2022	NV	Rural	5.83%	3.15%	Medicare FFS
2022	NV	Urban	11.41%	4.84%	Medicare FFS
2022	NY	Rural	4.67%	2.59%	Medicare FFS
2022	NY	Urban	7.17%	3.70%	Medicare FFS
2022	OH	Rural	6.50%	3.62%	Medicare FFS
2022	OH	Urban	8.27%	4.99%	Medicare FFS
2022	OK	Rural	6.22%	3.44%	Medicare FFS

Year	State	Rural/Urban	Broad Percent	Narrow Percent	Payer
2022	OK	Urban	9.69%	5.98%	Medicare FFS
2022	OR	Rural	6.71%	3.15%	Medicare FFS
2022	OR	Urban	13.61%	7.51%	Medicare FFS
2022	PA	Rural	5.77%	3.64%	Medicare FFS
2022	PA	Urban	10.22%	5.81%	Medicare FFS
2022	SC	Rural	8.09%	4.53%	Medicare FFS
2022	SC	Urban	8.27%	5.11%	Medicare FFS
2022	SD	Rural	9.31%	2.61%	Medicare FFS
2022	SD	Urban	17.89%	7.98%	Medicare FFS
2022	TN	Rural	7.41%	3.11%	Medicare FFS
2022	TN	Urban	8.89%	4.45%	Medicare FFS
2022	TX	Rural	6.04%	3.33%	Medicare FFS
2022	TX	Urban	9.28%	6.63%	Medicare FFS
2022	UT	Rural	7.05%	3.13%	Medicare FFS
2022	UT	Urban	14.46%	9.42%	Medicare FFS
2022	VA	Rural	6.51%	3.96%	Medicare FFS
2022	VA	Urban	9.73%	6.19%	Medicare FFS
2022	VT	Rural	3.55%	1.58%	Medicare FFS
2022	VT	Urban	7.60%	3.57%	Medicare FFS
2022	WA	Rural	7.26%	3.50%	Medicare FFS
2022	WA	Urban	15.12%	8.81%	Medicare FFS
2022	WI	Rural	7.47%	3.42%	Medicare FFS
2022	WI	Urban	14.09%	8.16%	Medicare FFS
2022	WV	Rural	7.15%	4.06%	Medicare FFS
2022	WV	Urban	10.86%	6.43%	Medicare FFS
2022	WY	Rural	9.25%	4.34%	Medicare FFS
2022	WY	Urban	13.86%	7.70%	Medicare FFS

About the Primary Care Collaborative

The Primary Care Collaborative (PCC) is the leading national, nonpartisan and multi-stakeholder voice advocating for better health and wellbeing for all Americans by strengthening primary care. The PCC unifies and engages diverse stakeholders in promoting policies and sharing best practices that encourage the growth of comprehensive, whole-person primary care.

thePCC.org

About the American Academy of Family Physicians (AAFP) Robert Graham Center

The AAFP's Robert Graham Center aims to improve individual and population healthcare delivery through the generation or synthesis of evidence that brings a family medicine and primary care perspective to health policy deliberations from the local to international levels. The information and opinions contained in research from the AAFP's Robert Graham Center do not necessarily reflect the views or policies of the American Academy of Family Physicians.

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