

Health Literacy in Rural Communities: Aligning Transformation with Needs

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Background

Rural Health Disparities

Rural communities in the United States face persistent and widening health disparities compared to non-rural populations, including significantly higher mortality rates.^{1,2,3} Natural-cause mortality is estimated to be 43% higher in rural areas,² with elevated rates of both cardiovascular⁴ and diabetes⁵ related deaths. Rural residents also experience more diagnoses, but lower utilization of both primary and specialty care.⁶ County Health Rankings data show that clinical care, health behaviors, and non-medical drivers of care are consistently worse and worsening in rural settings.⁷

These disparities stem from intersecting factors, including geographic isolation, lower socioeconomic status, and health behaviors shaped by these conditions.^{8,9,10} Limited access to healthcare providers, hospital closures and uneven Medicaid expansion further exacerbate these challenges,² while lack of internet access restricts engagement with telemedicine and other digital health resources.^{11,12}

The Role of Health Literacy in Rural Health

Health literacy is a modifiable factor linking socioeconomic and environmental conditions to health outcomes. The Centers for Disease Control and Prevention describes personal health literacy as the ability to find, understand, and use health information and services to make informed decisions.¹³ Adequate health literacy enables individuals to effectively navigate healthcare systems and make informed decisions.¹⁴ Individuals with inadequate or marginal health literacy have 25% higher risk of mortality compared to those with adequate literacy,¹⁵ and evidence shows a positive association between health literacy and quality of life.¹⁶

Rural populations often experience lower health literacy, though this relationship may be largely driven by demographic factors such as education, socioeconomic status, and age.¹⁷ Understanding specific challenges and gaps related to health literacy is essential for designing effective interventions tailored to the unique needs of rural communities.

Policy Context: The Rural Health Transformation Program

Recent federal legislation aims to address rural health challenges through the Rural Health Transformation Program (RHTP). The RHTP, enacted as part of H.R.1 in July 2025, allocates \$50 billion over five years to improve access and quality of care in rural areas.¹⁸ The RHTP's allowable uses include several strategies relevant to health literacy: promoting consumer-facing technology solutions, providing training and technical assistance for care delivery improvements, strengthening the clinical workforce, and supporting evidence-based interventions for prevention and chronic disease management.¹⁹

However, this investment must be considered alongside \$911 billion in Medicaid cuts over the next 10 years that disproportionately affect rural communities.²⁰ The \$50 billion RHTP fund represents 37% of the estimated \$137 billion in cuts to federal Medicaid spending in rural areas. Additionally, RHTP funding is temporary (2026-2030), while Medicaid cuts are permanent.²¹

To maximize RHTP's impact during this temporary funding window, states must strategically target investments toward modifiable factors that enable rural residents to access and benefit from improved healthcare infrastructure. Health literacy is one such factor. Without evidence identifying specific health literacy gaps, states risk a mismatch between infrastructure investments and rural residents' ability to use them.

The Purpose of this Report

This report examines the relationship between rural living and health literacy using representative state-level data from the Consumer Healthcare Experience State Survey (CHESS). Case studies of two states assess how confidence in specific healthcare navigation tasks varies between rural and non-rural participants and whether different measures of rurality yield different insights. By pinpointing which specific health literacy tasks pose the greatest challenges for rural residents, findings provide practical guidance for state implementation of RHTP funding and other rural health interventions.

Methods

The CHESS

This report uses data from the CHESS, administered by Altarum and supported by Arnold Ventures and the Robert Wood Johnson Foundation.²² CHESS is designed to produce reliable state-level estimates of adults' perspectives on healthcare navigation, financial burden, and policy solutions. The survey is conducted online using Dynata's web panel, and participants receive a stipend for completion. CHESS is currently offered in English and Spanish. Although not randomly sampled, the survey structure and weighting are designed to reflect state-level demographics. All demographic information is self-reported.

Michigan and Virginia as Case Studies

In 2025, Michigan and Virginia were selected for survey administration, asked respondents about health literacy, and provided rural classification. In Michigan, the 2025 CHESS was completed by over 1,300 adults from June 30 to July 29, 2025. In Virginia, 1,387 adults completed the survey between August 1 and August 19, 2025.

Health Literacy Measures

This report describes responses to questions measuring confidence in key healthcare tasks, including:

- Selecting the best insurance plan
- Disputing a medical bill believed to be incorrect
- Following medical directions given by a doctor
- Finding out the cost of a procedure ahead of time
- Finding a doctor you like and trust
- Resolving problems with nonresponsive health insurance carriers, physicians, or hospitals

For each task, participants rated their confidence on a five-point scale: not at all confident, not too confident, somewhat confident, very confident, or extremely confident. For this report, participants selecting “very confident” or “extremely confident” were classified as having high confidence in that task. Higher confidence in these healthcare navigation tasks suggests higher health literacy.

Rural Classification

In 2025, rural designations were assigned at the county level by state-based experts with specialized knowledge of local geographic and demographic characteristics. In both Michigan and Virginia, rurality was categorized as a binary variable: rural or non-rural.

To provide additional context for these findings, we also examined findings from earlier CHES data from Michigan (2021) that measured rurality with the Index of Relative Rurality (IRR).²³ This measure incorporates multiple dimensions of rurality including size, density, remoteness and amount of built-up area.²³ IRR scores were assigned at the county level and participants were divided into tertiles: Most Rural (IRR 0.45-0.60), Intermediate (IRR 0.27-0.45), and Most Urban (IRR 0.18-0.27). The 2021 IRR-based findings provide insight into how health literacy varies across a spectrum, not just between rural and urban endpoints. Understanding this gradient is essential for identifying which communities face the greatest challenges and may require the most intensive interventions.

Analysis Approach

Results are presented descriptively, showing the percentage of participants reporting high confidence in each health literacy-related task. For the 2025 data, findings were compared between rural and non-rural populations in Michigan and Virginia separately. The 2021 Michigan data used a continuous IRR measure, dividing participants into tertiles to examine patterns in health literacy across the rurality spectrum. All data were weighted to reflect state-level demographics.

Results

Demographic characteristics for participants completing the 2025 Michigan and Virginia CHES are described in Appendix 1.

Health Literacy in Michigan and Virginia

Confidence in healthcare tasks varied by state and by rural status (Table 1). Virginians reported higher confidence than Michiganders across nearly all tasks examined. Confidence in following medical directions given by a doctor was high, with over 80% of participants in each state reporting high confidence in this task. Conversely, confidence in resolving problems with non-responsive health insurance carriers, doctors or hospitals was low in both states, dipping below 50% for both rural and non-rural Michiganders and rural Virginians.

Health Literacy According to Rurality

Weighted results from both states confirmed that health literacy was generally lower in rural compared to non-rural residing respondents. In both states, fewer rural participants were confident that they could:

- Select the best insurance plan for themselves
- Dispute a medical bill they believed was incorrect
- Resolve a problem with a *nonresponsive* health insurance carrier, doctor or hospital

While there were several similarities between states that support the hypothesis of lower health literacy in rural areas, there were some findings that defied this explanation and some differences between states. For example, in Michigan, confidence in following medical directions provided by a doctor was similar in rural and non-rural populations. However, in Virginia, rural participants had higher confidence in following medical directions compared to non-rural participants. Additionally, the pattern of lower health literacy in rural participants was demonstrated by Virginia for the task of “Find a doctor you like and trust,” but in Michigan, rural residents had higher confidence in this task than non-rural residents.

Health Literacy Across the Rurality Spectrum

To explore whether rural-urban differences varied according to definition of rurality, we examined earlier findings of Michigan CHES data (2021) that used a continuous IRR measure, which includes multiple dimensions of rurality. Participants were divided into tertiles based on their county’s rurality score: Most Rural, Intermediate, and Most Urban (Table 2).

Participants in the most urban counties consistently reported the highest confidence across nearly all health literacy related tasks. However, the lowest confidence was not found in the most rural group, but rather in the intermediate group. This pattern was consistent across health literacy questions and suggests that the relationship between rurality and health literacy may not be linear. For example, communities at intermediate levels of rurality may experience distinct challenges that differ from both highly rural and urban contexts.

Table 1. Weighted Percentage (%) of Participants Reporting *High Confidence* in Health Literacy Related Tasks According to Rurality^a

Health Literacy Statement in CHES Survey	Michigan		Virginia	
	Rural	Non-Rural	Rural	Non-Rural
Select the best insurance plan for you	54.2	56.1	57.2	59.1
Dispute a medical bill that you believe is incorrect	47.6	51.5	52.9	62.3
Follow medical directions given to you by your doctor	85.0	84.9	85.2	81.8
Find out the cost of a procedure ahead of time	49.2	48.1	56.0	55.5
Find a doctor you like and trust	59.9	57.5	60.5	65.3
Resolve a problem if your health insurance carrier is not being responsive to your concern	36.2	41.3	46.4	50.1
Resolve a problem if your doctor is not being responsive to your concerns	40.2	44.2	49.4	57.1
Resolve a problem if your hospital is not being responsive to your concerns	35.5	42.2	47.7	48.8

^a Color coding compares rural vs. non-rural populations within each state. Green Indicates higher confidence; red indicates lower confidence. Differences of 1% or less were considered similar and not color-coded.

Table 2. Weighted Percentage (%) of Participants Reporting *High Confidence* in Health Literacy Related Tasks According to the Index of Relative Rurality (IRR)^b

Health Literacy Statement in CHES Survey	Michigan		
	Most Rural IRR (n=309)	Intermediate IRR (n=309)	Most Urban IRR (n=308)
Select the best insurance plan for you	54.5	57.3	63.8
Dispute a medical bill that you believe is incorrect	54.2	51.5	62.8
Follow medical directions given to you by your doctor	69.8	60.5	72.2
Find out the cost of a procedure ahead of time	83.8	74.8	82.2
Find a doctor you like and trust	55.2	48.9	58.9
Resolve a problem if your health insurance carrier is not being responsive to your concern	49.7	47.2	60.8
Resolve a problem if your doctor is not being responsive to your concerns	49.7	47.9	60.5
Resolve a problem if your hospital is not being responsive to your concerns	39.6	37.2	53.1

^b Color coding compares populations across Index of Relative Rurality (IRR). Green indicates the highest confidence; red indicates lowest confidence.

Interpretation and Discussion

Challenges with Problem Resolution

State-representative data from Michigan and Virginia confirm patterns observed in prior research: rural residents generally reported lower health literacy than their non-rural/urban counterparts.¹⁷ However, the CHES data reveals important nuances: rural residents demonstrated significantly lower confidence in problem resolution (addressing unresponsive providers, hospitals or insurers), but similar or higher confidence in following medical directions given by their doctors. This pattern suggests health literacy challenges in rural settings stem less from difficulty understanding medical information and more from system-wide challenges in navigating complex healthcare systems.

Communication obstacles and the digital divide likely contribute to these challenges. Insurance documents and medical bills contain complex jargon that is often above patients' reading levels.¹⁴ Additionally, problem resolution increasingly requires digital engagement (online portals, secure messaging, document uploads), yet rural areas have lower broadband access.¹¹ Addressing this challenge requires simplifying communication, strengthening patient navigation, and closing the digital divide.

The Non-Linear Relationship Between Rurality and Health Literacy

Earlier Michigan CHES data (2021) using the IRR revealed an unexpected pattern: while participants in the most urban counties showed the highest confidence, the lowest confidence was found in participants from counties with intermediate levels of rurality, not the most rural. These intermediate communities, potentially lower-income suburban or exurban areas, may lack both the concentrated resources of urban centers and the targeted support or community cohesion of remote rural areas. This suggests health literacy interventions need tailoring not just to ‘rural’ versus ‘urban’ residents, but to specific community characteristics across the rurality spectrum.

Policy Implications and Recommendations

These findings have direct implications for implementing the RHTP. States have broad flexibility in selecting from approved funding categories, but given the specific challenges identified in this report, particularly around insurance navigation and problem resolution, states should prioritize interventions that directly address these gaps.

The broader context of RHTP within H.R. 1 is important to acknowledge. RHTP’s investment represents only a fraction of estimated Medicaid cuts, and funding expires in 2030 while cuts are permanent.²¹ This makes strategic allocation critical to maximize impact during the limited funding window.

Evidence-Based Interventions for Rural Health Literacy

Improving rural health literacy requires interventions that are both evidence-based and tailored to the specific needs of rural communities.²⁴ Research demonstrates that effective health literacy interventions incorporate locally informed, person-centered strategies including tailoring, skills-building, and interactive sessions.^{25,26,27} Several approaches have demonstrated efficacy in rural settings and directly address the obstacles identified in this report:

- Insurance literacy programs help individuals understand coverage and navigate billing, which directly addresses rural residents’ low confidence in these areas.^{28,29}
- Patient navigation support can provide personalized support for navigating complex systems and resolving problems with unresponsive providers or insurers.^{30,31}
- Plain-language materials and provider communication training can reduce the medical jargon and complexity that hinder comprehension, improving rural residents’ ability to understand health information and communicate effectively with providers.^{32,33}
- Digital healthcare access and support through broadband expansion, user-friendly technology with offline capabilities, and multi-modal access options (phone, in-person, online) can address digital obstacles in rural areas.³⁴

Recommendations for Federal and State Implementation

To meaningfully advance health literacy through RHTP and other rural health initiatives, federal and state agencies should:

- **Incorporate health literacy goals with measurable targets into state RHTP implementation plans.** States designate health literacy as a core component of their transformation strategies and set specific targets for improvement.

- **Prioritize evidence-based health literacy interventions in RHTP funding allocations.** Direct resources toward programs that address the specific gaps identified: insurance literacy workshops, patient navigation services, plain-language communication materials, and patient advocacy programs with clear escalation pathways. These align with RHTP’s allowable uses for evidence-based interventions and consumer-facing solutions.
- **Support implementation through technical assistance and workforce development.** Federal agencies should provide training, toolkits, and consultation to help rural providers adopt health literacy best practices. Integrate health literacy competencies into RHTP-funded workforce recruitment and training initiatives.
- **Ensure accessible technology design and maintain non-digital access pathways.** As states adopt digital health tools, ensure accessibility for individuals with limited internet access or digital skills. Pair technology investments with digital literacy training and maintain alternative phone-based and in-person channels for problem resolution.

Table 3 summarizes common challenges to health literacy in rural populations and corresponding solutions aligned with RHTP funding opportunities.

Table 3. Challenges to Health Literacy in Rural Populations and Rural Health Transformation Program Aligned Solutions

Challenges to Health Literacy	Suggested Solutions	Aligned RHTP Use of Funds ^c
Communication	• Patient navigation services • Patient support programs with clear escalation pathways • Provider training in patient-centered communication and plain language • Patient education materials tailored to patient needs • Shared decision-making training	• Promote consumer-facing solutions for prevention and management of chronic diseases • Recruit and retain clinical workforce talent to rural areas • Developing projects that support innovative models of care
Limited Broadband Access and Digital	• Broadband infrastructure expansion • User-friendly digital tools with offline capabilities • Multi-modal access options (phone, in-person, online) • Digital health literacy training where internet access exists	• Promote consumer-facing, technology-driven solutions for the prevention and management of chronic diseases • Provide technical assistance, software, and hardware for significant information technology advances
Geographic Isolation	• Recruitment incentives for providers and community health workers • Telehealth and remote monitoring • Mobile health clinics with education services	• Recruiting and retaining clinical workforce talent to rural areas, with commitments to serve rural communities for a minimum of 5 years • Providing training and technical assistance for the development and adoption of technology-enabled solutions, including remote monitoring

Challenges to Health Literacy	Suggested Solutions	Aligned RHTP Use of Funds ^c
Lower Income and Education Levels	• Community-based health education programs • School-based health literacy interventions • Tailored materials for lower-literacy populations	• Promote consumer-facing solutions for prevention and management of chronic diseases • Promote evidence-based, measurable interventions to improve prevention and chronic disease management

^c RHTP use of funds are quoted or paraphrased from CMS guidance.¹⁹ States must select three or more approved uses for their implementation place

Limitations and Future Research

This report offers insight into rural health literacy by comparing confidence in important healthcare tasks in two states. However, several limitations should be noted. First, while survey responses were weighted to reflect state-level demographics, results were not adjusted for individual-level characteristics such as education or income, making it difficult to determine whether disparities in health literacy are driven by rurality itself or by underlying demographic differences. Second, self-reported confidence may not reflect actual literacy or ability, and qualitative research is needed to explore underlying experiences. Third, the online format may exclude individuals with limited internet access, which is common in rural areas. Finally, findings from two states may not be generalizable nationwide.

There is a pressing need to evaluate the impact of H.R.1's Medicaid cuts and RHTP funding on health literacy and health outcomes in rural populations. Longitudinal studies and implementation science approaches can assess whether RHTP-funded interventions improve individuals' ability to navigate healthcare, access services, and manage their health, especially in the context of constrained Medicaid coverage and provider capacity.

Conclusion

Health literacy is a modifiable factor that can impact health and well-being. Due to several contributing factors, rural residents may have lower health literacy, which may contribute to observed health disparities. This paper demonstrates that, while the relationship between rural living and health literacy can be observed in data that is representative of state populations, important nuances exist in how health literacy is experienced.

The passage of H.R. 1 and the launch of the RHTP present a timely opportunity to address these disparities. As states begin implementing their transformation plans, they have a critical window to invest in evidence-based, community-informed strategies that strengthen health literacy infrastructure. At the same time, the broader policy environment, including substantial Medicaid cuts, raises concerns about the sustainability of rural health systems and the accessibility of health information and services. By leveraging this policy moment to prioritize health literacy, federal and state leaders can address a key modifiable risk factor and advance more fair health outcomes for rural populations.

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Appendix A: Demographic Characteristics of CHES Participants, by State

Demographic Characteristic	Michigan (N=1,300)	Virginia (N=1,387)
Sex		
Woman	53	57
Man	47	42
Sexual Diverse	14	11
Race		
American Indian/Native Alaskan	4	2
Asian	5	2
Black or African American	31	34
Native Hawaiian/Pacific Islander	<1	<1
White	60	61
Prefer Not to Answer	1	<1
Two or More Races	6	6
Ethnicity		
Hispanic or Latino	5	7
Non-Hispanic or Latino	95	93
Age		
18-24	21	14
25-34	16	19
35-44	16	23
45-54	17	15
55-64	18	15
65+	12	13
Education Level		
Some high school	5	4
High school diploma/GED	28	24
Some college/training, certificate program	24	23
Associate degree	11	10
Bachelor's degree	19	21
Some graduate school	2	3
Graduate degree	11	16