



Opportunities to Address Healthy Housing Needs in Rural and Frontier Communities:

A Guide for Environmental Public Health Professionals



This guide is a resource for environmental public health and healthy housing professionals who support rural and frontier communities. Environmental public health and healthy housing concerns in these communities include risks of exposure to contaminants like lead, radon, arsenic, and mold, indoor air quality, and structural issues like damaged roofs, unmaintained private wells, and leaking septic systems. These are common issues faced by many communities, but they may be particularly pronounced in rural and frontier communities where they are likely to experience additional barriers.

Included in this guide are details about the most common environmental public health and healthy housing concerns rural and frontier communities experience, as well as the related barriers faced by the workforce. Also included are intervention tools and examples of best practices that practitioners can implement to address concerns, reduce risks, increase safety, and improve public health outcomes for rural and frontier communities.

Why healthy housing?

Americans spend 90% of our time indoors. The connection between housing and illness has been a focus of public health since at least the industrial revolution, when overcrowding and poor sanitation led to the spread of infectious diseases like cholera. Today, 45% of homes in the U.S. have at least one health or safety hazard and housing quality is linked to chronic diseases including asthma and other respiratory illnesses, lead poisoning, lung cancer, and others. These impacts disproportionately affect low-income and communities of color. Addressing housing quality is an important part of environmental public health and doing so can reduce cost burden on the healthcare system and improve population health and health disparities. To learn more about the specific ways housing quality impacts health, see the 10 Principles of a Healthy Home supported by the National Center for Healthy Housing.

Understanding Rural and Frontier Communities

Definition

The definition of rural varies federally, which allows for variations in population size, location, terminology, and data. A study published in October 2021 assessed the relative performance of eight federal rural definitions in identifying rural urban disparities and found that, depending on the definition of rural, the rural population varied from 6.9 million people to 75.5 million people across the United States. The U.S. Census Bureau defines any population, housing, or territory that is not in an urban area (50,000 or more people) as rural. According to the Census Bureau in 2017, 60 million Americans (one in five) live in rural communities; and the southern region, which encompasses 16 states and the District of Columbia, is home to nearly half (47%) of all U.S. rural residents. In the rural-urban continuum, frontier communities tend to be the most isolated and sparsely populated. They are frequently characterized by low population density and considerable travel time to basic amenities like schools, grocery stores, or to receive medical care. More than 12 million people living in the U.S. live in frontier areas. Ninety-five percent of frontier areas are located within only 19 states, with many frontier counties located in the Western part of the country.

Race & Ethnicity

Significant populations of older adults and Black, Indigenous, and people of color (BIPOC) living in rural communities. Eighteen percent (18%) of people living in rural counties are 65 years old or older, compared to 13% in urban areas. While the majority (76%) of people living in rural areas are non-Hispanic White, diversity areas has increased over the last decade. Individuals who identify as Hispanic represent the largest BIPOC group in rural areas, followed by individuals who identify as Black. New Americans accounted for 37% of the growth in rural communities between 2000 and 2018. According to the First Nations Development Institute (FNDI), 54% of American Indian and Alaska Natives in the U.S. live in rural and small-town areas. In the Rocky Mountains, plains, and southwest regions of the U.S., rural populations reach 64-66%. In addition, 68% of the American Indian Alaskan Native population either reside in sovereign governed areas or near tribal homelands.



Belief

Though the population density of rural communities is low, the population is diverse, and the communities have unique strengths and challenges. For example, residents of rural communities often share common beliefs and values, including feeling rooted in their local area and family ties. A majority of rural residents say that most people in rural areas have similar values to their own. Further, rural and frontier communities are key sources of food, water, energy, and natural resources for residents throughout the U.S. Forty-nine percent (49%) of the freshwater in the United States is found in or near remote areas such as frontier communities.

Environmental Health and Housing Concerns

When supporting rural communities it's important to understand the issues they face in order to navigate obstacles and uplift and strengthen them.

Limited Infrastructure and Resources

Rural areas may have limited access to public infrastructure, including municipal water systems and wastewater treatment, leading to reliance on private wells, septic systems, and other decentralized systems that may not be regulated. These areas also may not have sufficient resources to monitor drinking water.

- 12% of rural Americans report issues with their sewage systems.
- 48% of households on Native American reservations lack clean water or adequate sanitation.
- Native American homes are 19 times more likely to lack indoor plumbing than those inhabited by White residents.
- Private wells are not regulated by federal or, frequently, state or local laws.

Limited Data & Technology

Sparse population density of rural areas, especially when coupled with diverse terrain or lack of broadband access, can hinder digital data collection efforts to identify environmental health trends and emerging threats.

- In rural communities, 37% more residents do not have access to broadband versus residents in urban communities.
- Alaska, Oklahoma, and Wyoming have the most limited high-speed Internet access and the largest gap in access to and use of digital technology between urban and rural areas.

The Power of Rural Communities

Despite experiencing health-related disparities, rural communities have historically shown strength and resilience during natural disasters, demographic shifts, and economic declines. Rural communities have diverse populations whose strengths are seen in their shared values and beliefs. Most adults (62%) in rural communities believe they can make an impact in their community, including 27% believing they can make a great impact.

Health Disparities & Limited Access to Care

People living in rural areas have fewer primary care providers, lower rates of health insurance coverage, and higher percentages of residents paying for health care costs out-of-pocket than individuals living in urban or suburban communities.

Rural residents experience higher rates of lung cancer, primarily attributed to higher rates of tobacco use, and colorectal cancer, primarily attributed to obesity and lower preventative cancer screening rates. Residents living in rural areas also have higher rates of death due to heart disease, stroke, and chronic lower respiratory disease compared to urban residents. In addition, chronic obstructive pulmonary disease (COPD) is over twice as common in rural areas versus urban areas.

More than 70% of counties in the U.S. do not have medical oncologists and only 3% of medical oncologists practice in rural communities.

Geographic Barriers

Long distances between communities in rural and frontier areas can make it difficult to conduct site visits, provide in-person services, and respond to issues in a timely way. Long travel distances also increase travel costs, straining already limited budgets, and may limit workforce retention due to the isolating nature of the travel.

Geographical isolation and low population density can also lead to fewer housing choices and limited access to services to address housing quality.

Older Housing Stock

Rural areas often have a higher proportion of older, substandard homes with risks like lead paint, asbestos, mold, inadequate wiring, and lack of modern ventilation/plumbing systems. Further, resources for remediation are frequently limited.

Approximately 11.5 million rural homes have at least one environmental health hazard, such as pests, peeling paint (which may contain lead hazards), water leaks, foundation problems, and mold. More than 1.4 million homes in rural areas are considered severely or moderately inadequate and 1 out of 5 residents living in rural communities have recently worried about the effects of housing on their family's health and safety.

Rural communities have an aging housing stock, much of which is in need of repairs and renovations. **BIPOC** residents of rural America are more likely to live in substandard housing than White residents which is consistent with disparities observed nationally.

Residential Overcrowding

Multigenerational families and households with low-income often reside together in rural housing, increasing risk of infectious disease transmission, indoor air quality issues from cooking/heating, and mental health impacts from lack of space. Overcrowding also impacts private wells and overworks septic systems that were designed for fewer tenants

Indoor Air Pollution

Residents living in rural areas are more likely to use coal or wood-burning stoves as a heating source, which contribute to poor indoor air quality; 1.5 million rural households use wood, 70,000 use coal, and 1.9 million use fuel oil or kerosene. Wood stoves can generate particulates and carbon monoxide gas and create fire and burn risks if not properly maintained.

Limited Weatherization and High Energy Use

Rural housing often lacks proper insulation and weatherproofing, leaving residents vulnerable to high heat or extreme cold, health risks such as mold accumulation due to inadequate ventilation, as well as disproportionately high energy costs

The median energy burden for rural households is 4.4% compared to the national level of 3.3%. This burden is even greater for residents with low-incomes, renters, BIPOC households, older adults, and those living in manufactured or multifamily housing. Compared to 8.4% of large metro counties, 31.5% of rural counties had 60-150 heat related emergency department visits per 100,000 residents.

High Rates of Vacant Homes

Vacant and abandoned homes can become an environmental and safety issue for residents. The cost of improvements increases significantly when renters and homeowners defer repairs or maintenance. More than 450,000 homes in rural communities are abandoned or in need of repair largely due to cost.

Mobile and Manufactured Home

In rural communities, 20% of housing consists of mobile homes; Southern states, such as South Carolina and North Carolina, have higher percentages. Of individuals living in mobile homes in rural areas:

- 33% report recently worrying about their housing conditions affecting their family's health or safety.
- 40% report experiencing problems with pests, bugs, or wild animals.
- 23% report problems with mold or other environmental health problems.
- 27% report problems with inadequate heating and cooling.

Poor Water Quality or Limited Access to Water

Rural communities often have challenges with poor water quality, access to water and sewer services, and aging infrastructure. The US Environmental Protection Agency (EPA) classifies small community water systems as those that serve fewer than 10,000 people. In the U.S, 92% of community water systems are small systems; these systems serve 18% of the country's population.

According to USDA, unique challenges faced by rural water systems include their large, spread-out service areas, reduced economies of scale, and high operator turnover.



Limited Funding

Funding can be also be a challenge specific to systems in rural areas. Nationally, local government revenues provide 98% of public investment in water and sewer infrastructure, which can pose an obstacle for rural areas that have a smaller revenue base or economic challenges. Between 2010 and 2020, rural communities experienced a 41% increase in water and sewer utility rates, while suburban areas had a 27% increase.

Aging Infrastructure

Communities with limited or aging systems may be especially vulnerable to health hazards in their water. For example, 85% of community water systems with high levels of nitrates have no treatment systems in place to address nitrates. Nitrates are a common hazard in farming communities due to runoff from fertilizer and manure.

Unregulated Private Wells

43 million residents have private wells. Private wells are not regulated by the Safe Drinking Water Act, meaning that there is no universal or regular testing of well water for contamination. EPA recommends that homeowners test their wells annually; US Geological Survey advises that some counties offer free well testing.

- In 2009, USGS released a report with test results from 2100 private wells in 48 states. They found that one in five wells had at least one contaminant above a benchmark level for human health. Identified contaminants included metals, radionuclides, nitrates, pesticides, solvents, and microbial contaminants.
- A 2020 study of private wells in three Illinois counties found lead in 48% of the homes' drinking water, with 3.3% of those levels above the EPA action level.

Pesticide Exposure

Residents in rural, agricultural areas live at the interface of chemical exposure and occupation. Exposure to pesticides have been linked to many health issues including birth defects, autism, cancer, and Parkinson's disease. In the United States, almost 90% of pesticides are used in commercial agriculture, which can disproportionately expose farmworkers and their families to hazardous chemicals in the course of their job or proximity of their home to the agricultural area via household dust. Pesticide levels in the blood and urine of farmworkers has been found to be up to 400 times higher than the national average.



Extreme Weather and Limited Preparedness

Rural areas can be more vulnerable to extreme weather and climate impacts and often experience slower disaster recovery. Further, they often lack emergency planning infrastructure and rely on volunteers for combatting events like fires and floods. Only 29% of rural counties have one or more land use planner compared to 73% of metropolitan counties.

One in six community disaster resilience zones (CDRZ) – areas designated by FEMA to identify at-risk communities – are in remote rural counties, and 35% of the population in the CDRZs are in rural areas.

These CRDZs have higher proportions of BIPOC residents than rural communities overall.

Rural communities with very limited capacity face significant risks from climate threats. Among the 7,704 rural communities nationally with such limitations, 46% are at high risk of flooding.

The impact of wildfires on air quality and public health is an increasing concern nationally, and particularly for rural communities, especially in the Western United States. Longer-term wildfire smoke exposure is linked to negative health impacts like respiratory and cardiovascular diseases.

Groundwater is the source of more than 90% of rural communities' drinking water, making rural residents more susceptible to running out of water during droughts.

Solutions to Address Environmental Health & Housing Issues

This section outlines examples of innovative strategies, best practices, resources, and links to more information to support practitioners to ensure environmental health and healthy housing in rural and frontier communities. The 10 Essential Public Health Services can also be a useful framework to assess the needs in your community and the services you are able to provide, or are considering expanding, and incorporated into the strategies below.

Perform Multi-Sector Home Visits

Multi-sector home visits can be an impactful public health strategy in rural areas where access barriers and health disparities exist. Teams comprised of nurses, environmental public health professionals, social workers, and community health workers can coordinate and conduct joint visits. They conduct enable holistic assessments of home environmental health risks like mold, lead, and safety hazards along with resident health issues, medication compliance, nutritional status, and behavioral health. Having one visit address connections between health conditions, environmental health exposures, and social determinants improves efficiency for isolated residents and builds rapport.



Example Multi-Sector Home Visit Programs

The Community Aging in Place-Advancing Better Living for Elders (CAPABLE) program is a person-centered approach to the older adult resident and their homes. Over the course of five months, home visits are conducted by an occupational therapist, registered nurse, and a home repair professional. The goal of the cross-sector team is to increase the residents' control over their physical function and improve the condition of their home so that they can remain in their home independently. Program outcomes include improved health care access, improved service quality through partnerships, and collaboration, information-sharing, and partnership-building.

US Department of Housing and Urban Development (HUD) Office of Lead Hazard Control and Healthy Homes offers grants through the Older Adult Home Modification Program to state and local governments, nonprofit organizations, and public housing agencies to make home modifications that allow older adults to age in place. A portion of these funds are reserved for rural communities in every grant cycle.

The Healthy Homes Coalition of West Michigan (HHCWM) partners with Priority Health and Corewell Health Visiting Nurses to implement the Priority Health Asthma Program. The home visit teams consist of a Healthy Housing Specialist from HHCWM and a nurse from Priority Health or Corewell. The Healthy Housing Specialist works to identify and reduce asthma triggers while the nurse supports the management of asthma symptoms. The program includes six visits from the home visit team.

Community Paramedicine

An emerging model for providing support to residents in their homes is through community paramedicine, which equips Emergency Medical Technicians (EMTs) and paramedics to provide public health, preventative health, and primary care services when responding to calls or serving residents in their homes. This can help fill a gap in rural areas where residents may lack access to medical services and facilities and may rely on emergency services for primary care.

The National Conference of State Legislatures [provides an overview](#) of which states include community paramedicine in EMS licensing, and which states reimburse for community paramedicine through Medicaid.

In 2023, the National Academy of Emergency Medical Technicians [conducted a survey](#) of 199 EMS programs that either currently or previously offered community paramedicine programs. Of the respondents, 30% served rural and frontier communities, and another 20% served both suburban and rural communities. Home health partnerships were the fifth most popular service offered at 34% of programs.

Example Community Paramedicine Programs

The Rural Health Information Hub's [topic guide for community paramedicine](#) provides tools for understanding and establishing community paramedicine programs, and details the [Queen Anne's County Mobile Integrated Community Health Program](#), which conducts home visits with a community health nurse, paramedic, a pharmacist, and a peer support and addictions counselor as needed. The program provides services including education, home safety checks, and fall risk assessments. The hub also describes the [Mobile Integrated Healthcare Network in Missouri](#) that conducts home visits with a community paramedic and a community health worker. The program provides home safety assessments and basic preventative care.

A Healthy Homes Program was developed by Boulder County Public Health in 2023 to build provide residents with information and resources that foster safe and healthy homes. The program utilizes a Health in All Policies (HiAP) approach.

The Maine Community Paramedicine Pilot Programs established in 2012 allowed paramedics to conduct home visits in 12 regions, nine of which were rural. Paramedics were allowed to evaluate vital signs and weight, offer basic care, and provide education on health topics as well as assess the safety of the home and conduct fall risk assessments. Training was provided to prepare emergency medical services (EMS) staff for home visits.

An environmental remediation program at the [Multnomah County Health Department](#) in 2013 focused on moderate remediation measures. The program included a multidisciplinary team of a certified community health worker, a registered nurse, and a registered environmental health specialist or a certified asthma educator as a case manager. The team provided behavioral intervention, environmental health education, and supplies like vacuum cleaners, green cleaning kits, and encasements. The team also referred residents to community partners who assist with weatherization, minor repairs, structural integrity or relocation.

Meals on Wheel's in-home safety initiative assists older adults in identifying and addressing fall related hazards in their homes. Local programs are offered throughout the United States, including in rural communities and may also offer referrals or direct home repair services.

Develop and Maintain Partnerships (cross-sector collaborations)

Partnering with a diverse set of federal, state, local, and non-governmental organizations and programs helps to provide more comprehensive and effective services.

Important partners may include faith-based organizations, refugee organizations, public housing authorities, water utilities, building/housing departments and code enforcement programs, physicians, legal aid and tenant advocate programs, landlords, educators, environmental justice programs at the state and local levels, healthy homes programs at the state and local level, the EPA, HUD, CDC, and Pediatric Environmental Health Specialty Units (PEHSU). See appendix for partnership table.

The following strategies and resources can be used to identify cross-sector partners and strategies to ensure healthy and safe homes and environments.

Collaborate with Water Utilities to Address Water Contamination

Visit the EPA's [Safe Drinking Water Information Systems \(SDWIS\)](#) webpage to identify public water systems in your area.

- Use [A Critical Connection: The Water and Healthcare/Public Health Sectors](#) from EPA to identify action

steps that you can take in partnership with your local utility to prepare for emergencies and protect health. Water system partnerships are partnerships between different water systems, often ones in neighboring areas, and may include combining services, sharing equipment, or formal consolidation.

- Review EPA's [collection and interactive map](#) of water system partnership case studies. While public health agencies are not traditionally included in these partnerships, if you are working closely with your utility, these examples may help identify opportunities for addressing challenges.
- Partner to take advantage of [funding opportunities to remove lead service lines](#). Review the Lead Service Line Replacement Collaborative's information on funding replacement of lead service lines. EPA also offers funding for [Small, Underserved, and Disadvantaged Communities](#).
- Review EPA's [Community-Based Water Resilience Guide](#), specifically the section on the Water Resilience Action Plan Kit for information about holding a community workshop to prepare for service interruptions.

Resources for Creating & Maintaining Partnerships

The National Association of County and City Health Officials' (NACCHO) resource, [Mobilizing Community Partnerships in Rural Communities Toolkit](#), offers general recommendations and stories from local organizations about how to successfully develop and maintain partnerships in rural communities.

Build Healthy Places Network's guide, [A Playbook for New Rural Healthcare Partnership Models of Investment](#), offers action-oriented guidance to healthcare organizations that would like to establish cross-sector partnerships in rural areas. The playbook includes healthcare and healthy housing case studies, which offer health partnership strategies for cross-sector rural work.

The Association of State and Territorial Health Officials' (ASTHO) report, [Supporting Resilience in Rural Areas Through Cross-Sector Partnerships](#), uses a Health in All Policies (HiAP) approach and provides considerations, strategies, and examples of working with partners across sectors to improve health and resilience in rural communities.

NACCHO's [Quick-Start Guide to Using Health in All Policies](#) provides a guide to implementing a HiAP approach in making and implementing decisions and plans for addressing social determinants of health. The [SOPHIA Guide for Health in All Policies Implementation](#) provides tools, tips, and strategies for implementing a HiAP approach.

Explore Policy Solutions for Private Well Water Quality

Work to address water quality issues in private wells. ChangeLab Solutions offers a suite of tools for environmental and public health practitioners to explore policy solutions for improving well water quality:

- Closing the Water Quality Gap: provides an overview of water quality policy, how environmental and public health can affect policy change, and specific policies for well water.
- Improving Well Water Quality and Well Stewardship Case Studies: provides four examples of state and local public health agencies using policy strategies to address well water.
- Navigating Unfamiliar Waters: leads public and environmental health professionals through identifying, exploring, adopting, implementing, and evaluating a new policy.

Partner with Energy Utilities, Non-Profits, and Health Care Providers for Home Retrofits

Partner with energy utilities, local nonprofits, and/or healthcare providers to provide home retrofits that can improve both energy efficiency and health. Many utilities offer programs to customers to receive free or low-cost energy efficiency upgrades. Examples include:

- New Hampshire Electric Cooperative, which serves 118 communities in the state, offers income-qualified members an energy audit and up to \$8,000 in energy efficiency and weatherization services, including insulation, air sealing, and health and safety measures. The cooperative partners with local community action agencies to handle the applications and conduct the retrofits. The services are available to both renters and homeowners.
- Lane Electric, a cooperative energy utility that an area covering 2,600 square miles in central western Oregon, offers small grants of up to \$1,000 for all members (25% of weatherization costs) and up to \$1,500 to low-income members for weatherization measures. If the property is a rental, the property owner must provide matching funds.

- The Tennessee Valley Authority (TVA)'s Home Uplift Program provides funding to local utilities and local nonprofits to weatherize and upgrade homes throughout TVA's service area. The most frequent interventions provided address home repairs, HVAC, insulation, air sealing, and duct work.

Community action agencies may also offer weatherization or energy assistance programs, frequently funded by the federal Weatherization Assistance Program and Low-Income Home Energy Assistance Program. Washington State Community Action Partnership provides a Weatherization + Health program that addresses both energy efficiency, helping to provide relief from high energy bills, and home safety.

Some health systems may also offer home retrofit programs. The Inova Health System partners with an affordable housing developer, Community Housing Partners (CHS) to provide energy efficiency and other home upgrades to patients who may benefit. Services are available for income-qualifying homeowners and renters.

Address Lead Hazards with Health Care and Child Care Providers and Code Officials

Form partnerships to address lead hazards in housing. This [factsheet](#) provides a list of actions that local governments, including local public health, can take to prevent lead poisoning, including:

- Outreach to and collaborate with local physicians and health care providers. Provide educational presentations on the sources of lead and state blood lead testing requirements to raise awareness and encourage compliance with state mandated screening guidelines. This outreach can also result in healthcare providers meeting or exceeding health care lead related performance measures, increasing provider scoring on health care report cards, and further incentivizing collaboration and provider compliance with state lead screening mandates. The California Department of Health's [Report](#) provides more detailed information on the ways that local health departments can collaborate with local physicians and health care providers.

- Collaborate with local childcare providers to identify and fix sources of lead. Use the [Lead-Safe Toolkits for Home-Based Child Care and Center-Based Child Care](#) to share policies, strategies, and resources with childcare providers. Provide education about lead poisoning to administrators, teachers, and school nurses. The [Connecticut State Department of Education website](#) provides a list of professional development opportunities for educators.
- Collaborate with code enforcement officials to identify and improve codes that pertain to lead hazards in housing. Use the [Code Comparison Tool](#) to compare your local codes to the International Property Maintenance Code and the National Healthy Housing Standard, and review the guides and best practices [here](#) about proactive rental inspection as a tool for improving housing quality.

Partner with Universities to Address Pests

Collaborate with universities and extension services to address pests and implement Integrated Pest Management (IPM) strategies.

- [Oregon State University](#) collaborates with local farmers, researchers, and experts to develop and implement IPM strategies.
- [Cornell Cooperative Extension \(CCE\) in Delaware County, NY](#) provides pest identification and IPM resources to local communities. Cornell University test samples of insects, plants, and invasive species to identify the potential pest.
- [Washington State University Extension](#) developed factsheets that details IPM strategies including cultural, mechanical, biological and chemical methods to manage common indoor pests.



Engage the Community Appropriately

Professionals working in environmental public health and healthy housing programs should have cultural humility and avoid judgmental communication. This is particularly true for those working with rural populations who have significant and growing diversity. Providing cultural competency training to staff and partnering with members of the community, including by using cultural navigators helps to ensure successful and respectful community engagement. To follow are resources and guidance for inclusive community engagement strategies.

- [Communicate to Make a Difference Series](#) includes five modules on cross-cultural communication and a collection of case studies that examine the practical application of the "Ten Strategies for Effective Cross-Cultural Communication," as described in the "Exploring Cross-Cultural Communication" course.
- [Guide to Providing Effective Communication and Language Assistance Services](#) is designed to help you and your organization communicate effectively with patients with diverse communication needs and preferences.
- [The Think Cultural Health](#) library includes resources on cultural competency, cross-cultural communication skills, and how to develop culturally capable materials.
- The Colorado Centers for Excellence in Newcomer Health [webpage](#) and [toolkit of resources](#) provide information on cultural navigation and using cultural navigators when engaging with community members in public health programs.



Partner with Community Health Workers

Having partners and employees that represent the community builds trust and relationships with community members and benefits both the program and the community. Engaging Community Health Workers (CHWs) is one way to bring in people who are familiar with the community and the cultural context. CHWs are members of the community who provide public health services, which can include home assessments, where they play an especially important role given the vulnerability residents may feel about inviting a stranger into their homes.

The Rural Health Information Hub [Community Health Workers Toolkit](#) includes an overview of CHWs and their role in rural communities, examples and models of CHW programs in rural areas, and tools and resources to help with program design, funding, implementation, evaluation, and dissemination. The National Rural Health Association's policy brief: [Community Health Workers: Recommendations for Bridging Healthcare Gaps in Rural America](#) provides examples of where CHWs have helped provide services in rural communities, as well as recommendations for rural health policymakers. Training materials and resources available for CHWs related to healthy homes issues include:

- [Community Health Worker Training Programs](#) as part of EPA's [Asthma Community Network](#) helps individuals find existing training and certification options for CHWs in local communities and nationally.
- [Community Health Worker Asthma Training](#) from Seattle-King County Public Health outlines remote protocol guidance for all educational and environmental topics CHWs may be discussing with clients and describes a process to ensure successful delivery of the remote services.
- [Massachusetts Department of Public Health Asthma Home Visiting Training for Community Health Worker](#) is a 4-day training on asthma intervention protocol that includes a home visit, environmental assessment, and education on modifiable factors to reduce asthma triggers. Motivational interviewing techniques are also discussed. [The 4-day training](#) includes one day on asthma management and medications, two days on environmental assessment and trigger reduction, and one day on motivational interviewing techniques
- [Healthy Housing Principles](#)
- [Healthy Home Principles and Assessment Practice for Health Educators and Community Workers](#)

Example Partnerships with Community Health Workers

TidalHealth, a large health service provider, [partnered](#) with Chesapeake Housing Mission and Rural Maryland Council to address healthy homes in rural Maryland. Utilizing a Community Health Worker (CHW), the hospital identifies homeowners that require housing repair assistance and refers them to Chesapeake Housing who conducts the repairs.

CHWs in [Rhode Island](#) are required by law to for legal challenges on unsafe housing conditions.

Call to Action

Addressing the unique healthy housing needs in rural and frontier communities presents both significant challenges and tremendous opportunities. Environmental public health and healthy housing professionals play a crucial role in ensuring that residents of these areas have safe and healthy living environments. By understanding the specific concerns and barriers these communities face, and by implementing innovative and collaborative strategies, we can make substantial progress in improving public health outcomes.



Other Resources

These resources offer additional tools for understanding the challenges and opportunities when working in rural communities.

- [Leveraging Technology to Increase the Efficiency and Accessibility of Healthy Housing Services: Strategies for Rural Communities with Dispersed Populations](#) from NCHH and NEHA provides a number of strategies to leverage technology to increase efficiency, accessibility, and scalability of services in rural and frontier communities. Each strategy includes a general description, useful tips, recommendations, examples, and potential benefits and limitations.
- [Rural Healthy Housing and Environmental Health 2023 Fact Sheet](#) from NCHH and NEHA provides a snapshot of key healthy housing and environmental health issues in rural communities and is intended as an introduction to the topic.
- [Rural Communities and Healthy Housing Primer](#) developed by NCHH and NEHA supports the above fact sheet. It provides additional information about how healthy housing issues manifest in rural communities, why these issues matter, and how they intersect with issues of health equity.
- [NCHH and NEHA's Identifying Needs of Rural Healthy Housing Organizations Questionnaire: Summary Report](#). This report summarizes the results of responses to a questionnaire and can be used by other organizations, state or local agencies, or other stakeholders to inform future environmental health and healthy housing work.
- The Center for Disease Control and Prevention's (CDC) [Public Health Strategies for Rural Child Mental Health: Policy Brief](#). This policy brief provides policy options, planning strategies, and case studies to address children's mental health in rural areas.
- CDC's [Leading Causes of Death in Rural America as a Public Health Issue](#). This website explores the factors that might put rural residents at higher risk of death from public health conditions and what local public health programs can do to improve the health of rural communities.
- The Rural Health Hub's [Rural Health Equity Toolkit](#) offers guidance and resources for rural communities on mapping community assets and promoting civic engagement and leadership. It also provides examples of local programs that are building community capacity to advance health equity.
- NEHA's [HiAP Preparedness Guide](#) provides a framework to taking a Health in All Policies (HiAP) approach to public health preparedness to improve the depth and effectiveness of collaboration at all stages of response.
- Smart Growth America's [Providing Well-Placed Affordable Housing in Rural Communities Toolkit](#) provides guidance to local governments about low-cost ways to support affordable housing in their communities.
- Rural Health Information Hub's (RHInhub) [Rural Emergency Preparedness and Response Toolkit](#) compiles evidence-based and promising models and resources to support organizations implementing emergency planning, response, and recovery efforts in rural communities across the United States.

Appendix: Partnership Tables

These tables provide a high-level overview of the agencies, organizations, and programs that you may consider partnering with to meet the environmental health and healthy housing needs in your community. It is intended as a starting point to identify partnerships you already have and those you may want to establish.

Health and Healthcare Partners

Agency or Organization Type	Program/Services	Contact Info
Nutritional programs and services	Food, education, and referrals to low-income families, often targeted at specific populations including pregnant women and infants/young children. May receive federal funding from <u>several programs</u> at USDA.	USDA <u>Food and Nutrition Service Programs</u>
Maternal and child home visiting programs	Visit homes during pregnancy and/or to families with infants and young children, providing education and connections to other services. May receive funding from HRSA, including through the <u>Maternal, Infant, and Early Childhood Home Visiting Program</u> (MIECHV) or the <u>Healthy Start Program</u> .	HRSA awarded recipients for <u>MIECHV FY23 state awardees</u> and <u>Healthy Star FY24 state and local awardees</u>
Physicians, clinics, and hospitals	Healthcare services. Nonprofit hospitals are required to spend some of their surplus on addressing community needs, including improving health. This is known as "community benefits" and you can learn more about how this works <u>here</u> .	HRSA <u>list of Federally Qualified Health Centers by state</u> .

Health and Healthcare Partners

Agency or Organization Type	Program/Services	Contact Info
Medicaid and CHIP programs	Provide health insurance to low-income adults and children.	<u>State profiles</u>
Pediatric Environmental Health Specialty Units (PEHSUs)	Provide guidance, expertise, support, training, and consultation on reproductive and children's environmental health issues.	<u>Regional PEHSU listing</u>
Home delivered meal programs	Deliver meals to older adults, including to those living at home as well as in group settings. Programs may also identify other issues in the home, offer home repair, or connect recipients to other services.	<u>Meals on Wheels listing</u>
Community paramedicine	Equips EMTs and paramedics to provide public health services and primary and preventative healthcare, which can be an important vector of care for populations that rely on emergency services for healthcare due to lack of access to other medical facilities or services.	Local emergency medical services providers

Housing Partners

Agency or Organization Type	Program/Services	Contact Info
Public housing authorities	Provide, manage, and maintain housing for income-eligible residents (public housing); manage the housing choice voucher program.	HUD listing of housing agencies , HUD public housing and housing choice vouchers data
State Housing Finance Agencies (SHFAs)	Provide affordable housing assistance and support affordable housing development.	Map by State
Tribal housing programs and Tribal designated housing entities (TDHEs)	Provide, manage, and maintain housing and housing assistance for Tribal members. TDHEs receive funding from HUD's Office of Native American Programs (ONAP).	HUD list of ONAP regional offices and Tribal contacts .

Housing Partners

Agency or Organization Type	Program/Services	Contact Info
Local building/housing department and/or code enforcement program.	Maintain and enforce local housing and building codes and standards; may administer home repair programs or other housing assistance or community development programs.	Usually in your city or town. May be within or partnered with a department of community development.
Local home repair programs	Provide assistance to homeowners (and sometimes rental properties) to fix critical health and safety issues in the home. May be operated by a local government, local nonprofit, or partnership between agencies. When operated by a government (or a nonprofit subcontracted to a government), may be funded by HUD's <u>Community Development Block Grant (CDBG)</u> or <u>HOME</u> programs.	<p>NCHH <u>home repair funding</u>.</p> <p>Home repair networks:</p> <ul style="list-style-type: none"> • <u>Rebuilding Together</u> • <u>Habitat for Humanity</u> • <u>NeighborWorks</u>
Private housing providers and landlords	Responsible for maintenance and meeting any applicable standards for rental housing (which will vary by location).	Identify your local providers.
Community Development Financial Institutions (CDFIs)	Provide access to local financing and investment, with a focus on community development and revitalization in low-income areas.	<u>List of certified CDFIs.</u>

School and Early Childhood Partners

Agency or Organization Type	Program/Services	Contact Info
Schools and educators		<p>Identify your local school district.</p> <p>Nineteen states provide funding for School-Based Health Centers (SBHCs) and School-Based Health Alliance affiliates in 26 states coordinate with and support SBHCs</p>
School nurses		<p>National Association of School Nurses affiliate organizations</p>
Head Start and Early Head Start	<p>Provides services including educational experiences, health screenings, and referrals to other services to children from birth to age 3 (Early Head Start) and 3-5 (Head Start) and their parents. Programs are available to families with low incomes or who are experiencing homelessness, children in foster care, and children with disabilities. Services may be provided in a center or through home visits (or both). Federal funding is provided by HHS.</p>	<p>Head Start and Early Head Start center locator</p>
Childcare providers	<p>Provide safe environments for young children. Services may be offered in a center or in a private home.</p>	<p>Identify your local providers.</p> <p>Online childcare directories or associations for your city, county or state or state's rNational Association of Family Childcare Providers representative</p> <p>Childcare.gov</p>

Other Partners

Agency or Organization Type	Program/Services	Contact Info
Organizations, agencies, and programs working on environmental justice	May be working to address a wide variety of issues, including environmental health and healthy housing.	<p>Identify partners in your area.</p> <p>Programs that have received funding from EPA environmental justice 2021, 2023 non-governmental, and 2023 governmental programs</p> <p>For state government efforts, you can view View state summaries of environmental justice-related mapping tools, policies, and contacts</p>
Legal aid programs	Provide free or low-cost legal advice or representation, often targeted to those with low or moderate incomes.	<ul style="list-style-type: none"> • Legal Services Corporation directory • LawHelp.org • The American Bar Association directory of law schools that provide pro bono services
Water utilities	Address contaminants in drinking water and lead service line removal.	EPA's Safe Drinking Water Information Systems (SDWIS) webpage.

Other Partners

Agency or Organization Type	Program/Services	Contact Info
Energy utilities	May provide free or reduced-cost energy efficiency upgrades or home retrofits to customers.	<p>Database of State Incentives for Renewables & Efficiency</p> <p>EPA webpage on working with lower power utility</p>
Refugee programs	Provide supportive services to refugees, unaccompanied children, and other eligible newcomers to the US. May receive funding from HHS Office of Refugee Resettlement (ORR) .	ORR's map of contacts by state
Community Action Agencies (CAAs)	Provide a range of services meant to address reduce poverty, which may include assistance with housing, transportation, nutrition, employment, education, and others. Related to housing specifically, many CAAs operate weatherization programs. Frequently funded through the Community Services Block Grant .	Map of Community Action Agencies
Other nonprofit programs and community-based organizations (which may or may not have nonprofit status); faith-based organizations and religious institutions that provide community services	May provide a wide range of services depending on the community. May also be well-positioned to advocate for community needs and priorities with other partners.	National Council of Nonprofits directory

About this Partnership

The National Center for Healthy Housing (NCHH) and the National Environmental Health Association (NEHA) are partnering to improve healthy housing and environmental public health in rural and frontier communities. Our intention is to gather information about the current state of healthy housing and environmental public health; collaborate, unite our strengths, and identify solutions and unique strategies to improve public health outcomes in rural and frontier communities.

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