

# Telehealth in Rural Communities

## How CDC Develops Programs That Deliver Care in New Ways

People who live in rural areas of the United States are more likely than urban residents to die prematurely from all of the five leading causes of death: heart disease, cancer, unintentional injury, chronic lower respiratory disease, and stroke.

CDC's [National Center for Chronic Disease Prevention and Health Promotion](#) uses several approaches to help improve the health of rural residents. One approach is telehealth, which is the delivery of health care through technology such as mobile phones or computers. It can help reduce barriers to care for people who live far away from specialists or who have transportation or mobility issues.

Telehealth can be an effective approach for communication and counseling. It's also a good way for doctors to monitor their patients' chronic conditions, like heart or lung disease. Better monitoring can improve patients' quality of life and reduce hospital admissions and deaths from chronic diseases. In addition, telehealth is a good way to deliver care quickly in an emergency, such as a stroke.

CDC is supporting telehealth projects across the country to give rural residents better access to chronic disease prevention and management programs and specialist care, including:

- Stroke care and cardiac rehabilitation.
- Diabetes management and prevention.
- Vision care for people with diabetes.
- Tobacco cessation.
- Epilepsy management.

### Stroke Care and Cardiac Rehabilitation

CDC's [Division for Heart Disease and Stroke Prevention](#) promotes the use of telehealth as a way to reduce heart disease and stroke risk factors in rural areas. A recent [study](#) looked at the use of telestroke services, which use videoconferencing to connect specialists in stroke centers to health

Compared to urban areas, rural areas have:



higher rates of unhealthy behaviors



less access to health care



less access to healthy foods





care providers in smaller hospitals with fewer resources. The study found that these services had increased significantly during 2008–2015, especially in rural areas. Telestroke services help increase the use of lifesaving treatments, such as ensuring that stroke patients get a clot-busting drug called alteplase within the national standard of 60 minutes of arriving at the hospital.

Grantees in CDC’s [Paul Coverdell National Acute Stroke Program](#) are working to help rural hospitals develop partnerships with hospitals that have telestroke capacity to improve outcomes and reduce deaths. The Coverdell Program is also collecting information to better understand the current use of telestroke services in hospitals and its potential benefits.

Cardiac rehabilitation—or cardiac rehab—is a prevention program that typically occurs in an outpatient hospital facility. It is designed to help patients improve their heart health after a cardiac event or procedure and prevent future events. However, participation is low, ranging from 19% to 34% among eligible patients across the country. Rural residents may have trouble participating in cardiac rehab because they cannot afford copayments, they lack transportation to a facility, or they do not live near a program.



Home-based cardiac rehab, alone or in combination with facility-based rehab, could help rural residents overcome some of these barriers. It typically involves smart devices and apps that allow doctors and other clinical staff to interact with patients and supervise them as they exercise in their homes or community fitness centers.

Evidence has shown that the safety and effectiveness of home-based cardiac rehab is equal to the care delivered in facilities. [Million Hearts®](#) 2022 is a national initiative co-led by CDC and the Centers for Medicare & Medicaid Services to prevent 1 million heart attacks and strokes within 5 years. Its priorities include increasing the use of cardiac rehab. One component of this effort is the [Cardiac Rehabilitation Change Package](#) for health care providers, which advocates home-based cardiac rehab or a hybrid model of facility-based and home-based rehab.



## Diabetes Management and Prevention

In the United States, 34.2 million people (about 1 in 10) have diabetes. Rural populations have higher rates of diabetes and lower rates of participation in [diabetes self-management education and support](#) (DSMES) services compared to residents of urban areas.

DSMES services help people manage their diabetes by eating healthy food, being active, checking their blood sugar, taking medicines, and handling stress. DSMES improves health and reduces diabetes complications and can be cost-effective or cost-saving for employers, insurers, and the US health care system. However, 62% of rural counties don’t have DSMES services.

In 2012, the Eastern Montana Telemedicine Network began a DSMES initiative called Promoting Realistic Individual Self-Management. This initiative included a 3-year telehealth component conducted in five rural clinics, each serving 30 to 300 patients with diabetes each year. Among participating patients, 61% reported that they were checking their blood sugar correctly after 6 months, compared to 31% before the program started. In addition, 29% said they were following an appropriate diet, compared to 8% before the program.

The CDC-led [National Diabetes Prevention Program](#) (National DPP) is a public-private partnership working to build a nationwide system to deliver an affordable, evidence-based lifestyle change program to prevent or delay type 2 diabetes. Programs can be delivered in person or online, and online programs allow more access and flexibility. About 200 programs are [available online](#).

The National DPP lifestyle change program can also be delivered by telehealth. For example, the Montana Department of Health and Human Services worked with Holy Rosary Healthcare of Miles City to start a telehealth pilot in eight remote communities.

From 2008 to 2015, almost 900 participants were enrolled in the pilot program, 29% of them at telehealth sites that connected to “host sites” through video conferencing. An evaluation of the program showed that weight loss and participation rates were the same for telehealth and in-person participants and suggested that telehealth delivery could increase access and participation.

## Vision Care for People With Diabetes

One complication of diabetes is blindness. CDC funds several telehealth projects to screen for eye disease in rural areas. For example, for the [Global Network Diabetic Retinopathy Project](#), the Yale-Griffin Prevention Resource Center is working to adapt a successful program from India for rural Ansonia, Connecticut.

CDC also funds Wills Eye Hospital in Philadelphia, Pennsylvania, to work with Federally Qualified Health Centers (FQHCs) and community-based eye care providers to reach people who are at high risk of glaucoma and other age-related eye disease by focusing on African American, Hispanic, and Asian populations and older adults. From April 1, 2015, to February 6, 2017, an [integrated telemedicine screening intervention](#) in primary care offices and FQHCs found a high rate of eye diseases.

## Tobacco Cessation

The health of people living in rural areas is affected by tobacco use more so than those in urban and metropolitan areas, often because of socioeconomic factors, culture, policies, and lack of proper health care. The 2019 report [Advancing Tobacco Prevention and Control in Rural America](#) summarizes aspects of the rural context that may have implications for





tobacco prevention and cessation, as well as evidence-based interventions to address tobacco use in this environment. It was published by the National Network of Public Health Institutes with funding from CDC.

Telehealth programs can provide a variety of tobacco use cessation services, but they often rely on high-speed Internet connections. Unfortunately, only about 60% of residents living in rural or tribal areas have such access, compared to over 95% of urban residents. As a result, the use of telehealth for tobacco control interventions is limited in rural areas.

Strategies that use cell phones are another option for reaching rural communities for tobacco cessation interventions. More than 90% of rural residents own cell phones, and more than 3 in 4 send or receive text messages. One way to overcome access barriers is to use texting, which provides a direct, immediate channel to communicate your message to residents who may not have high-speed Internet service.

In 2018, CDC and the American Lung Association developed a document called [Telehealth as a Vehicle for Tobacco Cessation](#) that explores the barriers to and potential benefits of using telehealth to improve access to evidence-based tobacco cessation services.

## Epilepsy Management

In 2015, about 3.4 million Americans had epilepsy. People with epilepsy benefit from regular care by a neurologist, but few neurology practices are found in rural areas. Adults with epilepsy are 5 times more likely to report lack of access to transportation as a barrier to health care than adults without the disorder, likely because of common transportation barriers.

CDC's [Epilepsy Program](#) funds the following telehealth interventions to reduce barriers to care:

### Epilepsy self-management programs

- [Project UPLIFT](#) (Using Practice and Learning to Increase Favorable Thoughts) is a program delivered entirely by phone that significantly reduces and prevents depressive symptoms in adults with epilepsy. UPLIFT has been piloted in nine states. Reductions in depressive symptoms among participants ranged from 24% to 43%.
- [HOBSCOTCH](#) (HOMe-Based Self-management and COgnitive Training CHanges lives) is an evidence-based program delivered primarily by phone that is shown to improve memory and quality of life in adults with epilepsy and memory problems.

### Epilepsy telementoring programs

- Project ECHO (Extension for Community Healthcare Outcomes) connects family practitioners, general neurologists, school nurses, and other providers to epilepsy specialists to improve the care of adults and children with epilepsy. It is supported by the Epilepsy Foundation.