HHS Public Access

Author manuscript

Vaccine. Author manuscript; available in PMC 2024 December 18.

Published in final edited form as:

Vaccine. 2024 September 17; 42(Suppl 3): 125897. doi:10.1016/j.vaccine.2024.04.043.

A Programmatic Update On COVID-19 Vaccination in Rural Communities in the United States

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Keywords

Rural; COVID-19 vaccination; partnerships; vaccine equity; commentary

When the first COVID-19 vaccines became widely available to the public in April 2021, demand and uptake varied across the United States (U.S.). Vaccination coverage lagged in rural areas [1,2], even though rural communities on average experienced disproportionate rates of hospitalization and mortality due to COVID-19 compared with urban and suburban areas. 3]

The Centers for Disease Control and Prevention (CDC)'s Vaccine Task force and the COVID-19 Rural Health Response Team recognized how multiple social, political, cultural, and historical characteristics impacted rural communities' vaccine confidence and uptake. [4] In order to improve vaccine confidence, a diverse communication effort with a variety of partnerships, training of trusted messengers, and outreach was needed to increase vaccine demand in rural communities. Therefore, CDC collaborated with existing community partners and developed new partnerships to further understand rural populations' health and vaccine needs, perspective on COVID-19 vaccine, and opportunities for improving COVID-19 vaccination uptake. When public health experts think of rural barriers to vaccines, they often initially focus on access, which makes sense with a new vaccine during a pandemic. This commentary highlights the greater complexity to vaccine uptake in rural communities. What follows are some examples of CDC's efforts to better understand rural health and learnings to inform ongoing vaccination efforts in rural communities.

CDC collaborated with NORC at the University of Chicago to conduct case studies [5] in areas where vaccination coverage in rural areas was higher than the state's overall

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coverage, which was not the national trend. Lessons learned from this work showed that identifying local partners to support the response, maximizing convenience and access to the vaccine, and leveraging trusted messengers are important considerations for other rural communities in ongoing COVID-19 vaccination efforts and in preparation for new public health threats. [5] The most impactful trusted messengers included family, friends, judges, faith leaders, barbershop owners, teachers, firefighters, emergency medical technicians, and various local leaders. [5] In a southern county of Texas, for example, a judge briefed school officials, members of the clergy, and business leaders on how to prepare and respond to COVID-19 before the first cases of COVID-19 were even reported in the county. These community leaders then spoke to their respective constituents, providing a unified and consistent message. When the first stay-at-home orders were made, the judge, medical professionals, and other local leaders shared the latest COVID-19 updates through weekly press conferences that were open to the public. These efforts set the groundwork for promoting vaccine uptake. The county was well prepared for mass vaccination efforts because they had already solved many of the logistical considerations while setting up testing sites. Once COVID-19 vaccines became available, community leaders and vaccination partners employed a combination of traditional and newer communication approaches to educate the public. These efforts included the same community conference calls but focusing on vaccine safety and efficacy, during which callers could ask questions, and social media promotion, such as Facebook Live interviews in Spanish and English with the local radio station. This example demonstrates the range of partners that collaborated to improve awareness, answer questions, and promote vaccination in a range of settings. The learnings from these case studies showed how trusted leaders and messengers can share COVID-19 resources, implement mobile vaccination clinics, create a united effort to vaccinate their community, and can serve as models for other rural communities. [5]

To learn more about COVID-19 vaccine attitudes and perceptions in rural communities, CDC partnered with the Federal Office of Rural Health Policy in the Health Resources and Services Administration (HRSA) to engage the National Rural Health Association (NRHA) and Morning Consult [6] to conduct polls from February 1-February 22, 2022, with rural populations, including a convenience sample of 2,500 rural adults, parents, and teens across the U.S. [7] These interviews provided data on where individuals obtain their health information, to whom they bring questions regarding their health, and why they decide to get vaccinated or not. The survey found that feeling overwhelmed with information and misinformation was the most commonly reported barrier to getting vaccinated. Healthcare providers were the most trusted sources for COVID-19 information and were key to fostering a vaccine dialogue. Knowing community members turn to healthcare providers for information reinforces that healthcare providers need to be included in community public health decisions and messages. If individuals feel overwhelmed with information, it’s crucial that the healthcare provider, as trusted messenger, is up to date on CDC’s latest guidance, is equipped with vaccination strategies to meet the needs of the community, [8] and is connected to the larger campaign to promote vaccination. The findings from this survey suggested that an on-going dialogue between the healthcare provider and their patients about vaccination is needed, particularly as individuals manage an overwhelming amount of information and misinformation.

Local partners such as government, health care organizations, health councils, schools and universities, businesses, pharmacies, media, first responders, religious leaders, and community-based organizations are key to understanding the community and social structure of their neighborhoods, towns, and rural communities. CDC funded the United States Department of Agriculture (USDA)'s National Institute of Food and Agriculture (NIFA) and the Extension Foundation to leverage U.S. Cooperative Extension Professionals, who have offices in every county in the U.S. and are educators in their community, to share COVID-19 vaccine educational materials and resources with rural groups. [9] The project, the Extension Collaboration on Immunization Teaching and Engagement (EXCITE), has allowed CDC and USDA to establish a new way of collaborating, and provided important insights into rural trusted messengers. In St. Cloud, MN, Somali grocery store owners relied on Extension Professionals and EXCITE resources to communicate real-time CDC COVID-19 vaccine information tailored to their Somali community during the pandemic. [10] While Extension Professionals routinely provide education related to agriculture, nutrition and health, and youth development, for some, vaccine education was a completely new area and thus, the collaboration with CDC included providing training to Cooperative Extension Professionals on vaccines and vaccination issues. Once equipped with evidence-based vaccine facts and messages and aligned with community partners to provide vaccines, in an internal report to CDC, the Extension Foundation estimated that Extension Professionals had reached over 18 million individuals across the country with COVID-19 education, which led to over 25,000 COVID-19 people receiving the vaccination, as of May 2023.

The rural health partnerships and activities were critical to understanding the approaches and education needed in addressing vaccine uptake and outreach in rural communities. These three collaborations, which included surveying adults about their trusted information sources, identifying elements of successful vaccination efforts in rural communities, and working with partners in the community, showed the importance of involvement by healthcare providers and trusted members of the larger community in communicating accurate COVID-19 vaccine information in a way that resonated with people living in rural areas. These activities suggest that vaccine uptake can improve by engaging with trusted messengers, listening to the communities' needs, involving local healthcare providers, and identifying and addressing barriers. These lessons learned will be important as CDC addresses future COVID-19 vaccines and other routine vaccinations in rural communities. An important next step would be to integrate evidence from epidemiological research including geographic and temporal variations and trends in COVID-19 vaccine uptake in rural and urban areas along with the lessons learned from the programmatic update described in this manuscript.

Acknowledgments:

We would like to acknowledge the following partners: United States Department of Agriculture, Extension Foundation, NORC at the University of Chicago, National Rural Health Association, and Health Resources and Services Administration.

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