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Strategies for Disseminating and Implementing COVID-19 Vaccines in Rural Areas

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The United States has well-documented rural–urban health disparities, and it is imperative that these are not exacerbated by an inefficient rollout of coronavirus disease 2019 (COVID-19) vaccines to rural areas. In addition to the preexisting barriers to delivering and receiving health care in rural areas, such as high patient:provider ratios and long geographic distances between patients and providers, rural residents are significantly more likely to say they have no intention of receiving a COVID-19 vaccine, compared with urban residents. To overcome these barriers and ensure that rural residents receive the vaccine, officials and communities should look to previous research on how to communicate vaccine information and implement successful vaccination programs in rural areas for guidance and concrete strategies to use in their local efforts.

Graphical Abstract

Keywords. COVID-19; coronavirus; rural; vaccine; vaccination.
Unfortunately, there are now cases of COVID-19 in nearly every rural community in the United States, and some have seen cases increase at a faster rate than anywhere else in the country [2]. If there was a hope that rural America could be spared the brunt of the pandemic, that hope is long gone.

Fortunately, with the approval of effective vaccines, the conversation is now shifting to disseminating vaccine information and implementing vaccinations [3], particularly in rural areas. A recent study found that rural residents were significantly more likely to say they had no intention of receiving the vaccine, compared with urban residents [4]. Ensuring that rural residents receive the vaccine means taking into consideration the challenges and cultural context in rural areas. Looking to previous research on how to communicate vaccine information and implement successful vaccination programs in rural areas can offer guidance and concrete strategies that officials and communities can use in their local efforts.

IMPORTANCE OF COMMUNITY LEADERS AND ORGANIZATIONS

Community leaders and organizations influence the community on many topics, including health. In a study of the human papillomavirus (HPV) vaccine in rural areas, religiosity was an important factor in whether parents chose to vaccinate their children [5]. Parents reported that their vaccine-related decisions and beliefs were influenced by other church members and saw the church as an active disseminator of health information. In fact, most parents reported a desire for their pastors to present information specifically on the HPV vaccine. Parents who did not report this desire indicated that this was driven by concern that the pastor lacked the training to discuss the topic and that it was better left to someone educated on the vaccine. If religious leaders were informed and educated about the COVID-19 vaccines, there might be wide acceptability in them discussing the topic with their congregations.

In another study, researchers implemented a comprehensive, community-wide campaign to increase HPV vaccine rates among children [6]. Their campaign included presentations about the vaccine and HPV at school- and community-based events. They also distributed educational materials to health clinics in the community and, importantly, used Facebook, local radio stations, and newspapers to provide a description of their program and advertise events. Using this approach, they were able to significantly increase vaccination rates among children in the community.

ROLE OF SOCIAL MEDIA AND INTERNET

Social media and the Internet should be leveraged in the dissemination of information about the COVID-19 vaccines. In a study of women in rural Kentucky, anonymous sources of health information were preferred to interpersonal sources, such as a family member, friend, or health care professional [7]. Concern about stigma was associated with preferring an anonymous source, and the internet was the most preferred anonymous source. Given that rural Americans report having less intention to get a COVID-19 vaccine [4] and given the influence of community leaders and friends/family on health intentions, having accurate but anonymous sources of information about COVID-19 vaccines, especially on the internet and social media, will be critically important to ensuring that all those who want to learn about the vaccines can do so.

In a separate study, researchers looking at the uptake of the influenza vaccine in one rural town found that both residents who received the vaccine and those who did not believed the vaccine was affordable, convenient, and quick to receive [8]. The main difference between those who received the vaccine and those who did not was whether they believed the vaccine made them sick and whether they believed getting the vaccine was worthwhile (the former being associated with not receiving the vaccine and the latter with receiving it). However, half of those who believed the vaccine was worthwhile still did not get it. This suggests that there are additional barriers to receiving the vaccine that are not related to affordability, access, or worth, and perhaps facilitating the dissemination of accurate information via trusted channels, such as community leaders and social networks, could overcome these barriers.

ALTERNATIVE DISTRIBUTION SITES AND MODELS

Given the challenges of providing and receiving health care in rural areas [9, 10], vaccine rollout will certainly require specialized strategies. In a study of the differences in location of influenza vaccinations, those in rural areas were more dependent on traditional, clinical locations, such as a physician’s office, hospital, or health department, than those in urban areas [11]. The authors believed this was due to a lack of alternative distribution sites such as retail clinics or pharmacies in rural areas. The lack of alternative distribution sites in rural areas, as well as the overall lack of clinical sites, likely contributes to the overall lower vaccination rates in rural areas [12, 13]. Therefore, increasing both clinical and alternative distribution sites may significantly increase access to COVID-19 vaccines in rural areas.

Pharmacies are one such alternative distribution site for which there is considerable evidence of effectiveness. In a study of vaccine distribution in Texas, if pharmacists were considered vaccine providers, 18% of previously inadequately covered rural census tracts (defined by provider-to-resident ratio) would become adequately covered [14]. In addition to pharmacists being more geographically dispersed in rural areas, rural residents frequently report positive relationships with their pharmacists [15], which could facilitate residents seeking out a COVID-19 vaccine (or information on it) from them. Furthermore, rural
pharmacies are already aware of the important role they could play in vaccine distribution [16].

Despite the promise of rural pharmacies as vaccine distribution sites, the number of independent pharmacies in rural areas has been steadily declining [17], and therefore additional alternative vaccine distribution sites must be explored. Often taking the form of vans, mobile health units or clinics (MHUCs) can successfully reach rural residents who do not have adequate access to other types of health care [18]. MHUCs in rural Appalachia were found to mitigate many of the access barriers presented to rural residents [19]. The researchers also found that the private, trusted environment MHUCs offered, coupled with the fact that MHUCs often serve patients who do not receive routine health care, led to the discovery or disclosure of multiple problems with patients beyond their initial complaint [19]. For example, an MHUC may be specifically targeting breast cancer screening but during that encounter additional concerns such as hypertension or intimate partner violence may be discovered. This would also very likely be the case in the event that MHUCs are used to distribute COVID-19 vaccines, and as such, MHUCs should have protocols in place to address these additional concerns. This may mean having additional providers on hand who are trained to triage these concerns or having a robust referral database to direct patients to for additional follow-up.

CONCLUSIONS

Nearly a year into this pandemic, there is finally a light at the end of the tunnel. We must now focus our efforts on ensuring that every rural resident who wants a COVID-19 vaccine receives one and, importantly, that rural residents are not the last to receive them. Despite the challenges to providing health care in rural areas, there are also, fortunately, effective strategies to overcome these challenges, specifically as they relate to vaccinations. Learning from and utilizing these existing evidence-based strategies can ensure that the COVID-19 vaccines are rolled out efficiently and equitably in rural areas.

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