

# Challenges and Limitations of the COVID-19 Vaccine Distribution In Arizona Federally Qualified Health Centers

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## Introduction

The COVID-19 vaccine roll out in Arizona has been plagued with challenges. Insufficient and inconsistent supply, confusing eligibility criteria, rigid storage requirements, and the short amount of time between vaccine preparation and expiration are just a few challenges with which distributors have grappled. As eligibility expanded, healthcare clinics faced unexpected limitations and barriers that needed to be evaluated and resolved. The objective of this research proposal was to evaluate and compare the limitations/barriers and effective vaccine strategies pharmacists have come across in safety net clinics in Arizona.

The significance of our study was to characterize and describe the challenges of state-based vaccine distribution versus direct distribution to clinics to better inform and guide existing and future vaccine efforts. Arizona's rural communities were home to more than 350,000 people and almost 60 million Americans live in rural communities nationwide.<sup>1,2</sup> The clinics serving Arizona's rural population were a part of the COVID-19 vaccination efforts, and they experienced a different set of problems than urban health centers. Understanding what barriers Arizona's rural clinics face while rolling out COVID-19 vaccines would help improve the allocation of resources and assistance. There may have been some relevance to other rural parts of the United States because a lack of healthcare to underserved areas did not only reside within the boundaries of Arizona but throughout the nation as well.

## Specific Aims

1. To compare the identified challenges and opportunities described by FQHC clinics during the COVID-19 vaccine roll out in early 2021.
2. To make recommendations for future best practices in the event of another global pandemic.

## Methods

**Design:** This descriptive, cross-sectional study used data obtained from structured telephonic interviews and electronic surveys.

**Subjects:** Vaccine coordinators from clinics among the Arizona Alliance Community Health Centers (AACHC).

**Measures:** Data was collected using a questionnaire and/or a semi-structured interview. The questionnaire/guide was separated into 4 sections; general, challenges, effective strategies, and future recommendations and has a total of 24 items.

**Data Collection:** Recruitment was completed by contacting members of the AACHC and asking to be directed to a vaccine coordinator. Once in contact with the participant, a consent script and a survey were emailed to the subject, or a consent script was read to them, and the telephonic interview was conducted.

**Data Analysis:** The themes seen among rural and urban FQHCs were compared by: 1) Reviewing the written transcripts and identified codes within the responses 2) Discussing the codes with the principal investigator and co-investigators for thematic organization 3) Categorizing themes and calculated the number of participants that fall in each theme.

## Results

	Rural Clinics	Urban Clinic	Total
Lack of public health communication channels	5/5	0/1	5/6
Vaccine hesitancy and misinformation	5/5	0/1	5/6
Workflow and staffing difficulty	5/5	1/1	6/6
Ineffective state distribution and management	3/5	1/1	4/6
Problems with inventory and storage of vaccines	4/5	1/1	5/6

	Survey Responses
Lack of public health communication channels	"I believe we have not yet done enough to address [communicating correct information]" "We have also tried to utilize our social media platforms to communicate [accurate] information about COVID vaccines"
Vaccine hesitancy and misinformation	"Public fear of 'under tested' vaccine" "One of the biggest challenges we faced was vaccine hesitancy" "..growing spread of misinformation, disinformation, conspiracy theories, & rumors through online platforms..."
Workflow and staffing difficulty	"Pharmacy initially given the job [to vaccinate] with little support/extra help" "Lack of staffing then and now"
Ineffective state distribution and management	"...the organization we went through would change the amount [of vaccines] we would get" "...distribution could have been better if the COVID vaccines had been added to Drug Distribution channels sooner"
Problems with inventory and storage of vaccines	"Smaller sites had more trouble with wasting Moderna vaccines because they come in packs of 10, whereas Pfizer was groups of 6" "One challenge anticipated was cold storage"

## Discussion

Many of the rural FQHCs experienced trouble ordering larger quantities of the vaccine, distributing the vaccine to patients in rural areas, and finding the staff to administer the vaccine. On the other hand, the only urban clinic response described having issues with storing, minimizing waste, and reporting of the vaccine, which was expected because the urban clinics will receive more stock and have a better opportunity to fill staff positions. The struggles of urban FQHCs were general and anticipated with a clinic in a more densely populated area; however, rural clinics needed to address more basic matters, such as staffing and ordering enough of the vaccine. One of the reasons why vaccine hesitancy and fighting vaccine misinformation was profoundly repeated throughout the responses of the rural clinics is because they understand they are responsible for vaccinating a large portion of their cities/counties. Urban FQHCs were only focused on their patients since they understand that there are several other clinics in the area administering vaccines to their community.

Most of the clinics had mentioned using previous workflow strategies, specifically the drive-thru vaccine clinics, to create an organized flow of patients, minimize patient contact, and vaccinate as many patients as possible. One strategy that the urban clinic shared with 3 of the rural clinics was attending webinars and reaching out the county and the vaccine manufacturers for information on the vaccine and strategies on how to conduct a mass vaccination event. Other rural clinics reported contacting neighboring clinics for information and advice on their attempts to vaccinate their community.

Regarding the survey, the program used to record the answers of the participants' responses would visually cut off after a certain number of characters; this resulted in missing details and shorter responses from some of the answers recorded. The most important limitation was that only one of the six participants was from an urban clinic; therefore, the responses from the urban clinic were generalized for all urban clinics to be able to compare with the responses from the rural clinics. This limitation was assuming that the strategies and challenges were consistent among all urban clinics, which may or may not be accurate. The generalization of all urban clinics from one response should be taken account for when assessing the results of this study.

## Conclusion

Most of the challenges experienced during the COVID-19 vaccine rollout between urban and rural Federally Qualified Health Centers in Arizona were different. Many of the rural clinics came across issues with ordering the vaccines, administering the vaccines to the public in rural areas, and finding the staff, whereas the urban clinic reported trouble with storing, minimizing waste, and reporting. There were several similarities seen between the rural and urban clinics when it came to strategies used for the vaccine rollout, which included using previous vaccine workflows and attending webinars and training sessions held by the state and vaccine manufacturers.

## References

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