

NCUIH in the News: Practical hurdles, cultural distrust in Native communities could hamper vaccine distribution

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Cold-chain and two-dose requirements for promising vaccine candidates pose serious challenges for Native American communities without reliable electricity or transportation.

On the Hopi Nation in northeastern Arizona, the remote nature of its communities and transportation obstacles present logistical challenges to the tribe's pandemic response. Here, homes line the top of the village of Shungopavi, one of three villages on Hopi's Second Mesa. Hopi Tribe

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By Kelly Cannon

When Timothy Nuvangyaoma, chairman of the Hopi Tribe, heard there were [two coronavirus vaccines](#) that both showed promising data of more than 90 percent efficacy, he felt initial relief that soon transitioned to cautious skepticism.

That's because the logistic and cultural challenges of delivering a Covid-19 vaccine with precise temperature requirements and two-dose administration to members of the Hopi Tribe are vast: Hopi often live in remote locations and only one-third of the population has reliable means of transportation, according to officials with knowledge of vaccine distribution planning. Hopi lands span more than 1.5 million acres and encompass parts of both Coconino and Navajo counties in northeastern Arizona.

Power supply is always a concern, brownouts are common, and generators are a luxury. The Hopi Health Care Center has to outsource much of its care.

Full coverage of the coronavirus outbreak

Meanwhile, [the Pfizer vaccine](#) requires transportation at minus 94 degrees Fahrenheit and must be ordered in units with a minimum of 1,000 doses. And while this week's preliminary results from biotech company Moderna Inc. showed encouraging data that [its candidate was 94.5 percent effective](#), that vaccine still requires long-term storage at sub-zero freezer temperatures, short-term storage in a refrigerator and a two-dose administration separated by multiple weeks.

Other options progressing through the pipeline aren't as finicky; one of the Johnson & Johnson candidates, for example, has a one-dose regimen and is expected to remain stable at basic refrigerator temperatures for longer periods of time.

Added to the logistical challenges is the broader, long-simmering cultural mistrust of vaccines and

clinical trials felt by tribal communities as a result of historical trauma, making their skepticism about the safety of vaccines more pronounced.

"There's always that reluctance as a Native American," Nuvangyaoma said. "I have to make sure that it's going to be able to help. And I don't want to get people's hopes up."



Chairman Timothy Nuvangyaoma. Hopi Tribe

For Nuvangyaoma and leaders across other tribal nations, Covid-19 has been [an extraordinary crisis](#).

The pandemic has highlighted [long-standing structural inequities](#) and health disparities for American Indians and Alaska Natives, [many of which are rooted](#) in the federal government's chronic underfunding of tribal and urban health care systems, despite legal and treaty obligations to do so. According to the Centers for Disease Control and Prevention, [the Covid-19 infection rate is 3.5 times](#) higher for American Indians and Alaska Natives, who are also more likely to suffer hospitalization or mortality than non-Hispanic whites.

The collapse of tribal economies due to the virus, as well as problems and regulations around the distribution of emergency federal funds, stalled any potential recovery even more.

Amid America's mismanaged response to the pandemic, few communities have borne the brunt quite like smaller tribal nations. For the Hopi, a people who have maintained a connectivity to their traditional ways of life and identity, the loss of even one member is amplified.

The virus "has taken elders who should have been able to pass this down to the younger generation," Nuvangyaoma said of the tribe's cultures and traditions. "It's taken the younger generation who should be the ones that are picking up where we're leaving off, to continue with our story."

'It's a gamble at this point'

Throughout the pandemic, tribal leaders have faced rushed processes and deadlines to make consequential decisions involving vaccine readiness, such as whether to receive vaccine allocations through the state or the Indian Health Service. Some Urban Indian health clinics were told one day before the presidential election that they needed to make the choice by the end of that week.

Tribal leaders are making "life and death decisions within their tribal communities on the reservations and villages right now . . . so they may not always have the time to respond in a week," said Abigail Echo-Hawk, a citizen of the Pawnee Nation of Oklahoma, director of the Urban Indian Health Institute and chief research officer for the Seattle Indian Health Board.



Chairman Timothy Nuvangyaoma and others on the site of the new water well system that will supply water to the Oraibi village, funded with CARES Act funds. That will help with pandemic response by increasing hand-washing and sanitation, especially in individual homes. Hopi Tribe

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The Hopi Tribe opted to receive allocations through the Indian Health Service, the federally funded

health care system responsible for providing services to approximately 2.6 million American Indians and Alaska Natives. According to officials involved in the logistics planning, the Hopi Tribe is preparing for a direct-shipment scenario from the manufacturer or a “hub and spoke” strategy using ultracold storage in a central location like Phoenix as a distribution hub.

Supply chain experts like Julie Swann, a professor at North Carolina State University who previously advised the CDC during the 2009 H1N1 pandemic, are greatly worried about the logistics involved in cold-chain management of the vaccine for these communities.

“Pfizer kind of acts like that’s going to solve the problem and to some extent, the federal government acts like that, as well,” Swann said of the company’s direct delivery approach that ships vaccines in specialized containers packed with dry ice.

While Pfizer’s strategy would work for a mass vaccination clinic, she explained, it would not be as effective for a health care provider trying to allocate small amounts of vaccine to multiple people over time.

“I think the changes in the Moderna vaccine make it much easier to give that one in rural or sparsely populated areas,” Swann said.

Moderna’s vaccine [can remain stable at standard refrigerator temperatures](#) of 36 to 46 degrees Fahrenheit for up to 30 days once thawed.