

RESPONDING FROM A FRACTURED FOUNDATION:  
An Analysis of the COVID-19 Response on the Navajo Nation, to Explain Observed Elevated  
COVID-19 Mortality Rates

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**EXECUTIVE SUMMARY**

One of the more sobering impacts of the COVID-19 pandemic is the disproportionate mortality burden on disadvantaged and minority populations. Native Americans have been particularly affected, with prior literature estimating that nationally, Native Americans have significantly higher COVID-19 mortality burdens than Whites, Blacks and Latinos. Prior literature has found that reservation status, or the percentage of Native Americans who live on reservations in a given state, is correlated with a higher standardized mortality ratio. Given the importance of reservations for Native American communities, and the responsibility of the Federal government to support these tribal lands, these findings are particularly troubling. In a pandemic with few pharmacological interventions, the health system, governmental and individual responses can either exacerbate or reduce mortality. There are three important distinctions between reservation and non-reservation life in the context of the COVID-19 response. For one, health services are largely provided by the Indian Health Service to reservation residents. Secondly, sovereign tribal governments govern reservation lands. Lastly, community members are more socio-economically vulnerable. Using qualitative interviews conducted with Navajo Nation Indian Health Service physicians and Navajo Nation community members, and also original survey data from both Native American and the general population quantifying parts of the health system and individual response, I ask: **“How have Native American reservations, particularly the Navajo Nation, responded to the COVID-19 pandemic? Have reservation responses contributed to higher COVID-19 mortality rates associated with reservation status?”**

I find that the response itself on the Navajo Nation, and potentially reservations more broadly, has been significantly *more* protective<sup>1</sup> than the general population to reduce COVID-19 transmission and ultimately mortality. The Navajo Nation has had strong public health efforts (higher rates of vaccination, strong contact tracing efforts, and effective public health messaging campaigns), strict lockdown policies (weekend and nightly curfews) and broad citizen compliance, and protective individual behavioral decisions (high rates of mask compliance). However, pre-existing factors, largely resulting from historical Federal policies surrounding tribal lands, has hindered the response at all levels. The Indian Health Service direct care response has been challenged because existing understaffing challenges, lockdown enforcement has been inhibited by existing jurisdictional challenges, and resource constraints have made it more difficult for individuals to distance from extended family members. All of these factors exacerbate transmission, and likely contribute to increased mortality.

**“I want you to put this down. I want to see where this goes. [COVID-19] can't be for naught. We've lost too many people. Too many good people.”<sup>2,3</sup>**

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<sup>1</sup> 'Protective,' decisions are defined as actions that aim to prevent the spread of COVID-19.

<sup>2</sup> Barbara. Interview by Katherine Leggat-Barr. Zoom Call. February 21, 2021.

<sup>3</sup> Barbara, a Navajo Nation community member, shared this, recounting the significant impact of COVID-19 in her community. COVID-19, in many ways, serves as a call to action to remediate many of the inequities that have existed for generations. (Note: Barbara is a pseudonym).

## INTRODUCTION:

On the Navajo Nation, as of April 7, 2021, approximately 17% of the reservation population had been infected with COVID-19 since March 2020.<sup>4</sup> In comparison, only 9% of the US population has been infected with the virus as of April 7, 2021.<sup>5</sup> Approximately 0.73% of the reservation population has died of COVID-19, where in comparison, only 0.15% of the US population had died of COVID-19.<sup>6</sup> Reservation status, or the percentage of Native Americans who live in a given state, is correlated with higher state level COVID-19 mortality in existing literature.

For a virus with no pharmacological treatment, the response at the health system, governmental, and individual level are vitally important to lower mortality rates.<sup>7</sup> Reservation life differs from normal life in three ways that are important in the context of a COVID-19 response. Firstly, reservation Native Americans are more likely to use Indian Health Service (IHS) facilities than non-reservation Native Americans, given Indian Health Service facilities are concentrated in these spaces.<sup>8</sup> Secondly, reservations are governed by tribal governments. In the context of a pandemic where consistent governmental policies promoting public health practices are crucial to reduce COVID-19 spread, the choices and jurisdictional capacity of a given tribal government are important in influencing mortality rates. Lastly, reservation residents are more socio-economically vulnerable, with lower median incomes than non-reservation Native Americans,<sup>9</sup> which could lead to higher transmission and mortality.

My thesis examines how these three levels of COVID-19 response can either explain or not explain the higher observed mortality rates correlated with reservation status and observed on the Navajo Nation. Specifically, my thesis aims to answer the question: **“How have Native American reservations, particularly the Navajo Nation, responded to the COVID-19 pandemic? Have reservation responses contributed to higher COVID-19 mortality rates associated with reservation status?”** Response<sup>7</sup> is broadly defined as how various institutions and individuals have adapted and changed during the to the COVID-19 pandemic to either mitigate or exacerbate viral spread. This question helps explain why this sobering observed mortality disparity is observed.

Based on interviews I conducted with Navajo Nation community members and health care workers who primarily work in Indian Health Service facilities on the Navajo Nation, and original survey data I collected from February 18-March 18, 2021, analyzing the health system and individual response among Native Americans and the general population, I conclude that the Navajo Nation in particular has had a more protective response in many ways than the general United States, with stronger public health efforts (higher rates of vaccination, stronger contact tracing efforts, and effective public health messaging), stricter governmental policies promoting public health guidelines, and more protective behavioral individual actions. However, longstanding, pre-existing, external factors at the health, government, and individual level have inhibited the Navajo response effort and contributed to the elevated mortality on the Navajo Nation. These include the underfunding of the IHS, jurisdictional challenges making lockdown enforcement challenging, and resource constraints making distancing between family units difficult. These characteristics, which predated the pandemic, are mostly historical and have, at least in part, originated from Federal policy. This shows the largely unavoidable interdependence of tribal sovereigns on other jurisdictions.

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<sup>4</sup> “Dikos Ntsaaígíí-19 (COVID-19),” Navajo Nation Department of Health, accessed February 9, 2021, <https://www.ndoh.navajo-nsn.gov/covid-19>.

<sup>5</sup> “COVID-19 Map,” Johns Hopkins Coronavirus Resource Center, accessed March 2021, <https://coronavirus.jhu.edu/map.html>.

<sup>6</sup> “COVID-19 Map,” Johns Hopkins Coronavirus Resource Center.

<sup>7</sup> Benjamin J. Cowling et al., “Impact Assessment of Non-Pharmaceutical Interventions against Coronavirus Disease 2019 and Influenza in Hong Kong: An Observational Study,” *The Lancet Public Health* 5, no. 5 (May 1, 2020): e279–88, [https://doi.org/10.1016/S2468-2667\(20\)30090-6](https://doi.org/10.1016/S2468-2667(20)30090-6).

<sup>8</sup> “Locations | Indian Health Service (IHS),” Indian Health Service, US Department of Health and Human Services, accessed May 13, 2020, <https://www.ihs.gov/locations/>.

<sup>9</sup> US Census Bureau, “My Tribal Area- US CENSUS Data,” accessed April 24, 2020, <https://www.census.gov/tribal/?st=04&caianihh=2430>.

## METHODOLOGY:

This thesis employs a mixed method approach, including qualitative interviews and an original survey. A significant portion of the findings result from qualitative, original, semi-structured interviews with both Navajo Nation community members, and health care providers who work at Indian Health Service facilities across the Navajo Nation. Original survey data collected by the researcher, comparing broadly the COVID-19 experience of the general population with (reservation) Native Americans, provided important information about differences between the health and individual response during the COVID-19 pandemic on reservation lands in comparison to the general population.

During the research process, I interviewed ten Navajo Nation community members. These interviews focused on their experience during the COVID-19 pandemic. I also interviewed ten health care professionals, the majority of whom worked for the Navajo Nation Indian Health Service. Questions centered around their role during the COVID-19 pandemic, and the strengths and weaknesses of the overall health response. These interviews were semi-structured, meaning similar questions were asked to each participant.

The thesis also relies on original survey data. Before I conducted this survey, there was little available information for most of these variables.<sup>10</sup> I developed two surveys that contained the same questions; however, one targeted all racial groups in three states (Arizona, Utah and New Mexico), and the other targeted Native Americans in six states (Arizona, California, Mississippi, New Mexico, Utah and South Dakota). Responses from both surveys were collected from February 19 to March 19, 2021. The survey was circulated through two methods. The vast majority of both the general population and Native American survey was circulated online by CINT, an online survey research company recommended by the Princeton Survey Research Center. Individuals who filled out the survey through email represented a very small portion of the Native American respondents (<5%). In all surveys, individuals were only eligible if they were >18 years old and agreed to the consent form before beginning the survey. Logistic regression models quantified the difference between reservation and non-reservation responses.

The interview data, supplemented by the survey data, provides important perspective into how reservation responses differed from the general population response, and how potentially, these differences can explain higher mortality rates that are correlated with reservation status.

## FINDINGS:

**Key Observation #1:** The *public health* response on the Navajo Nation has been effective. However, the *direct care* response has been inhibited by existing understaffing challenges.

- ◆ Broadly, the public health response focuses on population health and aims to prevent disease from happening and spreading.<sup>11</sup> In contrast, direct health response is centered around the individual patient, and is largely curative (i.e. treating a sick individual).<sup>12</sup>
- ◆ The rate of vaccination on the Navajo Nation is much higher than the general population in the United States. As of April 25, 2021, 55% of the Navajo Nation population under 18+ had received both doses of the COVID-19 vaccine.<sup>13</sup> In comparison, only 27% of the

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<sup>10</sup> One study was released on vaccine willingness among Native Americans during the collection period, however, was released after the survey had been formulated.

<sup>11</sup> Woolf, Steven H., and Laudan Aron. *Public Health and Medical Care Systems. U.S. Health in International Perspective: Shorter Lives, Poorer Health*. National Academies Press (US), 2013. <https://www.ncbi.nlm.nih.gov/books/NBK154484/>.

<sup>12</sup> *Strengthening Public Health as the Foundation of the Health System and First Line of Defense, The Neglected Dimension of Global Security: A Framework to Counter Infectious Disease Crises* (National Academies Press (US), 2016), <https://www.ncbi.nlm.nih.gov/books/NBK368392/>.

<sup>13</sup> "Navajo Nation COVID-19 Vaccine," Navajo Department of Health, accessed March 16, 2021, <https://www.ndoh.navajo-nsn.gov/COVID-19/COVID-19-Vaccine>.

general US population had received both doses.<sup>14</sup> While Navajo interlocutors expressed mistrust of the health system, this did not appear to be reflected in lower vaccine willingness. Higher vaccine willingness appeared due to two factors. Firstly, effective messaging, featuring salient community authority figures, contributed to higher vaccine confidence. Secondly, Navajos were more familiar with the danger of COVID-19, given the higher mortality burden in their communities, and were more likely to get vaccinated as a result. Existing vaccine infrastructure also enabled a strong rollout.

- ◆ Public health messaging on the Navajo Nation was not only effective to increase vaccine confidence, it also was effective to educate the populace about appropriate behavior in the context of a pandemic. Information was presented in a way that were salient and meaningful to community members, increasing protective behavior decisions, and likely decreasing transmission.
- ◆ The contact tracing workforce on the Navajo Nation is much larger than the contact tracing workforce across the US and appears to have been more successful as well.
- ◆ Community focused, public health efforts organized by individual providers have been common and effective across the Navajo Nation to reduce spread. Isolation programs to quarantine COVID-19 exposed homeless individuals are one example that led to a reduction of COVID-19 transmission.
- ◆ The direct care response has not been nearly as successful, with many individuals with severe cases of COVID-19 having to be flown out to other hospitals. The direct care response has been inhibited by existing understaffing, resulting from chronic underfunding of the IHS.

**Key Observation #2:** The Navajo Nation government has implemented some of the strongest lockdown measures in the country. While there appears to be widespread compliance among the Navajo populace, challenges that predated the pandemic inhibited the tribe's response to fully enforce the lockdowns, likely contributing to increased transmission and mortality.

- ◆ The Navajo Nation's lockdown measures have been stricter than all states. Nightly and weekend curfews have been enacted for the vast majority of the pandemic, where all businesses were closed, and residents were to remain at home. A mask mandate was implemented before most states. In contrast, the neighboring state of Arizona has not issued a mask mandate, and the governor tried to block local governments from issuing one.
- ◆ Community members felt that while the lockdowns were inconvenient, they were important and necessary to control COVID-19 spread.
- ◆ Community members and health care professionals cited border town transmission (which are towns that border the reservation), as places of where reservation residents initially contracted COVID-19. Border towns had looser COVID-19 restrictions. Border towns have undermined public health measures in the past.
- ◆ Limited material assistance and existing poverty made it difficult for residents to fully comply with lockdowns. While the Navajo Nation held food drives, these were not enough for residents to fully avoid the border towns for supplies.

**Key Observation #3:** Individual behavioral choices on behalf of Navajo residents were largely protective. However, multigenerational households appeared to be one of the most devastating sources of COVID-19 spread.

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<sup>14</sup> "COVID Data Tracker," Centers for Disease Control and Prevention, March 28, 2020, <https://covid.cdc.gov/covid-data-tracker>.

- ◆ Masking rates were higher on the Navajo Nation. This observation is supported both by survey data, and interlocutors insights. Higher masking compliance appeared to be driven by the collectivist nature of the Navajo culture, where individuals considered the impact of their behavior on the larger group.
- ◆ Multigenerational homes, which serve important social functions in non-pandemic times, were devastating sources of spread during the COVID-19 pandemic. Largely resulting from existing resource constraints and resource sharing networks, intergenerational interaction was difficult to avoid. Oftentimes, ‘one weak link’ or infected person (which most commonly were essential workers), could infect an entire family, and was particularly consequential for elderly individuals.

**Key Observation #4:** Original survey data collected from both Native Americans as well as the general population, supported many of these assertions above.

- ◆ Native Americans who live on reservations are more likely to indicate willingness to get a COVID-19 vaccine than the general population (unadjusted odds ratio (OR)=1.752,  $p<0.05$ ) and Native Americans who do not live on reservations (unadjusted OR=1.7,  $p<0.05$ ).<sup>15</sup>
- ◆ Native Americans express significantly higher mistrust of health care providers than the general population (unadjusted OR=1.6,  $p<0.05$ ). While this finding is somewhat expected, the vaccine willingness is particularly striking given presence of health care provider mistrust.
- ◆ Access to COVID-19 tests among reservation Native Americans was not statistically significantly different than non-reservation Native Americans or the general population.
- ◆ Masking rates were higher among reservation Native Americans; however, this difference was not statistically significant.

## CONCLUSION:

- ◆ **There is a high COVID-19 mortality burden among Native Americans:**<sup>16</sup> Native Americans are dying at higher rates from COVID-19 than Whites.
- ◆ **The response on the Navajo Nation has been largely protective:** The Navajo Nation has responded in a much more protective fashion than the majority of jurisdictions across the country. The public health response has been more successful than in the general United States, with a stronger vaccination effort, more robust contact tracing workforce, and strong public health education messaging. Lockdown measures and mask mandates have been in place for the duration of the pandemic, and compliance among community members appears strong. A collectivist community member mindset has promoted compliance.
- ◆ **Pre-existing institutional factors has undermined the response at all levels:** Existing underfunding of the Indian Health Service has inhibited the direct care response, as facilities have been understaffed and unable to fully care for COVID-19 patients. More relaxed regulations in border towns have undermined the Navajo Nation government’s response, as residents are able to travel to these spaces, facilitating cross border spread of the virus. Resource constraints and existing resource sharing networks made it difficult for family units to distance from one another, facilitating intergenerational spread. All of these factors likely contribute to the observed, elevated COVID-19 mortality rates among Native Americans.

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<sup>15</sup> An unadjusted odds ratio examines how likely one group is to perform a certain action in comparison to another. For example, a 1.7 odds ratio means that Native Americans who live on reservations are 1.7 times more likely to indicate willingness to get a vaccine.

<sup>16</sup> Katherine Leggat-Barr, Fumiya Uchikoshi, and Noreen Goldman, “COVID-19 Risk Factors and Mortality among Native Americans,” *MedRxiv*, March 13, 2021, <https://doi.org/10.1101/2021.03.13.21253515>.

- ◆ **There is lots to learn from the Navajo Nation response:** In a country where there has been mixed compliance even for the simplest measures such as wearing a mask, the Navajo Nation's response has been consistent and effective, and has prioritized public health measures. Residents have been largely compliant, which cannot be said of other jurisdictions.

## **POLICY IMPLICATIONS:**

- ◆ **Make the IHS an entitlement program:** The Indian Health Service is currently funded through federal appropriations. The funding does not change depending on how much care is used, or how many individuals utilize the IHS. An entitlement program means that any person who meets the eligibility requirements for a given program is guaranteed services. Medicaid and Medicare, the two most prominent government health care programs, are entitlement programs. Changing the funding structure of the IHS would improve the IHS's ability to hire full time staff and improve infrastructure within their facilities.
- ◆ **Improve communication with border towns:** Border towns have undermined past Navajo Nation public health efforts, especially surrounding alcohol sales. Improving communication between these two jurisdictions will strengthen the governing capacity of the Navajo Nation to enact laws that are enforceable and serve the needs of the Navajo Nation populace.
- ◆ **Understand the impact of historical legacies:** Many of the pre-existing factors that undermined the Navajo Nation COVID-19 response result from existing historical precedent, illuminating the unavoidable interdependence of tribal sovereigns on other jurisdictions. Thus, the Federal government must recommit to honor the promises and treaties made to Native American tribes.
- ◆ **Lessons from the Navajo Nation Response:**
  - *Community salient public health messaging:* The importance of community targeted messaging appeared effective to both educate individuals about COVID-19 and improve vaccine confidence, even though the Indian Health Service remains mistrusted today. Localized, relevant messaging is critical for effective care delivery for all populations.
  - *Public Health Response:* The Indian Health Service public health focus facilitated a strong response with the COVID-19 vaccine rollout and effective public health messaging. The public health infrastructure within the United States is largely fragmented from direct care institutions. Greater coordination, as was seen on the Navajo Nation, between these two health entities could improve the US response to a pandemic in the future.
  - *Collectivist mindset:* Navajo residents and government entities focused largely on the collectivist mindset versus the individual to promote protective behavior decisions. In a pandemic with significantly different risk factors depending on one's age, this framework was effective in reducing dangerous behavior across age groups.

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