NEJM Catalyst | Innovations in Care Delivery

ARTICLE

The Disproportionate Impact of Covid-19 on Communities of Color

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Vol. No. | July 6, 2020
DOI: 10.1056/CAT.20.0370

The root causes of suffering during the Covid-19 pandemic in two disparate communities of color — Navajo Nation and Chelsea, Massachusetts — have striking parallels. Here are recommended steps to help health care providers on the front lines.

I play two distinct roles in Boston. One is that of a primary care physician at Brigham and Women's Hospital, Professor of Medicine and Health Care Policy at Harvard Medical School, and the Chief Patient Experience and Equity Officer for Mass General Brigham (formerly Partners HealthCare System), where I oversee a spectrum of activities including quality and safety, including the Mass General Brigham's operations response to the Covid pandemic.

The second is that of a proud member of the Taos Pueblo tribe in New Mexico. My mother was raised on the reservation in a mountain landscape of northern New Mexico amidst a beautiful culture, but also in the setting of what can only be described as significant poverty. I have spent 20 years working to improve health care for American Indian communities through academic research and program implementation. I currently lead the Brigham and Women's Outreach Programwith the Indian Health Service in the Navajo Nation, where we provide on-site specialty care for rural hospitals in New Mexico and Arizona, as well as teleconsultation services from our academic medical system here in Boston. I also serve on the Board of Directors of the Navajo COPE (Community Outreach and Patient Empowerment) program, a partnership with the Navajo Nation and Brigham and Women's Hospital designed to improve the lives of those living with chronic disease in the Navajo Nation by bridging gaps in the health system identified by patients and families.

Two Communities in Crisis

I would like to share with you a story of two different communities which I have had the privilege to work with over the years, including during the Covid pandemic these past three months. The Navajo Nation and Chelsea, Massachusetts, have been widely referred to in the media recently.

Table 1.

	Navajo Nation	Chelsea, MA
Population	180,462	40,227
Area (square miles)	27,673	2.2
Population density (per square mile)	6.5	18,285
Poverty rate (%)	43%	19%
Covid-19 Infections	6,747	2,845
Covid-19 Infection Rate (per 100,000 residents)	3,739	7072
Covid-19 Deaths(n)	322	148
Covid-19 Death Rate (per 100,000 residents)	178	368

Source: Data compiled from Navajo Nation Department of Health (https://www.ndoh.navajo-nsn.gov/COVID-19), Navajo Nation Division of Economic Development (http://www.navajobusiness.com/fastFacts/Overview.htm), MA Department of Public Health (https://www.mass.gov/doc/weekly-covid-19-public-health-report-june-17-2020/download)

The root causes of suffering in these two communities during the Covid pandemic have striking parallels despite their differences in many ways as communities of color. (Table 1.)

Navajo Nation

Dorothy Scott lived with 11 family members spanning three generations in a traditional hogan in the Navajo Nation. Of these, 8 have become infected with Covid and she lost her husband and son to the illness. To make matters worse, she and her family have been forced to find respite in hotels set up as shelters in New Mexico.[1] This is not a unique story among the Navajo during the Covid pandemic. The Navajo COPE program is working to help Dorothy Scott and other families like hers by raising money, securing housing and food, and providing medical care. But the situation remains incredibly dire for thousands of Navajo people who are fighting for their lives and for their dignity.

The Navajo Nation covers an area nearly 3 times as large as my home state of Massachusetts, with 180,000 residents across New Mexico, Arizona, and Utah. One-third of residents do not have access to clean running water or indoor plumbing, and up to 30% may not have electricity; with a stunning poverty rate of over 40%. The Navajo Nation has been hit extraordinarily hard by the Covid pandemic. With over 6,500 cases, the infection rate of over 3,500 per 100,000 residents surpasses New York City,[2] and has caused 322 deaths (Table 1). This death toll is disproportionate – for example in New Mexico, American Indians represent 53% of Covid- related deaths[3] in the state despite only representing 11% of the population.[4] Curfews and lockdowns have been instituted to stem the tide of infection, yet the peak is not expected for a few more weeks.

> *"Consider for a moment what it must be like to battle an epidemic where many homes do not have access to clean running water. Where electricity, cell phone, and landline telephone access are not a given."*

Shiprock, New Mexico, is a small town of approximately 8,000 people in the Navajo Nation. The Shiprock area has 1,114 residents confirmed to be infected with Covid, an enormous disease burden in an isolated area.[5] The main hospital serving the American Indian population in the Shiprock area is the Indian Health Service Northern Navajo Medical Center. The hospital typically has an inpatient census of approximately 30 patients per day, but during Covid can have up to 30 inpatients

infected with Covid, leaving their capacity to care for other medical conditions extremely limited. The community is in desperate need of experienced frontline health care workers, personal protective equipment, safe housing options, and other supplies. Consider for a moment what it must be like to battle an epidemic where many homes do not have access to clean running water. Where electricity, cell phone, and landline telephone access are not a given. Frontline clinicians and community members are desperate for help, feeling overwhelmed and scared for patients and family members.

Programs like the Brigham and Women's Outreach Program and Navajo COPE have focused on delivering personal protective equipment to community-based frontline workers and hospital staff; combatting water, food, and housing insecurity; supporting contact tracing; and providing specialized consultative services from Boston such as tele-ICU care. But so much more is needed.

Chelsea, Massachusetts

Chelsea is a city of 40,000 people along the Mystic River in eastern Massachusetts. It occupies 2 square miles, making it the smallest city in Massachusetts by land area, but among the most densely populated in the state. Two-thirds of the population identifies as Hispanic, and 70% speak a language other than English at home. One in five residents (18%) report an income below the federal poverty level. In this densely populated city, there have been 2,845 cases of Covid infection, for an astonishing rate of over 7,000 cases per 100,000 residents that is among the highest in the nation. This has resulted in nearly 150 deaths due to Covid in Chelsea, a per capita death rate that is more than 3 times higher than the neighboring city of Boston.[6,7]

Within 10 miles of Chelsea are two renowned academic hospitals: Brigham and Women's Hospital and Massachusetts General Hospital. They are each home to some of the top medical experts in the world. They have a combined inpatient capacity of over 1,500. Mass General Brigham has tested over 3,000 residents of Chelsea for Covid infection, diagnosing nearly 1,500 patients with active infection. We have cared for these patients in our ambulatory health centers (including one in the city of Chelsea), emergency departments, and unfortunately for many, in our intensive care units. Our health system has distributed care kits containing masks and hand sanitizer in the community to mitigate the spread of Covid, supported the creation of avenues to enable social distancing such as hotel spaces for people who could not isolate at home, and asked our nurse care managers to reach out directly to our patients in Chelsea to provide clinical support.

What Went Wrong?

To understand the crises in the Navajo Nation and Chelsea and other communities of color, we must acknowledge the embedded structural racism that has created the perfect storm we are observing. I would like to focus on three questions as they relate to our clinical and public health approach to the Covid pandemic.

> *"To understand the crises in the Navajo Nation and Chelsea and other communities of color, we must acknowledge the embedded structural racism that has created the perfect storm we are observing."*

1) Why Are There So Many Infections in These Communities?

The rapid spread of Covid among communities of color is ***not*** because race or ethnicity is a risk factor for disease spread. Racism – not race – is the risk factor for spread. The congestion present in a city such as Chelsea makes recommendations to socially distance from others nearly impossible to follow. You may wonder how crowding could be an issue in a rural area such as Shiprock. Like Chelsea, multigenerational housing is commonplace in the Navajo Nation. In many cultures, this allows the passing of culture and knowledge from elders to younger generations. However, these crowded living conditions are often forced by poverty, and poverty does not distinguish between rural and urban areas.

The challenge of social distancing does not stop with home living conditions. The lower wage-earning residents of these communities are the very people who cannot work from home during the Covid-19 crisis. They are the essential workers that keep our economy moving – and in our hospitals they make sure our patients receive high quality care. They transport our patients within the hospital, they keep our environment clean to promote infection control in the clinics and inpatient rooms, and they help feed our patients and other health care workers. To get to work, they must travel using often crowded public transportation means. If you live on the Navajo Nation, simply obtaining clean water involves traveling to a public source of water and associated potential infectious exposures. And many community members struggle to get access to masks and hand sanitizer for themselves and their families. In short, communities of color confront head-on all the risks for infectious spread that many of us have the privilege to avoid.

2) Why Have the Clinical Outcomes Been So Poor in These Communities?

At Mass General Brigham, we have increased testing in these communities and know that the rate of testing positive for Covid-19 infection among symptomatic patients is much higher – as high as 60% – in Chelsea compared to other cities around Boston. However, higher rates of infection do not necessarily translate to worse clinical outcomes. Many have cited the higher prevalence of comorbid conditions among these communities – diabetes, heart failure, and kidney disease – that ultimately contribute to poor outcomes. This is certainly true from a clinical and epidemiologic standpoint, but a rush to this conclusion limits our insight into the real root cause.

Communities like Chelsea and Shiprock are aptly labeled food deserts due to limited options for healthy food. Worse yet, options for unhealthy food may abound ("food swamps"), ultimately contributing to obesity and downstream chronic diseases. The Navajo Nation has long been known to be a food desert, with long distances required to travel for grocery stores, yet fast food is often more readily available. The average travel time to a grocery store is 3 hours, with only 13 full-service grocery stores in an area that would nearly cover Massachusetts, New Hampshire, and Vermont. We have to change our national dialogue from one that defaults to the notion that healthy diets are

a personal choice, to one that recognizes and acts on the fact that our societal structure has limited personal choices to the point of determining one's health outcome. In other words, our "geography is destiny."

> *"We have to change our national dialogue from one that defaults to the notion that healthy diets are a personal choice, to one that recognizes and acts on the fact that our societal structure has limited personal choices to the point of determining one's health outcome."*

Access to health care also drives health outcomes. I suspect we will learn much more in the months to come about the contribution of limited access to care among communities of color dealing with the Covid-19 pandemic – which will likely impact health outcomes for Covid-19 itself and other conditions not related to Covid-19. With the messaging to "stay home" and the wide reporting of poor patient outcomes related to Covid-19 infections, the public is understandably scared of hospitals and clinics, where Covid-19 infections are perceived to be concentrated. Our data suggest up to a 30-40% reduction in the presentation of emergent conditions such as stroke, heart attack, and intestinal bleeding among all patients in the Boston area – and it is not hard to imagine that this deferred care will disproportionately have impacted communities of color.[8]

On top of this, there is a pre-existing mistrust of the public health and medical system among these communities that also impacts access to care. There is a large immigrant community in Chelsea, and the current dialogue across the nation about immigration fosters fears that may limit community residents from accessing both health care and other public health resources. On the Navajo Nation, there is a 500-year-old history of conflict and betrayal that drives an understandable hesitancy on the part of the American Indian community when interacting with public health officials and Indian Health Service providers. We need to implement true partnerships, especially during a time of crisis, that begin to break down the barriers to trust that are so embedded.

3) What Are Some of the Pitfalls Ahead?

Our biggest challenge in the ongoing response to the Covid-19 pandemic is complacency. I have heard from many colleagues that they are horrified to see what is happening in these communities, expressing a mix of shock and empathy. I am saddened, but not surprised by what we are seeing. Communities of color regularly suffer the worst consequences of both slow- moving crises such as chronic diseases and acute disasters such as the Covid-19 pandemic. The

questions we need to seriously ask ourselves are, "Where will we be in 6 months? Will we forget? Will we move on to the next urgent item on our agenda?" We must remember that the circumstances that created the crisis in Navajo Nation and Chelsea existed long before the Covid-19 pandemic and will persist long after unless we take sustained and impactful action now. If we do nothing to change the underlying structure of impoverished communities, this scenario can and will happen again.

Another challenge is our inclination to focus only on short-term process measures of success strictly in the clinical environment. We must focus on health outcomes and hold ourselves accountable to them, such as Covid-19 mortality rates by race, ethnicity, or community. Increased Covid-19 testing in the community is important – but it is not our end goal. Identifying adequate hospital capacity and ventilators is important, but it misses the opportunity to focus our efforts upstream in the communities being ravaged by this disease.

> *"Technology is touted as an equalizer but among poor communities often only widens disparities."*

Another potential pitfall is our collective enthusiasm about technology and digital health, which have been thrust onto center stage during the Covid-19 pandemic to help provide care when hospitals and patients alike wanted patients to stay home if appropriate. Technology is touted as an equalizer but among poor communities often only widens disparities. Broadband access is insufficient among rural Native communities to support video consultation, and limited cell phone access prohibits home-based consultation. The electronic health record is an invaluable tool; however, during my most recent visit to Shiprock they had suffered a prolonged power outage, and even when the power returned the Internet access was so slow as to leave the electronic health record not functional. This is not only a problem in rural America, with recent data showing that broadband access is limited in communities with lower incomes. In Chelsea, we have observed that less than 10% of our teleconsultations across Mass General Brigham are able to be completed using video technology, compared to 50% or more for our patients residing in other more affluent Boston area cities.

Recommendations for Moving Forward

I would like to offer some recommended steps that I believe would help many of us on the front lines. The big-picture message is that we need to fund programs that enable health care delivery systems, public health, and community health leaders to address the social risk factors I have outlined above.

1) **Fund programs to support programs at the interface of health care delivery, public health, and community health to address social risk factors such as food and housing insecurity.** The Covid-19 pandemic highlights the significant shortcomings of our public health system and the structural factors of racism and other forms of systemic bias that act as a constant stress test on communities of color. Health care delivery systems like mine have attempted to step up to fill the gap during this pandemic; however, this is neither sustainable nor sufficient as a long-term solution.

2) **Increase funding of the Indian Health Service and fund infrastructure improvements in Native and non-Native communities.** It is not acceptable that so many are without clean running water in 2020, or that Native Americans born in 2020 can expect to live 5.5 years fewer on average compared to other Americans.[9] Despite modest budget increases dating back to 2008, the

Indian Health Service is not funded at levels that would enable delivery of high quality care. This promotes a system of health care rationing that would be unacceptable in any other segment of U.S. society, yet we tolerate it among Native communities and often decline to speak of it.

3) **Support training and financial incentive programs to increase health care provider supply in communities of color.** Shiprock has received supplies of ventilators for critically ill patients but does not have enough experienced staff necessary to use such equipment in the care of patients infected with Covid-19. In 2018, the Indian Health Service had a 25% vacancy rate for physicians and other clinicians.[9] We must focus on increasing the diversity of the clinical workforce – through recruitment to medical schools and other clinical training programs. Some data suggest that we are losing ground on health care workforce diversity in recent years.[10] Most student pipeline programs to advance underrepresented minorities in health care are developed and funded at the local or regional level. We need a national strategy that includes financial aid and directed recruitment strategies. Equally as important, we need to support programs that enable training of local community members to develop a sustainable workforce and support economic development in these communities. Federal intervention could support training of medical technicians and other health professionals.

> *"Perhaps the most tragic part of caring for a patient with a life-threatening illness is not being able to communicate with them."*

4) **Improve health care communication with communities.** Perhaps the most tragic part of caring for a patient with a life-threatening illness is not being able to communicate with them. External communication and messaging need to target diverse venues on radio and television, and we need to reach patients in their preferred language. Inside the hospital increased funding to support medical translator services is needed. Across Mass General Brigham, 35% of patients hospitalized with Covid-19 infection do not speak English as a primary language. Within the Indian Health Service, the most common interpreter available for elders who do not speak English is a younger family member. This is not acceptable. We cannot continue to provide care in a one-size-fits-all fashion– equitable care requires us to meet our patients' needs, whatever they may be – and it all starts with effective communication.

5) **Do not allow technology advancements to leave our communities of color behind.** We must require that any technologies funded by federal and private payers demonstrate an ability to reach these communities. In addition, we should support innovation that uses technology to address existing inequities in health care. And finally, all technology solutions require infrastructure – broadband access, cell phone networks, and other tools that are often lacking in communities of color and require funding to advance.

I thank all the people who continue to work every day on behalf of Native and other communities of color across the country during this pandemic – refusing to let these communities be forgotten. And to these communities, please know that you are not forgotten and we see the heroic efforts you are undertaking. We can and must do better. We stand together in our mission to ensure that health

equity is treated as an emergency, and that no one is denied the highest quality care because of who they are or where they come from.

This article was adapted from Dr. Sequist's testimony before the United States House of Representatives Ways and Means Committee on May 27, 2020.[11]

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Disclosure: Tom Sequist has nothing to disclose.

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