Lessons Native American Culture Can Teach Us About Resilience During Pandemics and Health Care Crises

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Like the rest of Wisconsin, the coronavirus disease 2019 (COVID-19) pandemic has upended Native American tribal programs, institutions, and activities that support their way of life, revenue, and health. A closer look at Native American (NA) tribal health disparities, but more crucially their cultural resiliencies, provides instructive perspective on the current crisis. The leading cause of death in Wisconsin Native American communities is heart disease, followed by malignant neoplasm, and accidents.[1] These mortalities are disproportionately high in Native American populations relative to all other races.[1] 2018 data from the Centers for Disease Control and Prevention (CDC) on Wisconsin Native American mortality report the same trends and disparities: heart disease, malignant neoplasms, and accidents (Table 1).

Despite racial misclassification issues of Native American health data, these trends appear consistent with the rest of the developed world in which chronic disease is a driving factor in mortality from COVID-19. As of March 11, 2021, there were 95 recorded Native American COVID-19 deaths in Wisconsin.[2] Native Americans account for 1.5% of all reported COVID-19 deaths in the state and, according to the 2019 census, they comprise 1% of the population.

Those COVID-19 deaths are likely confounded with chronic disease disparities. The leading comorbidities that increase risk of COVID-19 hospitalization and death are diabetes mellitus, chronic lung disease, and cardiovascular disease.[3] Examination of the latest data from CDC's provisional death counts (Table 2) reveals notable overlap between the leading causes of death in Wisconsin Native Americans and these suspected comorbidities. Circulatory and heart disease stand out, with 87% of Wisconsin death certificates listing COVID-19 also listing some form of circulatory or heart disease as a contributing cause (Table 2). This is not a new phenomenon or something novel to the current crisis. These same comorbidities increase the risk of intensive care unit (ICU) admission, pulmonary co-infections, and ICU mortality with influenza patients as well.[4]

A Crisis of Capacity

The mismatch between health care workforce resources and aging, comorbid populations in the United States was described as a crisis in the early 2000s.[5] In 2006, the US Health Resources and Services Administration report projected a shortfall of 3,330 intensivist full-time equivalents by 2020, a gap larger than the entire projected supply.[6] Federal programs at the Department of Health and Human Services (HHS) set aside support for hospital preparedness and infrastructure to deal with potential capacity shortfalls as seen in the current pandemic. In 2004, that budget was $515 million; it was cut to $392 million in 2009 and then $255 million in 2015.[7,8]

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Meanwhile, the Bemidji (Minnesota, Michigan, and Wisconsin) Indian Health Service (IHS) area is chronically underfunded compared to other federal health care programs, including other IHS service areas.[1] The IHS is the primary federal health care provider and health advocate for Native American people. It is an agency within the HHS formed out of the government-to-government relationship between the US and the various Tribes, as described in Article I, Section 8 of the US Constitution.

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As illustrated by the lack of consistent and adequate funding from the IHS, the Wisconsin Native American tribes have learned not to rely on federal spending as the foundation of their public health capacity. Thus, they are not in the habit of waiting for outside governments to act in a crisis. During the initial phases of the pandemic, tribal reservations acted quickly and independently at a local level to deploy mitigation efforts that met their specific needs. Multiple reservations shut their borders, large gatherings, and casinos in early Spring 2020. However, such measures were not sustainable. Longer-term solutions must address the chronic health disparities that affect Native American populations and increase the risk of complication from respiratory viruses.

Table 1. Top 10 Leading Causes of Death in 2018 Reported as Age-adjusted Death Rates per 100,000 for Racial Classification: American Indian/Alaskan Native in Wisconsin vs All Other Races

Causes of Death	Deaths	Native American	All Other Races
Diseases of heart (I00-I09, I11, I13, I20-I51)	99	192.9	157.4
Malignant neoplasms (C00-C97)	93	178.9	151.3
Accidents (unintentional injuries) (V01-X59, Y85-Y86)	52	81.3	56.7
Diabetes mellitus (E10-E14)	31	59.6	20
Chronic liver disease and cirrhosis (K70, K73-K74)	30	45.1	9.8
Chronic lower respiratory diseases (J40-J47)	22	49.7	37.8
Cerebrovascular diseases (I60-I69)	17	Unreliable	33.3
Intentional self-harm (suicide) (*U03, X60-X84, Y87.0)	13	Unreliable	14.7
Nephritis, nephrotic syndrome and nephrosis (N00-N07, N17-N19, N25-N27)	12	Unreliable	12
Alzheimer disease (G30)	10	Unreliable	31.7
Septicemia (A40-A41)	10	Unreliable	7.7

Source: CDC WONDER. Accessed November 11, 2020. https://wonder.cdc.gov/

Table 2. Selected Conditions for Contributing to Deaths Where COVID-19 Was Listed on the Death Certificate in US and Wisconsin

	Comorbidity Group	ICD-10 Codes	COVID-19 Deaths	% COVID-19 Deaths
US	Obesity	E65-E68	8,238	4%
US	Malignant neoplasms	C00-C97	10,245	5%
US	Chronic lower respiratory diseases	J40-J48	19,143	9%
US	Renal failure	N17-N19	19,690	9%
US	Diabetes	E10-E14	35,699	16%
US	Circulatory/heart diseases	I00-I15, I20-I45, I47-I49, I50-I52, I70-I99	139,623	64%
US	COVID-19	U071	217,337	100%
WI	Malignant neoplasms	C00-C97	158	8%
WI	Renal failure	N17-N19	157	8%
WI	Obesity	E65-E68	195	10%
WI	Chronic lower respiratory diseases	J40-J48	284	15%
WI	Diabetes	E10-E14	473	25%
WI	Circulatory/heart diseases	I00-I15, I20-I45, I47-I49, I50-I52, I70-I99	1,664	87%
WI	COVID-19	U071	1,902	100%

Source: https://data.cdc.gov/. Accessed November 11, 2020. https://wonder.cdc.gov/ucd-icd10.html

Indigenous Ways of Knowing

Our Ojibwe friends remind us that the Tribes have known for generations how to stay healthy. Scientists often claim—through the publication process—what is already known traditionally. In 14 years of conducting National Institutes for Health-funded research with Wisconsin Native American Tribes, we have witnessed many instances of health resilience built into their culture. We described these themes at length in our various publications, ranging from culturally responsive biomedical education[9] to community-engaged environmental risk assessment.[10,11] Overall, our Native American friends, colleagues, and Elders teach that the key to promoting wellness everywhere is by democratizing health capacity. This can be accomplished through cultural vectors of community, education, and inclusivity. The main themes that address the health and wellness crisis in Wisconsin Native American populations are (1) helping my people, (2) honoring our elders, (3) self-determination, and (4) living in a good way.

Helping My People

The Great Lakes Native American Research Center for Health (GLNARCH) has conducted hundreds of interviews with Native American interns, mentors, community members, and tribal representatives regarding motivations to engage with biomedical sciences. Since the GLNARCH mandate is to promote Native American participation in biomedical sciences, we must assess the incentives that would motivate tribal/academic partnerships. One prominent motivation is "helping my people."[9]

There is a strong cultural norm in Indian Country to honor their heritage by "moving forward in a good way." Every meeting, presentation, poster session, and meal associated with GLNARCH and partners begins with acknowledgement of an ancient heritage that must be honored through an attitude of service to the local community. Native American students and trainees need opportunities to help their communities without being lured away to large, well-resourced institutions. Therefore, GLNARCH works to promote resource investment in the underfunded Bemidji service area to build sustainable networks and best practices that can transcend fluctuations in resources.

Honoring Our Elders

In Native American tribes around the country, there is a cultural norm of waiting for elders to speak first for as long as they want. This norm teaches important lessons: patience, deference to wisdom, the value of knowledge acquired slowly over time, respect for the past, and humility. Deference to elders reminds us that knowledge without wisdom is hazardous and chaotic. Brian Bainbridge, CEO of Great Lakes Inter-Tribal Council (GLITC) explains:

> "I have witnessed the resilience of our oldest of elders and how they have adapted but still knew enough to keep our traditional knowledge and ways to protect their family and community first and then themselves last. It's important to know that the tribal leaders are still practicing in the same ways, not forgetting the past and looking towards to the future."

A unique feature of COVID-19 is the disproportionate severity in older demographics.[12] A unique feature of modern life is the presence of large congregations of elderly communities in either assisted living homes or senior communities. This, combined with the demographic shift to older populations, creates the ideal conditions for a health crisis. By contrast, Native American families more often inhabit multigenerational homes. This can complicate the need to shield older generations from SARS-Cov2. Nevertheless, intergenerational interaction is codified in many Native American cultures, which provides many benefits. Youth on the reservation learn traditional methods of hunting, gathering, and crafts from elders who are not necessarily direct relatives. This sort of cultural mentorship strengthens intergenerational bonds and facilitates care for the elderly when they need it. For example, GLITC has a web page (https://www.glitc.org/programs/elders/) dedicated to Elder Services that describes a Foster Grandparent Program and a Senior Companion Program.

Self-Determination

The Laurentian Great Lakes Basin is the traditional territory of Indigenous nations, including the Anishinaabeg—the Three Fires Confederacy of Ojibwe, Odawa, and Potawatomi peoples. All research seeking to engage stakeholder communities in the Basin must consider this historical context. Biomedical research can navigate this context by partnering with onsite intertribal organizations. One such partner is the Chippewa Ottawa Resource Authority (CORA), which serves as an intertribal management body for the 1836 Treaty area in upper Michigan. That treaty is one of several that were negotiated with the US government. The Tribes struck a deal using their limited remaining negotiating power: the right to hunt, fish, and gather across their traditional territories in exchange for relocation to reservations. This deal was struck with the 7th generation philosophy in mind, in which consequences to future generations are considered in decision-making. The explicit intent was to maintain their culture. It was their final effort to avoid cultural annihilation by codifying these activities in federal law.

Many outsiders don't realize that the subsistence practices enshrined by the Anishinaabe treaties cannot be replaced by food rations. These traditions are a foundational institution of their socio-political existence. Hunting game, harvesting fish, and gathering ceremonial ingredients for medicines or crafts represent acts of self-determination that promote wellness. These acts require broad intact ecosystems; thus, environmental stewardship is integral to tribal identity. CORA is but one example of intertribal coordination to maintain natural resources that connect modern tribal culture to the past. Without that connection, the intent of the treaties and the benefits of the culture are likewise severed. The descendants of the treaty signatories literally view their health, identity, and political empowerment as intertwined with the environment. Non-Natives call it preventive medicine; our Native American colleagues call it "living in a good way."

Minobimaadaziiwin 'Living in a Good Way'

Apart from demographic shift to old age, the morbidities that exacerbate respiratory virus disease burdens are either outright preventable or otherwise manageable through high-quality care and preventive measures. The Ojibwe have a saying: "minobimaadaziiwin," which translates roughly to "living in a good way." Most Elders teach that health is wholistic. Living—and acting—in balance is very important to Tribal people. This applies to health, art, language, and more. They know that living according to their ancestral ways is the key to improving population health outcomes. Preventive initiatives decrease the need for health care capacity in areas where it is scarce.

Recent research in partnership with CORA has identified health-promoting behaviors connected to the treaty-protected subsistence activities by blending traditional Native American perspectives with biomedical science.[10,11] Salient to the current disease crisis, we observed that strong research partnerships with CORA's fisheries program promotes the safe consumption of local (Great Lakes) fish species. As discussed above, fish consumption is an important part of "living in a good way." Fish is also one of the few dietary sources rich in Vitamin D.[13] Deficiency in this nutrient is common in modern adults and is linked to adverse outcomes, particularly cytokine storms, from respiratory viruses including COVID-19.[14,15] This is but one example of how living in a good way can improve clinical outcomes at the population level.

Conclusion

Given the current community spread and prevalence of mild cases, COVID-19 may become endemic like other respiratory pandemics.[16] If so, the virus will integrate with cold/flu season, which routinely burdens health care capacity. If a vaccine manages to eradicate SARS-Cov2, more viruses will come. A realistic, wholistic, and nuanced response is needed for under-resourced populations, such as Wisconsin Native American Tribes, to overcome inevitable fluctuations in the severity of respiratory virus seasons. The Elders teach that living in balance with community, tradition, and nature builds resilience in Native American populations. This demonstrates how to sustainably improve health despite adversity. The traditions described above—helping my people, honoring our elders, self-determination, and living in a good way—are still practiced. Through our GLNARCH collaborations in Wisconsin, we are now witnessing important initiatives to maintain and adapt these principles for future generations. The rest of the world would do well to follow their example.

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