

LETTER

Indigenous people and the COVID-19 pandemic: the tip of an iceberg of social and economic inequities

The outbreak of the novel COVID-19 that began in Wuhan, China, killed a Yanomami (an Amazonian tribe) adolescent on 9 April 2020, presumed to have been contracted from gold miners. Although the strong influence of environmental conditions such as place of residence and socioeconomic status on health or illness is irrefutable, scant attention is paid to the interconnectedness of people and how conditions that affect one group ultimately affect everyone globally. The COVID-19 pandemic is a reminder or wake-up call of how a more equitable distribution of money, power and resources at global, national and local levels benefits all. Even though indigenous peoples and other socioeconomically disadvantaged communities will likely bear the brunt of the pandemic, no one will be spared its pervasive health, social, economic and political consequences.

Indigenous peoples are ethnic groups who are the original or earliest known inhabitants of a particular geographic area. They are a heterogeneous group with thousands of culturally distinct communities, and numbers approximating 370 million in over 90 countries.¹ Indigenous peoples comprise about 2% of the US population (6.8 million), 5% of the Canada's population (1.7 million), 3% of the Australia's population (>750 000) and there are about 32 million in South America, the majority in Peru.

The epidemiological and social-ecological models are useful for understanding the uneven and disproportionate impact of COVID-19 on indigenous populations. The pandemic has disproportionately affected densely populated urban areas (eg, New York City) and worldwide, and there were over 4 million confirmed cases and more than 300 000 deaths from COVID-19 by mid-May 2020. It could be theorised that geographically isolated indigenous communities far removed from international transportation hubs would be unaffected. Sadly, that is not the case. From Brazil to Peru, the USA and Canada to Australia, reports of

infections in indigenous communities have been reported. In New Mexico, 57% of the COVID-19 cases and 50% of the deaths have occurred in the Native American community in the state, even though they comprise only 11% of the New Mexico's population.² Rodriguez-Lonebear and colleagues in a recent study showed that the rate of COVID-19 cases was more than four times higher for the populations residing on reservations than the general population.³

With little reason to presume differences in SARS-CoV-2 virulence across communities and in the absence of a vaccine or curative treatment, high attack or case-fatality rates in indigenous people can only result from higher risk of exposure and spread and/or increased susceptibility to infection or complications. High poverty rates and associated social risks create conditions for the spread of COVID-19 in indigenous populations, once introduced. These are exemplified in two statistics: even though they comprise 5% of the global population, indigenous peoples constitute 15% of the extreme poor and their life expectancy is about 20 years lower than that of non-indigenous populations.¹ Factors related to cultural preservation (ie, reservations and isolated communities) may further increase vulnerability to poor health indicators in indigenous peoples.¹ For communities in reservations or isolated areas, COVID-19 was introduced either by outsiders entering communities or by indigenous people who became infected while outside their communities for work, leisure, or other activities. In Brazil, for instance, the epicentre of the pandemic is Manaus, the capital of the Amazonas, and transmission of COVID-19 to the Yanomami Indigenous Territory was the result of uncontrolled movement of miners in and out of the territory.

COVID-19 may be difficult to contain once introduced in indigenous communities. A high proportion of homes on reservations in the USA lack indoor plumbing or access to running water, which precludes effective hand hygiene measures and promotes disease acquisition and spread.³ In addition, many indigenous peoples live in crowded, multi-generational households with shared bathrooms hampering self-isolation and social distancing. A large proportion of indigenous people live in isolated or remote communities with limited access to affordable and quality healthcare that also limit access to testing and timely contact tracing

to limit COVID-19 spread. Poor broadband penetration in these communities also limits access to information, including public health information critical during a pandemic.

Lower levels of innate immunity in isolated tribes can increase susceptibility to emerging infections. In past pandemics (eg, the H1N1 pandemic of 2009/2010), indigenous people had higher attack rates and approximately threefold to sixfold higher risks of severe disease and death.⁴ Indigenous populations also have a high prevalence of chronic health conditions such as obesity, type 2 diabetes mellitus, hypertension due to pre-existing health disparities that increase their susceptibility to more severe morbidity and death from COVID-19.⁵

With socio-environmental conditions that promote spread, the first step in pandemic control in indigenous communities is to prevent introduction of disease into communities. This requires effective surveillance, containment and mitigation measures. Restricting movement in and out of isolated or reservation communities may be effective. Ensuring access to healthcare improves testing and contact tracing. Enhanced personal protection through sanitary measures and access to personal protective equipment may reduce harm.

The Navajos called COVID-19 *Dikos Ntsaaigii* (the 'cough' that kills). Integrating cultural and community context in outbreak control measures is critical. This may be achieved through the inclusion of indigenous peoples in developing crisis and emergency risk communication for pandemics. General public health messages may have extensive reach, but often lack needed cultural context and may not address myths or maybe disregarded due to historical mistrust. Identifying effective awareness programmes that are informed by individual indigenous communities is critical.

Indigenous populations are indeed vulnerable to COVID-19, and other emerging infections and their isolated locations have not spared them from this virulent and contagious virus, and perhaps placed them at greater risk and, for some tribes, an existential threat. Previous pandemics have caused similar poor outcomes in indigenous peoples as downstream consequences of social determinants of health. Prevention, containment and mitigation initiatives such as securing borders, social distancing, provision of hand sanitisers, economic support,

effective communication and improving the availability of testing will improve outcomes for indigenous communities, which safeguard 80% of the world's remaining biodiversity.¹

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