UC SANTA BARBARA

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Indigenous Protection

The global reach of COVID-19 is unquestionable. Every day, news reports highlight the disease's increasing toll on countries and major cities around the world.

However, little attention is paid to indigenous populations worldwide who may be especially vulnerable to COVID-19 but are largely excluded from most national or regional efforts to curb the spread of the disease. Even in high-income countries, indigenous groups like the Navajo have been hit hard by COVID-19, with per capita infection rates rivaling those of New York and New Jersey.

A team of anthropologists, physicians and tribal leaders has developed a strategy for mitigating the impact of COVID-19 among the Tsimane, an indigenous population in the Bolivian Amazon. Led by UC Santa Barbara's Michael Gurven and Hillard Kaplan of Chapman University, their multiphase plan brings together relevant stakeholders to best serve Tsimane interests. They hope to provide a general template that can be applied to other indigenous groups, and to promote a wider discussion on how to adapt strategies to local circumstances, with the goal of minimizing harm to indigenous populations due to the SARS-CoV-2 pandemic.

Their work is published in the journal The Lancet.

"In Bolivia, most attention is focused in the cities, where the pandemic first appeared. Indigenous communities have not been part of any organizational plan," said Daniel Eid Rodriguez, the paper's Bolivian co-author and a physician working with the Tsimane Health and Life History Project since 2005. "Although resources in

Bolivia and other countries are too limited to create the ideal response plan, there are many people and organizations who are ready to help. Finding and building collaboration is key for the success of any COVID-19 plan.”

To reach a wider audience, the authors have published their paper not only in English, but also in Spanish, Portuguese and French — languages spoken in countries where many indigenous people reside.

“We’ve been working with the Tsimane and other indigenous groups in Bolivia for almost two decades,” said Gurven, co-director of the Tsimane Health and Life History Project. Research operations shut down in mid-March, as did most activity worldwide, but he and his team recognized that indigenous groups living in remote areas may be especially vulnerable to COVID-19, given their limited access to up-to-date information and appropriate health care.

So building on their years of active involvement with Tsimane health care, the researchers initiated conversations with tribal authorities and other local officials. Together, they began working on a plan, first to get folks informed and prepared, and then to act once COVID-19 hit the region.

“After a teenage Yanomami boy died of COVID-19 there was, understandably, a lot of panic about the potential plight of indigenous populations around the world in light of this new, unpredictable threat,” Gurven said. “Since our team had already been working with the Tsimane to try and work out a reasonable plan, we thought it would be a great opportunity to move the conversation toward a concrete blueprint that could, hopefully, be adapted to work in similar areas.”

While every individual around the world is vulnerable to COVID-19 because it is new and no one has developed any immunity, many indigenous communities are at additional risk because of widespread respiratory illness, including prior history of tuberculosis, bronchitis and lower respiratory tract infections and compromised immune function.

“These could make people more at risk of having COVID-19 complications,” said Gurven. According to the World Bank, over 370 million indigenous people inhabit over 90 countries, in both rural and urban areas. Though health clinics may be present in rural areas, access and resources such as medication, portable oxygen and other treatments may be very limited. In Bolivia, the local hospital will likely be overloaded by the time COVID-19 reaches Tsimane villages, and the existing remote

health outposts are not yet equipped to diagnose or treat COVID-19.

The potential for higher mortality among infected individuals makes COVID-19 more salient for indigenous populations, Gurven notes, for reasons different from those typically considered. “Indigenous elders are at greater risk because of their age and comorbidity; yet they are crucial for helping to pass on long-standing traditions,” Gurven explained. “They are ‘walking libraries,’ the ones who transmit cultural practices, native language and rituals that are crucial to indigenous identity.”

While certain elements of the indigenous populations make them more vulnerable to COVID-19, other factors may foster resilience. “Many indigenous populations maintain the ability to provide their own sustenance through farming, fishing, hunting and foraging activities,” said Gurven. “The ability to get food in self-sustaining ways — both in terms of the know-how and having use rights in native territories — makes it easier for some indigenous communities to self-isolate and reduce COVID-19 exposure that might otherwise come from visits to nearby town.”

“Tribal sovereignty also allows indigenous groups to make their own decisions, especially when it comes to restricting access to their communities,” Gurven went on. “Also, strong family bonds and a tradition of community meetings helps provide everyone with the latest COVID-19 information and to coordinate action — without the kind of political polarization we’ve seen in the U.S. that seems to shape what people know about COVID-19 and what should be done.”

The multiphase plan he and his team developed began taking shape before COVID-19 was confirmed in the Beni region of Bolivia, where the Tsimane reside. The goal of Phase I was education and preparation. “Our team of trained Tsimane visited over 60 villages for awareness campaigns, using a variety of materials such as Centers for Disease Control posters translated to the Tsimane language,” Gurven said. “In meetings, each community came up with a specific plan for collective isolation and for quarantining suspected cases.”

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A COVID-19 information message delivered to the Tsimane community in their native language.

They also developed a list of material needs to help with the collective isolation of Tsimane communities to minimize reliance on markets and outside merchants. Salt, for example, is used not just to flavor food, but also to preserve meat and fish. “So we made massive deliveries of these items to each community,” said Gurven.

Phase II of the plan began when COVID-19 reached the Beni in mid-April. It focuses on implementing collective isolation containment of Tsimane communities, COVID-19 containment and patient management. “Our plan is adapted to a low-tech environment of inadequate hospital facilities and to lower population density where isolation is possible for whole communities,” said Kaplan, co-director of the Tsimane Health and Life History Project.

“It prioritizes protecting the elderly, rapid-testing with contact-tracing and patient monitoring with portable oxygen support for those who need it,” Kaplan continued. To track the location of disease ‘hotspots,’ the team will take advantage of a variety of communication methods and their detailed GPS data available on resident structure and social networks.

“Details are likely to change as new ways to diagnose or treat COVID-19 become available,” Gurven noted. As of now, he added, no confirmed cases have been reported in the towns closest to Tsimane communities.

The authors hope their paper will serve to affect policy and call for action. “Our article is directed toward the heads of state in countries with indigenous peoples, tribal leaders, scientists, health care workers, missionaries and non-governmental organizations that work with tribal peoples,” said Kaplan. “We also hope that charitable organizations and ordinary citizens will be inspired to look for ways to help reduce the wave of death that will occur in the face of inaction.”

“History teaches us that the effects of a new infectious disease on a vulnerable population can be devastating,” said MemorialCare’s David Michalik, a co-author of the paper and a specialist in pediatric infectious disease. “Our protocol seeks to augment already existing plans that countries may have in place, and raise awareness that even in 2020, indigenous communities are at risk of being wiped out if nothing is done.”

Other co-authors include Sarah Alami and Thomas Kraft of UC Santa Barbara. Other senior co-authors include Benjamin Trumble of Arizona State University, Jonathan Stieglitz of the Institute for Advanced Study in Toulouse and Gregory Thomas of MemorialCare.

About UC Santa Barbara

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