Center for World Indigenous Studies
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Olympia, Washington 98502 USA

Center for World Indigenous Studies COVID-19 Indian Country Risk Assessment Update

17 April 2020

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One hundred and two (102) tribes and communities or 18% of the 574 tribal communities in 20 US States are at great or the greatest risk of contracting infections from the spread of COVID-19 as of 15 April 2020. The Center for World Indigenous Studies COVID-19 Indian Country Pandemic Risk Assessment conducted weekly documents recorded cases and deaths in 250 counties (many of which are solely tribal territories or communities in the county). Of the 263,404 documented cases and 13,510 (16 April) deaths in the Assessment, the tribes and communities exposed to the Greatest number of infections are located in the states of Wisconsin, Washington, Utah, Rhode Island, Oklahoma, New York, New Mexico, Nevada, Nebraska, Montana, Mississippi, Minnesota, Michigan, Massachusetts, Iowa, Florida, Connecticut, Colorado, California, Arizona. The large number of cases and deaths calculated in some instances is due to inclusion of several metropolitan areas near reservations.

The Assessment uses six terms to describe Risk, recognizing that the term Risk means: Exposure to the chance of injury or loss; a hazard or dangerous chance. Orders of magnitude of risk in this Assessment are assigned terms to describe the level of risk as follows:

Table 1 Orders of Magnitude of Risk from COVID-19

Greatest	Forty-three to more (43 and more) known or unknown cases of infection in proximity to tribe or tribal community
Great	Ten to Forty-two (10-42) known or unknown cases of infection in proximity to tribe or tribal community
High	Four to Nine (4-9) known or unknown cases of infection in proximity to tribe or tribal community
Elevated	Two to Three (2-3) known or unknown cases of infection in proximity to tribe or tribal community
Moderate	One (1) known or unknown case of infection in proximity to tribe or tribal community
Low	Zero (0) known or unknown cases of infections in proximity to tribe or tribal community

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Future reports on the Assessment will indicate the risk of other of the tribes and tribal communities under study. We note that in the 1918 Influenza Pandemic the use of hydrotherapy (includes such treatments as saunas, steam baths, foot baths, contrast therapy, hot and cold showers, and water therapy) or the ancient equivalent practiced by tribal communities, Sweat Lodge, reduced the number of hospitalizations by 25%. Sweat Lodge and Hydrotherapy have the effect of stimulating the immune system and thus reducing the adverse effects of the influenza or COVID-19 infection.

In all instances of magnitude, one or more of these factors influences the possibility of COVID-19 spreading rapidly into a tribal community:

1. Movement of tribal and family members on and off the reservation into surrounding communities and coming into contact with infected persons and returning to the reservation without protective cover
2. Movement of non-tribal members onto the reservation from outside communities who have been exposed to infected persons off the reservation
3. The Spread of COVID-19 on the reservation is reduced by minimizing contact between tribal members through "stay-at home" and distancing practices and wearing facial masks when in the presence of more than two persons.
4. The Spread of COVID-19 on the reservation or in the community is minimized by persons wearing latex gloves when handling objects that may carry COVID-19 droplets and when used on surfaces (clean surfaces with soap or 70% alcohol - countertops, doorknobs, cabinet handles, etc.).

Table 2 Tribes or tribal communities at Great or Greatest Risk of COVID-19 16 April 2020

Arizona	Cocopah Reservation
	Colorado River Indian Reservation
	Fort Mojave Indian Reservation,
	Hualapai
	Kaibab Indian Reservation
	Chemehuevi Reservation
	Colorado River Indian Tribes
	Tohono O'odham Indian Reservation.
	San Carlos Apache Indian Reservation
	Ak-Chin Indian Community
	Yavapai-Prescott Reservation
	Pascua Yaqui Tribe
	Havasupai Reservation

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	Hopi Reservation.
	Kaibab Indian Reservation
	Navajo nation
California	Twenty-Nine Palms Band of Mission Indians of California
	Soboba Band of Luiseno Indians
	Santa Rosa Band of Cahuilla Indians
	Santa Rosa Rancheria
	Ramona Band of Cahuilla
	Pechanga Band of Luiseño Indians.
	Morongo Band of Mission Indians.
	Augustine Band of Cahuilla Indians
	Cabazon Reservation.
	Cahuilla Reservation
	Chemehuevi Reservation
	United Auburn Indian Community
	Viejas Group of Capitan Grande Band of Mission Indians.
	Sycuan Band of the Kumeyaay Nation
	Iipay Nation of Santa Ysabel
	San Pasqual Band of Diegueno Mission Indians.
	Rincon Band of Luiseño Indians.
	Inaja Band of Diegueno Mission Indians.
	Jamul Indian Village
	La Jolla Band of Luiseno Indians
	La Posta Band of Diegueno Mission Indians.
	Los Coyotes Band of Cahuilla and Cupeno Indians
	Manzanita Band of Diegueno Mission Indians.
	Mesa Grande Band of Diegueno Mission Indians
	Pauma Band of Luiseno Mission Indians.
	Pala Indian Reservation.
	Barona Group of Capitan Grande Band of Mission Indians.
	Cher-Ae Heights Indian Community of the Trinidad Rancheria
	Wiyot Tribe
	Bear River Band of the Rohnerville Rancheria.

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	Karuk Tribe
	Table Mountain Rancheria
	San Manuel Band of Mission Indians.
	Colorado River Indian Tribe
	Fort Mojave
	Kashia Band of Pomo Indians of the Stewarts Point Rancheria
	Lytton Band of Pomo Indians
	Cloverdale Rancheria of Pomo Indians of California
	Dry Creek Rancheria of Pomo Indians
	Federated Indians of Graton Rancheria
	Kashia Band of Pomo Indians of the Stewarts Point Rancheria
	Lower Lake Rancheria
	Torres-Martinez Desert Cahuilla Indians
	Santa Ynez Band of Chumash Mission Indians
	Yocha Dehe Wintun Nation
Connecticut	Mashantucket Pequot Tribe
Florida	Hollywood Seminole Indian Reservation
	Miccosukee Indian Reservation.
	Seminole Tribe of Florida
	Big Cypress Reservation
IOWA	Sac and Fox Tribe of the Mississippi in Iowa
Massachusetts	Hassanamisco Nipmuc
Michigan	Nottawaseppi Huron Band of Potawatomi.
Mississippi	Mississippi Band of Choctaw Indians
Montana	Crow Creek Indian Reservation
	Fort Belknap Reservation
Nebraska	Omaha Reservation
Nevada	Fort Mojave Indian Reservation,
	Reno-Sparks Indian Colony
	Pyramid Lake Indian Reservation
New Mexico	Zuni Reservation
	Santa Clara Indian Reservation.
	Sandia Pueblo

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	Ute Mountain Ute Tribe
	Tesuque
	Santa Clara Indian Reservation.
	San Ildefonso Pueblo, New Mexico.
	Pojoaque, New Mexico
	Nambé Pueblo, New Mexico
New York	Tuscarora Reservation
	Stockbridge–Munsee Community
	Shinnecock Reservation
	Schaghticoke people
	Onondaga Reservation
South Carolina	Catawba Reservation
Rhode Island	Narragansette
Utah	Uintah and Ouray Indian Reservation
	Paiute Indian Tribe of Utah
Washington	Chehalis Reservation
	Yakama Indian Reservation
	Stillaguamish Reservation
	Sauk-Suiattle Indian Tribe of Washington
	Puyallup people
	Lummi Nation
	Port Madison Indian Reservation
Wyoming	Wind River Indian Reservation

COVID-19 has quickly spread to areas on and near tribal and urban Indian communities resulting in high concentrations in California, Arizona, Montana, Florida, New York and Washington states.

We have indicated the particular locations in the United States where tribal and urban Indian community COVID-19 Infections are likely to have Great or Greatest rates. Figure

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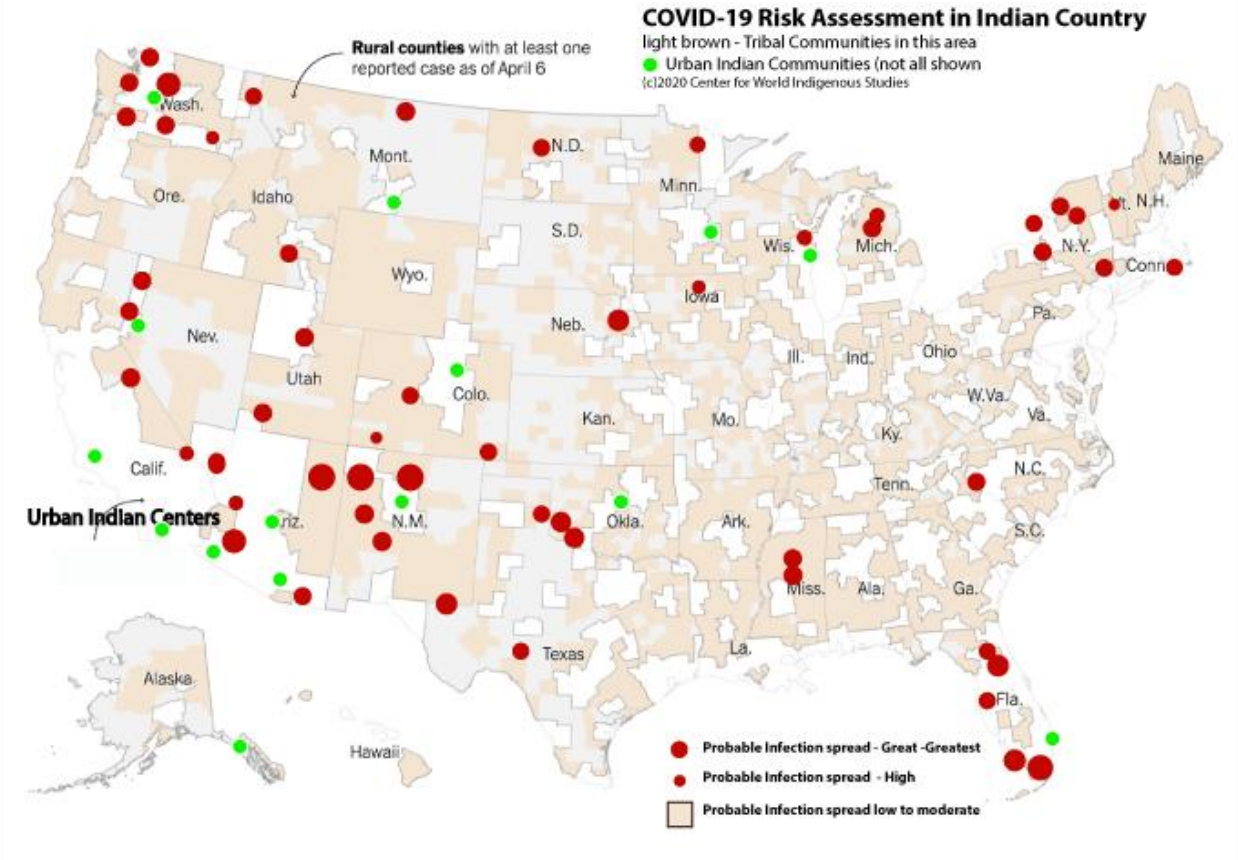
Figure 1 COVID-19 Risk to Indian Country 16 April 2020



While the Assessment identifies specific tribes and tribal communities, the actual level of COVID-19 cases and deaths specific to each tribe or tribal community is not here entered. This lack of specific tribal information is because there is no current epidemiological system for fully documenting testing, cases of infection, and deaths due to COVID -19. The Center for World Indigenous Studies **COVID-19 Indian Country Risk Assessment** is conducted to measure risk from documented evidence of cases and deaths in proximity to tribes and tribal communities. Absent extensive testing and contact tracing as well as monitoring of each tribal home regularly, it is not now possible to determine with absolute accuracy the number of asymptomatic and symptomatic cases. There is no

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extensive or even significant testing being conducted in tribes and tribal communities. Until testing and tracing are actually conducted, it is not possible to know with certainty the extent of COVID -19 spread in Indian Country.

By documenting Risk, the Center for World Indigenous Studies Assessment is intended to alert tribes and communities to the disease proximity and probable spread.

Methodology

Since there is no consistent or comprehensive data collection for the 574 tribal communities, the CWIS Assessment sought to gather data from the closest sources to tribal communities—counties. Since many tribes actually occupy whole counties or several tribes occupy a single county the data needed to be confirmed by comparing with the Johns Hopkins University and Center for Disease Control, and the website USAfacts.org. All case and death data for the counties included was updated on 16 April 2020.

The absence of testing, contact tracing and weekly monitoring in tribal households reduces the accuracy of totals for cases and deaths. The Tribal Epidemiological Centers funded by the United States government do not have consistent or accurate data though they attempt to obtain information from individual tribes in many cases. The absence of health facilities and hospitals for most tribal communities results in undercounting as well.

Recent studies have concluded that the number of cases and deaths are logically short of the actual levels. Three studies (one in Italy) concluded that the public numbers are undercounted by a factor of 5 to 10. Li Ruiyun of MRC Centre for Global Infectious Disease Analysis in London led an international study team that concluded that the transmission rate was 55% of documented infections ("Substantial undocumented infection facilitates the rapid dissemination of novel coronavirus" 16 March 2020). Projecting wider COVID-19 spread the number of undocumented infections in Indian Country is like to be high and therefore a ten fold increase over current numbers could be expected. "A ratio of one certified case out of every 10 is credible," according to Angelo Borrelli, the head of the Italy's Civil Protection Agency (Reuters, Europe News. 24 March 2020).

This means that the numbers we site may in fact reflect an undercount of asymptomatic and symptomatic persons who have contracted COVID-19 with the result that our number may be as high as 1,322 million to 2,634 million cases with tribal

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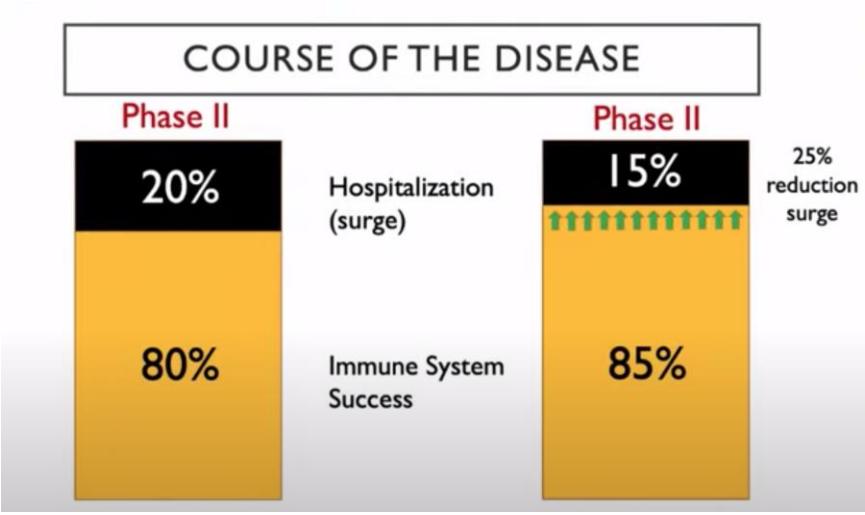
communities experiencing infections as high as 26,340 tribal and urban Indian community members (at 1% of the population). This is clearly an estimate based population proportion represented by tribal members. Serious COVID-19 infections in Indian Country may follow the model established where 80% of tribal members may experience successfully overcoming the disease resulting from immune system effects. Twenty percent of those infected (and this may apply to Indian Country as well) will require hospitalization. In estimated numbers that could mean that up to 340,000 tribal and urban Indian community members will require hospitalization. As we note, if Hydrotherapy or Sweat Lodge treatments are implemented shortly before infection or at the initial stages of infection, Indian Country could reduce the number of hospitalizations by 25% and thus reduce the total potential hospitalizations to 255,000 reservation based tribal members. Overall, tribal and urban Indian community potential infections could be reduced from a possible 1,040,000 to an overall Indian Country hospitalization level to 780,000. In Phase I individuals are not infected or asymptomatic. In Phase II of the disease individuals are infected but the immune system reduces the need for hospitalization.

Figure 2 COVID-19 Hospitalization without water treatment and with Hydrotherapy treatment



This Assessment is intended as an alert for tribes and urban Indian communities. We do this by indicating the level of risk we calculate and assign Greatest, Great, High, Elevated, Moderate, or Low according to levels of infection in proximity to specific tribal

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and urban Indian communities. This designation is not an absolute calculation of infections on Indian reservations or other tribal and urban Indian communities since no such data (even when there are a few tests) exists. We have chosen the "proximity" as a measure due to the lack of onsite tribal community data for infections and case tracking and the occasional location of tribal communities near urban settings where higher concentrations of COVID-19 exposures and confirmed infections have been documented. Again, in all instances we recognize that the levels of infections in Indian Country could be 5 to 10 higher than documented levels.