An urgent call to collect data related to COVID-19 and Indigenous populations globally

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INTRODUCTION
SARS-CoV-2 which causes COVID-19 emerged in Wuhan, China in December 2019 and has now reached pandemic status. As of 31 January 2021, COVID-19 has been detected in 188 countries/regions and all continents except Antarctica. A total of more than 100 million cases have been detected so far with some countries showing disproportionately more cases than others, in particular the USA, Brazil, Russia, India, Peru and Mexico. Currently, it is understood that SARS-CoV-2 is spread through respiratory droplets and direct contact. The reproduction number (R0) of SARS-CoV-2 has been estimated to be in the range of 1.40–6.49 with a mean of 3.28. Any virus with an R0 above 1 is indicative of a virus with increasing number of infections.

Globally thus far, efforts to curb the spread of SARS-CoV-2 have resulted with varying success. Countries such as China, Australia and New Zealand, which have implemented widespread lockdown of social gathering, restricted movement and quarantine (for returning residents), seem to have curbed the early spread of SARS-CoV-2 although are susceptible to recurring waves as has occurred in many European countries recently. Contrariwise, in nations with less strict pandemic governance arrangements including social distancing policies and adherence, or a removal of once imposed restrictions (eg, USA, Brazil and Iran), the incidence of the virus continues to escalate rapidly. Even within countries that have relatively contained the spread of COVID-19, disparities have been noted among identifiable population groups such as the elderly, prisoners, healthcare workers, migrants, refugees and Indigenous peoples. Here we discuss COVID-19 cases, outcomes and challenges for Indigenous peoples globally.

Indigenous peoples live in over 90 countries globally and account for some 476 million individuals or ~6.2% of the global population. Despite recent efforts to improve the health and well-being of Indigenous peoples, disparities exist between Indigenous and non-Indigenous peoples where data are available. Issues such as earlier life expectancy, disparate rates of infant mortality, chronic diseases and mental health continue to be common issues affecting Indigenous populations globally. Much of this burden of disease is driven by poor outcomes in many of the social determinants of health, and the ongoing impact of colonisation, marginalisation and discrimination. Indigenous peoples hold significant cultural heritage and understanding of the ways of environment and humanity living harmoniously together. Many Indigenous groups continue to use their medical traditions to address their health problems, sometimes in unison with western medical care at public health facilities. Many have endured...
than non-Indigenous peoples; and in the USA, higher mortality rates among Indigenous peoples locally and globally. We contacted jurisdictional health authorities to gather information regarding the number of cases and deaths of COVID-19 in both Indigenous and non-Indigenous populations. Our intent is to show the importance of developing specific pandemic plans and responses for Indigenous peoples locally and globally. We contacted jurisdictional health authorities to gather information regarding the number of cases and deaths of COVID-19 in both Indigenous and non-Indigenous populations. We also searched peer-reviewed and grey literature including government and institute websites, databases between 1 June and 3 November 2020. Data are presented as number per 100,000 individuals.

**DATA QUALITY AND AVAILABILITY**

We found major gaps in the reporting of SARS-CoV-2 among Indigenous peoples globally with just nine countries being able to publicly report notifications and mortality data as listed in table 1 (accurate and available as of 24 November 2020).

Where data are available in the majority of these countries, COVID-19 cases were lower among Indigenous populations than their non-Indigenous counterparts except for Brazil, Peru and the USA. We also found that within countries there are significant disparities between Indigenous and non-Indigenous peoples. This is evident in regions where the majority of the population are Indigenous such as in isolated or remote regions as in Navajo Nation in the USA or the Ucayali region in Peru, and Saskatchewan in Canada.

**DATA COLLECTION STANDARDS**

We believe that due to the global nature of the SARS-CoV-2 pandemic, a global and standardised approach of data collation specific for Indigenous populations, the sharing of this sharing, transparency and collaboration is needed to curb the devastating toll of SARS-CoV-2, as previously described by Zavaleta.
### Table 1 COVID-19 confirmed cases and deaths in Indigenous (I) and non-Indigenous (NI) populations

| Country/source | Indigenous population or representative organisation where data were acquired | Estimated population | Confirmed cases (per 100 000) | Deaths (per 100 000) | Case fatality ratio (CFR) |
|---------------|--------------------------------------------------------------------------------|----------------------|-------------------------------|----------------------|--------------------------|
|               | NI I                                                                              | Percentage of total population NI I | Rate of cases (I/IN) NI I | Rate of deaths (I/IN) NI I | Rate of CFR (I/NI) |
| Australia17   | Aboriginal and Torres Strait Islanders                                           | 25 706 889 798 365   | 3.11                         | 107.72 17.79         | 0.17 3.53 0.00         | 0.00 0.03 0.00 0.00 |
| Brazil18      | Brazil’s Indigenous People Articulation                                           | 210 147 125 900 000  | 0.43                         | 2870.17 4425.11      | 1.54 80.09 77.00       | 0.96 0.03 0.03 0.79 |
| Canada19      | First Nations                                                                     | 37 894 799 14 006 85 | 3.7                          | 874.72 274.20        | 0.31 89.93 2.94        | 0.03 0.10 0.01 0.10 |
| Colombia20    | Organizacion Nacional Indigena de Colombia                                         | 50 662 678 14 500 00 | 2.86                         | 2399.25 2268.62      | 0.95 45.21 83.38       | 1.84 0.02 0.04 1.95 |
| Ecuador21     | The Confederation of Indigenous Nationalities of the Ecuadorian Amazon            | 17 080 000 46 000 000 | 26.93                        | 1069.76 70.20        | 0.07 76.82 2.26        | 0.03 0.07 0.03 0.45 |
| Mexico22      | Instituto Nacional de los Pueblos Indigenas                                       | 126 000 000 15 894 00 | 12.61                        | 825.54 90.49         | 0.11 80.30 9.80        | 0.12 0.10 0.11 1.11 |
| New Zealand23 | Mīōri                                                                             | 50 021 000 85 035 70  | 17.00                        | 36.84 21.99          | 0.60 0.50 0.59         | 1.18 0.01 0.03 1.97 |
| Peru (total population)24 | CDC-Peru                                                                          | 29 381 884 212 823 00 | 0.72                         | 3143.32 12681.90     | 4.03 120.76 74.71      | 0.62 0.04 0.01 0.15 |
| Peru (Ucayali region)25 | Propurús                                                                          | 439 975 36 774 006  | 8.36                         | 3523.84 4671.78      | 1.33 70.69 304.56†     | 4.31 0.02 0.07 3.25 |
| USA26         | Navajo Nation                                                                     | 329 735 879 356 890 0 | 0.11                         | 3754.71 4213.90      | 1.12 77.92 176.81      | 2.27 0.02 0.04 2.02 |
| USA (23 states only)27† | American Indian/Alaskan Native                                                   | 329 735 879 230 815 01 | 0.70                         | 169.00 594.00        | 3.51 NA NA NA          | NA NA NA NA |
| USA (1 May–31 August only)28§ | American Indian/Alaskan Native                                                   | 329 735 879 230 815 01 | 0.70                         | NA NA NA            | 34.25 64.42           | 1.88 NA NA NA |

Indigenous populations are estimated from total population or from their representative organisation until 24 November 2020.
*Cases reported for Indigenous people in the Ucayali region.
†Self-reported by Indigenous leaders in the Ucayali region up to 30 July 2020. CFR is calculated as number of deaths/cases.
‡Cases reported for American Indians and Alaskan Natives from 23 states.
§Deaths reported from 1 May to 31 August only.
NA, not available.
It is important for COVID-19 now but important for all other communicable diseases. Governments globally should collect and provide data on Indigenous communities for the main purpose of preparedness and response to the COVID-19 pandemic. Sharing data globally ensures accountability for most vulnerable populations. Failure to do so can and will potentially wipe out Indigenous peoples and their cultures that have existed for many thousands of years.

There are some limitations of this approach to our collation of data: many countries with Indigenous populations also do not register the ethnicity of population at time of diagnosis; some countries did not want to share Indigenous data, despite existing recommendations to do so and so we are not able to report cases by Indigenous status.

Other countries have no publicly available data on Indigenous cases or outcomes from COVID-19. We argue that with limited or no information publicly available regarding Indigenous peoples and COVID-19, there is a hindrance in decision-making for Indigenous peoples, and in doing so this potentially minimises the impact and the ability to curb infections with tailored approaches appropriate for Indigenous peoples. Finally, where there are available data among Indigenous peoples many do not disaggregate by regions of residence and often Indigenous peoples living in urban environments are masked within broader population groups.

SELF-GOVERNANCE
The COVID-19 pandemic has shown the capacity of Indigenous peoples themselves to control the spread of the virus among Indigenous peoples. Many Indigenous populations around the world have taken preventative action above and beyond that of the recommendations of their local and federal governments, including self-isolation and border control to tribal lands. Yet, sometimes the government policies themselves have blocked these measures, such as the case of Peru, when the government decision to provide financial assistance to poor Peruvians through cash transfers resulted in otherwise not infected Indigenous peoples travelling to towns where banks were located, becoming infected and taking the virus back to traditional lands.

CONCLUSIONS
During the current pandemic, we found major gaps in reporting SARS-CoV-2 infections and outcomes among Indigenous peoples. We urge the collection of Indigenous ethnicity data regarding the number of cases, hospitalisation and mortality of COVID-19, for other disease states and for future pandemics. Transparency for Indigenous populations should be paramount in global governance agendas. Informative, inclusive and participatory decision-making and policy creation is key to preventing and limiting the spread of SARS-CoV-2 among Indigenous populations who are at a greater risk of losing cultural phenomena and shared histories that belong to humankind.

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