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The COVID-19 pandemic in the USA: what might we expect?



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As of March 19, 2020, 191 127 cases of, including 7807 deaths attributed to, coronavirus disease 2019 (COVID-19) have been reported worldwide.¹ The incidence of reported cases in China has dramatically reduced to tens per day as a result of strict social distancing measures; however, the pandemic severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is now generating sustained transmission in many countries including the USA. In *The Lancet*, Isaac Ghinai, Tristan D McPherson, and colleagues² report details of the first known human-to-human transmission of SARS-CoV-2 in the USA, which was identified in late January, 2020. An infected traveller, a woman in her 60s, returned from Wuhan and subsequently became symptomatic and transmitted the infection to her husband with whom she had prolonged and unprotected contact.² An investigation of 350 contacts of both patients did not lead to any additional cases. However, we cannot rule out the possibility that some asymptomatic contacts went undetected, because the proportion of asymptomatic COVID-19 cases appears to be large. For example, estimated asymptomatic proportion was 18% for the outbreak on the Diamond Princess cruise ship.³

In the USA, where influenza activity is still widespread,⁴ 3499 cases, including 60 deaths, have been attributed to COVID-19 as of March 15, 2020.⁵ Most cases have been reported in New York (20.1%), Washington (18.4%), and California (12.2%), but the epidemic is still unravelling as testing becomes broadly available across the country. Although it is impossible to predict which areas of the USA will fare better or worse with regard to COVID-19, past influenza pandemics in the USA have generated substantial spatial heterogeneity in mortality.⁶ For example, all-cause mortality for the 1918–20 influenza pandemic ranged from 0.25% in Wisconsin to 0.84% in Arizona.^{6,7} Furthermore, older populations in some areas tended

to exhibit lower excess mortality, which might have resulted from protection provided by previous exposure to a similar virus.⁸ In contrast, the risk of death from COVID-19 increases with older age,⁹ suggesting that Florida, Maine, and Puerto Rico, which have the populations with the largest proportions of older people (≥ 65 years), might be the most vulnerable to this pandemic virus.

On March 13, 2020, President Donald Trump declared a national emergency to combat the spread of COVID-19 in the USA, which led to a range of social distancing interventions across the country, including closures of schools, bars, cinemas, and restaurants, cancellation of large public gatherings, including cultural and sporting events, and discouraging gatherings of more than 50 people. Moreover, an increasing number of businesses and companies have asked their employees to work remotely. These social distancing measures are reducing the transmission rate of the virus and, in turn, reducing the risk of death for the most vulnerable populations. During the influenza 2009 A/H1N1 pandemic, the implementation of social



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distancing interventions, including nationwide school closures and cancellation of public gatherings, was associated with a 30% reduction in the transmission rate.¹⁰ However, it increased after the mandatory school suspension resumed and before summer vacation started.¹⁰ Given the uncertainties surrounding the extent of the COVID-19 pandemic across the country, efforts to sustain online learning and remote working in combination with enhanced infection control measures in health-care settings and nursing homes could aid in mitigating the spread of the virus and gaining control of the epidemic's chains of transmission.

In the USA, past influenza pandemics have spread as a series of waves of varying durations and intensities, which have been associated with seasons and school cycles.^{10,11} Because respiratory viruses, including other coronaviruses, are known to respond to seasonal variation,¹² we might expect that increasing temperatures in the summer could reduce the intrinsic transmissibility of the novel coronavirus to some extent. In the context of a novel virus, warmer weather alone is unlikely to sufficiently mitigate the transmission rate and interrupt community transmission in the absence of social distancing strategies. Perhaps the most reasonable scenario ahead of us is that the transmission rate will decline during the next few months, partly driven by social distancing measures, a scenario that is reminiscent of the influenza 2009 A/H1N1 pandemic.¹⁰ Close monitoring of the transmission potential of the virus on the basis of reliable and publicly available data in near real-time will be key to short-term forecasts and sound public health decisions.

We declare no competing interests.

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Preparedness is essential for malaria-endemic regions during the COVID-19 pandemic

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For the Chinese translation see Online for appendix

The coronavirus disease 2019 (COVID-19) pandemic that first emerged in Wuhan in China's Hubei province¹ has quickly spread to the rest of China and many other countries. Within 3 months, more than 125 000 people have been infected and the death toll had reached over 4600 worldwide on March 12, 2020.² In an attempt to contain the virus, the Chinese

Government has made unprecedented efforts and invested enormous resources and these containment efforts have stemmed the spread of the disease.³ As of March 12, 2020, malaria-endemic regions in Africa have reported a few imported COVID-19 cases including in Nigeria, Senegal, and the Democratic Republic of the Congo.² Africa needs to be prepared