2019-nCoV

Daily updates on the emerging novel coronavirus from the Johns Hopkins Center for Health Security.

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January 24, 2020 - Morning Update

EPI UPDATE S China's National Health Commission is reporting a total of 830 confirmed cases across 29 provinces, including 177 severe cases and 25 deaths (24 in Hubei Province, where Wuhan is located, and 1 in Hebei Province). Another 1072 suspect cases have also been reported. 5 confirmed cases have been reported in Hong Kong (2), Macao (2), and Taiwan (1). Among the 53 cases reported in Guangdong Province , health officials identified 10 "cluster outbreaks," all among families, which could provide additional insight into the degree to which the 2019-nCoV infection is transmissible among humans.

The Thailand Ministry of Public Health reported Thailand's 5th case, a 33-year-old woman traveling from China with her daughter (not known to be infected). The patient reportedly has mild symptoms and has been placed in isolation. The Korea Centers for Disease Control and Prevention (South Korea) confirmed its second case, a man who had been working in Wuhan. The Japan Ministry of Health, Labour, and Welfare confirmed the country's second case as well, a man who arrived from Wuhan.

In the United States, the Brazos County (Texas) Health Department announced that they are investigating a suspect case in an individual who recently traveled to Wuhan. Testing is in progress, and the individual has been isolated at home.

WUHAN UPDATES China's Ministry of Finance has allocated 1B yuan (approximately US$145M) to support response activities in Hubei Province. Numerous media reports (many based on an original report in the *Changjiang Daily* news) indicate that construction is underway for a new hospital in Wuhan that will have the capacity for 1,000 beds, with the intention of being operational by February 3. A similar effort was implemented during the 2003 SARS response to rapidly construct hospital facilities, including the 1,000-bed Xiaotangshan Medical Center, which was constructed in 7 days. The Wuhan Municipal Health Commission announced that the city has designated additional 2019-nCoV treatment hospitals in an attempt to manage the growing number of patients seeking care.

ANTI-RETROVIRALS China's National Health Commission reported that Dr. Wang Guangfa , Head of the Department of Pulmonary Medicine at Peking University First Hospital, was infected with 2019-nCoV. In an interview with the China News Agency , he reported being treated with the AIDS anti-retroviral drug lopinavirlitonavir. He is recovering from the disease, but it is unclear at this time to what extent, if any, the antiviral drug contributed to his treatment.

R0 ESTIMATES Several preliminary modeling studies based on current incidence data and/or sequence data are estimating an R0 of 1.5-3 for the 2019-nCoV outbreak. This is comparable to SARS and pandemic influenza. The R0 is dependent on a myriad of factors, including the pathogen/disease itself and public health interventions and containment measures, and it will change over the course of the outbreak.

CROWDSOURCED PATIENT DATA Three sources of patient-level data have been compiled using publicly available data by scientists not affiliated with the response. These efforts are based on a variety of publicly available information—including from official reports, news media, and social media—and they aim to provide a substitute for official "line list" data, which have not been published publicly.

VIROLOGY DESCRIBED Scientists affiliated with the Chinese Academy of Sciences have posted a pre-print of genetic analysis of 11 samples of 2019-nCoV from some of the earliest identified patients in the ongoing outbreak. They found that (1) the virus in the same species as SARS-CoV, with 94.6% similarity in amino acid sequence and 80% similarity in nucleotide sequence across the genome; (2) the 2019-nCoV strain was less than 75% homologous to nearly all strains of SARS-CoV in the spike protein; and (3) a single isolate of a bat coronavirus shared 96.7% sequence homology with the 2019-nCoV strain, suggesting 2019-nCoV may have originated in bats and possibly shares a common ancestor with SARS-CoV. Findings also suggest that a PCR diagnostic test could differentiate 2019-nCoV from other coronaviruses. Serological

testing of the patient samples showed strong IgG antibodies specific for 2019-nCoV in specimens collected 20 days after disease onset in 5 of 7 patients.

US SENATE BRIEFING The US Senate Health and Foreign Relations Committees will jointly host a briefing by federal health officials on the emerging 2019-nCoV outbreak as well as US preparedness and response activities.