

NOVEL CORONAVIRUS FROM WUHAN, CHINA 2019-2020

Update to:

Chapter 155: [Coronaviruses, Including Severe Acute Respiratory Syndrome \(SARS\) and Middle East Respiratory Syndrome \(MERS\)](#),

Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, Ninth Edition (Elsevier, 2020)

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A novel coronavirus, currently designated as 2019-nCoV, was reported to be the cause of an outbreak of respiratory disease in Wuhan, China in December, 2019. Chinese authorities reported that the etiologic agent was a novel coronavirus, as detected by electron microscopy and by genomic sequencing. The majority of the initial cluster of 45 cases from the Wuhan area had been associated with visitation of a seafood/live exotic animal market or by close contact with an ill family member. As of January 30, 2020, a total of 7,818 cases have been confirmed globally, and 170 deaths have been reported.¹ Six cases have been detected in the United States.² Five of those cases are identified in individuals who traveled to China, and one case has been confirmed as the first person-to-person transmission in the United States.³

Virus has been isolated from infected patients.⁴ Full genomic sequences have been published and suggest that 2019-nCoV has approximately 70% amino acid homology to SARS-CoV and 96% to a known bat CoV.⁵ It may be able to use ACE2 as a receptor⁵ and based on its sequence, it is likely to further adapt to ACE2 to enhance human cell infectivity.⁶ The impact of these properties, and the full potential of this novel coronavirus for transmission and for its epidemiologic behavior remain to be determined. The Chinese government has currently restricted travel to Wuhan and to 10 nearby cities. Travelers returning from China who have respiratory symptoms or fever are being screened at multiple airports worldwide.

Therapy for patients with novel coronaviruses is primarily supportive, with strict isolation precautions when hospitalized. Antivirals such as remdesivir, lopinavir/ritonavir, and beta-interferon have shown activity in vitro and in mouse models of MERS-CoV, but data on clinical use are very limited.⁷ Active investigation of candidate vaccines is underway.⁸

References

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