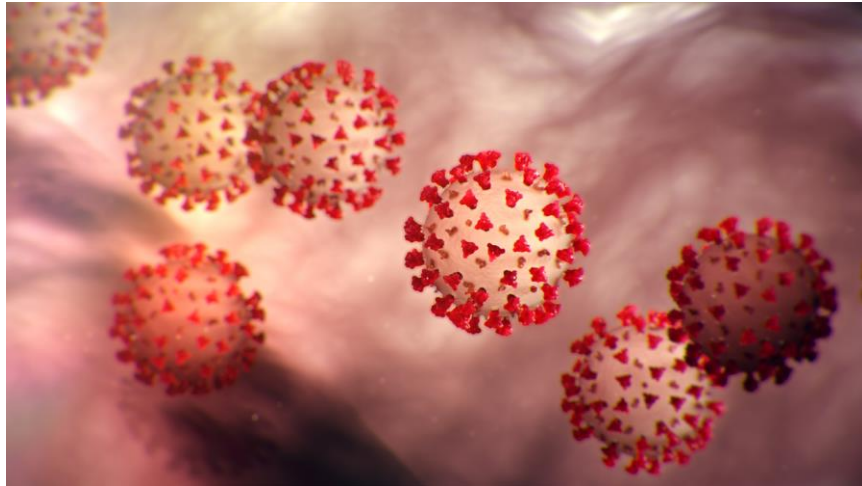


Overview of Coronaviruses, SARS-CoV-2, and COVID-19



Coronaviruses are a large family of viruses that usually cause mild to moderate upper-respiratory tract illnesses, like the common cold. However, three new coronaviruses have emerged from animal reservoirs over the past two decades to cause serious and widespread illness and death.

There are hundreds of coronaviruses, most of which circulate among such animals as pigs, camels, bats and cats. Sometimes those viruses jump to humans—called a spillover event—and can cause disease. Four of the seven known coronaviruses that sicken people cause only mild to moderate disease. Three can cause more serious, even fatal, disease. SARS coronavirus (SARS-CoV) emerged in November 2002 and caused severe acute respiratory syndrome (SARS). That virus disappeared by 2004. Middle East respiratory syndrome (MERS) is caused by the MERS coronavirus (MERS-CoV). Transmitted from an animal reservoir in camels, MERS was identified in September 2012 and continues to cause sporadic and localized outbreaks. The third novel coronavirus to emerge in this century is called SARS-CoV-2. It causes coronavirus disease 2019 (COVID-19), which emerged from China in December 2019 and was declared a global pandemic by the World Health Organization on March 11, 2020. In the first three months after COVID-19 emerged nearly 1 million people were infected and 50,000 died.¹

Based on what is currently known about the virus and about similar coronaviruses that cause SARS and MERS, spread from person-to-person happens most frequently among close contacts (within about 6 feet). This type of transmission occurs via respiratory droplets, but disease transmission via infectious aerosols is currently uncertain. Transmission of SARS-CoV-2 to persons from surfaces contaminated with the virus has not been documented. Transmission of coronavirus in general occurs much more commonly through respiratory droplets than through fomites (inanimate objects that, when contaminated with or exposed to infectious agents, can transfer disease to a new host). Current evidence suggests that SARS-CoV-2 may remain viable for hours to days

on surfaces made from a variety of materials. Cleaning of visibly dirty surfaces followed by disinfection is a best practice measure for prevention of COVID-19 and other viral respiratory illnesses in community settings.

It is unknown how long the air inside a room occupied by someone with confirmed COVID-19 remains potentially infectious. Facilities will need to consider factors such as the size of the room and the ventilation system design (including flowrate [air changes per hour] and location of supply and exhaust vents) when deciding how long to close off rooms or areas used by ill persons before beginning disinfection. Taking measures to improve ventilation in an area or room where someone was ill or suspected to be ill with COVID-19 will help shorten the time it takes respiratory droplets to be removed from the air.

¹Excerpted from the NIAID website, to read more of this article click [here](#).

²Excerpted from the CDC website, to read more of this article click [here](#).