



## CAPS: THE PATHOGEN AND CLINICAL SYNDROME

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The **FICTIONAL** Coronavirus Acute Pulmonary Syndrome (CAPS) is an acute respiratory infection that can progress to pneumonia and acute respiratory distress syndrome. It is caused by a swine-origin coronavirus (CAPS virus).

The CAPS virus is from the same family of viruses as SARS and MERS but is antigenically distinct. The virus has existed in the fruit bat population for many years and has been transmitted to domestic pigs. The virus causes mild disease in pigs.

Like SARS and MERS, a mutation in the CAPS virus enabled human infection, leading to one or more spillover events to pig farmers in South America, but with limited human-to-human spread. Like SARS, a further mutation in the CAPS virus later enabled efficient human-to-human transmission.

The CAPS virus is more transmissible in mild cases than SARS-CoV, and spread by mildly symptomatic individuals is possible. Transmission is via the respiratory route, mostly by respiratory droplets, with some proportion being airborne during aerosol-generating medical procedures.

- Approximately 50% of CAPS cases require hospitalization, many of them in an intensive care unit (ICU).
- The CAPS fatality rate in hospitalized patients is about 14%.
- The overall case fatality rate (CFR) is 7%.
- The average  $R_0$  is 1.74.
- The incubation period ranges from 5 to 7 days.

There is no licensed vaccine for any coronavirus, although some are in development for SARS and MERS. There is no antiviral drug with an indication for coronavirus treatment, although there are several drugs, including anti-HIV drugs, that might be effective. In this scenario, there is one **FICTIONAL** HIV antiviral—extranavir—that may be effective for treatment or prophylaxis of CAPS.