

COVID-19 an Emerging Infectious Disease (EID)

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Corona virus (COVID-19) disease is a contagious one caused by severe acute respiratory syndrome corona virus 2 (SARS-Cov-2). The first case was identified in Wuhan, China on December 2019. Since then it spreads worldwide as an ongoing pandemic. The Corona virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. These particles range from larger respiratory droplets to smaller aerosols. The virus spreads mainly between people who are in close contact with each other, typically within 1 meter (short-range).

Corona, a type of virus of many different kinds and among them some cause disease.¹ On 31 December 2019, the World Health Organization (WHO) was formally notified about a cluster of cases of pneumonia in Wuhan City, home to 11 million people and the cultural and economic hub of central China. By 5th January, 59 cases were known and none had been fatal. Ten days later, WHO was aware of 282 confirmed cases, of which four were in Japan, South Korea and Thailand. There had been six deaths in Wuhan, 51 people were severely ill and 12 were in a critical condition. The virus responsible was isolated on 7th January and its genome shared on 12th January. The cause of the severe acute respiratory syndrome that became known as COVID-19 was a novel corona virus, SARS-CoV-2.² On January 30, 2020, the WHO declared the COVID-19 outbreak a global health emergency. On March 11, 2020, the WHO declared COVID-19 a global pandemic.³ This virus has a large family that cause illnesses ranging from the common cold to more severe diseases like Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS).⁴ Corona viruses are zoonotic,⁴ however no animal reservoir has yet been found.⁵ Several known corona viruses are circulating in animals that have not yet infected humans but it appears that COVID-19 has crossed species from bats to snakes, and pangolins then to humans, initially via the live animal 'wet markets' of Wuhan.⁶ As of 12 May, 82,591 new cases of COVID-19 worldwide were being confirmed daily and the death rate was over 4200 per day.⁷ The US has the highest number of reported infections and deaths in the world. India, Brazil, Russia, and France have the highest number of infections and Brazil, India, Mexico, and Peru have the highest number of deaths after the US.⁴ In Bangladesh, from 3rd January 2020 to 3rd September 2021, there have been 1,510,283 confirmed cases of COVID-19 with 26,432 deaths, reported to WHO.⁷

Seasonal variation from winter to summer, elevated

temperature and humidity has no effect on COVID-19 transmission.⁸ The incubation period varies from 2 to 14 days. A person infected with the corona virus is contagious to others for up to 2 days before symptoms appear, and they remain contagious to others for 10 to 20 days, depending upon their immune system and the severity of their illness.⁴ No age is immune for developing corona virus. Specially it become more severe in people who are older than 60 years or who have co-morbidities like lung or heart disease, diabetes or conditions that affect their immune system.⁹

A person can be infected when aerosols or droplets containing the virus are inhaled or come directly into contact with the eyes, nose, or mouth. The virus can also spread in poorly ventilated and/or crowded indoor settings, where people tend to spend longer periods of time. People may also become infected by touching surfaces that have been contaminated by the virus when touching their eyes, nose or mouth without cleaning their hands. Whether or not they have symptoms, infected people can be contagious and the virus can spread from them to other people.¹⁰

COVID-19 affects different people in different ways. Most infected people developed mild to moderate illness and recover without hospitalization.¹¹ Most common symptoms are fever, dry cough and tiredness. Relatively less common symptoms are aches and pains, sore throat, diarrhea, conjunctivitis, headache, loss of taste or smell, a rash on skin, or discoloration of fingers or toes. More serious symptoms are difficulty breathing or shortness of breath, chest pain or pressure, loss of speech or movement. Patient should seek immediate medical attention if one has serious symptoms.¹² The Case Fatality Rate ranges from 0.25% to 10%.¹³ Long-term effects COVID-19 symptoms can sometimes persist for months. The virus can damage the lungs, heart and brain, which increases the risk of long-term health problems.¹⁴

To test for the COVID-19 virus, a health care provider takes a sample from the nose (nasopharyngeal swab), throat (throat swab) or saliva.⁶ Essential investigation is Real-Time Reverse Transcription Polymerase Chain Reaction (RT-PCR). Emerging tests are reverse transcription loop-mediated isothermal amplification (RT-LAMP), lung ultrasound and calprotectin.¹⁵

Currently, only one medication Remdesivir (Veklury) has been approved to treat COVID-19. Antibiotics aren't effective against viral infections such as COVID-19. The U.S. National Institutes of Health has recommended the corticosteroid dexamethasone for people hospitalized with severe COVID-19 who are on supplemental oxygen or need mechanical ventilation. The FDA has also granted

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emergency use authorization for convalescent plasma therapy with high antibody levels to treat COVID-19. Many people with COVID-19 may have mild illness and can be treated with supportive care, aimed at relieving symptoms and may include: Pain relievers (ibuprofen or acetaminophen), Cough syrup or medication, Rest, Fluid intake.¹⁰

Preventive measures include cleaning hands often, using soap and water, or an alcohol-based hand rub, maintaining a safe distance from anyone who is coughing or sneezing, wearing a mask when physical distancing is not possible, not to touch eyes, nose or mouth, covering nose and mouth with bent elbow or a tissue when cough or sneeze, staying home if feel unwell, and if fever, cough and difficulty breathing, seek medical attention.¹¹

The impact of COVID-19 vaccines on the pandemic will depend on several factors. These include the effectiveness of the vaccines; how quickly they are approved, manufactured, and delivered; the possible development of other variants and how many people get vaccinated. Whilst trials have shown several COVID-19 vaccines to have high levels of efficacy, like all other vaccines, COVID-19 vaccines will not be 100% effective.¹⁶ WHO supports achieving 'herd immunity' through vaccination, not by allowing a disease to spread through any segment of the population, as this would result in unnecessary cases and deaths.

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