



## An Overview of Corona Virus Disease - Review

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### ABSTRACT

*The investigation of this review article is based on a recently outbreak of a pandemic disease which has posed a major health hazards, the novel coronavirus (SARS-CoV-2) is a infection which is more commonly referred to as COVID-19. This infectious disease is emerging and reducing human population across the globe. Common symptoms noted among human for this infection include fever, cough, and shortness of breath. Muscle pain, sputum production, and sore throat are less common symptoms. The infection is transmitted from one human to others by respiratory droplets, often produced during coughing and sneezing. It takes 2–14 days to develop symptoms from the day of exposure. The person who has been infected by the virus need to get himself isolated. Several methods to prevent from this virus include hand washing, maintaining distance from other people, use of sanitizer frequently. To avoid contamination person should wear face mask in general public. This infection has its acute effect on people with old age group or patient having low immunity. In most cases person infected with this virus need to be admitted to intensive care unit for intensive care and supportive organ treatment.*

### 1. INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (China-WHO Joint Mission, 2020). The disease was first identified in 2019 in Wuhan, the capital of Hubei China, and has since spread globally, resulting in the 2019–20 coronavirus pandemic (Hui, D. S et al, 2020). The common symptoms of Covid-19 include fever, dry cough, and difficulty in breathing but muscle pain, sputum production, diarrhea, and sore throat are less common (Centre for Disease control and Prevention, 2020). While the majority of cases result in mild symptoms, some progress to pneumonia and multi-organ failure.

In the month of March 2020, the rate of deaths per number of diagnosed cases is 4.4 percent; however, it ranges from 0.2 percent to 15 percent, according to age group and other health problems (Li *et al*, 2020). Until the preparation of this proposal (3 April 2020), more than 1,010,000 cases of COVID-19 have been reported in more than two hundred countries and territories, resulting in over 53,000 deaths but more than 211,000 people have recovered from this deadly virus (Worldometer, 2020). Since the first reports of cases from Wuhan, a city in the Hubei Province of China, at the end of 2019, more than 80,000 COVID-19 cases have been reported in China, with the majority of those from Hubei and surrounding provinces. A joint World Health Organization (WHO)-China fact-finding mission estimated that the epidemic in China peaked between late January and early February 2020 (WHO Media Report, 2020), and the rate of new cases decreased substantially by early March. However, at present time cases have been reported in all continents, except for Antarctica, and have been rapidly rising in many countries of the world. The rapid increment in the cases of Covid-19 throughout the world including the United States, most countries in Western Europe (including the United Kingdom), and recently it has been reported in South-east Asia and this has forced the

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countries to announce sudden lockdown. The virus is typically spread from one person to another via respiratory droplets produced during coughing (Centres for Disease control and Prevention, 2020). It may also be spread from touching contaminated surfaces and then touching one's face (Centres for Disease control and Prevention, 2020). The virus can live on surfaces up to 72 hours (National Institutes of Health, 2020). The time from exposure to onset of symptoms is generally between two and fourteen days, with an average of five days (Centres for Disease control and Prevention, 2020 Zhou et al, 2020). The standard method of diagnosis is by reverse transcription polymerase chain reaction (rRT-PCR) from a nasopharyngeal swab. The infection can also be diagnosed from a combination of symptoms, risk factors and a chest CT scan showing features of pneumonia (Jin YH *et al.*, 2020). The recommended measures to prevent infection include frequent hand washing, social distancing (maintaining physical distance from others), and keeping hands away from the face (Perlman, 2020). The use of sanitized masks is recommended for suspect persons and their caregivers, but not for the general public, although simple cloth masks may be used by those who desire them (Tang *et al.*, 2020; Li *et al.*, 2020). There is no vaccine or specific antiviral treatment for COVID-19. It can be cured by the treatment of symptoms, supportive care, isolation, and experimental measures.

The World Health Organization (WHO) declared the 2019–20 corona virus outbreaks a Public Health Emergency of International Concern (PHEIC) on 30 January 2020 and a pandemic on 11 March 2020. The evidences of local transmission of the disease have been found in many countries across all six WHO regions and most of the countries have announced an emergency alert throughout the countries.

## 2. COVID-19

It is a zoonotic virus and is an animal virus that can be transmitted to humans. COVID-19 is not SARS and it is not influenza. It is a new virus with its own characteristics. The COVID-19 virus is unique among human coronaviruses which has capacity of high transmissibility, substantial fatal deaths in some high-risk groups, and ability to cause huge societal and economic disruption in the nation. As COVID-19 is a newly identified pathogen, there is no known pre-existing immunity in humans. Based on the epidemiologic characteristics and the scenario of increasing Covid-19 infected patients throughout the world so far, everyone is assumed to be susceptible, although there may be risk factors increasing susceptibility to infection. Since the start of the COVID-19 outbreak, there have been extensive attempts to better understand the virus and the disease in China. It is remarkable how much knowledge about a new virus has been gained in such a short time. However, as with all new diseases, and only 7 weeks after this outbreak began,

key knowledge gaps remain. The people are unknown about the source of infection, pathogenesis and virulence of the virus, transmissibility, risk factors for infection and disease progression, diagnostics, clinical management of severe and critically ill patients, and the effectiveness of prevention and control measures. The timely filling of these knowledge gaps is necessary to keep oneself safe and away from the disease and to enhance control strategies. The COVID-19 virus is unique among human coronaviruses since it has high transmissibility, uncontrollable fatal deaths in high-risk age groups, and has ability to cause huge social disharmony and economic loss. The present scenario of increasing Covid-19 patients and number of deaths per day shows that the global population seems to be susceptible to this virus. As the animal origin of the COVID-19 virus is unknown at present, the risk of reintroduction into previously infected areas is also high.

## 3. VIRAL ETIOLOGY

Coronaviruses are important human and animal pathogens. At the end of 2019, a novel coronavirus was identified as the cause of a cluster of pneumonia cases in Wuhan, a city in the Hubei Province of China. It rapidly spread, resulting in an epidemic throughout China, followed by an increasing number of cases in other countries throughout the world. In February 2020, the World Health Organization designated the disease COVID-19, which stands for coronavirus disease 2019. The virus that causes COVID-19 is designated severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2); previously, it was referred to as 2019-nCoV. According to recent research, Covid-19 is zoonotic, with Chinese horseshoe bats (*Rhinolophus sinicus*) being the most probable origin (Chan *et al.*, 2020; Lu *et al.*, 2020) and pangolins as the most likely intermediate host (Meng *et al.*, 2020).

## 4. EPIDEMIOLOGIC CHARACTERISTICS

### 4.1. Mode of Transmission

The person-to-person spread of SARS-CoV-2 is thought to occur mainly via respiratory droplets, resembling the spread of influenza. With droplet transmission, virus released in the respiratory secretions when a person with infection coughs, sneezes, or talks can infect another person if it makes direct contact with the mucous membranes. The infection can also occur if a person touches an infected surface and then touches his or her eyes, nose, or mouth. Droplets typically do not travel more than six feet (about two meters) and do not linger in the air however, SARS-CoV-2 remained viable in aerosols under experimental conditions for at least three hours (Van *et al.*, 2020).

### 4.2. Source of Transmission

The study in Wuhan shows that the Covid-19 outbreak was associated with a seafood market that sold live animals,

where most patients had worked or visited and which was subsequently closed for disinfection (WHO Report, 2020). However, as the outbreak progressed, person-to-person spread became the main mode of transmission. Although patients with symptomatic COVID-19 have been the main source of transmission, recent study suggests that asymptomatic patients and patients in their incubation period are also carriers of SARS-CoV-2 (Chan et al., 2020; Rothe et al., 2020). This epidemiologic feature of COVID-19 has made its control extremely challenging, as it is difficult to identify and quarantine these patients in time, which can result in an accumulation of SARS-CoV-2 in communities (The Chinese Preventive Medicine Association 2020) (Meng1 et al, 2020).

#### 4.3. Incubation Period

The incubation period for COVID-19 is thought to be within 14 days following exposure, with most cases occurring approximately four to five days after exposure (Li et al, 2020; Chan et al, 2020). In a study of 1099 patients with confirmed symptomatic COVID-19, the median incubation period was four days (interquartile range two to seven days) ( Guan et al., 2020).

#### 4.4. People at High Risk of Infection

Individuals of any age can acquire Covid-19 infection, although adults of middle age and older are most commonly affected. In study conducted with hospitalized patients with confirmed COVID-19, the median age ranged from 49 to 56 years (Huang et al, 2020; Wang et al, 2020). In a report from the Chinese Centre for Disease Control and Prevention that included approximately 44,500 confirmed infections, 87 percent of patients were between 30 and 79 years old (Wu et al, 2020). Older age was also associated with increased mortality, with a case fatality rate of 8 and 15 percent among those aged 70 to 79 years and 80 years or older, respectively. The findings from China shows that mortality was highest among older individuals, with 80 percent of deaths occurring in those aged  $\geq 65$  years.

#### 4.5. Clinical Manifestations Initial Presentation

Pneumonia appears to be the most frequent serious manifestation of infection, characterized primarily by fever, cough, dyspnea, and bilateral infiltrates on chest imaging (Guan et al., 2020). There are no specific clinical features that can yet reliably distinguish COVID-19 from other viral respiratory infections. In a study describing 138 patients with COVID-19 pneumonia in Wuhan, the most common clinical features at the onset of illness were (Wang et al., 2020):

1. Fever in 99 percent
2. Fatigue in 70 percent
3. Dry cough in 59 percent

4. Anorexia in 40 percent
5. Myalgias in 35 percent
6. Dyspnea in 31 percent
7. Sputum production in 27 percent

### 5. MANAGEMENT

#### 5.1. Site of Care Home Care

Home management is appropriate for patients with mild infection who can be adequately isolated in the outpatient setting. Management of such patients should focus on prevention of transmission to others. Outpatients with COVID-19 should stay at home and try to separate themselves from other people and animals in the household. They should wear a facemask when in the same room (or vehicle) as other people and when presenting to health care settings. Disinfection of frequently touched surfaces is also important. The optimal duration of home isolation is uncertain.

#### 5.2. Hospital Care

Some patients with suspected or documented COVID-19 should be treated in the hospital. Management of such patients consists of ensuring appropriate infection control and supportive care. Patients with severe disease often need oxygenation support. Symptomatic patients should also be asked about recent travel or potential COVID-19 exposure in the prior 14 days to determine the need for evaluation for COVID-19.

### 6. CONCLUSION

The novel coronavirus spread so rapidly that it has changed the rhythm of the globe. Whether from the perspective of a single country or multilateral levels, the solidity of international relations has been put under test. The most obvious consequences include economic recession, a crisis of global governance, trade protectionism and increasing isolationist sentiment. People-to-people, cultural and travel exchanges have all been restricted. Nonetheless, this is just a tip of the iceberg. After we overcome the pandemic, which can surely happen, we must perform a comprehensive evaluation of the world's ability to take care of stability when faced with similar challenges within the future. We must also craft measures to deal with these challenges together. But perhaps at the present phase, we will already draw some conclusions.

A pandemic is not new in human history. But what makes the COVID-19 pandemic special is that it takes place in an unprecedented backdrop when the interconnectivity and interdependence between people, between countries and between continents are so deep. The achievements people have made in technology, intelligence and transportation make them both physically and psychologically globalized.

The consequence is that problems in one country will become global ones. Long ago we raised warnings, and we cannot underestimate the danger of multinational threats, from terrorism to cybercrimes. Similarly, if one isolates oneself and relies on others to solve one's own problems, it is simply impossible. The effect of the virus has clearly proved this. The pandemic reminds us that we need to stay humble in the face of disasters. Any country or individual, no matter their geography, fortunes or political ambitions, is equal. The novel coronavirus crisis rips off all fanciful illusions and superficial things and displays the lasting value of human life.

Not everybody was prepared for the test of the pandemic. Even under the present circumstances, when global challenges are alleged to unite people and propel people to even temporarily forget divergences, some still resort to exploitation. Not everyone can resist the temptation of being selfish. Others also cash in of things to play geopolitics by chasing their own interests and revenge against their geopolitical rivals. Once bred in such an environment, the virus will intensify conflicts and heighten unfair competition.

As a result, some "man-made" consequences are added to the natural effect caused by the virus. These "man-made" consequences are a results of the zero-sum mentality that humans, or precisely some humans, refuse to offer up even when faced with common disasters. Nonetheless, to beat the visible consequences caused by COVID-19, countries are urged to remain more united than ever and to collect all strengths and resources.

We have to admit that the COVID-19 pandemic has shown us examples that lack humanitarianism. This may flow from to the chaos caused by the spreading threat. However, such lack of humanitarianism seems to be deep-rooted. This is due to some countries' and their ruling elites' incurable egoism. Those who proclaim themselves as moral leaders with democratic traditions didn't unite all parties to hunt mutual affection. Instead, they began to act consistent with the law of the jungle, no matter etiquette rules and ethical constraints.

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