

Case Definitions:

WHO periodically updates the [Global Surveillance for human infection with coronavirus disease \(COVID-19\)](#) document which includes case definitions.

For easy reference, case definitions are included below.

- **Suspect case**

A. Patients with acute respiratory illness (fever and at least one sign/symptom of respiratory disease, (e.g. Cough, shortness of breath), AND with no other etiology that fully explains the clinical presentation AND a history of travel to or residence in a country/area or territory reporting local transmission of COVID-19 disease during the 14 days prior to symptom onset.

Or

B. A patient with severe acute respiratory illness AND having been in contact with a confirmed or probable COVID-19 case(see definition of contact) in the last 14 days prior to onset of symptoms,

OR

C. A patient with severe acute respiratory infection (fever and at least one sign/symptom of respiratory disease, (e.g., cough, shortness of breath) AND requiring hospitalization AND with no other etiology that fully explains the clinical presentation.

- **Probable case**

A suspect case for whom testing for COVID-19 is inconclusive.

- Inclusive being the result of the test reported by the laboratory.

- **Confirmed case**

A person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.

- Information regarding guidance can be found [here](#).

Clinical Classification

1. Mild cases

The clinical symptoms were mild, and there was no sign of pneumonia on imaging.

2. Moderate cases

Showing fever and respiratory symptoms with radiological findings of pneumonia.

3. Severe cases

Cases meeting any of the following criteria:

- Respiratory distress (≥ 30 breaths/ min);
- Finger oxygen saturation $\leq 93\%$ at rest;
- Arterial partial pressure of oxygen (PaO_2)/ fraction of inspired oxygen (FiO_2) $\leq 300\text{mmHg}$ ($1\text{ mmHg}=0.133\text{kPa}$);

4. Critical cases

Cases meeting any of the following criteria:

- Respiratory failure and requiring mechanical ventilation.
- Shock.
- With other organ failure that requires ICU care.

Clinical Manifestation

Based on the current epidemiological investigation, the incubation period is 01-14 days, mostly 03-07 days. Usual clinical presentations are-

1. Fever, fatigue and dry cough.
2. Nasal congestion, runny nose, sore throat and diarrhea.
3. Severe cases mostly developed dyspnea and/or hypoxemia after one week.
4. In severe cases, Acute respiratory distress syndrome, septic shock, metabolic acidosis may occur.

The patients with mild symptoms do not develop pneumonia but only low fever and mild fatigue. From current situations, most patients have good prognosis and a small number of patients are critically ill. The prognosis for the elderly and patients with chronic underlying disease is poor. In children, symptoms are relatively mild.

Laboratory investigations:

Supporting investigations:

1. CBC, CRP
2. Sputum for gram staining and culture.
3. Urine R/M/E
4. Blood culture
5. Liver function test
6. Renal function test
7. S. Electrolytes, ABG
8. Lactate dehydrogenase (LDH)
9. Coagulation profile
10. Sepsis marker (e.g.- Procalcitonin)
11. Echocardiogram

Imaging:

Chest imaging

- In the early stage, imaging shows multiple small patchy shadows and interstitial changes, apparent in the outer lateral zone of lungs.
- As the disease progresses, imaging then shows multiple ground glass opacities and infiltration in both lungs.
- In severe cases, pulmonary consolidation may occur while pleural effusion is rare.

Confirmatory

Recommendations for laboratory testing: Any suspected case should be tested.

Recommended test:

1. RT-PCR
2. Serological assay

Recommendations for specimen collection (for RT-PCR)

Covid-19 nucleic acid can be detected in **nasopharyngeal swabs, sputum, lower respiratory tract secretions, blood, feces and other specimens.**

- Lower respiratory specimens likely have a higher diagnostic value than upper respiratory tract specimens for detecting 2019-nCoV infection.
- WHO recommends that lower respiratory specimens such as sputum, endotracheal aspirate, or broncho alveolar lavage be collected for 2019nCoV testing, where possible.
- If patients do not have signs or symptoms of lower respiratory tract disease or if specimen collection for lower respiratory tract disease is clinically indicated but the collection is not possible, upper respiratory tract specimens such as a nasopharyngeal aspirate or combined nasopharyngeal and oropharyngeal swabs should be collected.
- If initial testing is negative in a patient who is strongly suspected to have COVID-19 infection, the patient should be resampled and specimens collected from multiple respiratory tract sites (nose, sputum, endotracheal aspirate).
- Additional specimen may be collected such as blood, urine, and stool, to monitor the presence of virus of and shedding of virus from different body compartments.
- Serological Test
 1. NAAT
 2. RT-PCR assay
 3. Whole genomic sequencing.

Management:

Treatment venue determined by the severity of the disease

- Suspected and confirmed cases should be isolated and treated at designated hospitals with effective isolation, protection and prevention conditions in place. A suspected and/or mild cases can be treated in isolation in a single room..
- Confirmed cases can be treated in the Hospital.
- Critical cases should be admitted to ICU as soon as possible.

General management:

- Bed rest and strengthening support therapy.
- Ensuring sufficient caloric intake
- Monitoring water and electrolyte balance to maintain internal environment stability
- Monitoring vital signs and oxygen saturation.
- Timely providing effective oxygen therapy, including nasal catheter and mask oxygenation, and if necessary, nasal high-flow oxygen therapy.
- Antiviral therapy: There are currently no effective antiviral drugs.
 - Lopinavir/ ritonavir (200mg/50mg for each pill), 2 capsules a time and twice a day; or add Ribavirin (4g for the first time for adults, every 8 hours a time on the following day; or 8mg/kg iv. every 8 hours a time).
- Antibiotic drug treatment: Blind or inappropriate use of antibiotic drugs should be avoided.

Treatment of severe and critical cases:

Treatment principle: On the basis of symptomatic treatment,

- complications should be proactively prevented,
 - underlying diseases should be treated,
 - secondary infections also be prevented, and
 - organ function support should be provided timely.
- Respiratory support:
 - Oxygen therapy: Nasal canula or masks for oxygen inhalation and timely assessment of respiratory distress and/or hypoxemia
 - High-flow nasal-catheter oxygenation or noninvasive mechanical ventilation: When respiratory distress and/or hypoxemia
 - Invasive mechanical ventilation: Lung protective ventilation strategy, namely low tidal volume (4-8ml/kg of ideal body weight) and low inspiratory pressure (platform pressure <30cmH20)
 - Circulatory support: Adequate fluid resuscitation, vasoactive drugs, and perform hemodynamic monitoring when necessary.
 - Other therapeutic measures

Glucocorticoids can be used in a short period of time (three to five days) according to the degree of respiratory distress and the progress of chest imaging. It is recommended dose should not exceed the equivalent of methylprednisolone 1-2 mg/kg/day. Larger dose of glucocorticoid will delay the removal of coronavirus due to immunosuppressive effects.

Criteria for Isolation, Removal and Discharge

Patients meeting the following criteria can be removed from medical isolation and discharged

- Body temperature is back to normal for more than three days;
- Respiratory symptoms improve obviously;
- Pulmonary imaging shows obvious absorption of inflammation, and
- Nucleic acid tests negative for respiratory tract pathogen twice consecutively (sampling interval being at least one day).

