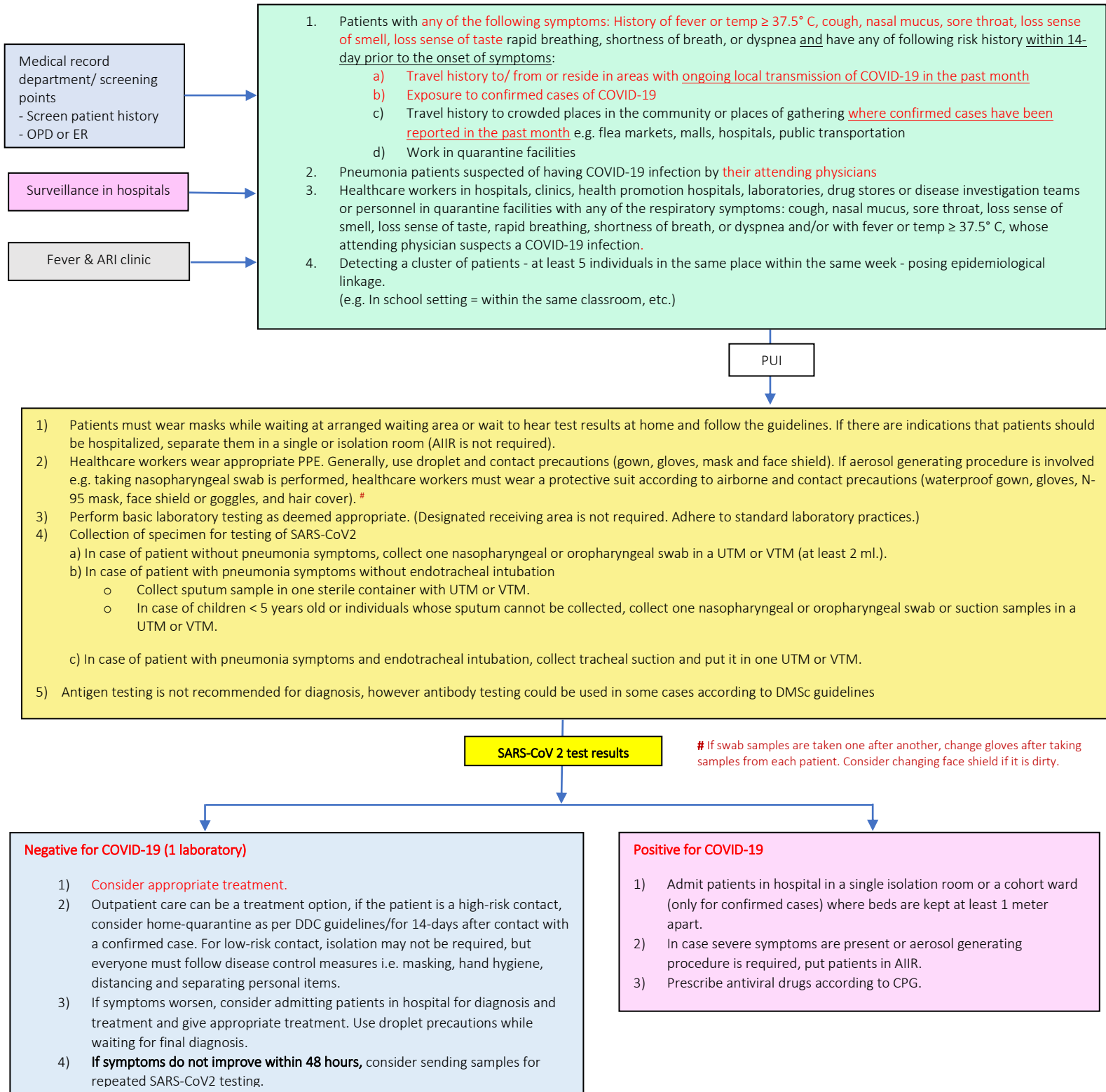


Updated 28 January 2021 for medical professionals and public health personnel
Guidelines on clinical practice, diagnosis, treatment, and prevention of
healthcare-associated infection for COVID-19



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Treatments for COVID-19 are classified into 4 cases as follows:

1. **Asymptomatic COVID-19 confirmed case**
 - Recommend admitting the patient in a hospital or facility arranged by the State at least for 10 days from the day the patient tests positive. If there are no complications, consider discharging patients. **If develop symptoms, recommend investigation and treatment according to the cause of illness.**
 - Provide supportive care without prescribing antivirals since most patients can recover on their own and might suffer from side effects.
2. **Confirmed case with mild symptoms and no risk factors (Symptomatic COVID-19 without pneumonia and no risk for severe diseases)**
 - Provide symptomatic treatment, most patients can breathe normally.
 - Recommend admitting the patient in the hospital at least for 10 days from symptom onset, or until symptoms improve. Consider discharging patient if there is no fever or other symptoms for at least 24 -48 hours.
 - May consider prescribing Favipiravir.
3. **Confirmed case with mild symptoms and risk factors (Symptomatic COVID-19 without pneumonia but risk factors for severe disease) including any of the following: Aged over 60 years old, COPD and other chronic lung diseases, CKD, chronic CVD and congenital heart disease, cerebrovascular disease, diabetes, obesity (BMI ≥ 35 kg./m²), cirrhosis, immune deficiency conditions, and lymphocyte count < 1,000 cells/cu. mm.**
 - Recommend hospitalization until symptoms improve
 - **Recommend prescribing Favipiravir for 5-10 days, depending on clinical manifestation, physician's discretion, and consultation with experts.**
 - **If patient's symptoms or chest roentgenography got worsen: progression of infiltration or SpO₂ room air \leq 96% or SpO₂ room air reduces \geq 3% from the first time exercise-induced hypoxia test is performed, consider administering Corticosteroid together with Favipiravir.**
4. **Confirmed case with pneumonia and hypoxia (resting O₂ saturation SpO₂ < 96%) or SpO₂ room air reduces \geq 3% from the first time (exercise-induced hypoxia), or chest x-ray shows progression of pulmonary infiltrates**
 - Recommend Favipiravir for 5-10 days depending on clinical manifestation
 - May consider Lopinavir/Ritonavir for 5-10 days (depending on physician's discretion)
 - Recommend Corticosteroid as in Table 1

Treating COVID-19 in child patients < 15 years old

1. **Asymptomatic COVID-19 case**
 - **Recommend providing supportive care**
2. **COVID-19 case with mild symptom without pneumonia and no risk factors**
 - **Recommend giving supportive care and consider prescribing Favipiravir for 5 days.**
3. **COVID-19 case with mild symptom with pneumonia or risk factors but not fulfil criteria of COVID-19 with pneumonia (4)**
 - **Risk factor/ comorbid disease such as \leq 1 year of age and other factors - same criteria as adults**
 - **Consider prescribing Favipiravir for 5-10 days, depending on clinical manifestation and physician's discretion**
4. **COVID-19 with pneumonia breathing taster than the age-related respiratory rate (60/min for <2 months of age, 50/min for 2-12 months of age, 40/min for 1-5 years of age, 30/min in >5 years of age)**
 - **Recommend Favipiravir for 5-10 days (may consider adding Lopinavir/Ritonavir for 5-10 days)**
 - **Recommend Corticosteroid as in Table 1**

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Other recommendations

1. Retrospective analysis of 744 cases in Thailand showed that important factor in reducing the risk of disease's severity such as the use of high flow oxygenation, endotracheal intubation, adding in ICU or death is the treatment with favipiravir within 4 days of symptom onset. Moreover, this study showed favipiravir helps reduce the viral load, therefore the medicine should be prescribed before the symptom get worse and considered in patient with severe symptom or in all patients with fever even without other risks.
2. Exercise-induced hypoxemia conduct by having the patient do he air cycling (in supine position and cycling like riding the bicycle) for 3 minutes or walking at bedside for > 3 minutes then measure SpO2 before and after the activity. if SpO2 drops $\geq 3\%$ interpreting as positive test.
3. Using Favipiravir in pregnant women may cause teratogenic effect. Therefore, if the patient is in the reproductive age, pregnancy test should be done before prescribing the medicine and recommendation must be given to engage patients and family in decision making.
 - a. **First trimester of pregnancy with mild symptom and without pneumonia** provide symptomatic treatment
 - b. **Second trimester and over of pregnancy** if physician determines that the benefit of favipiravir is greater than risk may consider favipiravir with decisions make in conjunction with patient and relatives.
 - c. **pregnant women in all trimesters with pneumonia, the use of Remdesivir** may be considered because there is a data on the safety of using Remdesivir in pregnancy and no teratogenic effect in accordance with the recommendation for the use of Remdesivir only benefit in patient with pneumonia and required oxygen for treatment.
 - d. there are only 2-5% of vertical transmission and majority of fetus do not have sever symptom and infected pregnant woman tend to have severe symptom therefore treatment is focus to the mother.
4. **Remdesivir may be considered if**
 - Patient has severe pneumonia (SpO2 room air $\leq 94\%$) or if non-invasive or invasive ventilation is required, including patients requiring extracorporeal membrane oxygenation (ECMO) as per guidelines issued by the Infectious Disease Society of America (IDSA) and the National Institute of Health (NIH)
 - Oral administration of drugs is prohibited or if there are drug absorption issues
 - No response to other drugs after 72 hrs. of administration
 - **The WHO studies found that Remdesivir does not reduce mortality and does not recommend using Remdesivir beyond the studies.** But study in the US study pointed out that this drug may be benefit therefore have recommended the use as mentioned above
 - **Choose either favipiravir or Remdesivir, not recommend using both drugs together because they act on the same target. In Thailand there are more study data of favipiravir than Remdesivir.**
5. Chloroquine, Hydroxychloroquine and Azithromycin are not recommended for the treatment of COVID-19
6. Studies on the use of boosted Lopinavir/Ritonavir (LVP/r) conducted overseas which involved numerous subjects indicated no clear evidence that the drug reduces mortality rate, but can reduce time in the ICU; however, there is insufficient data on Darunavir/ritonavir, so these antiretrovirals are not recommended for the treatment of COVID-19 except in studies.
7. Corticosteroid is not recommended in cases with mild symptom (not require oxygen therapy) or without pneumonia.
8. There is no evidence indicating that anti-inflammatory therapeutics and IL6 receptor antagonist can reduce mortality rate; therefore, it is not recommended.
9. Antibiotics should be prescribed when there is indication of bacterial infection/complication. It should not be prescribed when patient is first admitted.
10. If patient is suspected to have pneumonia and bacterial infection, collect sputum for bacterial culture in order to select antibiotic that best matches the **causative pathogen**. Sputum exam can be done in a biosafety cabinet to prevent generating droplets or aerosol in the process. Laboratory staff must wear full PPE (coverall, N95 respirator, face shield, gloves, shoe cover) as per COVID-19 lab standards
11. **Remarks: The regimen in this CPG is based on available evidence to date. Currently there is insufficient randomized controlled trials to endorse any specific therapeutic; therefore, the attending physician must closely monitor the treatment outcome and must be ready to modify the regimen/ treatment accordingly. The clinical guideline practice will be revised when more evidence becomes available.**

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Table 1 showing recommended drug dosages for adults and children

Drugs/dosage for adults	Dosage for children	Cautions/ common side effects
<p>Favipiravir (200 mg/tab)</p> <p>Day 1: 1,800 mg (9 tablets) twice daily</p> <p>following days: 800 mg (4 tablets) twice daily</p> <p>If body weight >90 kg</p> <p>Day 1: 2,400 mg (12 tablets) twice daily</p> <p>Following days: 1,000 mg (5 tablets) twice daily</p>	<p>Day 1: 60 mg/kg/day twice daily</p> <p>following days: 20 mg/kg/day twice daily</p>	<ul style="list-style-type: none"> - Possible teratogenic effects. Carefully administer the drug to pregnant women or women who may be pregnant, and advice must be given to engage the patient in decision making. - Be cautious for increasing of uric acid level when use in conjunction with pyrazinamide. - Be cautious for hypoglycemia when use in conjunction with repaglinide or pioglitazone. - Tablet can be broken or crushed and feed via NG tube. - No need to adjust the dosage for CRF patient. - Adjusted dosage in patient with moderate to severe liver problem, Day 1: 4 tablets twice daily the following days: 2 tablets twice daily.
<p>Lopinavir/ritonavir (LPV/r)</p> <p>(tablet 200/50 mg/tab, liquid 80/20 mg/ml)</p> <p>Take two tablets every 12 hrs.</p>	<p>2 wks – 1 yr: 300/75 mg/m²/ dose twice daily</p> <p>1-18 yrs. 230/57.5/m²/ dose twice daily</p> <p>Tablet dosage by weight</p> <p>15-25 kg: 200/50 mg twice daily</p> <p>25-35 kg: 300/75 mg twice daily</p> <p>> 35 kg: 400/100 mg twice daily</p>	<ul style="list-style-type: none"> - May cause diarrhea, nausea or vomiting. - Liquid drug must be refrigerated and should be taken with food to increase absorption. Tablets may be taken without food. - May cause QT prolongation arrhythmia. - May cause liver or pancreas inflammation (low incidence).
<p>Remdesivir</p> <p>Day 1: 200 mg. IV</p> <p>Days 2-5: 100 mg IV once daily</p> <p>(US NIH recommends 5 days, but for severe case requiring ECMO, recommends 10 days)</p>	<p>Day 1: 5 mg/kg IV once daily</p> <p>Following days: 2.5 mg/kg IV once daily</p>	<ul style="list-style-type: none"> - Constipation, hypokalemia, anemia, thrombocytopenia, increased total bilirubin, transaminitis, hyperglycemia - Be cautious when use in patient with compromised kidney and liver function. - Drug should be dripped longer than 30 minutes but not over 120 minutes. - Dissolve drug powder with 20 mL of sterile water for injection then mix the drug in 0.9% NSS, drug can stay for 24 hours at 20-25°C and 48 hours at 2-8 °C.
<p>Corticosteroid for 7-10 days</p> <p>Dexamethasone: 6 mg once daily</p> <p>or Hydrocortisone: 160 mg per day</p> <p>or Prednisolone: 40 mg per day</p> <p>or Methylprednisolone: 32 mg single dose</p>	<p>Consult expert level medical doctor</p>	<ul style="list-style-type: none"> - Be cautious of high blood sugar level, especially in diabetes patients.

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Recommendation for COVID-19 patient referrals

- If a patient is in a condition beyond the healthcare facility's capacity, refer to a hospital with higher capacity.
- The original healthcare facility should coordinate referrals/transfers at an early stage.

By using the following criteria:

- SpO2 room air \leq 96%
- Rapid progressive pneumonia within 48 hrs. of treatment

Table 2 Level of hospitals admitting patients

COVID -19 patients	Hospital
1) Asymptomatic confirmed case	All levels
2) Confirmed case with mild symptoms Normal chest x-ray No risk factors/comorbid disease	F1, M1, M2, S, A
3) Confirmed case with mild symptoms Normal chest x-ray but have risk factors/comorbid disease	M1, S, A, A+
4) Confirmed case with pneumonia SpO2 room air <96%	M1, S, A, A+

Discharging patients from a hospital

Patients who can leave the hospital are those who have passed the disease transmitted stage, no need to isolate or quarantine but have to maintain the principles of preventing infection according to the new standards.

- 1) Asymptomatic confirmed case will be in hospital or designated facility for **at least 10 days** from the day the patient tests positive.
- 2) Mild cases will be in hospital for **at least 10 days from symptom onset**. When completed, if symptoms persist, continue to be in hospital or a place designated by the state until there is no manifestation for at least 24-48 hours.
- 3) Moderate to severe cases and immunocompromised host will be in the hospital until conditions improve and will be discharged upon physician's discretion.
- 4) **Criteria to discharge patients:**
 - a) Patients whose symptoms improved and whose film chest x-ray does not show declined conditions
 - b) Body temperature not exceeding 37.8c for the past 24-48 hrs.
 - c) Respiratory rate of no more than 20 times/min.
 - d) SpO2 room air >96% at rest.
- 5) Patients who tested positive do not need a repeated swab and patients whose conditions improve can be discharged without swabbing.
- 6) **After discharging,**
 - a) Patient may rest at home or return work as usual since the disease transmitted period has passed.
 - b) Returning to work mainly depends on the health condition of the patient.
 - c) If any symptoms occur, consider identifying the cause(s) and provide treatment accordingly.

Remark: In case patient requested medical certificate, attending physician can specify as.... patient got better, recovered from COVID-19.... considering from patient symptoms

Guidelines for COVID-19 patients

Most COVID-19 patients develop only mild symptoms and maybe hospitalized for a short period of time before being discharged to convalesce in a home care setting. Those in mild condition will gradually get better until they are fully recovered; however, at the end of the first week, some patients may exhibit worse symptoms. For patients with mild or improved conditions, the virus that causes Covid-19 can still be detected in their mucus and saliva specimen for up to 50 days, yet studies found the viability of the virus to be around 8 days. Therefore, the detectable RNA could be fragments of inactive viral RNA remaining from viral shedding. In addition, detecting any viral DNA/virus particles will depend on the quality of the specimen collected.

The CPG also indicates a swab sample is not required before discharging a patient from a healthcare facility since it will not affect treatment plan. In addition, testing positive by PCR technique does not translate to potential infectivity. The clinician will make a decision based on the patient's clinical symptoms based on the above criteria. According to current evidence, there is no further risks to transmit the virus. The convalescing patient can continue a normal life by following general infection prevention and control precautions, until it is assured that the transmission is under control,

Practical advice for patients when the infection is detected

1. Avoid staying in close contact with other people in the house especially the elderly, young children, patient with chronic diseases and wear surgical mask at all time if cough or sneeze persist.
2. If need to be close to other people, must wear surgical mask and keep distance at 1 meter away.
3. Breast feeding is allowed because the infection is not found in breast milk. The mother must wear surgical mask, strictly washing hands every time before contact with the infant or breast feeding.
4. Do not share dining utensils and glasses/cups, towel, phone, and computer with others.
5. Do not share meals with others, should be eaten separately
6. Separate laundry from others, washes clothes, bed linens or towels etc. with water and soap or detergent
7. Separate garbage bag and tie the bag tightly before disposing with general waste and must wash hands with water and soap every time.
8. Separate the bathroom, if need to share the bathroom, be the last to use and close the toilet lid before flushing the water
9. During quarantine, regular cleaning of floor and other common touching equipment or surface e.g. furniture and appliance (bed, table, chair, and home phone) with water and detergent suitable for the equipment and material.
10. Get plenty of sleep in room that is not too cold and well-ventilated.
11. If any symptoms are reintroduced or the same symptoms worsen, for example, high fever, frequent cough, fatigue, chest pain, panting, difficulty breathing, loss of appetite, immediately contact a healthcare facility. If the patient wishes to go to the hospital/healthcare facility, do not use public transport. Use a personal vehicle or request to be picked up by an ambulance.

Recommendation for patient after being discharged to convalesce at home

1. No need to be isolated or quarantined from other peoples because of disease recovery (different from high-risk contact or just diagnoses that need to be quarantined)
2. Personal hygiene: Wear a surgical mask or cloth mask if living with others.
3. Wash hands regularly with soap and water, especially after urinating or excreting, or use alcohol-based hand rubs before and after touching common surfaces in the household e.g. doorknobs, stair rails, refrigerator handle, etc.
4. Do not share dining utensils and glasses/cups with others.
5. Drink plenty of water and eat nutritious food.
6. If any symptoms are reintroduced or the same symptoms worsen, for example, high fever, frequent cough, fatigue, chest pain, panting, difficulty breathing, loss of appetite, immediately contact a healthcare facility. If the patient wishes to go to the hospital/healthcare facility, do not use public transport. Use a personal vehicle or request to be picked up by an ambulance.

If there are any inquiries, the patients may call the hospital where they were treated, or the hotline 1422 or 1668.