

GOVERNMENT OF THE REPUBLIC OF THE UNION OF MYANMAR
MINISTRY OF HEALTH AND SPORTS
DEPARTMENT OF MEDICAL SERVICES



Clinical Management Guidelines for
COVID-19 Acute Respiratory Disease

Version - DoMS/COVID-19/clinical/Version 08-2020

Date - 25th August 2020

Clinical Management Guidelines for Corona Virus Disease (COVID-19)

Version (8/2020) (updated as of 25th August 2020)

Department of Medical Services

I. Standard definitions for COVID-19

Suspect COVID-19 Case

A. A person who meets the clinical **AND** epidemiological criteria:

Clinical criteria

- Acute onset of fever *AND* cough; *OR*
- Acute onset of *ANY THREE OR MORE* of the following signs or symptoms: fever, cough, general weakness/fatigue, headache, myalgia, sore throat, coryza, dyspnoea, anorexia/nausea/vomiting, diarrhoea, altered mental status

AND

Epidemiological criteria

- Residing or working in an area with high risk of transmission of virus: closed residential settings, humanitarian settings such as camp and camp-like settings for displaced persons; anytime within the 14 days prior to symptom onset; *OR*
- Residing or travel to an area with community transmission anytime within the 14 days prior to symptom onset; *OR*
- Working in any health care setting, including within health facilities or within the community; anytime within the 14 days prior to symptom onset.

B. A patient with severe acute respiratory illness (SARI: acute respiratory infection with history of fever or measured fever of $\geq 38\text{ C}^\circ$; and cough; with onset within the last 10 days; and requires hospitalization)

Probable COVID-19 Case

A. A patient who meets clinical criteria above *AND* is a contact of a probable or confirmed case, or epidemiologically linked to a cluster with at least one confirmed case.

B. A suspect case with chest imaging showing findings suggestive of COVID-19 disease. Typical chest imaging findings suggestive of COVID-19 include the following:

chest radiography: hazy opacities, often rounded in morphology, with peripheral and lower lung distribution

chest CT: multiple bilateral ground glass opacities, often rounded in morphology, with peripheral and lower lung distribution • lung ultrasound: thickened pleural lines, B lines (multifocal, discrete, or confluent), consolidative patterns with or without air bronchograms.

- C. A person with recent onset of anosmia (loss of smell) or ageusia (loss of taste) in the absence of any other identified cause
- D. Death, not otherwise explained, in an adult with respiratory distress preceding death AND was a contact of a probable or confirmed case or epidemiologically linked to a cluster with at least one confirmed case.

Confirmed COVID-19 Case

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

*see <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> for latest case definitions

Definition of contact

A contact is a person who experienced any one of the following exposures during the 2 days before and the 14 days after the onset of symptoms of a probable or confirmed case :

- Face-to-face contact with a probable or confirmed case within 1 meter and for more than 15 minutes;
- Direct physical contact with a probable or confirmed case;
- Direct care for a patient with probable or confirmed COVID-19 disease without using proper personal protective equipment;

(Note: For confirmed asymptomatic cases, the period of contact is measured as the 2 days before through the 14 days after the date on which the sample was taken which led to confirmation)

Monitoring of contacts of probable and confirmed cases:

- Contacts should be monitored for 21 days from the last unprotected contact.
- All contacts should be kept in facility quarantine arranged by government.
- Any contact of confirmed cases should be tested.
- Any newly identified probable or confirmed cases should have their own contacts identified and monitored

II. History taking

Name: ----- Age: -----

Sex: ----- R/N: -----

Address: -----

Detail of Travel History-----

Contact History-----

Complaints

FeverCough Fatigue..... AnorexiaShortness of breathMyalgia
Sore throat.....Nasal congestion.....Headache.....Diarrhoea.....Nausea & Vomiting
..... Loss of smell.....Loss of taste..... Altered mental status

III. Physical Examination

Vital signs: GCS: Temperature..... Cyanosis..... BP:

HR: SpO₂: RR: Lungs:

Features of Septic shock, Acute kidney injury

IV. Risk factor for severe disease

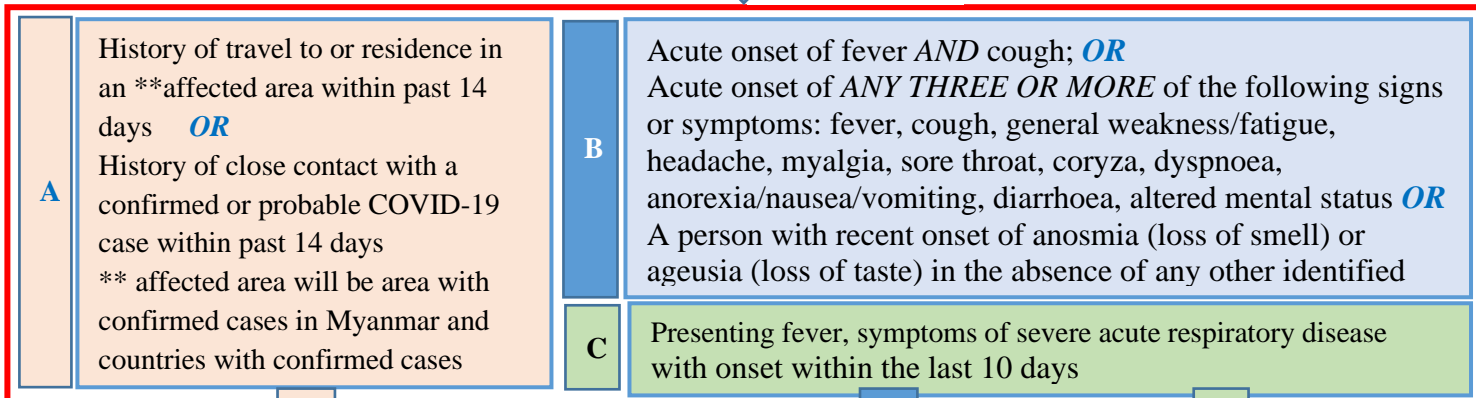
- Age > 60 years
- Underlying diabetes, hypertension, cardiac disease, chronic lung disease, cerebrovascular disease, chronic kidney disease, immunosuppressed and cancer
- Smoking



Management Protocol for Covid-19 Acute Respiratory Disease (Version 09) (updated as of 25 Aug 2020)

Attendance of patients in hospital, OPD and community clinics

↓ At triage area



↓ **A**

↓ **B**

↓ **C**

- Report to respective State and Regional or District or Township Health Department
- Facility quarantine for 21 days
- Follow CEU guidelines for specimen collection

- Isolate the patient in a separate room (e.g., Fever room)
- Take strict IPC measures depending on severity
- Take complete and detail history and physical examination
- Inform immediately to DoMS [09 449621202], CEU [067 3420268], State and Regional or District or Township Health Department
- Inform Regional/ Facility Level Clinical Management Committee

Person Under Investigation (PUI) for suspected pneumonia

- Move the patient to isolation room
- Take specimen and send to NHL/PHL/DMR (To follow specimen collection guidelines)
- If clinician strongly suspect possibility of COVID-19 infection, second swab should be considered
- Follow “**Clinical Management Guidelines for Corona virus disease (COVID-19)**”

Mild pneumonia (PUI)
Symptomatic treatment

Pneumonia (Suspected)
Symptomatic treatment
Oral antibiotics

Severe Pneumonia (Suspected)
(If any of following signs/symptoms is present)

- Respiratory rate > 30 breaths/min
- Severe respiratory distress
- SpO₂ ≤ 93% on room air
- Systolic Blood Pressure ≤ 100 mmHg
- Altered mental status (GCS <15)

- High flow O₂ 5L/min
- Supportive treatment including fluid therapy
- IV antibiotics
- IV dexamethasone if indicated
- Treatment of complications
- Assess for ventilator & specialist

Result (+)

Result (-)

Result (+)

Discharge
Discharge criteria
Discharge message

Recover

Confirmed case

- Supportive treatment including fluid therapy
- Antibiotic
- Antiviral if available
- Treatment of complications
- Refer to designated hospital with standard precaution and considering risk and benefit
- Isolate patients for 21 days (after last exposure)

Result (+)

Death – proper disposal of the dead person

V. COVID-19 disease severity

Mild disease

- Symptomatic patients meeting the case definition for COVID-19 without evidence of viral pneumonia or hypoxia

Moderate disease/Pneumonia

- Adolescent or adult with clinical signs of pneumonia (fever, cough, dyspnoea, fast breathing)

Severe disease/Severe pneumonia

- Adolescent or adult with clinical signs of pneumonia (fever, cough, dyspnea, fast breathing) plus one of the following: respiratory rate > 30 breaths/min; severe respiratory distress; or SpO₂ <93% on room air.

Critical disease

1. Acute Respiratory Distress Syndrome (ARDS)

- Onset: within 1 week of a known clinical insult (i.e. pneumonia) or new or worsening respiratory symptoms.
- Chest Imaging: (radiograph, CT scan, or lung ultrasound): bilateral opacities, not fully explained by volume overload, lobar or lung collapse, or nodules.
- Origin of pulmonary infiltrates: respiratory failure not fully explained by cardiac failure or fluid overload. Need objective assessment (e.g. echocardiography) to exclude hydrostatic cause of infiltrates/ oedema if no risk factor present.

Oxygenation impairment in adults:

- Mild ARDS: $200 \text{ mmHg} < \text{PaO}_2/\text{FiO}_2 \leq 300 \text{ mmHg}$ (with PEEP or CPAP $\geq 5 \text{ cmH}_2\text{O}$).
- Moderate ARDS: $100 \text{ mmHg} < \text{PaO}_2/\text{FiO}_2 \leq 200 \text{ mmHg}$ (with PEEP $\geq 5 \text{ cmH}_2\text{O}$).
- Severe ARDS: $\text{PaO}_2/\text{FiO}_2 \leq 100 \text{ mmHg}$ (with PEEP $\geq 5 \text{ cmH}_2\text{O}$).

2. Sepsis

- Acute life-threatening organ dysfunction caused by a dysregulated host response to suspected or proven infection.
- Signs of organ dysfunction include: altered mental status, difficult or fast breathing, low oxygen saturation, reduced urine output, fast heart rate, weak pulse, cold extremities or low blood

pressure, skin mottling, or laboratory evidence of coagulopathy, thrombocytopenia, acidosis, high lactate or hyperbilirubinemia.

3. *Septic shock*

- persistent hypotension despite volume resuscitation,
- requiring vasopressors to maintain MAP \geq 65 mmHg and serum lactate level >2 mmol/L.

4. *Other complication*

- Acute pulmonary embolism,
- Acute coronary syndrome,
- Acute Stroke and delirium

The SOFA score ranges from 0 to 24 and includes points related to 6 organ systems: respiratory (hypoxemia defined by low PaO₂/FiO₂), coagulation (low platelets), liver (high bilirubin), cardiovascular (hypotension), central nervous system (low level of consciousness defined by Glasgow Coma Scale), renal (low urine output or high creatinine).

Sepsis is defined by an increase in the Sequential [Sepsis-related] Organ Failure Assessment (SOFA) score of ≥2 points. Assume the baseline score is zero if data are not available

SOFA Score (Sequential (Sepsis related) Organ Failure Assessment Score)

System or organ and measure	SOFA score				
	0	1	2	3	4
Respiratory:					
PaO ₂ /FiO ₂ , mmHg	≥400	300-399	200-299	100-199 with respiratory support	<100 with respiratory support
Coagulation:					
Platelets, × 10 ³ /μL	≥150	100-149	50-99	20-49	<20
Liver:					
Bilirubin, μmol/L (mg/dL)	<20 (1.2)	20-32 (1.2-1.9)	33-101 (2.0-5.9)	102-204 (6.0-11.9)	>204 (12.0)
Circulatory:					
Mean arterial pressure, mm Hg	≥70	<70	Low dose dopamine or any dose dobutamine	Low-medium dose noradrenalin or adrenalin; medium dose dopamine	High dose noradrenalin, adrenalin, or dopamine
Central nervous system:					
Glasgow Coma Scale score	15	13-14	10-12	6-9	<6
Renal:					
Creatinine, μmol/L (mg/dL)	<110 (1.2)	110-170 (1.2-1.9)	171-299 (2.0-3.4)	300-440 (3.5-4.9)	>440 (5.0)
Urine output, mL/day	–	–	–	<500	<200
*Our recommendation applies to patients with an infection and a SOFA score of ≥2. PaO ₂ = partial pressure of oxygen (arterial). FiO ₂ = fraction of inspired oxygen.					

VI. Investigations

- Collection of blood cultures (if possible)– for bacteria that cause pneumonia and sepsis, ideally before antimicrobial therapy. Do not delay antimicrobial therapy to collect blood cultures.
- Collection of specimens – from the upper respiratory tract (nasopharyngeal and oropharyngeal) **AND**, where clinical suspicion remains and URT specimens are negative, collect specimens from the lower respiratory tract when readily available (expectorated sputum, endotracheal aspirate, or bronchoalveolar lavage in ventilated patient) for COVID-19 virus testing by RT-PCR and bacterial stains/cultures.
- In hospitalized patients with confirmed COVID-19, repeated URT and LRT samples can be collected to demonstrate viral clearance. The frequency of specimen collection will depend on local epidemic characteristics and resources.
- Testing for other respiratory viruses like influenza and bacteria if feasible and clinically indicated.
- Detection of malaria parasites – by RDT or blood film for patients with fever in malarial endemic areas should be considered.
- Detection of dengue/chikungunya - may also be considered in the differential diagnosis of undifferentiated febrile illness, particularly when thrombocytopenia is present.
- CP, ESR, RBS, U&E, Creatinine, ECG, CXR (PA)
- If possible CRP, D-Dimer, LDH, ABG
- SARS-CoV-2 antibody tests – not recommended for diagnosis of current infection with COVID-19

Recommendations for laboratory testing

- Any suspected case should be tested for COVID-19 infection using available molecular tests.
- Based on clinical judgment, clinicians may opt to order a test for COVID-19 in a patient not strictly meeting the case definition, for example, if there are patients involved in a cluster of acute respiratory illness among healthcare workers or of severe acute respiratory infection (SARI) or pneumonia in families, workplaces or social network.

- If clinicians strongly suspect possibility of covid-19 infection, 2nd swab should be considered in PUI cases (if 1st swab test is negative).

VII. Immediate implementation of IPC measures (Should start at the point of entry to hospitals)

At triage

- Screening should be done at first point of contact at the emergency department or outpatient department.
- Give suspect patient a medical mask and direct patient to separate area, an isolation room if available.
- Keep at least 1 meter distance between suspected patients and other patients.
- Instruct all patients to cover nose and mouth during coughing or sneezing with tissue or flexed elbow for others.
- Perform hand hygiene after contact with respiratory secretions.

Apply standard precaution

- hand hygiene (alcohol based hand rub/water and soap), use of PPE to avoid indirect and direct contact with patients' blood, body fluids, secretions and non-intact skin.
- prevention of needle-stick or sharps injury; safe waste management; cleaning and disinfection of equipment; and cleaning of the environment.

Apply droplet precaution

- Use medical mask if working within 1-2 metres of the patient.
- Use eye protection (face-mask or goggles)
- Place patients in single rooms, or group together those with the same etiological diagnosis.
- Limit patient movement within the institution and ensure that patients wear medical masks when outside their rooms.

Apply contact precaution

- Use PPE (medical mask, eye protection, gloves and gown) when entering room and remove PPE when leaving.
- If possible, use either disposable or dedicated equipment (e.g. stethoscopes, blood pressure cuffs and thermometers).

- If equipment needs to be shared among patients, clean and disinfect between each patient use.
- Minimal movement of patients or transport as much as possible.

Apply air-borne precaution

- Use PPE, including gloves, long-sleeved gowns, eye protection, and fit-tested particulate respirators (N95 or equivalent, or higher level of protection) when healthcare workers performing aerosol-generating procedures (i.e. open suctioning of respiratory tract, intubation, bronchoscopy, cardiopulmonary resuscitation).
- Avoid the presence of unnecessary individuals in the room.
- Care for the patient in the same type of room after mechanical ventilation commences.

VIII. Treatment

Treatment of mild COVID-19

- Isolate the patients in hospitals to contain virus transmission
- Symptomatic treatment such as antipyretics (paracetamol) for fever and pain
- Adequate nutrition
- Appropriate nutrition
- Counsel about signs and symptoms of complications that should prompt urgent care
- Antibiotic therapy/prophylaxis is not recommended

Treatment of moderate COVID-19: Pneumonia treatment

- Isolate the patients in hospitals to contain virus transmission
- Antibiotics if there is clinical suspicion of bacterial infection
- Monitor the patients for signs and symptoms of disease progression

Treatment of severe COVID-19: Severe Pneumonia treatment

- Immediate administration of supplemental oxygen therapy
- Monitor for signs of clinical deterioration, such as rapidly progressive respiratory failure and shock

- Cautious fluid management in patients with COVID-19
- Use of empiric antimicrobials to treat all likely pathogens, based on clinical judgment, patient host factors and local epidemiology, within 1 hour of initial assessment if possible, ideally with blood cultures obtained first. Antimicrobial therapy should be assessed daily for de-escalation.

For patients with ARDS	-	Refer to ICU management
For patients with septic shock	-	250-500 ml crystalloid fluid as rapid bolus in first 15-30 minutes
	-	Do not use hypotonic crystalloids, starches or gelatins for resuscitation
	-	Administer vasopressors (Noradrenalin) when shock persists during or after fluid resuscitation to reach MAP 65 mmHg
	-	Consider dobutamine if signs of poor perfusion and cardiac dysfunction persists despite achieving MAP target with fluids and vasopressors

Noradrenaline Infusion

Rate	ml/hr				
	40kg	45kg	50kg	55kg	60 kg
0.05ug/kg/min	0.6	0.7	0.8	0.8	0.9
0.1 ug/kg/min	1.2	1.4	1.5	1.7	1.8
0.15 ug/kg/min	1.8	2	2.3	2.5	2.7
0.2 ug/kg/min	2.4	2.7	3	3.3	3.6
0.25 ug/kg/min	3	3.4	3.8	4.1	4.5

Prevention of complications in hospitalized and critically ill patients with COVID-19

- For prophylaxis of venous-thromboembolism, consider LMWH (low molecular-weight heparin) OD or unfractionated heparin 5000 units subcutaneously twice daily in adolescents and adults without contraindications. For those with contraindications, use mechanical prophylaxis (intermittent pneumatic compression devices).
- Turn patient every two hours

- Awake proning position may reduce ICU admission (see attached photo)
- Give early enteral nutrition (within 24–48 hours of admission)
- Administer PPI in patients with risk factors for GI bleeding.
- Actively mobilize the patient early in the course of illness when safe to do so

Antivirals, immunomodulators and other adjunctive therapies for COVID-19 Disease

There is no definite treatment for COVID-19 disease. Should be treated with supportive measures as necessary.

➤ *Dexamethasone therapy*

- Preliminary evidence from an unpublished trial suggests that low-dose dexamethasone has a role in the management of severe COVID-19.
- It can be given for severely ill patients who are on supplemental oxygen or ventilatory support.
- Dose - 6 mg IV/PO daily for 10 days or until discharge, whichever is shorter.
- It should not be used for either prevention or treatment of mild to moderate COVID-19 (patients not on oxygen).

➤ *Convalescent plasma therapy*

- should consider in selected patients according to convalescent plasma protocol in Myanmar

Treatment of neurological and mental manifestations associated with COVID-19

- Implement measures to prevent delirium
- Evaluate using standardized protocol for the development of delirium
- Provide basic mental health and psychological support for all patients
- Prompt identification and assessment of anxiety and depressive symptoms
- Management of sleep problem in the context of acute stress

Treatment of Non communicable disease and COVID-19

- Continue or modify previous medical therapy according to the patient's clinical condition to prevent drug interactions and adverse events

- Do not stop antihypertensive drugs but adjust therapy to maintaining normal blood pressure and renal function

IX. Rehabilitation for patients with COVID-19

- Routinely assess for mobility, functional, swallow, cognitive impairments and mental health concerns
- Determine discharge readiness, and rehabilitation and follow-up requirements
- Groups of patients who need above measures:
 - patients that are in or have been discharged from intensive care;
 - older patients that have experienced severe cases;
 - patients that exhibit signs of any of these impairments.

X. Pregnancy and COVID-19 disease

- Symptoms such as dyspnea, fever, gastrointestinal (GI) symptoms or fatigue due to physiologic adaptations in pregnant women, adverse pregnancy events, or other diseases such as malaria, may overlap with symptoms of COVID-19.
- Isolate the patients to contain virus transmission
- Carefully monitor for maternal and fetal complications
- Mode of delivery should be individualized
- COVID-19 positive status alone is not an indication for caesarean section

Awake proning guide

Aims

Awake proning **may reduce** ICU admissions. Intubation in COVID19 has a high mortality. Patient **must** be **awake** and willing to **comply**.

Duration

Aim to remain prone for **4 hours periods**. Allow **1 hour comfort breaks** between periods of proning for eating, drinking, toilet and general comfort.

Placement for patient positioning

- 1 soft pillow for the **head**
- 2 substantial pillows for under the **chest**
- 2 substantial pillows for under the **pelvis**
- 1 pillow for under the **shins**

NB: The abdomen should hang free and not be compressed. This is even more important in obese patients.



Bed position

Steep head up (at least **30 degrees**).



Head position

Leave **oxygen mask in place** – do not try and wean down immediately. Improvement of oxygenation with proning may take many hours to manifest.

Head turned to left or right – **whatever is comfortable** for the patient.



XI. Discharge criteria

For confirmed COVID-19 disease

1. Afebrile for at least 48 hours
2. Resolving respiratory symptoms
3. Improving radiological signs
4. Improved well-being
5. Having had at least 2 consecutive, 48-hours apart, tests negative results of nasopharyngeal or oropharyngeal swab
6. Facility quarantine for 14 days after discharge from dedicated hospital
7. Testing of nasopharyngeal or oropharyngeal swabs for confirmed COVID-19 disease
 - Conduct the test on day 11: if negative the next test will be conducted on day 13 and if negative, discharge on day 14.
 - If positive on day 11: conduct another test after 6 days, and repeat after 6 more days until the test becomes negative, e.g. day 11, day 17, day 23, day 29, etc. When test becomes negative one more test will be conducted 48 hours later. If negative again, discharge on the next day.
 - After discharge, transfer the patient to ensure stay of 14 more days in facility isolation.

For PUI case came out COVID-19 negative result from Swab

- 1) Move from isolation ward to cohort room (so call room to meet others plan for DC)
- 2) Need to explore DC parade and counseling in 2 days stay in cohort room.
- 3) Afebrile and resolving respiratory symptoms for at least 48 hours, and, stable on co-morbid conditions for at least 48 hours (if co-morbid condition is not stable, refer to appropriate specialist for consultation)
- 4) Follow-up on 2 weeks after discharge (if anything happens, return to hospital anytime)

XII. References

- Global Surveillance for human infection with coronavirus disease (COVID-19), WHO Interim guidance, 20 March 2020.
- Clinical management of COVID-19, WHO Interim guidance, 27 May 2020.

- Infection prevention and control during health care when coronavirus disease (COVID-19) is suspected or confirmed, WHO Interim guidance, 29 June 2020.
- Clinical management guidelines for COVID-19 Acute respiratory disease, Version 6 MOHS.
- Discharge criteria for confirmed COVID-19 cases – When is it safe to discharge COVID-19 cases from the hospital or end home isolation?, ECDC Technical Report.
- Coronavirus Disease 2019 (COVID-19) Treatment Guidelines, NIH.
- Coronavirus disease 2019 (COVID-19): Management in hospitalized adults, Uptodate.
- WHO COVID-19 Case definition updated in Public health surveillance for COVID-19, published 7 August 2020

Summary of revised facts

- Case definitions
- One more symptom “Altered mental status” has been added

Update plan

- Guidelines will be updated upon the new information and situation of the disease