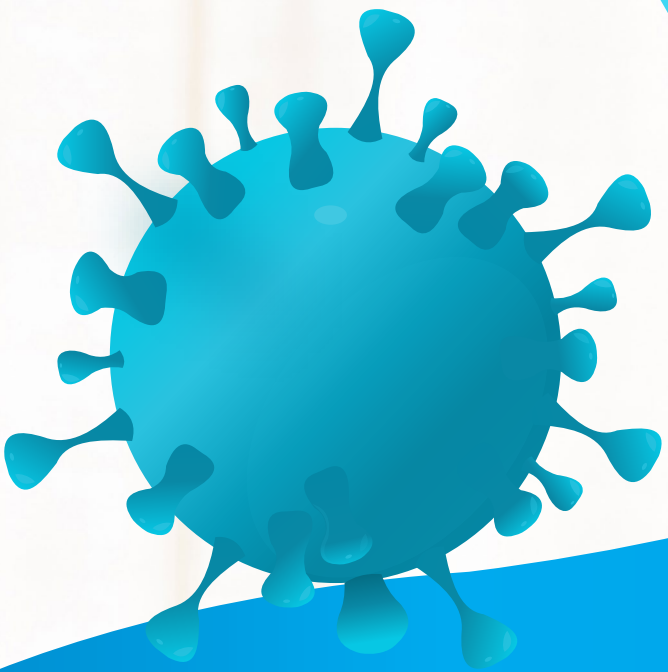
Management Protocol For

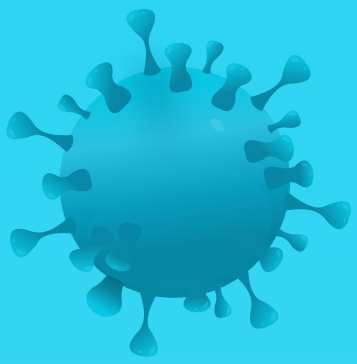
COVID-19

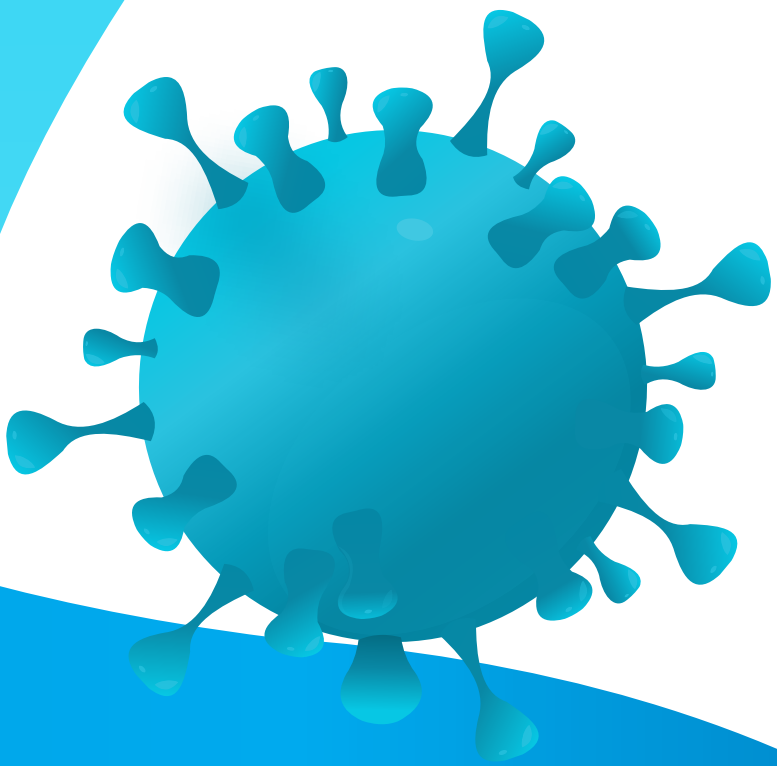
Patients (Diagnosis -Treatment)



Ministry of Health and Population
Management protocol for COVID-19
Patients (Diagnosis & Treatment)
Egypt
Version 1.4 / 30 May 2020

وزارة الصحة والسكان
Ministry of Health & Population





Management Protocol For

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Suspected COVID-19 Cases Management in Triage Hospitals (Chest And Fever Hospitals)

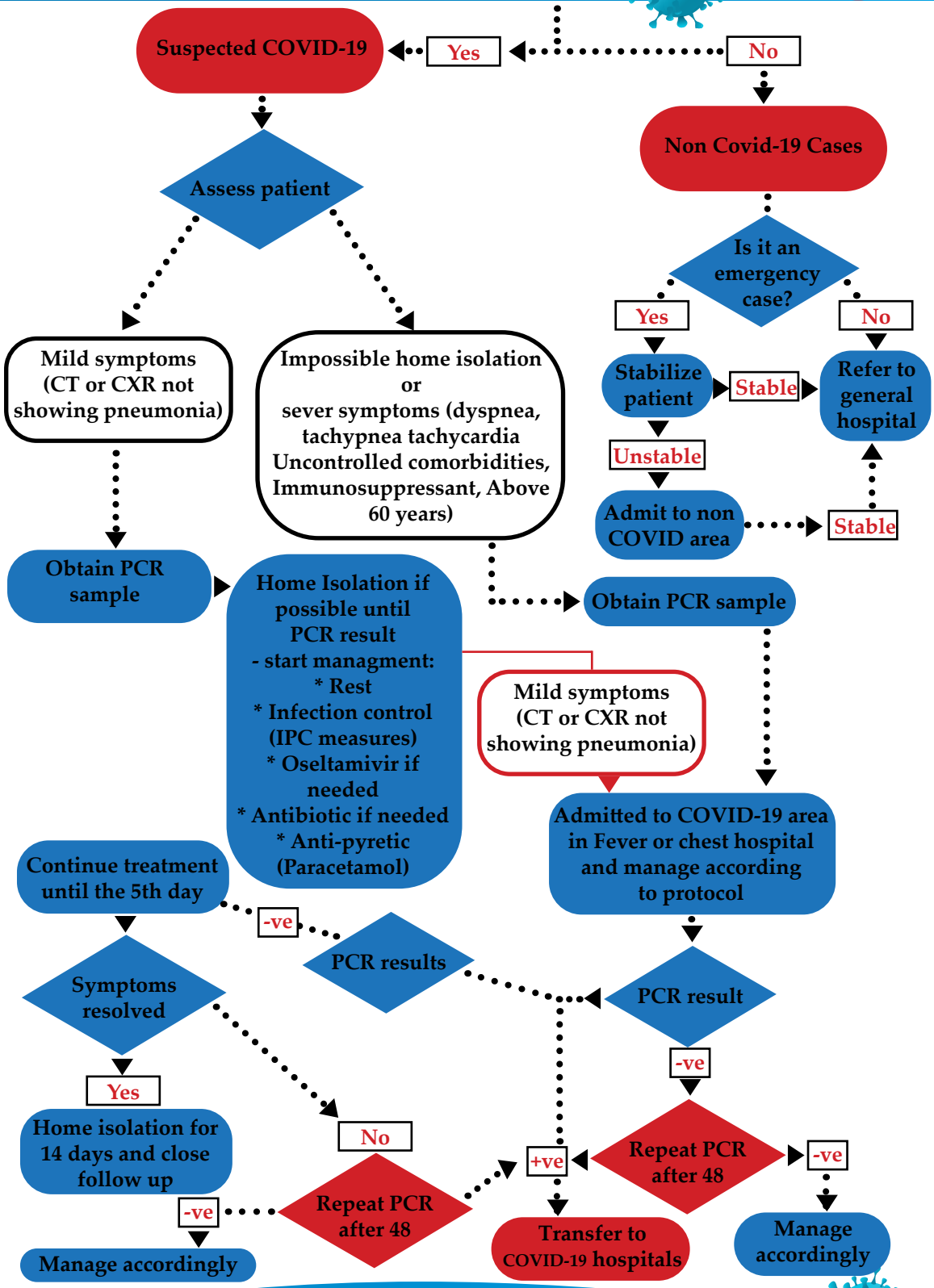
Patient enters chest and fever Hospital (referred from another hospital, referred by 105, walkin)

Assess to Identify Suspected Cases

A	OR	B	OR	C
Any one of the epidemiological history with any of the clinical features. **Epidemiological History:** **1. History of travel to or residence in communities where cases reported within the last 14 days.** **2. In contact with viral RNA positive people within the last 14 days.** **3. In contact with a patient who has fever or respiratory symptoms or from a community with confirmed cases reported within the last 14 days.**		**Asessing the presence of at least two of the following clinical features:** **1.Fever and/or respiratory symptoms.** **2.Imaging characteristics. CT scan is preferred, if not appicable do CXR** **3.Differential CBC findings: white blood cells is normal or decreased, with lymphocyte decreased.**		**Severe Acute Respiratory Infection (SARI) with no other obvious cause.**

N.B.
- Asymptomatic contact to +ve case should undergo home isolation and should seek medical advice whenever symptoms develop.
- Healthcare providers exposed to suspected or confirmed COVID-19 cases should follow the algorithim shown in MOHP guide booklet.

Suspected COVID-19 Cases Management in Triage Hospitals (Chest And Fever Hospitals)



Mild Case

Symptomatic case
With Lymphopenia or Leucopenia
With no radiological signs for pneumonia

Check for

1. Age
2. Temperature > 38
3. SaO2 ≤ 92%
4. Heart Rate ≥ 110
5. Respiratory Rate ≥ 25 /min.
6. Neutrophil / lymphocyte ratio on CBC ≥ 3.1
7. Uncontrolled Comorbidities
8. Immunosuppressive Drug
9. Pregnancy
10. Active Malignancy
11. On Chemotherapy
12. Obesity (BMI>40)

All No → **AND** → **Age < 60**

Any YES → **OR** → **Age ≥ 60**

- Home Isolation (Symptomatic Treatment)
- Strict isolation
- Follow and use personal protective guide equipment
- If any deterioration occurs, back to hospital

NB: Paracetamol is the preferred antipyretic

Isolation in a healthcare facility

Treatment

- Hydroxychloroquine (400 mg twice in first day then 200 mg twice for 6 days)
- Vitamin C (1gm daily)
- Zinc 50mg daily
- Acelylcysteine 200 mg t.d.s.
- lactoferrin one sachet twice daily

Moderate Case

Patient has pneumonia manifestations on radiology associated with symptoms &/Or leucopenia or lymphopenia

Hospitalization

- Lopinavir/Ritonavir (2 tab 200/50) every 12 hrs
- Ribavirin 400 mg every 12 hrs For 14 Days

(Not recommended if symptoms started for more than 7 days)

+

- Anticoagulation: Prophylactic OR Therapeutic if D-dimer > 1000

OR

- Hydroxychloroquine (if NO contraindication) 400mg /12 hrs for 1 day then 200 mg every 12 hours for 9 days

+

- Anticoagulation: Prophylactic OR Therapeutic if D-dimer > 1000

Steroids if patients is dyspneic or CT SCAN showed significant deterioration

Severe and Critically Ill Case

If any of the following criteria is present

1. RR > 30
2. Sa02 < 92 at room air
3. PaO2/FiO2 ratio < 300
4. Chest radiology showing
more than 50% lesion or
progressive lesion within 24 to 48 hrs
5. Critically ill if SaO2 <92, or RR>30,
or PaO2/FiO2 ratio < 200 despite Oxygen Therapy.

Admit to Intermediate Care Or Intensive care

- **Tocilizumab** 4-8mg/kg/dose Max 2 doses
  - Early Block the storm if steroids failed
- **Steroids** Methylpred-nisolone 1-2 mg/kg/d
  - 1 mg for non ventilated and 2 mg for ventilated
- **Antiviral** Drugs As is In Severe case
  - Add Antibiotics As per protocol
- **Anti-Coagulation** Enoxaparine 1 mg/kg BID
  - Consider D-dimer level as a guide
- **Prone** Awake or ventilated
  - Improves V/Q matching and survival
- **Avoid Hypoxia** O2/ NIV/ HFNC/IMV
  - Don't wait too much for any type of support Keep plateau<30

COVID 19 Critical Care Chain of Survival

Antiviral drugs

- Lopinavir/Ritonavir (2 tab 200/50) every 12 hrs.
+ Ribavirin 400 mg /12 hrs
+ Interferon beta 1b +
Azithromycin (500mg daily) or doxycycline (200 mg first day then 100mg daily OR

NB: Remdesivir if available: 200 mg day 1 then 100 mg daily for 9 days

OR

Hydroxychloroquine (if NO contraindication) 400mg /12 hrs for 1 day then 200 mg every 12 hours for 9 days +
- Lopinavir/Ritonavir (2tab 200/50) every 12 hrs.+
- Doxycycline 200 mg first day and 100 mg daily or Azithromycin 500 mg

Non Invasive Ventilation or High flow nasal cannula (HFNC):

- Conscious patients with minimal secretions.
- Hypoxia SpO2 < 90% on oxygen. Or PaCO2 >40 mmHg provided pH 7.3 and above.
- NIV trial shall be short with ABG 30 minutes apart.
- Any deterioration in blood gases from baseline or oxygen saturation or consciousness level shift to IMV.
- CPAP gradually increased from 5-10 cmH2O.
- Pressure support from 10-15 cm H2O.
- HFNC can be alternative to NIV.

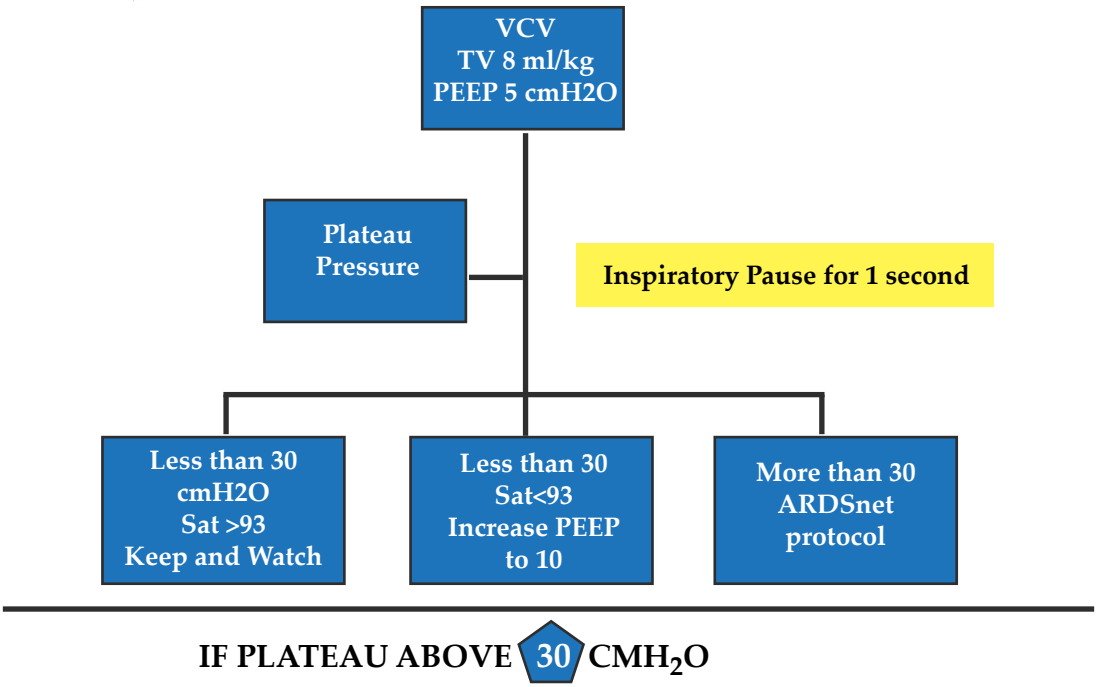
Invasive Mechanical ventilation:

- Use PPE specially goggles during intubation and avoid bagging.

Indications:

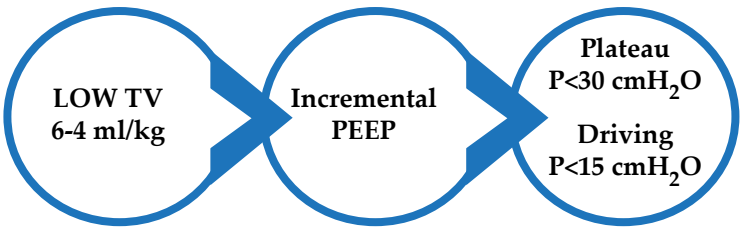
- Failed NIV or not available or not practical.
- PaO2 < 60 mmhg despite oxygen supplementation.
- Progressive Hypercapnia.
- Respiratory acidosis (PH < 7.30).
- Progressive or refractory septic shock.
- Disturbed consciousness level (GCS ≤ 8) or deterioration in consciousness level from baseline.

Step 1: Initiation of Invasive Mechanical ventilation



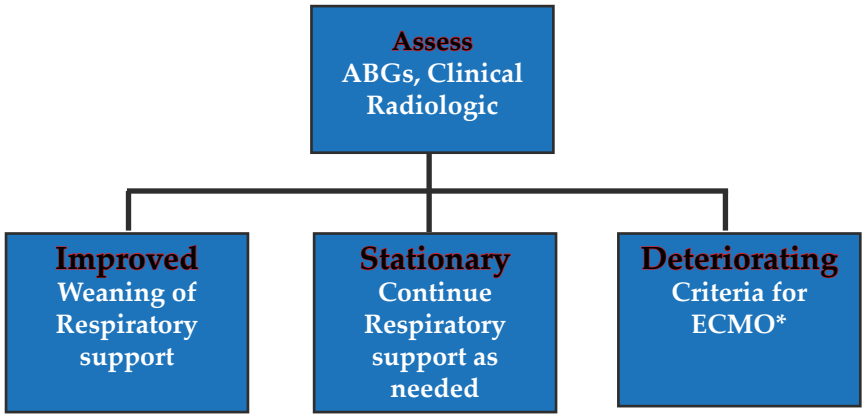
Step 2: Shift to ARDSNet protocol if needed

- ARDSNet protocol:



Start with tidal volume of 6 ml/Kg to keep plateau pressure on volume controlled ventilation (VCV) below 30 cmH2O, decrease to 4 ml/kg if the plateau remain higher than 30 allow permissive hypercapnia so long the pH is above 7.3 compensate by increasing respiratory rate up to 30 breath/ minute. Consider heavy sedation and paralysis. If pressures are high or any evidence of barotrauma shift to pressure controlled ventilation and be cautious about low tidal volume alarms for fear of unnoticed endotracheal tube obstruction. Consider ECMO early if eligible. Increase PEEP gradually if the patient remains hypoxic according to FIO2 level to keep driving pressure < 15cmH2O. NEVER FORGET PRONE POSITION.

Step 3: Assessment of Respiratory support Outcome



*Criteria for VV ECMO: Age below 55, Mechanical ventilation duration less than 7 days, No comorbidities, Preserved consciousness level, PaO2/ FiO2 <100 despite prone RESPscore >0. Expert opinion is needed and depends on availability.

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