Severe pneumonia:
- Adolescent or adult with fever or suspected respiratory infection, plus one of the following:
  i. respiratory rate >30 breaths/min, or
  ii. severe respiratory distress, SpO2 <90% on room air
- Child with cough or difficulty in breathing, plus at least one of the following:
  i. central cyanosis or SpO2 <90%; or
  ii. severe respiratory distress (e.g. grunting, chest indrawing);
  iii. signs of pneumonia with any of the following danger signs:
     - inability to breastfeed or drink, lethargy or unconsciousness, or
     - convulsions.
     - chest indrawing,
     - fast breathing (in breaths/min):
       - Age <2 months: ≥60 breaths/min;
       - Age 2–11 months: ≥50 breaths/min;
       - Age 1–5 years: ≥40 breaths/min.

Acute Respiratory Distress Syndrome
- Onset of new or worsening respiratory symptoms within one week of known clinical insult.
- Chest imaging (radiograph, CT scan, or lung ultrasound) showing bilateral opacities, not fully explained by effusions, lobar or lung collapse, or nodules.
- Origin of oedema due to respiratory failure not fully explained by cardiac failure or fluid overload. Need objective assessment (e.g. echocardiography) to exclude hydrostatic cause of oedema if no risk factor present.
- Oxygenation Status (adults):
  i. Mild ARDS: 200 mmHg < PaO2/FiO2 ≤ 300 mmHg (with PEEP or CPAP ≥5 cm H2O, or non-ventilated)
  ii. Moderate ARDS: 100 mmHg < PaO2/FiO2 ≤200 mmHg with PEEP ≥5 cm H2O, or non-ventilated)
  iii. Severe ARDS: PaO2/FiO2 ≤ 100 mmHg with PEEP ≥5 cm H2O, or non-ventilated)
  iv. When PaO2 is not available, SpO2/FiO2 ≤315 suggests ARDS (including in non-ventilated patients)
Oxygenation (children; note OI = Oxygenation Index and OSI = Oxygenation Index using SpO2)
1. Bilevel NIV or CPAP ≥ 5 cm H2O via full face mask: PaO2/FiO2 ≤ 300 mmHg or SpO2/FiO2 ≤ 264
2. Mild ARDS (invasively ventilated): 4 ≤ OI < 8 or 5 ≤ OSI < 7.5
3. Moderate ARDS (invasively ventilated): 8 ≤ OI < 16 or 7.5 ≤ OSI < 12.3
4. Severe ARDS (invasively ventilated): OI ≥ 16 or OSI ≥ 12.3

Sepsis

Adults- life-threatening organ dysfunction caused by a dysregulated host response to suspected or proven infection, with organ dysfunction.

- Signs of organ dysfunction include:
  1. altered mental status,
  2. difficult or fast breathing,
  3. low oxygen saturation,
  4. reduced urine output,
  5. fast heart rate, weak pulse, cold extremities or low blood pressure,
  6. skin mottling, or laboratory evidence of coagulopathy, thrombocytopenia, acidosis, high lactate or hyperbilirubinemia.

Children- any hypotension (SBP < 5th centile or > 2 SD below normal for age) or 2-3 of the following:

- altered mental state
- bradycardia or tachycardia (HR < 90 bpm or > 160 bpm in infants and HR < 70 bpm or > 150 bpm in children)
- prolonged capillary refill (> 2 sec) or warm vasodilation with bounding pulses;
- tachypnoea
- mottled skin or petechial or purpuric rash;
- increased lactate
- oliguria
- hyperthermia or hypothermia

अत: उपरोक्तानुसार कोविड-19 संदिग्ध/पॉजिटिव व्यक्तियों के भर्ती एवं रेफरल हेतु दिये गये निर्देशों का पालन करना सुनिश्चित करें।

संलग्न:- उपरोक्तानुसार।

पु. क्रमांक/आई.डी.एस.पी./2020/ 399
प्रतिलिपि:- सूचनार्थ
6. अतिरिक्त मुख्य सचिव, म.प. शासन, लोक स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भोपाल
7. मुख्य सचिव, चिकित्सा शिक्षा विभाग, मध्यप्रदेश।
8. आयुक्त स्वास्थ्य, सचार अधीन स्वास्थ्य सेवाएं, मध्यप्रदेश।
9. आयुक्त, चिकित्सा शिक्षा विभाग, मध्यप्रदेश।
10. मिशन संचालक, एन.एच.एम. मध्यप्रदेश।
11. संचालक चिकित्सा शिक्षा, सतपुडा भवन भोपाल, मध्यप्रदेश।
12. समस्त क्षेत्रीय संचालक, स्वास्थ्य सेवाएं, मध्यप्रदेश।

(फेज अहस्त फिदवई)
प्रमुख सचिव,
मध्यप्रदेश शासन,
लोक स्वास्थ्य एवं परिवार कल्याण
भोपाल, दिनांक 19/05/2020

(फेज अहस्त फिदवई)
प्रमुख सचिव,
मध्यप्रदेश शासन,
लोक स्वास्थ्य एवं परिवार कल्याण
Referral Mechanism for COVID 19 Patients based on Symptoms

Covid Care Centres/Home Isolation-

- COVID-19 suspect or
- COVID-19 positive patients with Uncomplicated Illness or
- COVID-19 positive patients with uncomplicated upper respiratory tract viral infection, may have non-specific symptoms such as fever, cough, sore throat, nasal congestion, malaise, headache.

Dedicated Covid Healthcare Centre-

- Patient with pneumonia and no signs of severe pneumonia
- Child with non-severe pneumonia has cough or difficulty in breathing/ fast breathing and no signs of severe pneumonia
  
  fast breathing - in breaths/min can be defined as :
  - age <2 months- ≥60 breaths/min
  - age 2–11 months- ≥50 breaths/min
  - age 1– 5 years - ≥40 breaths/min

Dedicated COVID Hospitals

- Severe pneumonia-
  - Adolescent or adult with fever or suspected respiratory infection, plus one of the following:
    i. respiratory rate >30 breaths/min, or
    ii. severe respiratory distress, SpO2 <90% on room air
- Child with cough or difficulty in breathing, plus at least one of the following:
  i. central cyanosis or SpO2 <90%; or
  ii. severe respiratory distress (e.g. grunting, chest in- drawing);
  iii. signs of pneumonia with any of the following danger signs:
    - inability to breastfeed or drink, lethargy or unconsciousness, or
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    - chest indrawing,
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  - Oxygenation Status (adults):
    i. Mild ARDS: 200 mmHg < PaO2/FiO2 ≤ 300 mmHg (with PEEP or CPAP ≥5 cm H2O, or non-ventilated)
    ii. Moderate ARDS: 100 mmHg < PaO2/FiO2 ≤200 mmHg with PEEP ≥5 cm H2O, or non-ventilated)
iii. Severe ARDS: \( \text{PaO}_2/\text{FiO}_2 \leq 100 \text{ mmHg with PEEP } \geq 5 \text{ cm H}_2\text{O, or non-ventilated} \)

iv. When \( \text{PaO}_2 \) is not available, \( \text{SpO}_2/\text{FiO}_2 \leq 315 \) suggests ARDS (including in non-ventilated patients)

- **Oxygenation** (children; note OI = Oxygenation Index and OSI = Oxygenation Index using \text{SpO}_2)
  
  i. Bilevel NIV or CPAP \( \geq 5 \text{ cm H}_2\text{O via full face mask: } \text{PaO}_2/\text{FiO}_2 \leq 300 \text{ mmHg or SpO}_2/\text{FiO}_2 \leq 264 \)
  
  ii. Mild ARDS (invasively ventilated): \( 4 \leq \text{OI} < 8 \) or \( 5 \leq \text{OSI} < 7.5 \)
  
  iii. Moderate ARDS (invasively ventilated): \( 8 \leq \text{OI} < 16 \) or \( 7.5 \leq \text{OSI} < 12.3 \)
  
  iv. Severe ARDS (invasively ventilated): \( \text{OI} \geq 16 \) or \( \text{OSI} \geq 12.3 \)

- **Sepsis**
  
  - **Adults**- life-threatening organ dysfunction caused by a dysregulated host response to suspected or proven infection, with organ dysfunction.
    
    - Signs of organ dysfunction include:
      
      i. altered mental status,
      
      ii. difficult or fast breathing,
      
      iii. low oxygen saturation,
      
      iv. reduced urine output,
      
      v. fast heart rate, weak pulse, cold extremities or low blood pressure,
      
      vi. skin mottling, or laboratory evidence of coagulopathy, thrombocytopenia, acidosis, high lactate or hyperbilirubinemia.

  - **Children**- any hypotension (SBP <5th centile or >2 SD below normal for age) or 2-3 of the following:
    
    - altered mental state
    
    - bradycardia or tachycardia (HR <90 bpm or >160 bpm in infants and HR <70 bpm or >150 bpm in children)
    
    - prolonged capillary refill (>2 sec) or warm vasodilation with bounding pulses; tachypnoea
    
    - mottled skin or petechial or purpuric rash;
    
    - increased lactate
    
    - oliguria
    
    - hyperthermia or hypothermia