Breathing difficulty in the Newborn

**Breathing difficulty**
- Chest indrawing
- Grunting

**Check**
- Respiratory Rate
- Cyanosis
- Oxygen saturation (SpO2)

**Severe respiratory distress**
- RR > 90/minute with grunting/retractions OR
- RR < 30/minute OR
- Cyanotic on > 1 L/min on nasal prongs or catheter or > 5L/min O2 on oxygen by hood OR SpO2 < 90%
- **Start CPAP, if not available**
- **REFER**
- **Maintain IV line**
- **Treat for sepsis**
- **Chest x-ray, if needed**
- **If no improvement REFER (for assisted ventilation)**

**Moderate respiratory distress**
- RR 60-90/minute AND retractions/grunting OR
- RR > 90/minute OR
- Oxygen 0.5 to 1 L/min on nasal prongs or catheter or 3-5 L/min on oxygen by hood & pink or SpO2 > 90%
- **Maintain O2 and IV line**
- **Treat for sepsis**
- **Chest x-ray, if needed**
- **May require CPAP, if not available REFER**

**Mild respiratory distress**
- RR 60-90/minute OR
- Oxygen < 0.5 L/min on nasal prongs or catheter or < 3L/min on oxygen by hood & pink or SpO2 > 90%
- **Consider chest x-ray**
- **Continue care (feeding, temperature control)**
- **Deteriorates or increasing oxygen requirement: Give antibiotics**

**Specific Management**
- **No Improvement**
  - Decreasing RR
  - No grunting or indrawing or cyanosis
  - Decreasing oxygen requirement

**Watch for signs of improvement**
- **Decreasing oxygen requirement**
- **No grunting or indrawing or cyanosis**
- **Decreasing RR**

Remove oxygen observe every 15 minutes for next one hour to see for pink tongue & lips, consider alternative methods or direct breast feeding once off oxygen. No difficulty in breathing, feeding well, pink for at least 2 days without oxygen: discharge.

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*Refer to Panel for assessment of respiratory distress

$ Signs of surgical conditions - scaphoid abdomen (diaphragmatic hernia), drooling of saliva (esophageal atresia)

# If Pulse Oximeter is available

** Congenital heart disease should be ruled out if cyanosis but no distress at > 5 L/min

*** Aminophylline may be required in preterm infant to manage apnoea

For additional / next level management please refer to WHO Guidelines (Managing Newborn Problems and Pocket Book of Hospital Care of Children), http://www.ontop-in.org/sick-newborn/, http://www.newbornwhoocc.org/
Standard Treatment Protocol for management of common newborn conditions in small hospitals
(Adapted from WHO Guidelines)

For additional / next level management please refer to WHO Guidelines (Managing Newborn Problems and Pocket Book of Hospital Care of Children), http://www.ontop-in.org/sick-newborn/, http://www.newbornwhoc.org/
Assessment of severity of respiratory distress

Panel 1: WHO Classification of respiratory distress

<table>
<thead>
<tr>
<th>Classification</th>
<th>Respiratory Rate (bpm)</th>
<th>Grunting or Chest indrawing</th>
<th>Requirement of oxygen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>By hood</td>
</tr>
<tr>
<td>Severe</td>
<td>More than 90 Less than 30</td>
<td>Present</td>
<td>&gt;5L/min</td>
</tr>
<tr>
<td>Moderate</td>
<td>More than 90</td>
<td>Absent</td>
<td>3-5 L/min</td>
</tr>
<tr>
<td>Moderate</td>
<td>60 – 90</td>
<td>Present</td>
<td>3-5 L/min</td>
</tr>
<tr>
<td>Mild</td>
<td>60 – 90</td>
<td>Absent</td>
<td>=3 L/min</td>
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