Management of an asphyxiated newborn

Flowchart 1
Immediate Management of an asphyxiated newborn

Newborn with birth asphyxia
Baby requiring bag and mask ventilation (BMV) OR Intubation with or without medications at birth

Categorize based on the severity of asphyxia

Mild asphyxia
- Requiring BMV for less than 60 seconds
- No intubation or medications at birth

Moderate or severe asphyxia
- Requiring BMV for 60 seconds or more and/or
- Needed for intubation or medications at birth

Assess at 5 minutes after birth:
Assess sensorium and tone
Look for abnormal movements

Normal tone and sensorium;
No abnormal movements;
No other complications

Abnormal sensorium/tone
OR
Abnormal movements

Shift to mother’s side;
Initiate breastfeeding;
If not able to breastfeed, start alternative methods of feeding

See Flowchart 2

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.newbornwhocc.org/
Flowchart 2
Management of a newborn who has been resuscitated for moderate or severe birth asphyxia

Newborn with moderate or severe asphyxia, who
- Required bag and mask ventilation (BMV) for 60 seconds or more at birth, OR
- Needed intubation or medications at birth

Check vitals (Annexure1):
Temperature, heart rate, capillary refill time (CRT), colour, oxygen saturation (SpO2), respiratory rate, lower chest retractions, abnormal movements

If any one of vital signs is abnormal
Follow Sheets A and B
(Management of Emergencies)

1. Maintain normal temperature
   - If Hypothermia, Follow STP
   - Avoid hyperthermia (temperature >37.5°C)
2. Maintain oxygenation and ventilation
   - Secure airway
   - Start oxygen by nasal cannula or hood if SpO2 is <90%
     (Target SpO2 90-95%)
3. Maintain normal perfusion
   - Administer normal saline bolus if CRT is prolonged
   - Transfuse if there is evidence of blood loss
   - If shock, Follow STP
4. Maintain normal blood glucose
   - Start IV 10% Dextrose for the next 12 hours
   - Check blood glucose every 12 hours in the first 48-72 hours of life
   - Maintain blood glucose between 60 and 120 mg/dl
   - If Hypoglycaemia, Follow STP
5. Watch for seizures
   - Administer phenobarbitone if the baby has seizures
     (Follow STP for Seizures)

• Assess if the infant has encephalopathy, 8-hourly until 72 hours (based on consciousness, tone, seizures, and suck/respiration; (Panel 1):

No or mild encephalopathy
Initiate alternative methods of feeding, after vitals are stable
Shift to Breastfeeding as soon as possible

Moderate or severe hypoxic-ischemic encephalopathy (HIE)
• Monitor vital signs and urine output (Panel 2)
• Continue IV fluids; restrict fluids to 60 mL/kg/d on the first day; do not increase volume if baby urinates <6 times/day
• Initiate intra gastric tube feeding followed by spoon/paladai feeds gradually after vitals are stable
• Assess for sepsis, if the baby does not improve even after 3 days
• If no improvement or deterioration, REFER

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.newbornwho.cc.org/
Panel 1: Classification of hypoxic-ischemic encephalopathy (Levene)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
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<tbody>
<tr>
<td>Consciousness</td>
<td>Irritability</td>
<td>Lethargy</td>
<td>Comatose</td>
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<tr>
<td>Tone</td>
<td>Hypotonia</td>
<td>Marked hypotonia</td>
<td>Severe hypotonia</td>
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<tr>
<td>Seizures</td>
<td>No</td>
<td>Yes</td>
<td>Prolonged</td>
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<tr>
<td>Sucking/respiration</td>
<td>Poor suck</td>
<td>Unable to suck</td>
<td>Unable to sustain spontaneous respiration</td>
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Panel 2: Monitoring of an asphyxiated baby

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<tr>
<th>Signs</th>
<th>At admission</th>
<th>2 hr</th>
<th>4 hr</th>
<th>6 hr</th>
<th>8 hr</th>
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