Chapter 1

EMERGENCY TRIAGE ASSESSMENT AND TREATMENT

Learning objectives

After completion of this module the participant should be able to-

- Triage neonates at health facility for appropriate management
- Assess temperature and manage temperature instability
- Assess airway and breathing and manage the same
- Assess circulation and manage shock
- Assess for convulsions and coma and manage the same

The word “triage” means sorting. Triage is the process of rapidly screening sick neonates when they arrive at the hospital and categorizing them in one of the following groups:

<table>
<thead>
<tr>
<th>E</th>
<th>Emergency</th>
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<tbody>
<tr>
<td>P</td>
<td>Priority</td>
</tr>
<tr>
<td>N</td>
<td>Non urgent</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Categories after triage</th>
<th>Action required</th>
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<tbody>
<tr>
<td>Emergency cases</td>
<td>Need emergency treatment</td>
</tr>
<tr>
<td>Priority cases</td>
<td>Need assessment and rapid action</td>
</tr>
<tr>
<td>Non urgent cases</td>
<td>Need assessment</td>
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Emergency cases

- Hypothermia (temp < 360 C)
- Apnea or gasping respiration
- Severe respiratory distress (rate > 70, severe retractions, grunt)
- Central cyanosis
- Shock (cold periphery, CFT>3 secs, weak & fast pulse)
- Coma, convulsions or encephalopathy

The neonates with emergency signs are at high risk and require urgent intervention and emergency measures. These neonates with emergency signs after stabilization are to be admitted SCNU (Special Care Newborn Unit).

Priority signs:

- Tiny neonate (<1800 gms)
- Cold stress (temp 36.4°C - 36.9°C)
- Respiratory distress (rate>60, no retractions)
- Irritable/restless/jittery
- Refusal to feed
- Abdominal distension
- Severe jaundice
- Severe pallor
- Bleeding from any sites
- Major congenital malformations
- Large baby

The neonates with priority signs are sick and would need immediate assessment. They should be attended to on a priority basis. These need to be admitted to SCNU.

Non urgent cases

- Jaundice
- Transitional stools
- Developmental peculiarities
- Minor birth trauma
- Possetting
- Superficial infections
- Minor malformations
- All cases not categorized as Emergency/Priority

Triaging Neonates: where and how?

The reception and resuscitation (RR) area or the casualty of the hospital managing sick neonates should be the triaging area. The site at the facility where a neonate is first brought should be the triaging area.

All the staff involved in the initial management of a child should be trained in the triaging process. The most experienced doctor present who is trained in neonatal care should undertake the responsibility of emergency treatment and management of the neonate.
After emergency treatment the neonate is assessed to establish a diagnosis and appropriate management done.

**Process of triaging:**

The neonate is assessed for emergency signs
- Assess for hypothermia. If present arrange for rewarming of the baby.
- Check for severe respiratory problem and if present arrange to oxygenate the baby.
- Determine if the child is in shock or has encephalopathy or convulsions and if so initiate urgent steps to manage.

After initiating emergency measures proceed to investigate the neonate.

**Based on the Clinical exam and the investigations proceed to treat the neonate for underlying disorder.**

**Assessment of emergency and priority signs**

- **Assess temperature and look for hypothermia.**
  If the temperature is <36°C, the child has hypothermia and needs to be rewarmed. If the temperature is above 37.5°C, the child has hyperthermia and is suggestive of sepsis if environmental cause has been ruled out.

- **Assess airway and breathing**
  Is the child apnoeic or has gasping respiration. It could be due to apnoeic spells or aspiration or blockage of airway.

  Does the child have severe respiratory distress? Is the RR more than 70/min, are there retractions or grunting.

  Is there central cyanosis? This is said to be present if the lips and tongue are blue or the mucosa in and around the mouth is blue.

- **Assess circulation**
  Look for evidence of shock. Are the hands and feet cold? Look for CFT by pressing the front of chest and blanching the area. If the area takes more than 3 seconds to become pink again, it is suggestive of prolonged CFT. Check for the pulse. If the child has tachycardia and the pulse is weak and rapid, it is suggestive of shock.

- **Assess for convulsions, encephalopathy and coma.**
  Look for convulsions. They may be generalized or localized. Is the child in coma or encephalopathy? Assess on the APU scale. A. Awake, P. responds to Pain and U. unresponsive.
Chart 2: Flow diagram for Triaging Sick Neonates

**Triage of Sick Neonates**

**ASSESS FOR EMERGENCY SIGNS**
*(In all Cases)*

**TEMPERATURE**
- Cold to touch (Abdomen)

**AIRWAY AND BREATHING**
- Not Breathing or Gasping or
- Central cyanosis or
- Severe respiratory distress
  - Respiratory rate ≥ 70/min
  - Severe lower chest indrawing
  - Apnoeic spells
  - Grunting
  - Unable to feed

**CIRCULATION**
- Capillary refill longer than 3 seconds, and
- Weak and fast pulse (>160)

**CONVULSIONS**
- Convulsions

**TREAT EMERGENCY SIGNS**

**IF POSITIVE**
- Manage airway
- Provide tactile stimulation if apneic
- If still apneic or gasping- Provide PPV
- Give oxygen
- Make sure neonate is warm.

**IF CONVULSING**
- Manage airway
- Check & Correct hypoglycemia
- Give anticonvulsant
- Make sure neonate is warm.

**ANY SIGN POSITIVE**
- Give oxygen
- Insert IV line and give 20 ml/kg Normal Saline over 30 min
- Proceed immediately to full assessment and treatment

**IF POSITIVE**
- Give oxygen
- Insert IV line and give 20 ml/kg Normal Saline over 30 min
- Proceed immediately to full assessment and treatment

If any sign positive: give treatment(s), Call for help, draw blood for emergency laboratory investigations (Glucose)
Give emergency treatment

Manage temperature:

Place the neonate under a warmer and bring the temperature to 36.5°C - 37.5°C. Keep the baby dry and the head, hands and feet should be covered. Maintain the temperature within this range.

Maintain the airway:

Place the child in sniffing position, Place a shoulder roll under the shoulder to position the child. Clear the airway of secretions by suctioning the mouth first and then the nose.

Assist breathing:

Support the child’s respiration if he is distressed. This can be done by using nasal prongs which can be placed just inside the nostrils and secured with a tape. The flow rate can maintained be around 1-2 litres/min. The child could also be placed under an oxygen hood with an oxygen flow rate of 5-8 litres /min. The oxygen can be monitored by a pulse oximeter targeting the saturation at 88-92%.

Support circulation:

If the child is in shock
Give an IV bolus of normal saline or ringers lactate at the rate of 10ml/kg over 20-30 mins. Repeat if features of shock persist. Initiate Dopamine in a dose of 5-20 micrograms/kg/min and Dobutamine at 5-20 microgms/kg/min if the neonate remains in shock despite fluid boluses.
EVALUATION

1. Baby Sunita a 3 day old neonate is brought to you with lethargy and inability to feed. His temperature is 36.2°C and he is lethargic, breathing normally, his hands are cold and capillary refill is 2 seconds.
   How do you triage this neonate?

2. A 8 day old baby with fast breathing and inability to feed and is brought to SCNU. His temperature is 35.8°C, respiratory rate 68/min with minimal retractions and no grunt. How do you triage this infant?

3. A 2 day old newborn with birth weight 2000 gm has been brought to SCNU with a complaint of swelling over the back since birth. Baby is feeding well at breast and has no respiratory problem. How do you triage this infant?