Facilitator instructions for case scenarios: ETAT supplemental neonatal module

1. Preparation
   a. Review learning objectives and case scenarios
   b. Review ETAT content that is illustrated in the scenarios (PowerPoint presentation, IMCI Pocketbook of Hospital Care for Children: p. 41-66)
   c. Review process for using case scenarios
      i. Participants may work alone or as a group.
      ii. Participants may be asked to review each other's performance at the end of the scenario.

2. Equipment (list all of the equipment that is required for this scenario)
   1. Manikin for airway positioning, airway adjuncts, and bag mask ventilation
   2. Assorted sizes of oral and nasal pharyngeal airways
   3. Oxygen delivery devices
      - Nasal cannula
      - Simple mask
      - Nonrebreather (if possible)
   4. Suction catheters
   5. Infant resuscitator (ambu) bag(s) with several sizes of masks
   6. Manikin for selecting sites for IV placement and performing intraosseous vascular access
   7. Intraosseous needles, an assortment of IV catheters, arm boards, T connectors, IV fluid bags, IV infusion sets

3. General principles
   a. Begin by reviewing the learning objectives for the neonatal module:
      - Accurately assess airway, breathing, circulation, and neurologic function for neonates.
      - Recognize danger signs for neonates.
      - Manage neonates with respiratory compromise, shock, altered mental status, convulsions, or dehydration.
      - Recognize and treat serious bacterial infections.
      - Describe important conditions and diagnostic considerations.
   b. All of these objectives will be covered in this station, using case scenarios. The specific objectives illustrated in each scenario will be described at the beginning of the case.
   c. Describe how the case scenarios will be presented
      i. The idea is to present the case as it would unfold in a real clinical situation. The facilitator will provide clinical information and may ask questions that will prompt the participant to give the appropriate response.
      ii. The participant should respond as s/he would in a real clinical situation. The participant may ask for additional clinical information.
      iii. The facilitator may ask the participant to demonstrate interventions.
      iv. Learning objectives will be reviewed again at the end of the case.

4. Record keeping: complete participant evaluation forms
Case Scenarios: ETAT Supplemental neonatal Module

Case #1: Baby with lethargy and change in feeding

Learning Objectives for Case Scenario #1:
- Accurately identify danger signs (change in feeding, lethargy).
- Accurately assess A, B, C, and C.
- Initiate appropriate interventions.

Facilitator says: A 12 day old infant was born unattended at home. She initially nursed well, but over the past 2 days has been sleeping all of the time and feeding poorly.

Facilitator says: How should you begin your evaluation?

Participant says: Evaluate airway and breathing.

Facilitator says: There is no stridor. The infant is breathing rapidly, with mild retractions.

Facilitator says: What should you do next?

Participant says: Evaluate circulation (temperature of hands and feet, capillary refill, quality of pulses, mental status).

Facilitator says: The extremities are warm and the capillary refill is < 3 seconds.

Facilitator says: What is the baby’s circulatory status?

Participant says: The baby is well-perfused and not in shock.

Facilitator says: What should you evaluate next?

Participant says: What is the baby’s mental status? Are there any abnormal movements?

Facilitator says: The infant arouses only to stimulation. There are no abnormal movements.

Facilitator says: What are the infant’s emergency signs?
**Participant says:** She has a history of poor feeding with retractions, tachypnea, and lethargy.

**Facilitator says:** What should you do next?

**Participant says:** Give oxygen, start an IV.

**Facilitator says:** Are there any tests that you should perform?

**Participant says:** Bedside glucose.

**Facilitator says:** The bedside glucose is 30 mg/dL

**Facilitator says:** What interventions should you perform next?

**Participant says:** Give glucose (2mL/kg of D$_{10}$W), give maintenance IV fluid (2.5mL/kg/hour), and give ampicillin (50mg/kg) and gentamicin (4mg/kg). Keep the baby warm.

**Teaching points**
- Recognize poor feeding and lethargy as emergency signs (nonspecific signs of serious infection).
- Recognize normal circulation.
- Check glucose.
- Treat hypoglycemia.
- Administer IV fluids at maintenance rate
- Give antibiotics

**Case # 2: Infant with shock**

Learning objectives for Case Scenario #2:
- Rapidly assess for danger signs.
- Recognize shock.
- Initiate appropriate management.

**Facilitator says:** A 5 day old infant was born unattended at home. He has nursed sporadically.

**Facilitator says:** How should you begin your evaluation?

**Participant says:** Evaluate airway and breathing.

**Facilitator says:** There is no stridor. Respirations are slow and irregular. The baby’s color is grey.
Facilitator says: *What should you do now?*

Participant says: Give oxygen. Begin bag mask ventilation.

Facilitator says: The infant’s color improves. He does not take breaths on his own.

Facilitator says: *What should you evaluate next?*

Participant says: Assess circulation (extremity temperature, capillary refill, quality of pulses, mental status).

Facilitator says: The hands and feet are cool, capillary refill is 4 seconds, you cannot feel distal pulses.

Facilitator says: *What is the infant’s condition and how do you want to manage it?*

Participant says: He is in shock. Continue to support airway and breathing. Establish IV access.

Facilitator says: *Are there any tests that you should perform?*

Participant says: Bedside glucose.

Facilitator says: The bedside glucose is 30 mg/dL

Facilitator says: *What treatments should you initiate?*

Participant says: Give dextrose (2mg/kg of D_10 W), give a bolus of 20 mL/kg of isotonic fluid, and give ampicillin (50mg/kg) and gentamicin (4mg/kg). Keep the baby warm.

**Teaching points**
- Recognize emergency signs (inadequate respirations and shock).
- Stabilize each emergency sign in the appropriate order.
- Give antibiotics.

**Additional discussion points**
• How do you manage infants who require prolonged assisted ventilation at your facility?

Case # 3: Baby with seizure

Learning objectives for Case Scenario #3:
• Recognize seizure activity.
• Support airway, breathing, and circulation during evaluation and treatment of seizures.
• Identify possible causes of seizures.
• Treat possible causes of seizures.
• Use anticonvulsant therapy appropriately.

Facilitator says: A two week old infant has been having intermittent jerking movements for the past 5 hours. On arrival at the clinic, he is unresponsive and his extremities are jerking.

Facilitator says: How should you begin your evaluation of the infant?

Participant says: Evaluate airway and breathing.

Facilitator says: He has good chest wall movement and his color is pale.

Facilitator says: What should you do next?

Participant says: Administer oxygen, evaluate circulation.

Facilitator says: The infant’s extremities are warm and the capillary refill is 3 seconds.

Facilitator says: What are the infant’s emergency signs?

Participant says: Breathing is inadequate (gray color) and the baby is having a seizure.

Facilitator says: What should you do next?

Participant says: Establish IV access and check bedside glucose.

Facilitator says: Bedside glucose is 20mg/dL.

Facilitator says: What treatments should you initiate?
**Participant says:** Dextrose 2mg/kg of D_{10}W.

**Facilitator says:** Dextrose is given by IV push. The seizure continues.

**Facilitator says:** What should you do now?

**Participant says:** Give lorazepam 0.1mg/kg IV.

**Facilitator says:** After lorazepam is given the seizure stops.

**Facilitator says:** What should you do next?

**Participant says:** Re-evaluate airway, breathing, and circulation.

The baby is having shallow, noisy, irregular respirations.

**Facilitator says:** Does the infant have any emergency signs?

**Participant says:** The airway is obstructed.

**Facilitator says:** What should you do now?

**Participant says:** Open the airway.

**Facilitator says:** What should you do next?

**Participant says:** Re-evaluate breathing.

**Facilitator says:** Respirations are shallow, slow, and irregular.

**Facilitator says:** What should you do next?

**Participant says:** Begin bag mask ventilation.

**Facilitator says:** Bag mask ventilations are easily provided. There is good chest wall movement.
Facilitator says: What should you do next?

Participant says: Re-evaluate circulation.

The extremities are warm and capillary refill is 2 seconds.

Facilitator says: What should you do now?

Participant says: Give maintenance IV fluid (2.5mL/kg/hour), and give ampicillin (50mg/kg) and gentamicin (4mg/kg). Consider adding cefotaxime if there is concern for gram negative organisms. Keep the baby warm.

Teaching points

- Recognize emergency signs (inadequate breathing, seizure).
- Stabilize each emergency sign in the appropriate order (breathing, hypoglycemia, seizure).
- Importance of re-evaluation.
- Clinical concerns for meningitis.

Case #4: Infant with respiratory distress

Learning objectives for Case #4:

- Recognize signs of respiratory distress.
- Initiate appropriate interventions to support breathing.
- Complete assessment.
- Begin treatment for infection.

Facilitator says: A five week old infant is brought to the clinic for coughing and poor feeding.

Facilitator says: The baby is pale. She is breathing rapidly and has marked retractions. What is the baby’s condition?

Participant says: Emergency.

Facilitator says: What are the emergency signs?

Participant says: Respiratory distress (poor color, rapid breathing, and retractions).
Facilitator says: What should you do first?

Participant says: Open the airway and give oxygen.

Facilitator says: The infant’s color improves. She continues to breathe rapidly, but with fewer retractions.

Facilitator says: What should you do now?

Participant says: Assess circulation.

Facilitator says: The infant has cool extremities, capillary refill is 2 seconds.

Facilitator says: Is the baby’s circulatory status adequate?

Participant says: The capillary refill is normal but the infant is cold. The infant is not in shock.

Facilitator says: What should you do now?

Participant says: Assess for coma and convulsions.

Facilitator says: The infant is alert and appears anxious.

Facilitator says: What is the infant’s neurologic status?

Participant says: The baby is neurologically appropriate.

Facilitator says: What should you do now?

Participant says: Assess for dehydration.

Facilitator says: The baby’s eyes are sunken and her skin pinch is slow.
Facilitator says: What is the baby’s condition?

Participant says: The infant is in respiratory distress, is dehydrated, and is cold.

Facilitator says: What should you do next?

Participant says: Establish an IV and give a bolus of 20mL/kg of isotonic fluid.

Facilitator says: What else does the baby need?

Participant says: She should receive IV antibiotics and be warmed.

Facilitator says: Fluids and antibiotics are given. She is placed in skin to skin contact with her mother.

Facilitator says: What should you do next?

Participant says: Re-evaluate the baby’s condition.

Facilitator says: The infant’s respiratory rate has slowed and the retractions have improved. Her hands and feet are warm.

Teaching points
- Evaluate and treat emergency signs in the appropriate sequence (respiratory distress, dehydration, hypothermia).
- Re-evaluate patient after each intervention.
- Importance of warming and hydration.

Case #5: Infant with focal infection

Learning objectives for Case #5:
- Understand the importance of evaluating neonates.
- Recognize a serious focal infection as a danger sign.
- Rapidly evaluate infant for associated emergency signs.
- Initiate treatment.

Facilitator says: Two toddlers are brought to the clinic for a routine visit. Their mother is nursing their 6 day old brother as you begin the visit.
Facilitator says: What should you ask the mother about the neonate?

Participant says: Ask about the infant’s general condition and the circumstances of his birth. Identify risk factors for infection.

Facilitator says: The infant was born at home. The birth was unattended. The mother and baby have been doing well.

Facilitator says: What should you do next?

Participant says: Ask permission to examine the infant.

Facilitator says: The baby wrapped in a blanket against his mother’s chest. He is nursing vigorously. He is breathing comfortably. His hands and feet are warm.

Facilitator says: What should you do next?

Participant says: Ask the mother to unwrap the infant.

Facilitator says: There is purulent, foul-smelling drainage from the umbilical stump. There is a 4 cm area of redness and warmth in the skin around the umbilicus.

Facilitator says: What is the infant’s condition?

Participant says: Emergency. The infant has a serious bacterial infection.

Facilitator says: What should you do next?

Participant says: The baby should be thoroughly evaluated and should receive IV antibiotics.

Teaching points
- Importance of evaluating neonates.
- Significance of a focal infection, even in a well-appearing neonate.