Facilitator instructions for case scenarios: ETAT module 3, circulation

1. Preparation
   a. Review learning objectives and case scenarios
   b. Review ETAT content that is illustrated in the scenarios
   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)
   a. Manikin for selecting sites for IV placement and performing intraosseous vascular access
   b. 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 Module 3.
      • Accurately assess circulation in a child.
      • Reliably identify signs of shock in a child.
      • Understand the significance of severe acute malnutrition for the management of shock.
      • Manage a shocked child (with and without severe acute malnutrition) with appropriate fluids and volumes.
      • Demonstrate where and how to achieve vascular access in a child.
      • Achieve intraosseous vascular access.

   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 Module 3, Circulation

Case # 1 Shock, well-nourished (IV)

Learning Objectives of Case Scenario #1

• Accurately assess circulation in a child.
• Reliably identify signs of shock in a child.
• Understand the significance of severe acute malnutrition for the management of shock
• Manage a shocked child without severe acute malnutrition with appropriate fluids and volumes

Facilitator says: A 7 month old boy has had diarrhea for two days. His mother brings him to the clinic today because she cannot wake him up.

Facilitator says:  What signs should you look for?

Participant says: Airway, breathing, circulation.

Facilitator says: He is moaning quietly (airway is patent). Breathing pattern is regular, without chest indrawing. His hands and feet are cool, capillary refill is 4 seconds, you cannot feel a radial pulse.

Facilitator says:  What is the child’s condition? What should you do?

Participant says: He is in shock. Give oxygen, keep warm, evaluate for severe malnutrition, and restore volume.

Facilitator says: There is no wasting and he does not have pedal oedema.

Facilitator says:  How should you restore volume?

Participant says: Weigh him. Establish IV access. Give Ringer’s lactate (or normal saline), 20 mL/kg.

Facilitator says: You do not have a scale available to weigh him. You are able to get a peripheral IV.
Facilitator says: What is the total volume of fluid he should receive for the first bolus? How will you deliver the bolus?

Participant says: He should receive 150 mL (chart 7, page 73). Draw up volume in aliquots (use the largest syringe that you have) and deliver each aliquot by IV “push-pull” method.

Facilitator says: Discuss and demonstrate drawing up and delivering bolus.

Participant demonstrates drawing up and delivering bolus by “push-pull” method

Facilitator says: The infant received 150 mL of Ringer’s lactate over 20 minutes.

Facilitator says: What should you do next?

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

Facilitator says: He continues to moan but is more alert (airway patent, improved mental status). Breathing is unchanged. His hands and feet are cool, capillary refill is 4 seconds, there is a faint radial pulse.

Facilitator says: What should you do next?

Participant says: Administer a second bolus of 20 mL/kg Ringer’s lactate. Evaluate for other conditions (hypoglycemia, sepsis).

Teaching points

- Identify signs of shock
- Evaluate for severe malnutrition
- Figure out how you can measure and deliver the bolus accurately in your clinical setting
- Re-evaluate

Case # 2 Shock, Severe Acute Malnutrition
Learning Objectives of Case Scenario #2

• Accurately assess circulation in a child.
• Reliably identify signs of shock in a child.
• Understand the significance of severe acute malnutrition for the management of shock
• Manage a shocked child with severe acute malnutrition with appropriate fluids and volumes

Facilitator says: The security guard rushes into the treatment room carrying a 15 mo girl. She is limp and poorly responsive. Her mother tells you that she has had diarrhea for two days and became unresponsive this morning.

Facilitator says: What should you do next?

Participant says: Assess airway, breathing, and circulation.

Facilitator says: She is barely responsive (altered mental status). Breathing is quiet, without chest indrawing (airway is patent). Her hands and feet are cool, capillary refill is 5 seconds, you cannot feel a radial or femoral pulse.

Facilitator says: What is the child’s condition? What should you do?

Participant says: She is in shock. Give oxygen, keep warm, evaluate for severe malnutrition, and restore volume.

Facilitator says: She has severe muscle wasting and there is bipedal oedema.

Facilitator says: What is the child’s condition? What should you do?

Participant says: She has severe malnutrition and is in shock.

Can she drink?

Facilitator says: She is unresponsive and her mouth is full of vomit.
**Facilitator says:** What should you do now?

**Participant says:** Establish IV access. Give 15 mL/kg of D5 Ringer’s lactate or D5 1/2 Strength Darrow’s solution over one hour. Monitor heart rate and respiratory rate every 5 minutes.

**Facilitator says:** After about 20 minutes of IV fluid, her heart rate has increased by 20 beats/minute and her respiratory rate has increased.

**Facilitator says:** What is the child’s condition? What should you do now?

**Participant says:** She is going into heart failure. Stop IV fluid. Give ReSoMal by nasogastric tube, 5 mL/kg every 30 minutes for 1 ½ hours.

**Teaching points**

- Evaluate for severe malnutrition
- Give fluid for patients with SAM
- Recognize patients with SAM who deteriorate while receiving IV fluid
- Give oral fluids to patients with shock and SAM

**Case # 3 Shock, well-nourished (no vascular access)**

**Learning Objectives of Case Scenario #3**

- Accurately assess circulation in a child.
- Reliably identify signs of shock in a child.
- Understand the significance of severe acute malnutrition for the management of shock
- Manage a shocked child without severe acute malnutrition with appropriate fluids and volumes
- Manage a shocked child without vascular access

**Facilitator says:** A 3 year old boy collapses at the registration desk. The triage nurse and clerk bring him into the treatment room.
**Facilitator says:** What should you do next?

**Participant says:** Assess airway, breathing, and circulation.

**Facilitator says:** He is moaning (altered mental status, airway patent). Breathing is quiet, without chest indrawing. His hands and feet are cool, capillary refill is 4 seconds, you cannot feel a radial pulse.

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**Facilitator says:** What is the child’s condition? What should you do?

**Participant says:** He is in shock. Give oxygen, keep warm, evaluate for severe malnutrition, and restore volume.

**Facilitator says:** There is no wasting and he does not have pedal oedema.

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**Facilitator says:** How should you restore volume?

**Participant says:** Weigh him. Establish IV access. Give Ringer’s lactate (or normal saline), 20 mL/kg.

**Facilitator says:** You do not have a scale available to weigh him. After 10 minutes and multiple attempts, you cannot start an IV.

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

**Participant says:** Attempt to place an IO.

**Facilitator says:** There are no IO needles at your facility.
**Facilitator says:**  What should you do now?

**Participant says:** Consider giving fluids via NG tube.

**Teaching points**

- Risks of placing NG tube and giving oral fluids