Pediatric Emergency Medicine Simulation Curriculum:
Septic Shock Scenario

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1. Instructor Contact Information

Jennifer R. Reid, MD  
Assistant Professor  
Department of Pediatrics, Division of Emergency Medicine  
Seattle Children’s Hospital  
Mail-stop B-5506  
4800 Sand Point Way NE  
Seattle WA 98105  
Email: jennifer.reid@seattlechildrens.org  
Phone: 206-987-2599

Kimberly Stone, MD, MA, MS  
Assistant Professor  
Department of Pediatrics, Division of Emergency Medicine  
Seattle Children’s Hospital  
Mail-stop B-5506  
4800 Sand Point Way NE  
Seattle WA 98105  
Email: Kimberly.stone@seattlechildrens.org  
Phone: 206-987-2599
2. Description of Scenario

Scenario Overview
This scenario teaches learners to recognize and manage pediatric septic shock.

The scenario is simulation-based with an integrated team communication focus.

Learners will participate in a simulation scenario and be asked to identify the signs and symptoms of septic shock and its management (See Appendix A).

At the end of training, the learners should be able to recognize the seriousness of the situation and recruit a full resuscitation team. The primary complication for the team to recognize and manage is hypotension with inadequate perfusion.

Educational Rationale on How the Curriculum Generalizes to Real-Life Circumstances
Septic shock continues to be a major cause of morbidity and mortality in children. Early recognition and management of severe sepsis and septic shock in the first hour of resuscitation have been shown to decrease mortality. 3,4,7

There is a spectrum of disease ranging from sepsis to severe sepsis to septic shock. Septic shock is defined by having 2 or more organ systems affected and cardiovascular dysfunction (e.g. hypotension, need for vasoactive medications, prolonged capillary refill, oliguria, and metabolic acidosis) despite > 40 mL/kg of isotonic fluid in one hour. 8

Medical providers must recognize children in septic shock early precisely because they are more likely to respond favorably to treatment. Signs of inadequate perfusion (fever, tachycardia, decreased peripheral pulses or perfusion, signs of dehydration, and altered mental status) should prompt providers to consider sepsis. Medical providers must initiate early goal directed therapy: isotonic fluid resuscitation within 60 minutes and the addition of inotropes, as needed within 60 minutes, to prevent further decompensation and cardiovascular collapse. In addition, treatment with effective antibiotics within the first hour of hypotension significantly decreases mortality. Each hour of delayed antimicrobial therapy, once hypotension has ensued, increases mortality 3,9,10

The goal of this scenario is to provide the learner with an opportunity to manage life threatening pediatric septic shock, where the correct steps need to be taken in a limited period of time.

Key elements include the primary survey, eliciting critical history (fever, signs of infection, altered mental status, potential source), recognizing the need to call for team assistance early in an event, recognizing septic shock (tachycardia, hypotension, diminished pulses, delayed capillary refill, altered mental status) and treating septic shock (rapid isotonic crystalloid administration, consider inotropic medication).

Duration of Training Session: 1 hour

Frequency of Curriculum: Goal is to have each learner experience this scenario approximately once/year. We have a non-mandatory curriculum that offers a different scenario every 2 weeks. This particular scenario is offered approximately 4 times a year to try to ensure that all our learners are exposed at least once.

Number of Trainees per Session: 5 to 10
3. Target Trainees

**Primary:** Pediatric and emergency medicine residents, fellows, faculty and nurses

**Secondary:** N/A
4. Prerequisite Knowledge and Skills

**Required background knowledge:**

- Signs and symptoms of septic shock
- Anatomy related to placement of an intraosseous line in the tibia
- Elements of primary survey (evaluation of airway, breathing, central circulation, disability and exposure) and secondary survey (complete head to toe exam)
- Knowledge of isotonic crystalloid vs. colloid fluids
- Knowledge of inotropic medications (e.g. dopamine, epinephrine, norepinephrine and their indications)
- Knowledge of antimicrobial agents (e.g. ceftriaxone, vancomycin, etc.)
- TeamSTEPPS communication terminology (See Appendix B)

**Required background skills expected in trainees prior to receiving training in the target curriculum:**

- Assessment of airway, breathing, circulation, disability and exposure
- How to provide supplemental oxygen
- How to insert an intraosseous line
- How to provide rapid administration of isotonic crystalloid fluids
- How to perform a secondary survey
5. Goals and Objectives

Goal 1: Recognition of Septic Shock
The learner will demonstrate recognition of septic shock in a safe and professional manner. (ACGME Competencies: Medical Knowledge\(^A\), Patient Care\(^B\), Interpersonal and Communication Skills\(^C\), Professionalism\(^D\), Systems-based Practice\(^E\))

**Objective 1a - Initial patient assessment** [A, B, C, D]
The learner will be expected to discuss what s/he would look for in an initial physical examination (primary survey e.g. airway, breathing, circulation, disability, exposure) and history (SAMPLE- Signs and symptoms, Allergies, Medications, Past medical history, Last meal, and Events) of any pediatric patient s/he is evaluating.

**Objective 1b – Appropriate monitoring** [A, B, C]
The learner should apply basic monitoring standards for a patient in shock (cardiorespiratory monitors, pulse oximetry, blood pressure, and temperature). S/he should obtain a patient weight or accurate estimate (e.g. Broselow-Luten Tape).

**Objective 1c - Identification of septic shock** [A, B, C]
The learner should identify signs of septic shock in history (fever, rhinorrhea, cough, decreased urine output, altered mental status) and in physical exam (fever, tachycardia, hypotension, diminished pulses, and delayed capillary refill).

Goal 2: Management of Septic Shock
The learner will treat septic shock in a safe and professional manner. (ACGME Competencies: Medical Knowledge\(^A\), Patient Care\(^B\), Interpersonal and Communication Skills\(^C\), Professionalism\(^D\), Systems-based Practice\(^E\))

**Objective 2a - Management of septic shock with supplemental oxygen** [A, B]
The learner should apply supplemental oxygen using face mask. Goal is to improve oxygen delivery to tissues.

**Objective 2b - Management of septic shock: first 15 minutes** [A, B]
The learner should administer isotonic saline or colloid either intravenously (IV) or intraosseously (IO). Push boluses of 20 mL/kg, over 5-20 min, until perfusion improves or unless rales or hepatomegaly develop. Correct hypoglycemia and hypocalcemia. Begin antibiotics.

**Objective 2c - Management of septic shock: 15-60 minutes** [A, B]
The learner should be aware that the goals of minutes 15-60 of management includes: continuing to administer isotonic or colloid fluid boluses up to and over 60 mL/kg within 60 minutes, until perfusion improves or unless rales or hepatomegaly develops, beginning inotropic medications IV/IO for fluid refractory shock, obtaining central access or airway stabilization as needed, and completion of first antibiotic dose.

**Objective 2d - Equipment setup** [A, B, C]
The learner should be able to set up the equipment required to treat a patient in septic shock: supplemental oxygen, intravenous or intraosseous access equipment.
5. Goals and Objectives

Objective 2d - *Demonstrate understanding of the relevant anatomy* \(^{[A]}\)
The learner should be able to identify pediatric anatomy necessary for intravenous or intraosseous access.

Objective 2e - *Technical skills*
The learner should position the patient for intravenous or intraosseous access. Using appropriate clean/sterile technique, the learner should insert either an intravenous or intraosseous line and administer isotonic crystalloid fluids, rapidly.

Goal 3: *Teamwork and Communication Skills*
The learner will become more skilled in the management and leadership of emergency personnel including physicians, nurses, and ancillary personnel. (*Competencies: Interpersonal and Communication Skills*\(^{[C]}\), *Professionalism*\(^{[D]}\), *System-based Practice*\(^{[E]}\))

Objective 3a – *Team structure and leadership* \(^{[C, D, E]}\)
The learner will be exposed to a full-scale high-fidelity simulation using a human patient simulator in which the learners are faced with a life threatening emergency due to septic shock. They will be expected to clearly identify (verbally or with visual cues) and maintain a team leader (orders, priorities verbally stated by team leader) and team member roles (questions, information directed to team leader).

Objective 3b – *Communication skills* \(^{[C, D, E]}\)
The learner will be required to direct available resources to manage septic shock. The team will be expected to brief at the beginning of the scenario, huddle during the scenario. The goal of briefing and huddling is to create a shared mental model, so that the team is on the same page regarding working diagnoses, treatment priorities and plan of care. S/he will coordinate, direct and communicate with a resuscitation team using directed call-out and check-back.
6. Instructor Notes

These are general “tips”. Everything in this section is included because at one time or another, we forgot to do it. The result was a suboptimal learning experience.

a. Environmental Set Up (See Section 10)
   - Try to re-create the location, look, and feel of the participants’ work environment.
   - Place simulator in a gown, diaper, etc. in order to maximize realism.

b. Pre-Simulation Introduction
   - Share a “learning contract” with participants. An example of some elements you may include: “We believe each of you is intelligent, well-trained, and doing their best” (adapted from the Center for Medical Simulation, Cambridge, MA). “We recognize this is a fictitious environment. We ask you to stretch your imagination, go beyond your comfort zone and help promote each other’s learning”.
   - Share ground rules with participants (e.g. “Treat others with respect, maintain confidentiality”).
   - Share the agenda (e.g. “We will begin with a 15 min simulation followed by a 30 min debrief.”).
   - Orient your participants (e.g. Review capabilities of simulator being used. Review location/availability of equipment/supplies. Identify facilitator to whom requests/questions should be directed during the simulation).
   - Review safety issues (e.g. correct use of defibrillator).
   - Review principles of teamwork and communication – TeamSTEPPS (See Appendix B). Review expectations of team leaders and members: take time to plan before a patient arrives (brief) and “get the team on the same page” (huddle).

c. Scenario Notes
   - A “trigger” is a critical time or event that signifies the start or end of an Stage in the scenario. These are the critical steps that help the scenario progress. Please review these prior to conducting your session.
   - Prompts. Sometimes learners get stuck- miss a physical exam finding, critical piece of history or don’t know/fail to implement a critical action that’s needed to help the team meet a learning objective or advance to the next stage. When this happens, the facilitator, who is actively monitoring the team’s progress, may choose to ask a question, state a que or have a third party “drop a critical hint” to mobilize the team towards meeting the objectives. The instructor needs to balance “keeping the team from failing to met the learning objectives” with the team’s opportunity to work through a problem. Careful not to shift it from self-discovery to a lecture!

d. Debriefing (See Appendix C)
   - Remember: Try to have participants step away from the simulator, into a different space (e.g. chairs in a circle or separate room). This physical cue helps participants shift from “doing” - a clinical focus to “reflecting” - a learning focus.
   - Remind participants that the debriefing time is intended to focus on the group’s performance.

e. Learner considerations
   - Each group of learners’ needs will vary. Thus, we have included a range of potential objectives, which can be tailored to suit different learner groups. E.g. for our less
6. Instructor Notes

experienced clinical providers, we focus more on the medical decision making goals. For our more advanced providers, we focus more on the team work and communication goals.

- If you are instructing more experienced learners, consider “titrating” the learning objectives. E.g. for learners that have limited medical knowledge, one dose of epinephrine IM will be all that we require to move them from Stage 2 to Stage 3. For experienced providers, they need to administer at least 2 doses of epinephrine, place an IV, ordered steroids, diphenhydramine, ranitidine, fluids and be preparing to intubate before we will advance from Stage 2 to Stage 3.

- If you are instructing more experienced learners, consider “titrating” the scenario’s signal to noise ratio. E.g. for resident learner groups, we will run the scenario as written. For those with more experience, we might add more “noise”. This could be an actor playing the role of a parent who gives less history, is crying or questioning the team.

- Participants. The most realistic and richest learning experiences occur when all the participants are performing their “normal” roles. E.g. physician functions as physician, nurse as a nurse, respiratory therapist as a respiratory therapist. If your learner group does not contain the full spectrum of “normal team members”, you may have to either ask some participants to function in different roles or provide “actors” to fill the necessary roles. Recognize that realism is going to be lost and learning opportunities missed. E.g. If the group is all physicians, none of your learners may have drug measuring/administration experience. As an instructor, you will need to make decisions on how much you want them to do to “get credit” and be able to advance to the next Stage in the scenario. Is it enough to be able to order the drug? Do they need to find the vial? Draw it up? Administer it to the simulator? Your answer should be driven on helping your learners to achieve the learning objectives.

- This scenario is part of the Pediatric Emergency Medicine Simulation Curriculum. The curriculum includes didactic sessions, skills sessions, and patient based education on topics ranging from septic shock to resuscitation skills to communication and teamwork. In addition, it includes several simulation scenario modules, presented on a rotating basis. We are in the process of submitting all of the scenario modules to MedEdPORTAL.
Common Errors and Prevention/Intervention Strategies:

a. **Failure to recognize septic shock.**
   *Strategy:* Review signs of septic shock: fever, signs of infection, tachycardia, hypotension, diminished pulses, delayed capillary refill, cool/dusky/pale skin/extremities and altered mental status.

b. **Failure to treat septic shock.**
   *Strategy:* Review treatment for septic shock: rapid fluid and antibiotic administration.

c. **Failure to provide supplemental oxygen.**
   *Strategy:* Review goal of supplemental oxygen: to improve oxygen delivery and meet metabolic demand, preventing progression to cardiac arrest. This is not dependent on measured oxygen saturation. Review equipment available for oxygen administration.

d. **Failure to achieve timely intravenous or intraosseous access.**
   *Strategy:* Review anatomy, equipment and process for insertion of IV/IO. Review goal to achieve IV/IO access within 90 seconds.

e. **Failure to rapidly administer intravenous or intraosseous isotonic crystalloid fluids.**
   *Strategy:* Review goal of administration of isotonic saline or colloids: 60 mL/kg within 60 min minutes, 20 mL/kg boluses over 5-20 min until blood pressure is restored and tissue perfusion improved. Review equipment available to achieve this.

f. **Failure to rapidly administer effective antimicrobial therapy.**
   *Strategy:* Review goal of administration of effective antimicrobial administration within 60 minutes.

g. **Inefficient teamwork**
   *Strategy:* Review need to *brief* (discuss team roles) prior to a critical situation and *huddle* (ad-hoc planning to re-establish situation awareness) during a crisis.

h. **Inefficient communication: lack of call-out**
   *Strategy:* Review importance of directed communication:
   “Survey physician- What’s the circulation status?”

i. **Inefficient communication: lack of check-back**
   *Strategy:* Review use of closed-loop communication:
   Team Leader: “Give Normal saline, 200mL, IV push over 5 min”.
   Medication Preparation Nurse: “Normal saline, 200 mL, IV push over 5 min”.
   Team Leader: “Correct”.

7. Common Errors & Prevention Strategies

General strategies to solve the problems

- Increase knowledge base: assigned reading, lectures, teamwork and communication training
- Debriefing focused to re-evaluate critical thinking and structure planning of actions
- Teaching points based on errors
- Regular simulation training to avoid previous mistakes

Background Information for Instructors

- This scenario is one case in a larger curriculum, the Pediatric Emergency Medicine Simulation Course. The course, as a whole, has been studied in pediatric resident led resuscitation teams and shows improved team performance. A manuscript is currently in submission with more details.

- General tip: learners improve- and sustain those improvements- when they practice, practice and practice. If your goal is to improve your learners’ ability to perform pediatric emergency medicine skills, we believe it’s critical to develop sustainable opportunities for your learners to develop their skills over time. Behavioral change comes slowly.
Key methods for delivering cognitive training include the following:

- Septic shock Learner Handout (See Appendix D).
Skills Training Scenario:

Patient

| Age: 12 Months | Weight: 10 kg | Gender: Female |

Scenario: The triage nurse is bringing back an “ill-appearing” child. She/he has not obtained vitals: the patient is initially fully clothed and not on monitors. The patient is initially febrile and listless. Anticipated interventions include primary assessment and attempted IV access. The patient is in severe sepsis then progresses to septic shock. Anticipated interventions include IV placement, fluid rehydration, presumptive antibiotic treatment and laboratory evaluation. The patient improves with IV fluid rehydration.

Learning Objectives:

1. Recognize septic shock
   a. Initial patient assessment
      i. SAMPLE history, initial physical
   b. Appropriate monitoring
      ii. Heart & respiratory, oximetry, blood pressure, temperature
   c. Identification of septic shock
      iii. Signs: fever, warm shock (bounding pulses), Cold shock (inadequate perfusion - mottling, prolonged capillary refill, hypotension, widened pulse pressure),

2. Manage septic shock
   a. Supplemental 100% oxygen (regardless of saturation)
   b. Obtain IV/IO access
   c. Goal: IV/IO fluid (normal saline or lactated ringers) resuscitation 60+ ml/kg within 60 minutes to restore perfusion

Learning Objectives continued:

d. Goal: Broad spectrum antibiotic administration within 60 minutes

e. Equipment set-up
   i. Oxygen, intravenous or intraosseous access
f. Demonstrate anatomy
   i. Demonstrate anatomy for IV/IO access
   g. Demonstrate technical skills for IM, IV or IO placement

3. Teamwork skills
   a. Team structure and leadership
      i. Determine and indicate team leader and member roles
   b. Communication skills
      i. Brief prior to starting the scenario
      ii. Huddle as needed during the scenario
      iii. Utilize directed communication
      iv. Utilize check-back for closed loop communication

Facilitator Notes:

Give team intro outside the simulation area. Patient is initially clothed, no triage vitals except for weight, not on monitors.

PMH: (If asked): 2 day history of fever, rhinorrhea, cough, and decreased activity. Last wet diaper 12 hrs ago. Previously healthy. No travel, ill contacts. Full term. No meds. NKDA. IUTD.

Scenario Intro:

ED: You are working in the ED when the Triage Nurse tells you she just put Maria, an ill-appearing 12 month old girl, in the resuscitation room. She had 2 days of fever and is listless. Her weight is 10 kg.
9. Skill Training

Prelude: 0-3 min

Give team the scenario intro outside the simulation area. You may answer any questions (if asked) which include the past medical history (PMH). Give them up to three minutes to plan: decide on roles, priorities, organizational elements before entering the simulation area.

Stage 1. Severe sepsis: 3-5 minutes, maximum

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<tbody>
<tr>
<td>Spo2</td>
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</tr>
<tr>
<td>BP</td>
<td>97/55</td>
</tr>
<tr>
<td>RR</td>
<td>44</td>
</tr>
<tr>
<td>Temp</td>
<td>38.9</td>
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Technologist Information

Soft crying, intermittent through Stage.

Clear breath sounds, shallow. After 2 min → Go to Act 2

Teaching Objectives

Recognize severe sepsis, progression to septic shock

Manage septic shock
- Oxygen
- Request IV
- Consider IO
- IVF bolus
- IV antibiotics

Core skills
- Primary Survey

Instructor Information

Exam (If asked):
Withdraw to pain mottled, CR 3-4 sec no hepatosplenomegaly

Responses:

1st IV attempt fails
Obtains IV access on 2nd try or IO

After 2nd IV attempt or IO or at 2 min → Go to Stage 2

Stage 2. Septic Shock: 5-10 minutes, maximum

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<tr>
<td>BP</td>
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<td>RR</td>
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<tr>
<td>Temp</td>
<td>38.9</td>
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Technologist Information

Stops crying.
BP falls: 64/32 weaker pulse
After 1st bolus: BP 68/38
After 2nd bolus: BP 72/45
After 3rd bolus: BP 80/48

If order/start 3rd bolus → Go to Act 4
If do not order 3rd bolus by maximum time for this stage → Go to Stage 3

Teaching Objectives

Manage septic shock
- 100% oxygen
- IV/IO access
- Bolus #1
- Bolus #2
- Bolus #3
- IV antibiotics

Core skills
- Secondary survey
- Reassess after boluses

Instructor Information

Exam (If asked):
Mottled to elbows and knees CR 5 unresponsive to pain

Responses:

1st IV attempt fails. 2nd IV attempt successful.
If call out correct landmarks, IO obtained.
If give 1st bolus: BP 68/38, CR 5
9. Skill Training

Optional Stage 3. Worsening Septic Shock: 10-15 minutes, maximum

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<td>BP</td>
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<td>RR</td>
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<td>Temp</td>
<td>38.9</td>
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Technologist Information
- No crying.
- Petechiae appearing on extremities.
- Weaker pulse

Teaching Objectives
- Manage septic shock
  - 100% oxygen
  - IV/IO access
  - Bolus #3
  - IV antibiotics
- Core skills
  - Reassess after boluses

Instructor Information

Exam (If asked):
- Mottled to elbows and knees
- CR 5
- New petechiae appear scattered on upper and lower extr
  unresponsive to pain

Responses:
- If give 3rd bolus: BP 80/48, CR 3-4
- If request bedside glucose: 62
- If finish 3rd bolus or reach max time → Go to Stage 4
- If requested, all labs pending.

Stage 4. Resolution: 2 minutes total, maximum

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<tr>
<td>BP</td>
<td>80/48</td>
</tr>
<tr>
<td>RR</td>
<td>28</td>
</tr>
<tr>
<td>Temp</td>
<td>38.5</td>
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After 3rd bolus: BP 80/48
If finish 3rd bolus or reach max time → Go to Stage 4

If requested, all labs pending.
9. Skill Training

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<tr>
<th>Technologist Information</th>
<th>Teaching Objectives</th>
<th>Instructor Information</th>
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<tr>
<td>All vital signs normalizing&lt;br&gt;Cries softly&lt;br&gt;After 2 min → end scenario</td>
<td>Manage septic shock&lt;br&gt;• Bolus #3&lt;br&gt;• IV antibiotics&lt;br&gt;Core Skills&lt;br&gt;• Secondary survey</td>
<td>Exam (if asked):&lt;br&gt;Mottled hands and feet&lt;br&gt;CR 3 sec&lt;br&gt;Responses:&lt;br&gt;• After 2 min in this stage → end scenario</td>
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<td>Temp remains 38.9 unless they give Tylenol → 37.8</td>
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Below are examples of learning objective based statements & questions you may use to debrief the team. Please see Appendix C- Debriefing Overview for general recommendations on debriefing format.

### Examples of debriefing for different Learning Objectives

#### Resuscitation Skills

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<tr>
<th>Debrief Script</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
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<tr>
<td>Let’s talk about a core resuscitation skill: the primary survey. It consists of the ABCDE’s. I heard A, B, C... evaluated out loud. I am pleased/concerned because the info in the primary survey helps you identify critical information quickly. • Why do you think (A, B ... were called out but not D/E or you called them all out)?</td>
<td>Review ABCDE’s&lt;br&gt;• Assess airway: patency&lt;br&gt;• Assess breathing: labored, comfortable, breath sounds, clear/wheeze/crackles&lt;br&gt;• Assessing circulation: central pulses, capillary refill/mottling, HR, BP&lt;br&gt;• Assess disability: AVPU, dextrose&lt;br&gt;Assess environment: temp, expose pt</td>
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#### Secondary Survey

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<thead>
<tr>
<th>Debrief Script</th>
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<tr>
<td>I noticed that you did / did not complete a secondary survey. That’s great/ problematic since the secondary survey helps assure the entire patient has been examined. • What happened to ensure/prevent that from happening?</td>
<td>Review elements of a secondary survey&lt;br&gt;• SAMPLE history&lt;br&gt;• Head – to- toe exam to help differentiate differential diagnosis</td>
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#### Supplemental Oxygen

<table>
<thead>
<tr>
<th>Debrief Script</th>
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<tr>
<td>I noticed that you did / did not give supplemental oxygen. That was great/could have helped the</td>
<td>Review uses of supplemental oxygen&lt;br&gt;Review types of supplemental</td>
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### 9. Skill Training

<table>
<thead>
<tr>
<th>Vascular Access</th>
<th>Oxygen</th>
<th>Instructor Notes</th>
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<tr>
<td>An important resuscitation skill is knowing when and how to obtain vascular access. I noticed that you had one/multiple peripheral IVs. That was great/potentially problematic since rapid vascular access is critical to improving outcomes.</td>
<td>• Review types of vascular access  • Emphasize having more than one site of access in a patient with shock</td>
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<tr>
<td>• What made/prevented that from happening?</td>
<td>• What did you think about your vascular access?</td>
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<table>
<thead>
<tr>
<th>Recognizing Septic Shock</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
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<tr>
<td>This patient had septic shock. Both the history and physical had signs and symptoms consistent with septic shock. I noticed in the history that the patient had fever and listlessness.</td>
<td>Review signs/symptoms of septic shock  • Fever  • Tachycardia  • Weak pulses, delayed CR  • Inadequate end organ perfusion* (depressed mental status-listless, lethargy, oliguria)  • Hypotension  • Petechia/purpura</td>
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<td>• What other symptoms did you notice?</td>
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<table>
<thead>
<tr>
<th>Manage Septic Shock</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Let’s talk about treating septic shock. I noticed that boluses were given (quickly/took a long time). I thought this was (great/concerning) because rapid IVF is the key to treating septic shock.</td>
<td>This is so critical! The literature shows a direct link between delayed fluids, delayed antibiotics, delayed inotropes and increased mortality on an HOURLY basis. So you want to start treatment FAST.  • Support shock: Oxygen  • IV or IO fluids: NS or LR  • Bolus 20 ml/kg within 5-20 min  • Repeat boluses as need goal 60mL/kg within 1st hour  • Antibiotics-broad spectrum (e.g. Ceftriaxone) within 60 min  • Consider early inotropes (e.g.</td>
<td></td>
</tr>
<tr>
<td>• What were you thinking at the time?  • Has anyone had a patient with septic shock? How did you determine if your patient had</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

*Hypotension*
### 9. Skill Training

<table>
<thead>
<tr>
<th>Septic Shock?</th>
<th>Dopamine, epinephrine or norepinephrine if not fluid responsive after isotonic fluids 40 mL/kg in less than 60 min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I noticed that you did/did not give antibiotics. This is great/could have happened earlier.</td>
<td></td>
</tr>
<tr>
<td>- How did you come to the decision to give/ not give antibiotics?</td>
<td></td>
</tr>
</tbody>
</table>

#### Examples for debriefing different Teamwork Learning Objectives

<table>
<thead>
<tr>
<th>Roles and Responsibilities</th>
<th>Debrief Script</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Let’s talk about how you functioned as a team.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It looked like you did/did not have a clear team leader and defined team roles. I think this is great/concerning because clear team roles can help a team function smoothly- improving how quickly interventions take place and reducing errors.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- What did you think about your roles?</td>
<td>Team leader</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- What worked well?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- What could have been better?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Brief and Huddle

<table>
<thead>
<tr>
<th>Debrief Script</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I noticed that your team (did/didn’t/took a while to) (brief prior to the patient’s arrival/huddle after the initial evaluation). I thought this was (great/could have helped you work better as a team).</td>
<td>The goal of a brief/huddle is to create a shared mental model. Assure all team members know what the working diagnosis is, treatment priorities and next steps in care.</td>
<td></td>
</tr>
<tr>
<td>- What (helped/hindered) your team from (briefing/huddling)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- How did that impact your team?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- What could your team have</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 9. Skill Training

<table>
<thead>
<tr>
<th>Directed call out</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I noticed that you (did/didn’t/intermittently) used (peoples names/roles/eye contact) when (calling out orders/asking for assistance). I thought this was (great/could have been more directed).</td>
<td>Directed call out. A tactical communication skill to assure that important orders/questions are specifically directed to one individual (rather than called out into the air).</td>
<td>Example:</td>
</tr>
<tr>
<td>• What did you think about orders/questions that were asked?</td>
<td>• “Jennifer-What’s the airway status?”</td>
<td></td>
</tr>
<tr>
<td>• How did this impact your team?</td>
<td>• “Kim- Give epinephrine .3mg IM”</td>
<td></td>
</tr>
<tr>
<td>• What would you Directed call out.</td>
<td>• “Team leader- we lost the pulse”</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Closed loop communication/Check back</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I noticed that you used closed-loop communication (consistently/a lot/rarely). Closed-loop communication can be critical for catching errors and assuring that (information/an order/a request) is heard.</td>
<td>Closed loop communication/check back is a strategy that requires verification of information. This enables the sender of the message to verify it has been heard, and heard correctly. It enables the receiver to confirm what they heard is correct.</td>
<td>Example:</td>
</tr>
<tr>
<td>• What did you notice about your communication loops?</td>
<td>• Team leader “epinephrine .3 mg IM”</td>
<td></td>
</tr>
<tr>
<td>• How did that impact your team?</td>
<td>• Medication preparation nurse “epinephrine .3 mg IM”</td>
<td></td>
</tr>
<tr>
<td>• Has anyone seen problems with this in a patient resuscitation?</td>
<td>• Team leader “correct”</td>
<td></td>
</tr>
<tr>
<td>• Has anyone seen closed loop communication prevent an error?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• How could you do it differently next time?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
10. Equipment Set-up

Simulation Environment preparation

Before each simulation, ensure the anticipated resuscitation equipment is available for the team’s use.

Resources

- PALS reference cards, material
- Patient Weight Estimator (e.g. Broselow tape)
- Pediatric Resuscitation Medication references (e.g. Broselow tape, reference cards)
- Documentation forms

Universal Precautions

- Staff gowns
- Gloves
- Mask and face shields

Medications (consider having all or only a limited number of medications available)

- Adenosine
- Amiodarone
- Antibiotics (e.g. ceftriaxone, vancomycin, gentamicin, etc.)
- Atropine
- Etomidate
- Fentanyl
- Ketamine
- Lidocaine
- Midazolam
- Normal Saline/Lactated Ringers
- Rocuronium
- Succinylcholine
- Epinephrine 1:10,000

Equipment

- Simulator in hospital gown, on bed
- Monitor – NIBP, HR, RR, Oxygen saturation, temperature
- Blood Pressure cuff, Heart Rate monitor leads, Oxygen saturation probe, defibrillator cables
- Oxygen hook-up on wall or cylinder
- Bag-mask system, multiple size masks
- O2 Mask, simple and/or non-rebreather
- Suction
- Thermometer
- Temperature probe
- Nasal, oral airways, multiple sizes
- Shoulder roll
- Endotracheal tubes- 3.0, 3.5, 4.0, 4.5, 5.0, cuffed or uncuffed, stylets
10. Equipment Set-up

Equipment Cont’d

- Laryngoscope, Miller and Mac blades, multiple sizes
- End-tidal CO2 colorimeter
- Nasogastric tube(s)
- Stethoscopes
- IV/Angiocaths, various sizes
- IO needles, 2 sizes
- Gauze, Tape
- IV tubing
- IV pumps, pressure bags
- 3 way stopcocks
- Syringes, multiple sizes
- Bedside blood sample processors: glucose, electrolytes, gases
- Specimen tubes
- Crash cart & backboard
- Defibrillator
11. Assessment Methods

Type(s) of Assessment Methods Used in This Scenario:

☐ Pre-test Only
☐ Pre-test & Post-test
☐ Post-test Only

☑ Medical Management Evaluation/Debriefing Form (Appendix E)
☑ Teamwork and Communication Evaluation/Debriefing Form (Appendix F)
☑ Simulation Session Evaluation (Appendix G)
## 12. Appendices

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<th>Description</th>
</tr>
</thead>
<tbody>
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<td>Appendix A</td>
<td>Pediatric Septic Shock Scenario Algorithm</td>
</tr>
<tr>
<td>Appendix B</td>
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<tr>
<td>Appendix C</td>
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<td>Learner Handouts</td>
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<tr>
<td>Appendix E</td>
<td>Pediatric Septic Shock Medical Management Evaluation/Debriefing Form</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Pediatric Septic Shock Teamwork and Communication Evaluation/ Debriefing Form</td>
</tr>
<tr>
<td>Appendix G</td>
<td>Pediatric Septic Shock Simulation Session Evaluation Form</td>
</tr>
<tr>
<td>Appendix H</td>
<td>References</td>
</tr>
</tbody>
</table>
Appendix A: Scenario Algorithm

**Scenario Timeline**

**Prelude:**
- Timer: 0-3 min
- Introduction and team brief
- Triage history

**Act 1: Severe Sepsis**
- Timer: 3-5 min
- Triggers: Start 3 min into scenario.
- End: 5 min into scenario

**Vital Signs**
- Rhythm: sinus
- HR: 175 bpm
- BP: 97/55
- SAT: 99%
- RR: 44/min
- Temp: 38.9°C

**Facilitator Information**
- Allow team to brief outside the simulated patient care area
- If requested, additional history available.

**Act 2: Septic Shock**
- Timer: 5-10 min
- Triggers: Start 5 min into scenario.
- End: After 3rd fluid bolus or 10 min into scenario

**Vital Signs**
- Rhythm: sinus tachycardia
- HR: 195 bpm
- BP: 69/52
- SAT: 98%
- RR: 46/min
- Temp: 38.9°C

**Facilitator Information**
- Exam and additional history available if requested.
- If requested, fluids, antibiotics, inotropes are available.
- If requested, intracutaneous line is available.
- If requested, labs are "pending".

**(Optional) Act 3: Worsening Septic Shock**
- Timer: 10-15 min, maximum
- Triggers: Without 3rd fluid bolus by 10 min, mark.
- End: After 3rd bolus or 15 min into scenario

**Vital Signs**
- Rhythm: sinus tachycardia
- HR: 160 bpm
- BP: 59/28
- SAT: 98%
- RR: 48/min
- Temp: 38.9°C

**Facilitator Information**
- Exam available, if requested.
- If requested, all labs are pending.

**Act 4: Resolution**
- Timer: 15-17 min, maximum
- Triggers: Start after 3rd fluid bolus is complete or 15 min into scenario.
- End: 17 min into scenario

**Vital Signs**
- Rhythm: sinus tachycardia
- HR: 142 bpm
- BP: 80/48
- SAT: 98%
- RR: 28/min
- Temp: 38.6°C

**Facilitator Information**
- Patient symptoms resolving
- If requested, additional medications available, consultants en route.
# Appendix B: TeamSTEPPS References

## Teamwork and Communication (TeamSTEPPS) Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptability</td>
<td>The ability to adjust strategies and altering a curriculum of action in response to changing conditions (internal and external).</td>
</tr>
<tr>
<td>Brief</td>
<td>Discussion prior to start that assigns essential roles, establishes expectation, anticipated outcomes and likely contingencies.</td>
</tr>
<tr>
<td>Call-Out</td>
<td>A tactic used to communicate critical information during an emergent event. Helps the team prepare for vital next steps in patient care. (Example: “Airway status?” – “Airway clear”; “Breath sounds?” – “Breath sounds decreased on right”)</td>
</tr>
<tr>
<td>Check-Back</td>
<td>A communication strategy that requires a verification of information. The sender initiates the message; the receiver accepts it and restates the message. In return, the sender verifies that the re-statement of the original message is correct or amends if not. (Example: “Give Benadryl 25 mg IV push” – “Benadryl 25 mg IV push” – “That’s correct”)</td>
</tr>
<tr>
<td>CUS</td>
<td>Signal phrases that denote “I am Concerned, I am Uncomfortable, This is a Safety Issue.” When spoken, all team members will understand clearly not only the issue but the magnitude of the issue.</td>
</tr>
<tr>
<td>Debrief</td>
<td>Brief, informal information exchange session designed to improve team performance and effectiveness.</td>
</tr>
<tr>
<td>DESC Script</td>
<td>A technique for managing and resolving conflict. Describe the specific situation or behavior; provide concrete data. Express how the situation makes you feel/what your concerns are. Suggest other alternatives and seek agreement. Consequences should be stated in terms of impact on established team goals; strive for consensus.</td>
</tr>
<tr>
<td>Huddle</td>
<td>Ad hoc planning to re-establish Situation Awareness; designed to reinforce plans already in place and assess the need to adjust the plan.</td>
</tr>
<tr>
<td>SBAR</td>
<td>A framework for team members to structure information when communicating to one another. S = Situation (What is going on with the patient?) B = Background (What is the clinical background or context?) A = Assessment (What do I think the problem is?) R = Recommendation (What would I do to correct it?)</td>
</tr>
<tr>
<td>Shared Mental Model</td>
<td>An organizing knowledge structure of relevant facts and relationships about a task or situation that are commonly held by team members</td>
</tr>
<tr>
<td>Situation Awareness</td>
<td>The ability to identify, process, and comprehend the critical elements of information about what is happening to the team with regards to the mission. It’s knowing “What is going around you” and “What is likely to happen next”.</td>
</tr>
<tr>
<td>Situation Monitoring</td>
<td>The process of actively scanning and assessing elements of the situation to gain information or maintain an accurate awareness or understanding of the situation in which the team functions.</td>
</tr>
<tr>
<td>Two-Challenge Rule</td>
<td>Assertively voicing concern at least two times to ensure it has been heard.</td>
</tr>
</tbody>
</table>
Appendix C: Debriefing Overview

Simulation creates the opportunity to debrief. We believe that the focus of each simulation should be the DEBRIEF. Simulation creates the opportunity to examine our medical management, technical skills and teamwork and communication skills. It facilitates discussion about challenges in a safe environment in order to improve the quality of patient care.

Framework for debriefing:
- Each debrief should consist of 4 components:
  - Introduction
  - Opportunity to discuss emotions
  - Discussion of medical management and technical skills
  - Discussion of teamwork and communication skills

1) Introduction
This “sets the stage” for debriefing and creates expectations.
What you might say:
- This is an opportunity to reflect and learn, improve our medical care, team work, and communication.
- Everyone should be able to ask questions and share their thoughts.
- Once you leave this session, we encourage open discussion of the concepts, but ask you to not to discuss individual performance.

2) Emotional experience discussion
There are a couple of camps regarding discussing emotions. One perspective is that until emotions are dealt with, it’s difficult for adult learners to “move on”: switching gears to process thoughts, actions and opportunities for improvement. Another perspective is that adult learners should process their emotions independently.

Our perspective is the first. If a group or team member is emotionally charged (sad, mad or frustrated) regarding something that did or didn’t happen in a scenario, it’s usually difficult for the individual or the group to be actively engaged, receptive to feedback and able to promote learning, until the emotions are addressed.

An example: a medication error occurs. One team member may think it is all his/her fault. S/he may feel embarrassed, judged, etc. If he/she can verbalize this, other team members may offer different perspectives, which enable the team to process the error together, potentially identifying contributing systems issues. If the emotions aren’t addressed- 3 separate people may feel embarrassed, responsible and not engage in a discussion, failing to identify systems issues which led to the error.
What you might say:
- How did that feel?
- Can you tell me more? Why?
Appendix C: Debriefing Overview

3) Medical management and technical skills
   This portion of the discussion focuses on the medical aspects of the case. It’s usually more comfortable to begin with these “facts”.

   What you might say:
   • Let’s discuss medical management.
   • What did you think was wrong with the patient? Can someone briefly summarize what happened in this scenario?
   • How did you reach those conclusions?

4) Teamwork and communication (a. k. a. crew resource management, non-technical skills, human factors)
   This portion of the discussion focuses on how the team worked together. It can be emotionally charged and difficult to discuss without feeling personal. The challenge is to try to generalize specifics into themes.

   What you might say:
   • Let’s talk about how you functioned as a team.
   • What did your team do well?
   • What could your team do differently next time?
   • That is something I see often. Has anyone else experienced that? How have you seen that handled?

4) Summarizing
   • This is your opportunity to ensure the key learning points are highlighted
   • Ask the participants to identify approximately three take-home points (or one per learner, depending on the size of the group/time)
   • If there are critical take home points not mentioned, consider calling them out.

   Medical management/technical skills examples:
   (a) This was a case of pediatric anaphylaxis.
   (b) Signs of anaphylaxis: skin/mucous membrane changes, vomiting, respiratory distress, hypotension, inadequate end organ perfusion.
   (c) Treatment of anaphylaxis: intramuscular epinephrine, oxygen, normal saline boluses, adjunct medications, potential intubation.

   Teamwork/communication examples:
   (d) Recognize need for a full resuscitation team when a patient develops anaphylaxis.
   (e) Designate leadership and team member roles to ensure coordinated team functioning.
   (f) Use brief or huddle to create a shared mental model for the working diagnosis and treatment plan.
Appendix C: Debriefing Overview

General Debriefing Goals:
- Try to facilitate the TEAM’s discussion (avoid dominating the conversation)
- Ask open ended questions (avoid yes/no questions)
- Discuss the team performance (not the individual)
Appendix D: Learner Handouts

Septic Shock Learning Objectives

1. **Recognize Septic Shock**
   a. Signs of infection: fever, rhinorrhea, cough, vomiting, diarrhea, rash, etc.
   b. Tachycardia or bradycardia
   c. End-organ perfusion impairment:
      i. Hypotension, diminished pulses
      ii. Altered mental status – Brain perfusion
      iii. Prolonged capillary refill, skin color / temp – Skin perfusion
      iv. Oliguria or anuria – renal perfusion

2. **Manage Septic Shock**
   **Shock is a state of inadequate perfusion to meet metabolic demands.** Management priorities are:
   a. Position
   b. 100% supplemental Oxygen (face mask – simple or non-rebreather)
   c. Rapid vascular access
   d. Fluid resuscitation
      i. Types of fluid
         • Normal Saline (NS) or Lactated Ringer’s (LR)
         • Also consider colloids (refer to specific colloid dosing)
      ii. How much?
         • Start with 20 cc/kg bolus and reassess
         • Repeat as necessary, until perfusion improves.
         • If you are concerned about cardiac problems, can start with 10 mL/kg and reassess. Evaluate for rales and/or hepatomegaly.
      iii. How fast? – as fast as it will go,
         **Goal is 60+ ml/kg in 60 min or less** until perfusion improves
         • IV push with 60 or 30cc syringes
         • Pressure bag
   e. **Begin broad-spectrum antibiotics within 60 minutes**
   f. For fluid refractory shock: begin inotropes IV/IO within 1 hour. Consider dopamine, epinephrine or norepinephrine.
   g. Monitoring
      i. Pulse oximetry
      ii. Capnography, if available
      iii. Heart rate
      iv. Blood pressure
   h. Frequent reassessment
      i. Evaluate trends in the child’s condition
      ii. Determine response to therapy
      iii. Plan next treatment interventions
   i. Ancillary studies
      i. Help to work through differential
      ii. Evaluate organ dysfunction
      iii. Identify metabolic abnormalities
      iv. Evaluate response to treatment
         • Rapid glucose, calcium
         • Electrolytes, BUN, creatine
         • Blood gas
         • Lactate
         • CBC with differential
         • PT, PTT, INR, fibrinogen
         • Cultures: blood, urine, wounds as indicated
3. **Core Resuscitation Skills**

   a. Assessing circulatory status – complete assessment of circulation requires all of the following
      i. Skin color and temperature
      ii. Heart rate
      iii. Heart rhythm
      iv. Blood pressure
      v. Pulses
      vi. Capillary refill time

   b. Demonstrate IO placement
      i. Where to place them
         - Proximal tibia (Most common)
           - Medial aspect of proximal tibia, 1 to 2 cm below and avoiding the tibial tuberosity
         - Distal Tibia
           - 1 to 2 cm proximal to medial malleolus in the center of the bone
      ii. How to place standard IO needle
         - Prep the area, consider local anesthetic if does not significantly delay care
         - Grasp IO needle in dominant hand and place it on the insertion site with point angled slightly away from the joint space
           - Don’t rest the limb in your nondominant hand, as the needle may penetrate both cortices and stick you!!
         - Use firm downward pressure and rotate the needle back and forth (slight twisting) until you feel the “pop” through the cortex.
           - The needle should stand on its own
         - Remove the styllet.
         - Confirm placement.
           - Aspirate the marrow. Blood and marrow confirms the placement, but is often not obtained.
           - Infuse fluids and look for extravasation
         - Secure the IO.
      iii. How to place EZ-IO
         - Prep the area, consider local anesthetic if does not significantly delay care
         - Select needle (3-39 kg size, >39 kg or >39kg with excessive tissue)
         - Attach needle to drill base, hold in dominant hand, test drill mechanism by pulling trigger
         - Perpendicular to bone, poke needle through skin, then drilling through soft tissue and bony cortex. Apply light but steady pressure (not excessive force or twisting) until the bony cortex is penetrated (feel a slight “give”), the needle should stand on its own.
         - Remove drill base. Untwist the proximal portion of the needle off, revealing the attachment for the EZ IO tubing.
         - Attach EV IO connection tubing, which has been flushed.
         - Flush with small amount of saline and evaluate soft tissue for extravasation. Secure the IO.
      iv. Contraindications
         - Ipsilateral fracture or IO placed within 24 hrs– fluids/meds can extravasate
         - Infection – can introduce bacteria, resulting in osteomyelitis or other deep infection
         - Compartment syndrome
### Appendix E: Medical Management Evaluation/Debriefing Form

#### Pediatric Septic Shock

**Medical Management/Technical Skills**

This instructor tool identifies potential medical management /technical skill based learning objectives. Instructors may use this to “capture their thoughts” on a team’s performance during a simulation, then use it to help guide their debriefing of the team. We recommend focusing on no more than 2-3 of these issues to focus on during a given debrief.

**Assessment of ABCDE’s**

- □ Done Well
- □ Needs Work

Specific comments:

- ________________________________________________________________
- ________________________________________________________________
- ________________________________________________________________

*What did you think of the assessment of the ABCDE’s? What could you do differently?*

**Recognizing septic shock**

- □ Done Well
- □ Needs Work

Specific comments:

- ________________________________________________________________
- ________________________________________________________________
- ________________________________________________________________

*Discuss Points: What are the signs of septic shock?* tachycardia, hypotension, weak pulses, delayed capillary refill, altered mental status

**Managing septic shock**

- □ Done Well
- □ Needs Work

Specific comments:

- ________________________________________________________________
- ________________________________________________________________
- ________________________________________________________________

*Discuss Points: What’s the treatment for septic shock?* Supplemental oxygen, rapid administration of IV/IO isotonic crystalloids 20 mL/KG bolus over 5-20 min repeated until blood pressure and perfusion are restored, goal 60+ mL/kg within 60 min, antibiotics within 60 min, inotropes IV/IO for fluid refractory septic shock

**Obtaining IV/IO access**

- □ Done Well
- □ Needs Work

Specific comments:

- ________________________________________________________________
- ________________________________________________________________

*Can you describe placement of an IO line?* Tibial plateau, 2 cm below the joint line, angled away from the joint
Pediatric Septic Shock
Teamwork and Communication Evaluation

This instructor tool identifies potential teamwork based learning objectives. Instructors may use this to “capture their thoughts” on a team’s performance during a simulation, then use it to help guide their debriefing of the team. We recommend focusing on no more than 2-3 of these issues to focus on during a given debrief.

Leader/Roles Identified & Maintained  □ Done Well  □ Needs Work
Specific comments: ________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Discussion Points: What helped/hindered having clear leadership and roles? (Did team leader use verbal/visual cues to establish leadership? Did team leader say all orders/priorities? Did team members’ direct questions/info to team leader?)

Directed Call out  □ Done Well  □ Needs Work
Specific comments: ________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Discussion Points: How were orders given- “Into the air” or directed at specific individuals? How did that impact you? How could they be delivered more effectively?

Check back/Closed loop communication  □ Done Well  □ Needs Work
Specific comments: ________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Discussion Points: describe closed loop communication

Shared Mental Model  □ Done Well  □ Needs Work
Specific comments: ________________________________________________________________
______________________________________________________________________________

Discussion Points: How did team members share information/working diagnosis/treatment plan ((brief/huddle)?)
## Appendix G: Simulation Evaluation Form

### Simulation Session Evaluation Form

**Facilitator:** __________________________  **Date:** __________

**Case Presented:** Pediatric Septic Shock

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>This simulation case provided is relevant to my work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>The simulation case was realistic.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>This simulation case was effective in teaching basic resuscitation skills.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>This simulation case was effective in teaching septic shock management skills.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>The debrief was a safe environment.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>The debrief promoted reflection and team discussion.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Can you list/describe 1 or more ways this simulation session will change how you do your job?

How could we improve this session?

Comments:
Appendix H: References