Pediatric Emergency Medicine Simulation Course: Seizure Scenario

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# Resource Outline

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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 MB.7.520  
4800 Sand Point Way NE  
Seattle WA 98105  
Email: jennifer.reid@seattlechildrens.org

Kimberly P. Stone, MD, MA, MS  
Assistant Professor  
Department of Pediatrics, Division of Emergency Medicine  
Seattle Children’s Hospital  
Mail-stop MB.7.520  
4800 Sand Point Way NE  
Seattle WA 98105  
Email: Kimberly.stone@seattlechildrens.org
2. Description of Scenario

Scenario Overview
This scenario teaches learners to recognize and manage a generalized pediatric seizure.

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

Learners will participate in a simulation scenario and be asked to identify and manage the signs and symptoms of a generalized pediatric seizure (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 is respiratory insufficiency.

Educational Rationale on How the Scenario Generalizes to Real-Life Circumstances
Pediatric seizures impact children worldwide. In developed countries, the prevalence of epilepsy is 4-8 per 1,000 children. Of all children, up to 5% will have a febrile seizure before reaching age 5. Pediatric seizures include a range of different types. For this scenario, the focus is generalized pediatric seizures, which involve both hemispheres of the brain, resulting in impaired mental status and bilateral motor manifestations: tonic and clonic movements. Most generalized seizures self resolve, without complications. The acute primary complication of a generalized seizure is respiratory insufficiency.

Medical providers must recognize a generalized seizure early, when a pediatric patient is more likely to respond favorably to treatment. Medical providers must anticipate and treat the primary complication of respiratory insufficiency, to prevent additional morbidity or mortality.

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

Key elements include the primary survey, eliciting critical history (duration of seizure and potential etiologies), recognizing the need to call for team assistance early in an event, recognizing a seizure (generalized tonic clonic movements, impaired mental status) and treating a generalized seizure (oxygen, benzodiazepines, airway support).

Duration of Training Session: 1 hour

Frequency of Scenario: 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. This scenario is most realistic and achieves maximal learning, if all participants are functioning in their “normal” roles, with the same number of participants as would typically be expected. E.g.: nurses perform nursing roles, physicians perform physician roles, if a more experienced physician would normally function as the team leader, s/he plays that role in the simulation. If a response team at your institution normally consists of ~ 7 respondents that should be the target number of trainees. If necessary, trainees or confederates can “act” to cover any unfilled roles, or those roles can be left unfilled. The instructor should be aware that realism will be compromised and learning objectives may be harder to achieve if these compromises are made.
### 3. Target Trainees

<table>
<thead>
<tr>
<th>Primary</th>
<th>Pediatric and emergency medicine residents, fellows, faculty and nurses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary</td>
<td>N/A</td>
</tr>
</tbody>
</table>
4. Prerequisite Knowledge and Skills

**Required background knowledge:**
- Signs and symptoms of a generalized seizure
- Knowledge of generalized seizure treatment medications (e.g. benzodiazepines, fosphenytoin, phenobarbital, etc.)
- Knowledge of pediatric airway anatomy
- TeamSTEPPS communication terminology (See Appendix B)

**Required background skills expected in trainees prior to receiving training in the target scenario:**
- Assessment of breathing and circulation
- How to provide supplemental oxygen
- How to administer airway adjuncts (e.g. nasal or oral airways)
- How to provide bag-mask ventilation
5. Goals and Objectives

Goal 1: Recognition of a generalized seizure
The learner will demonstrate recognition of a generalized seizure. ([ACGME Competencies: Medical Knowledge], Patient Care, Interpersonal and Communication Skills, Professionalism, and Systems-based Practice)

Objective 1a – Demonstrate initial patient assessment
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 – Apply appropriate monitoring
The learner should apply basic monitoring standards for a generalized seizure (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 a generalized seizure
The learner should identify critical historical elements that could indicate the etiology of the seizure (risks for glucose or electrolyte imbalances, intracranial injury, mass, bleed, prior history of seizures, toxin exposure, medication change, central nervous system infection, fever, hyper or hypocarbia) as well as assess physical exam (bilateral tonic-clonic movement, altered mental status).

Goal 2: Management of a generalized seizure with respiratory insufficiency
The learner will treat a generalized seizure in a safe and professional manner. ([ACGME Competencies: Medical Knowledge, Patient Care, Interpersonal and Communication Skills, Professionalism, and Systems-based Practice]

Objective 2a - Treat respiratory insufficiency with a stepwise escalation of support
The learner should begin with optimal airway positioning, apply supplemental oxygen, consider using airway adjuncts (e.g. nasal airway in a patient still likely to have a gag reflex), and bag-mask ventilation if the patient is still not adequately ventilating.

Objective 2b - Treat a generalized seizure with benzodiazepines
The learner should administer benzodiazepines, in the most efficacious route they have available: intranasal, rectal, intravenously (IV) or intraosseously (IO). Goal is to treat seizures persisting ≥ 5 min as quickly as possible.

Objective 2c – Assemble and demonstrate equipment setup
The learner should be able to set up the equipment required to treat a patient in a generalized seizure: supplemental oxygen, airway adjuncts, and equipment to deliver antiepileptic medication (institutionally dependent- could be atomizer for intranasal medication if this is available to you, or IV materials if this is what you have available).

Objective 2e – Demonstrate technical skills

5. Goals and Objectives

The learner should help provide a patent airway. Using appropriate technique, the learner should position the head, neck, and jaw to promote patency. Airway adjuncts (e.g. shoulder rolls or nasal airways) may supplement positioning. For additional support, effective bag-mask ventilation may be employed.

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.

(ACGME Competencies: Medical Knowledge\textsuperscript{A}, Patient Care\textsuperscript{B}, Interpersonal and Communication Skills\textsuperscript{C}, Professionalism\textsuperscript{D}, Systems-based Practice\textsuperscript{E})

Objective 3a – Create team structure and leadership\textsuperscript{[C,D]}
The learner will be exposed to a full-scale manikin-based simulation, in which the learners are faced with a life threatening emergency due to seizure with respiratory insufficiency. They will be expected to clearly identify and maintain a team leader and team member roles.

Objective 3b – Employ effective communication skills\textsuperscript{[C,D]}
The learner will be required to direct available resources to manage seizure with respiratory insufficiency. The team will be expected to brief at the beginning of the scenario and 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 others’ 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 a 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
   - Over time, we have discovered that each group of learners’ needs vary. Thus, we have included a range of potential objectives, which can be tailored to suit different learner groups. E.g. for our less experienced clinical providers, we focus more on the medical
6. Instructor Notes

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, ordering the IV magnesium 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 albuterol, place an IV, order steroids, IV magnesium and be preparing to intubate, recruiting all the additional personnel and equipment they will need, 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 insufficient history, is crying or questioning the team (providing a distraction).

- 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.

- Impact of the curriculum. We have studied our Pediatric Emergency Medicine Simulation Curriculum as a whole, and are in the process of submitting our results for publication. We have observed that over the course of a year, our learners’ performance (in medical decision making, technical skills and teamwork) improves. There is a dose response (greater exposure, better performance).
7. Common Errors and Prevention Strategies

Common Errors and Prevention/Intervention Strategies

These are common errors we have observed over the past 4 years. In order to prevent them, apply these strategies prior to your simulation. If you observe them in your simulation learners, apply these strategies to help them improve.

a. Failure to recognize a generalized seizure.
   
   **Strategy:** Review signs of a generalized seizure: bilateral, tonic-clonic movement and impaired mental status.

b. Failure to identify potential etiologies.
   
   **Strategy:** Review etiologies of generalized seizures: fever, CNS infection, intracranial trauma or bleeds, metabolic abnormalities, medication changes, toxin exposures.

c. Failure to treat a generalized seizure.
   
   **Strategy:** Review treatment for a generalized seizure (benzodiazepines, fosphenytoin, phenobarbital).

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

e. Failure to achieve a patent, unobstructed airway.
   
   **Strategy:** Review anatomy, equipment and process for promoting a patent airway (positioning, airway adjuncts, bag-mask ventilation).

f. 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.

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

h. Inefficient communication: lack of check-back
   
   **Strategy:** Review use of closed-loop communication:
   
   Team Leader: “Give lorazepam 1 mg IV push”.
   
   Medication Preparation Nurse: “Ilorazepam 1 mg IV push”.
   
   Team Leader: “Correct”.

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
8. Cognitive Training

Key methods for delivering cognitive training include the following:

- Generalized Seizure Learner Handout (See Appendix D).
  - We recommend sharing these with your learners BEFORE your simulation, if you want them to have the information “freshly reviewed” and ready to apply, AVAILABLE DURING your simulation if you want them to have a “reference” to turn to, or AFTER your simulation, if you want them to be able to compare their actions to a reference. When you share it with them should match your educational goals and philosophy: formative, summative, etc.
9. Skill Training

Skills Training Scenario:

<table>
<thead>
<tr>
<th>Patient</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Age: 12 Months</td>
<td>Weight: 10 kg</td>
<td>Gender: Female</td>
</tr>
</tbody>
</table>

**Scenario:** You are notified that the medics are bringing in a seizing child. She was at home and started seizing 10 minutes ago. She will be arriving in 3 minutes. The child arrives seizing. Anticipated interventions include primary assessment, anti-epileptics and IV access. The patient then develops slowed, irregular breathing. Anticipated interventions include supporting ABC’s, treatment with antiepileptics, and obtaining blood tests. The patient’s seizure then resolves.

**Learning Objectives:**

1. Recognize generalized seizure  
   a. Demonstrate initial patient assessment  
      i. Elicit a SAMPLE history, perform a primary and secondary survey  
   b. Apply appropriate monitoring  
      i. Apply heart & respiratory monitors, oximetry, blood pressure, temperature  
   c. Identify generalized tonic-clonic seizure  
      i. Ask or evaluate for critical historical/physical exam elements  
         a. Risks for glucose, electrolyte imbalances, intracranial injury, mass, bleed, prior history of seizures, toxin exposure, medication change, central nervous system infection, hypo or hypercarbia.  
      ii. Formulate working diagnosis and most likely etiology, state to team

2. Manage generalized seizure with respiratory insufficiency  
   a. Treat respiratory insufficiency  
      i. Apply a stepwise approach of increased airway support: positioning, supplemental oxygen, appropriate airway adjuncts (e.g. nasal airway), bag mask ventilation.  
      ii. Administer benzodiazepines (first line treatment)  
         i. Valium 0.5 mg/kg PR OR  
         ii. Midazolam 0.2 mg/kg IN/IM OR  
         iii. Lorezepam 0.1 mg/kg IV/IO  
   c. (Optional) Administer second line medications  
      i. Fosphenytoin/Phenytoin 15-20 mg/kg load  
      ii. Phenobarbital 15-20 mg/kg load

3. Demonstrate effective teamwork skills  
   a. Create team structure and leadership  
      i. Determine and indicate team leader and member roles  
   b. Employ effective 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
9. Skill Training

Scenario Introduction:

ED: Julia is a 12 month old girl. She was well until 1 day ago when she developed vomiting, diarrhea and poor oral intake. Urine output difficult to evaluate due to the diarrhea. Today she had a seizure at home which started 10 minutes ago. The parents called the medics; they will be arriving with her in 3 minutes. She weighs 10kg.

Instructor Notes:
Give team intro outside the simulation area. The information in the introduction was called in by the medics en route.

Prelude: 0-3 minutes
Give team the scenario intro outside the simulation area. You may answer any questions (if asked) with information from the Scenario Introduction. Give them up to three minutes to plan: decide on roles (you may pre-assign them or allow self-determination, depending on learning objectives and institutional policy), identify priorities, and organize before entering the simulation area.

Stage 1. Generalized Seizure: 3-5 minutes, maximum

<table>
<thead>
<tr>
<th>HR</th>
<th>176</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spo2</td>
<td>98%</td>
</tr>
<tr>
<td>BP</td>
<td>112/75</td>
</tr>
<tr>
<td>RR</td>
<td>35</td>
</tr>
<tr>
<td>Temp</td>
<td>38.5</td>
</tr>
</tbody>
</table>

Technologist Information
Stage 1: 3 min
Patient SEIZING – need to create tonic clonic movement
Clear breath sounds

Trigger to Stage 2:
5 min into scenario

Teaching Objectives
Assemble a full resuscitation team in the simulation room

Primary Assessment
- ABCDE
- Oxyen
- IV access
- Consider obtaining labs
  - Glucose
  - Chemistries
  - VBG
  - CBC
  - Blood culture

Seizure management
- Benzodiazepines – rectal, intranasal, IV/IO

Instructor Information
PMH: (If asked)
Vomiting- numerous, non-bilious/bloody
Diarrhea- numerous, non-bloody
No trauma or known ingestions
No medications
Previously healthy(no prior generalized seizures)
Immunizations up to date

Exam (If asked):
Patient is initially clothed, not on monitors.
Patient is seizing with generalized tonic-clonic movements (utilize your simulator technology or manually jerk).
9. Skill Training

Stage 2. Airway Obstruction: 5-10 minutes, maximum

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR</td>
<td>178</td>
</tr>
<tr>
<td>Spo2</td>
<td>91% RA</td>
</tr>
<tr>
<td>BP</td>
<td>134/85</td>
</tr>
<tr>
<td>RR</td>
<td>12, irregular</td>
</tr>
<tr>
<td>Temp</td>
<td>38.5</td>
</tr>
</tbody>
</table>

Pt continuing to SEIZE
Airway obstruction and slowed respiratory effort

Trigger to Stage 3:
Administer second dose of benzodiazepine AND provide airway support (depending on the experience of your trainees; this could be positioning and oxygen, or require nasal airway and bag-mask ventilate), or
after 5 min after start of Stage 2

Pupils 4mm non-reactive.
Mottled hands and feet, capillary refill 2 seconds.
No hepatosplenomegaly

Responses:
1st dose benzodiazepine: No response
All labs: pending.
If a full team is not actively caring for the patient, consider prompt: ask a sidelined participant to offer assistance/ask the team if they would like to recruit additional help/ state that more participants are available

Technologist Information
Teaching Objectives
Instructor Information

Instructor Notes:
At start of Stage 2, state “the child is making sonorous respirations”
If no airway intervention to relieve obstruction, restate above 2 min into Stage 2

Exam (If asked):
Generalized tonic-clonic seizure
Capillary refill 3 sec
No hepatosplenomegaly

Responses:
1st dose benzodiazepine total (intranasal, rectal, intramuscular, IV, IO)-
9. Skill Training

<table>
<thead>
<tr>
<th>Treat seizure activity</th>
<th>No response</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Benzodiazepines -- intranasal/rectal/IM/IV/IO</td>
<td>2nd dose benzodiazepine total or second line agent-</td>
</tr>
<tr>
<td>- Second line meds</td>
<td>Seizure stops</td>
</tr>
<tr>
<td>- Fosphenytoin</td>
<td>Airway maneuvers and adjuncts relieve obstruction</td>
</tr>
<tr>
<td>- Phenobarbital</td>
<td>Labs (if asked)</td>
</tr>
</tbody>
</table>

- glucose 95
- electrolytes: Na 138, K+ 3.6, ionized Calcium 1.2
- Venous Blood Gas: 7.42/32 HCO3 18 BE -2
- others “pending”

Stage 3. Resolution: 10-12 minutes, maximum

<table>
<thead>
<tr>
<th>HR</th>
<th>138</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spo2</td>
<td>95%</td>
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<tr>
<td>BP</td>
<td>86/48</td>
</tr>
<tr>
<td>RR</td>
<td>20</td>
</tr>
<tr>
<td>Temp</td>
<td>38.5</td>
</tr>
</tbody>
</table>

Technologist Information

- Seizure activity stops. Intermittent airway obstruction if no airway intervention

Teaching Objectives

- Reassess/support ABCDE’s
  - Oxygen/position/bag mask ventilation
  - Consider intubation
- Consider differential for seizure

Instructor Information

**Instructor Notes:**
- At start of Stage 3 state “the child is making intermittent snoring respirations” if no airway intervention in Stage 2.
- Lab values available in Stage 2. Any others requested “pending”.
- The goals for this Stage is for the team to recover, reassess the patient and consider any further differential causes/evaluation they would like to do before moving to the debrief.

**Exam (If asked):**
- Sleepy, no seizure activity
- Withdraws to pain
- Capillary Refill 2 sec
9. Skill Training

Debriefing the Team:
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 overall debriefing format.

Examples of debriefing for different learning objectives

<table>
<thead>
<tr>
<th>Performing a Primary Survey</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I noticed you did/didn’t complete a primary survey. I think this is critical, since the primary survey helps identify potentially life threatening issues.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• What helped/hindered you?                                        | Primary Survey                                                                      |                 |
• Airway (patent, obstructed)                                      |                                                                                     |                 |
• Breathing (clear, coarse, etc.)                                 |                                                                                     |                 |
• Circulation (central pulses)                                    |                                                                                     |                 |
• Disability (alert, obtunded, etc.)                              |                                                                                     |                 |
• Exposure (alert, obtunded, etc.)                                |                                                                                     |                 |

Assessing Airway and Breathing

<table>
<thead>
<tr>
<th>Debriefing Script</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I noticed you did/didn’t fully evaluate the patient’s airway and breathing. That’s good/could be improved to ensure your patient’s not in imminent respiratory failure.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• What did you think about her airway and breathing? |
• Airway (e.g. ability to move air): |
• Look for obstruction |
• Listen for stridor |
• Feel for air movement |
• Ask the child to speak /is s/he crying? |
• Breathing |
• Respiratory rate |
• Symmetry and quality of breath sounds |
• Oxygenation |
• Ventilation |

Airway Maneuvers and Adjuncts

<table>
<thead>
<tr>
<th>Debriefing Script</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>This patient had a partially obstructed airway (snoring). I noticed you did/didn’t reposition/use airway adjuncts to help establish a patent airway. This was great/could be problematic, since ongoing obstruction could lead to respiratory insufficiency.</td>
<td></td>
<td></td>
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</tbody>
</table>
• What did you think about her airway + breathing? |
| Sonorous respirations a sign of obstruction |
• Airway maneuvers |
• Head tilt-chin lift |
• Jaw thrust |
• Repositioning |
• Suctioning |
• Airway adjuncts - what they are and how to use them |
• Nasal airway |
### 9. Skill Training

<table>
<thead>
<tr>
<th>Bag-Mask-Ventilation</th>
<th>Debrief Script</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral airway</td>
<td>When the patient’s breathing became insufficient, I noticed you <em>quickly/took a while to/didn’t</em> bag-mask ventilate her.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What helped you make that decision?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Can you demonstrate how you <em>did/would</em> bag mask ventilate her?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bag-Mask-Ventilation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Seal / hand position</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Assessing chest rise</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Listening</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Goal approx 20 breaths per minute</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Recognizing A Generalized Seizure</th>
<th>Debrief Script</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I <em>did/didn’t</em> hear you state that your working diagnosis was a generalized seizure. I think that’s great/could help the team if stated to ensure the team is working with the same mental model.</td>
<td>Review generalized tonic clonic seizure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• What working diagnosis did you have?</td>
<td>• Bilateral movement, impaired mental state</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• How did you decide that?</td>
<td>• Review status epilepticus: &gt;30 min seizure activity or intermittent without return to neurologic baseline</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o ≥5 min = treat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Differential Diagnosis of A Generalized Seizure</th>
<th>Debrief Script</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I heard/didn’t hear you ask questions to explore the etiology of the seizure. I thought that was good/could have resulted in delay in care since different etiologies need to be addressed specifically.</td>
<td>Differential diagnosis of seizure:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• What did you consider as potential etiologies for the seizure?</td>
<td>Central nervous system trauma,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cerebral Vascular Accident,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Central nervous system infection</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrolyte, glucose, or metabolic abnormality,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Underlying Seizure disorder,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Toxic/ingestion,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medication change</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hypoxia/hypercarbia</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Manage A Generalized Seizure</th>
<th>Debrief Script</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I noticed your team did/didn’t take a stepwise approach to managing her seizure. A systematic approach</td>
<td>Primary assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Support ABC’s</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Oxygen, position, airway</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. Skill Training

Helps ensure you steadily escalate your support if the seizure continues.
- How did you choose your management priorities?
- Tell me more about why you chose to do that?
- What else could you have done?

Adjuncts, bag-mask ventilation, IV access
1st line meds:
  - Valium 0.5 mg/kg PR
  - Midazolam 0.2 mg/kg IN/IM (max 10 mg)
  - Lorazepam 0.1 mg/kg IV/IO
2nd line meds:
  - Fosphenytoin/Phenytoin 15-20 mg/kg load
  - Phenobarbital 15-20 mg/kg load

## 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>
</table>
| Let's talk about how you functioned as a team. | Team leader  
  - Clear direction, coordination, timely interventions  
  - Foot of patient  
  - Airway/Procedure MD  
  - Manage airway/c-spine  
  - Head of patient  
  - Survey MD  
  - Primary, Secondary survey, pulses with CPR, reassess  
  - Nursing roles  
  - Medication Prep (draw-up meds)  
  - Medication Admin (give meds)  
  - Documenting (time keeper) | | |

### Brief and Huddle

<table>
<thead>
<tr>
<th>Debrief Script</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
</table>
| 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).  
  - What (helped/hindered) your team from (briefing/huddling)? | 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.  
  - Everyone on the team is responsible for making this | |
## 9. Skill Training

### Directed call out

<table>
<thead>
<tr>
<th>Debrief Script</th>
<th>Reference Material</th>
<th>Instructor Notes</th>
</tr>
</thead>
</table>
| I noticed that you \( (did/didn't/intermittently) used (people's names/roles/eye contact) \) when \( (calling out orders/asking for assistance) \). I thought this was \( (great/could have been more directed) \). | 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). | Example:  
- “Jennifer-What’s the circulatory status?”  
- “Kim- Give normal saline 240 mL”  
- “Team leader- he stopped responding to pain” |
| • What did you notice about orders/questions that were asked?  
• How did this impact your team?  
• What would you | | |

### Closed loop communication/Check back

<table>
<thead>
<tr>
<th>Debrief Script</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></td>
</tr>
</tbody>
</table>
- Team leader “packed red blood cells 240 mL”  
- Medication preparation nurse “packed red blood cells 240 mL”  
- Team leader “correct” |
| • What did you think about your communication loops?  
• How did that impact your team?  
• Has anyone seen problems with this in a patient resuscitation?  
• Has anyone seen closed loop communication prevent an error?  
• How could you do it differently next time? | | |
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
- 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
- Atropine
- Etomidate
- Fentanyl
- Ketamine
- Lidocaine
- Lorazepam
- Midazolam
- Normal Saline/Lactated Ringers
- Fosphenytoin
- Phenobarbital
- 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
10. Equipment Set-up

Equipment Cont’d

- Endotracheal tubes - 3.0, 3.5, 4.0, 4.5, 5.0, cuffed or uncuffed, stylets
- Laryngoscope, Miller and Mac blades, multiple sizes
- End-tidal CO2 colorimeter
- Nasogastric tube(s)
- Stethoscopes
- Laryngoscope, Miller and Mac blades, multiple sizes
- IV/Angiocaths, various sizes
- IO needles, 2 sizes
- Gauze, Tape
- IV tubing
- IV pumps, pressure bags
- 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

- [x] Medical Management Evaluation/Debriefing Form *(Appendix E)*
- [x] Teamwork and Communication Evaluation/Debriefing Form *(Appendix F)*
- [x] Simulation Session Evaluation *(Appendix G)*
# 12. Appendices

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

<table>
<thead>
<tr>
<th>SCENARIO TIMELINE</th>
<th>VITAL SIGNS</th>
<th>FACILITATOR INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prelude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start Time: 0 min.</td>
<td>Rhythm: sinus, HR: 170 bpm, BP: 112/75, SAT: 95%, RR: 36/min, Temp: 38.5 °C</td>
<td>Allow team to enter outside the simulation room.</td>
</tr>
<tr>
<td>Scenario intro and team brief</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act 1: Generalized Seizure</td>
<td>Rhythm: sinus, HR: 170 bpm, BP: 134/85, SAT: drop to 91% over 1 min, RR: drop to 12/min over 1 min (irregular), Temp: 38.5 °C</td>
<td>Pt. seizing with generalized tonic-clonic movements.</td>
</tr>
<tr>
<td>5-10 min.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triggers: Start 3 min into scenario</td>
<td>CR 2 sec</td>
<td>If requested, lids are “pending.”</td>
</tr>
<tr>
<td>End: 5 min into scenario</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-10 min.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triggers: Start 5 min into scenario</td>
<td>CR 3 sec</td>
<td></td>
</tr>
<tr>
<td>End: 10 min into scenario</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-12 min.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triggers: Start 10 min into scenario</td>
<td>No seizure activity, CR 2 sec</td>
<td></td>
</tr>
<tr>
<td>End: 12 min into scenario</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendix B: TeamSTEPPS References

#### Teamwork and Communication (TeamSTEPPS) Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>Adaptable</td>
<td>The ability to adjust strategies and altering a scenario 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. <em>(Example: “Airway status?” – “Airway clear”; “Breath sounds?” – “Breath sounds decreased on right”)</em></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. <em>(Example: “Give Benadryl 25 mg IV push” – “Benadryl 25 mg IV push” – “That’s correct”)</em></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. <strong>S</strong> = Situation (What is going on with the patient?) <strong>B</strong> = Background (What is the clinical background or context?) <strong>A</strong> = Assessment (What do I think the problem is?) <strong>R</strong> = 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 3 components:
- Introduction
- 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) **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 begin by discussing medical management.
   - What did you think was wrong with the patient? Can someone summarize in 3 sentences what happened in this scenario?
   - What led you to think that?

3) **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? What have you seen done?
Appendix C: Debriefing Overview

4) Summarizing
   - This is your opportunity to ensure the key learning points are highlighted
   - Try to identify approximately three take-home medical/technical points and teamwork/communication points.
   - You may ask the participants’ to identify take home points or call them out yourself.

   Medical management/technical skills examples:
   (a) This was a case of a generalized seizure.
   (b) Signs of generalized seizures include: bilateral, tonic-clonic movement and impaired mental status.
   (c) Treatment of generalized seizures includes: positioning, oxygen, benzodiazepines, and potentially second line agents- fosphenytoin or phenobarbital

   Teamwork/communication examples:
   (d) Recognize need for a full resuscitation team when a patient develops uncompensated a generalized seizure.
   (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.

General Instructor 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

Generalized Seizure Learning Objectives

1. Recognize a Generalized Seizure
   a. Bilateral tonic-clonic movements
   b. Impaired mental status
   c. Eye deviation

2. Evaluate Potential Etiologies
   a. Central nervous system trauma
   b. Cerebral vascular accident
   c. Infection- central nervous system or generalized
   d. Fever
   e. Electrolyte/glucose/metabolic abnormality
   f. Underlying seizure disorder
   g. Toxin/ingestion
   h. Medication change

3. Manage a Generalized Seizure
   a. Support the ABC’s: position, 100 % supplemental oxygen, suction, airway adjuncts, bag mask ventilation, IV access, if needed
   b. First line medications: benzodiazepines
      a. Midazolam 0.2 mg/kg/dose intranasal with atomizer, or intramuscular
      b. Lorazepam 0.1 mg/kg IV/IO
   c. Second line medications: fosphenytoin or phenobarbital
      a. Fosphenytoin/Phenytoin 15-20 mg/kg IV/IO load (>2 months)
      b. Phenobarbital 15-20 mg/kg IV/IO load (<2 months)
   d. Monitoring: Pulse oximetry, respiratory rate, heart rate, temperature, mental status

4. Core Resuscitation Skills
   a. Primary survey: Airway, Breathing, Circulation, Disability, Exposure
   b. Assess airway (e.g. ability to move air)
      a. Look for obstruction
      b. Listen for stridor
      c. Feel for air movement
      d. Ask the child to speak / is the pt crying
   c. Assess breathing (e.g. efficacy of effort)
      a. Respiratory rate
      b. Symmetry and quality of breath sounds (wheezing, crackles, coarse sounds)
      c. Oxygenation
      d. Ventilation
   d. Provide airway support
      a. Whole body positioning to open airway
      b. Head-tilt chin lift if NO cervical spine injury
      c. Jaw-thrust good for all
      d. Suctioning
      e. Shoulder roll
      f. Adjuncts: nasopharyngeal airway/ oral airway (oral NOT for patients with intact gag reflex)
      g. Bag-mask ventilate
Appendix E: Medical Management Evaluation/Debriefing Form

**Pediatric Generalized Seizure**  
**Medical Management/Technical Skills**

This checklist identifies core medical management /technical skills. It’s hard to discuss more than 3 of these during one debriefing session. We recommend selecting 2-3 of these issues to focus on.

### Assessment of ABCDE’s

<table>
<thead>
<tr>
<th></th>
<th>Done Well</th>
<th>Needs Work</th>
</tr>
</thead>
</table>

Specific comments: ____________________________________________  
________________________________________________________________________  
________________________________________________________________________

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

### Recognizing a generalized seizure

<table>
<thead>
<tr>
<th></th>
<th>Done Well</th>
<th>Needs Work</th>
</tr>
</thead>
</table>

Specific comments: ____________________________________________  
________________________________________________________________________  
________________________________________________________________________

*Discuss Points: What are the signs of a generalized seizure? Bilateral tonic-clonic movement, impaired mental status, eye deviation*

### Managing a generalized seizure

<table>
<thead>
<tr>
<th></th>
<th>Done Well</th>
<th>Needs Work</th>
</tr>
</thead>
</table>

Specific comments: ____________________________________________  
________________________________________________________________________  
________________________________________________________________________

*Discuss Points: What's the treatment for a generalized seizure? Supplemental oxygen, airway positioning, benzodiazepines, second line agents: fosphenytoin or phenobarbital*

### Airway positioning

<table>
<thead>
<tr>
<th></th>
<th>Done Well</th>
<th>Needs Work</th>
</tr>
</thead>
</table>

Specific comments: ____________________________________________  
________________________________________________________________________  
________________________________________________________________________

*What are airway positioning techniques? Head tilt or jaw-thrust, shoulder roll, nasopharyngeal or oral airways, bag mask ventilation*
### Appendix F: Teamwork and Communication Evaluation/Debriefing Form

**Pediatric Generalized Seizure Teamwork and Communication Evaluation**

This checklist identifies core teamwork and communication skills. It’s hard to discuss more than 3 of these during one debriefing session. We recommend selecting 2-4 of these issues to focus on.

**Leader/Roles Identified & Maintained**

| □ Done Well | □ Needs Work |

Specific comments: __________________________________________________________

__________________________________________________________________________

**Discussion Points: What helped/hindered having clear leadership and roles?**

**Directed Call out**

| □ Done Well | □ Needs Work |

Specific comments: __________________________________________________________

__________________________________________________________________________

**Discussion Points: How were orders given- “Into the air” or directed at specific individuals? What 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

Pediatric Generalized Seizure Simulation Session Evaluation Form

Instructor: ____________________________ Date: ________________

Case Presented: Generalized Seizure

<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 generalized seizure management skills.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>The debrief created 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?

Comments:
Appendix H: References