



California Simulation Alliance (CSA) Simulation Scenario Template

The California Simulation Alliance (CSA) is comprised of simulation users from all disciplines from throughout the state. Several regional collaboratives have formed totaling 7 as of March, 2011: The Rural North Area Simulation Collaborative (RNASC), the Capital Area Simulation Collaborative (CASC), the Bay Area Simulation Collaborative (BASC), the Central Valley Simulation Collaborative (CVBSC), the Southern California Simulation Collaborative (SCSC), the Inland Empire Simulation Collaborative (IESC), and the San Diego Simulation Collaborative (SDSC). The CINHC, a non-profit organization focused on workforce development in healthcare provides leadership for the CSA.

The purpose of the California Simulation Alliance (CSA) is to become a cohesive voice for simulation in healthcare education in the state, to provide for inter-organizational research on simulation, to disseminate information to stakeholders, to create a common language for simulation, and to provide simulation educational courses. The goals of the alliance will include providing a home within the CINHC for best practice identification, information sharing, faculty development, equipment/vendor pricing agreements, scenario development, sharing and partnership models. More information can be found on the CSA website at www.cinhc.org/programs.

All scenarios have been validate by subject matter experts, pilot tested and approved by the CSA before they were published online. All scenarios are the property of the CINHC/CSA. The writers have agreed to release authorship and waive any and all of their individual intellectual property (I.P.) rights surrounding all scenarios. I.P. release forms can be found at www.bayareanrc.org/rsc and click documents. (Please send signed I.P. release forms to KT at kt@cinhc.org)

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SECTION I: SCENARIO OVERVIEW

Scenario Title:	Pediatrics- Post-op Heel Cord Lengthening _B_ Seizure Activity	
Original Scenario Developer(s):	Christine Madsen, MSN, RN	
Date - original scenario	03/03/2008	
Validation:	04/03/2008 Marie Gilbert, MSN, Marjorie Miller, MA, RN	
Revision Dates:	06/2009, 10/2010	
Pilot testing:	05/03/2008	
QSEN revision:	05/28/2012 Marjorie Miller, MA, RN	
Estimated Scenario Time: 15-20 minutes Debriefing time: 30-40 minutes		
<p>Target group: Beginning Pediatric Nursing students, new grad transition or orienting nurses Core case: 5 year old child, post-operative heel cord lengthening. History of Cerebral Palsy and seizure disorder.</p> <p>QSEN Competencies:</p> <ul style="list-style-type: none"> • Safety • Patient Centered Care • Teamwork and Collaboration <p>Brief Summary of Case: This is the second (B) scenario of an unfolding case. It can be used as a follow up or a stand alone case.</p> <p>5 year old male on afternoon of surgery for bilateral heel cord lengthening for foot drop. Child has had cerebral palsy and seizure disorder since birth and is moderately developmentally delayed (mostly non-verbal with vocabulary of 25 words) Contracture has hampered physical therapy teaching child to walk. At 10th percentile on growth curve for both height and weight.</p> <p>Learners are expected to perform initial assessment with a focus on neurovascular status of extremities and airway, assess for pain. As seizure begins, learners are to recognize, assess and time the seizure while positioning to protect the patient, communicate with mother as she arrives during the seizure and call charge nurse for assistance reporting findings using SBAR format.</p> <p>Note: This scenario is designed for the high-fidelity Gaumard Hal, a 5 year with the ability to program seizures.</p>		

EVIDENCE BASE / REFERENCES (APA Format)

- McKinney, James, Murray & Ashwill, (2009). *Maternal-child Nursing* (4rd ed). St. Louis, Elsevier/Mosby.
- Potts, N., Mandleco, B., (2007). *Pediatric Nursing: Caring for Children and Their Families* (2nd ed). Thompson/Delmar Learning.
- Cronenwett, L., Sherwood, G., Barnsteiner, J. et. al. (2007) Quality and safety education for nurses. *Nursing Outlook*. 55(3), 122-131. doi:10.1016/j.outlook.2007.02.006

SECTION II: CURRICULUM INTEGRATION

A. SCENARIO LEARNING OBJECTIVES

Learning Outcomes

1. Utilize principles and knowledge of caring practices, age & developmental stage, and cultural awareness to provide safe & effective nursing care for pediatric patients.
2. Implement clinical decision making skills to interpret data and implement appropriate interventions.
3. Integrate understanding of multiple dimensions in patient care.

Specific Learning Objectives

1. Gather relevant patient, environmental and contextual data.
2. Demonstrate developmentally-appropriate post-op assessment on a 5-year-old.
3. Recognize, assess and implement immediate nursing actions for a child experiencing a seizure.
4. Implement safe positioning for a child experiencing a seizure.
5. Demonstrate developmentally appropriate communication to a 5-year-old, as well as to family members.
6. Demonstrate the ability to treat common post-op abnormal findings in assessment.
7. Reassure patient and family throughout care with clear, calm statements.
8. Communicate significant data to inter-professional team using SBAR tool to obtain necessary orders for interventions.

Critical Learner Actions

1. Perform hand hygiene; Introduce self and role, and identify patient using 2 identifiers.
2. Communicate in developmentally appropriate manner with patient while performing assessment.
3. Performs accurate post op assessment of the orthopedic pediatric client to include CSM.
4. Anticipate possible seizure activity, planning for protecting patient.
5. Assess O² sats and administer O² as indicated.
6. Recognize seizure and appropriately position patient for safety.
7. Call charge nurse and report change in status using SBAR tool.
8. Collect data from mother and reassure in calm manner.
9. Reassesses plan of care based on patient change and new orders.

B. PRE-SCENARIO LEARNER ACTIVITIES

Prerequisite Competencies

Knowledge Competencies	Skill/ Attitudes Competencies
<input type="checkbox"/> Post-op assessment of developmentally delayed 5 year old child.	<input type="checkbox"/> Developmentally and culturally appropriate communication w/child & parent.
<input type="checkbox"/> Post-operative assessment and management of pediatric client following orthopedic surgery.	<input type="checkbox"/> Proper use of IV pump with volume control chamber.
<input type="checkbox"/> Current National Patient Safety Goals	<input type="checkbox"/> Role of nurse in calming family members in crisis situation.
<input type="checkbox"/> Structured communication tools. (SBAR)	<input type="checkbox"/> Routine post-op assessment & care, including CMS
<input type="checkbox"/> Pharmacology of anti-seizure medications and drug levels.	<input type="checkbox"/> Safety issues for child experiencing seizure activity <input type="checkbox"/> Recognize need to call for collaborative assistance

SECTION III: SCENARIO SCRIPT

A. Case summary – (unfolding case #2 of 2)

1600: (Change of shift report) Joseph Martinez is a 5-year-old male with cerebral palsy, developmental delay, essentially non-verbal with vocabulary of approximately 25 words. He has a history of a seizure disorder. He received Tylenol w/codeine for pain an hour ago for a lot of moaning and restlessness & a HR of 115. He has settled down, so it appears that pain med effective.

Today he had a heel cord lengthening of both Achilles tendons. Both legs are wrapped with kerlix and ace wrap. No drainage. CMS good.

He is due for both a feeding and his Tegretal now at 1600. He tolerated his last feeding at 1200 with no nausea and vomiting. We are to start slow, so he got 10 mL@ noon. His intake is to be increased by 10 mL q4h, so you are due to give 20 mL. at his next feeding.

B. Key contextual details

Pediatric Unit: beginning of PM shift with normal staffing.

C. Scenario Cast

Patient/ Client	<input type="checkbox"/> High fidelity simulator	
	<input type="checkbox"/> Mid-level simulator	
	<input type="checkbox"/> Task trainer	
	<input type="checkbox"/> Hybrid (Blended simulator)	
	<input type="checkbox"/> Standardized patient	
Role	Brief Descriptor (Optional)	Confederate/Actor or Learner
Primary nurse		Learner
Orienting nurse		Learner
Mother	Script: Mother arrives while child is having a seizure. Is upset, but responds to nurses interventions.	Actor
Charge Nurse	Script: comes into room when called with SBAR. Reports that she just spoke with MD who ordered a Tegretal level. Tells learners that she will stay while they go on a break.	Actor

D. Patient/Client Profile				
Last name:	Martinez		First name:	Joseph
Gender: Male	Age: 5	Ht: 97 cm	Wt: 15 Kg	Code Status: Full
Spiritual Practice: Catholic		Ethnicity: Hispanic		Primary Language spoken: English
1. History of present illness				
<u>Source of information:</u> mother				
<u>Chief complaint:</u> inflexible Achilles tendon, making walking difficult				
HPI: Spasticity controlled with Baclofen; mother feels if heel cords more flexible, child might be able to walk and participate in Physical Therapy more fully.				
Past medical history: 5 year old male with Cerebral Palsy since birth- hypoxic event intra-partum. Moderate developmental delay; poor verbal ability (25 words). Admitted last month for seizures and started on Dilantin, but developed vomiting and a rash. Currently is stable on Tegretol.				
Primary Medical Diagnosis		Post-op heel cord lengthening		

2. Review of Systems	
CNS	Normo-cephalic. Spastic. Severe foot drop unable to flex feet
Cardiovascular	Normal S1, S2; no murmurs or rubs heard
Pulmonary	Loose cough; coarse bilateral breath sounds; previous history of multiple aspirations prior to placement of gastrostomy tube
Renal/Hepatic	Voids clear urine
Gastrointestinal	Flat with active bowel sounds
Endocrine	Within normal limits
Heme/Coag	Within normal limits
Musculoskeletal	Extremities thin; foot drop as noted above; mild scoliosis noted.
Integument	Clear and intact.
Developmental Hx	Developmental delay.
Psychiatric Hx	None reported
Social Hx	Lives with parents and 3 siblings
Alternative/ Complementary Medicine Hx	None reported

Medication allergies:	Dilantin	Reaction:	Total body rash, vomiting
Food/other allergies:	None known	Reaction:	

3. Current Medications			
Drug	Dose	Route	Frequency
Baclofen pump (intrathecal):	100 mcg	IT	daily
Carbamazepine (Tegretol) 30 mg/kg/day	112 mg	PO	Q 6h

4. Laboratory, Diagnostic Study Results					
Na: 138	K: 4.0	Cl: 100	HCO ₃ : 24	BUN: 10	Cr: 0.4
Ca:	Mg:	Phos:	Glucose: 75	HgA1C:	
Hgb: 12	Hct: 36	Plt: 250	WBC: 7.0	RBC: 5	
PT	PTT	INR	Troponin:	BNP:	
AST: 30	ALT: 25	Lipase:	Albumin:	Lactate:	
ABG-pH:	paO ₂ :	paCO ₂ :	HCO ₃ ⁻ /BE:	SaO ₂ :	
VDRL:	GBS:	Herpes:	HIV:		
CXR:		ECG:			
CT:		MRI:			
Other:					

E. Baseline Simulator/Standardized Patient State

1. Initial physical appearance			
Gender: Male		Attire: Hospital gown	
Alterations in appearance (moulage): dark, curly wig. Lower legs wrapped with kerlix and ace bandages (see photo's); elevated on pillows. Program manikin for seizures. Pad back board (from crash cart) and place under sheet underneath patient. Program seizures at high level or they may not be visible to learners.			
x	ID band present, accurate information	ID band present, inaccurate information	ID band absent or not applicable
x	Allergy band present, accurate information	Allergy band present, inaccurate information	Allergy band absent or not applicable

	No monitor display	Monitor on, no data displayed	x	Monitor on, standard display
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BP: 100/50	HR: 90	RR: 24	T: 36.6° C.	SpO ₂ : 94 %
CVP:	PAS:	PAD:	PCWP:	CO:
AIRWAY:	ETCO ₂ :	FHR:		
Lungs: Sounds/mechanics	Left: coarse		Right: coarse	
Heart:	Sounds:	S ¹ , S ²		
	ECG rhythm:	Normal sinus rhythm		
	Other:			
Bowel sounds:	Active bowel sounds x 4		Other:	

3. Initial Intravenous line set up						
	Saline lock #1	Site:				IV patent (Yes/No)
x	IV #1	Site:	RA	Fluid type:	Initial rate:	IV patent (Yes/No)
x	Main			D5/0.45 NS w/20 mEq KCl	50 mL/hour	
x	Volutrol					
	IV #2	Site:		Fluid type:	Initial rate:	IV patent (Yes/No)
	Main					
	Piggyback					
4. Initial Non-invasive monitors set up						
x	NIBP	x	ECG First lead:		ECG Second lead:	
x	Pulse oximeter	x	Temp monitor/type		Other:	
5. Initial Hemodynamic monitors set up						
	A-line Site:		Catheter/tubing Patency (Y/N)	CVP Site:	PAC Site:	
6. Other monitors/devices						
	Foley catheter	Amount:	Appearance of urine:			
	Epidural catheter		Infusion pump: agency pump	Pump settings: 50 mL/hr		
	Fetal Heart rate monitor/tocometer			Internal	External	
Environment, Equipment, Essential props						
Recommend standardized set ups for each commonly simulated environment						
1. Scenario setting: (example: patient room, home, ED, lobby)						
Pediatric unit						

2. Equipment, supplies, monitors							
(In simulation action room or available in adjacent core storage rooms)							
x	Bedpan/ Urinal	x	Foley catheter kit	x	Straight cath. kit	x	Incentive spirometer
x	IV Infusion pump	x	Volutrol		Pressure bag	x	Wall suction
	Nasogastric tube		ETT suction catheters	x	Oral suction catheters		Chest tube insertion kit
	Defibrillator		Code Cart		12-lead ECG		Chest tube equip
	PCA infusion pump		Epidural infusion pump		Central line Insertion Kit		Dressing & equipment
	IV fluid type: D5/0.45 NS w/20 mEq KCl				Tubes/drains Type:		Blood product ABO Type: # of units:

3. Respiratory therapy equipment/devices						
x	Nasal cannula		Face tent	x	Simple Face Mask	x Non rebreather mask
x	BVM/Ambu bag	x	Nebulizer tx kit		Flowmeters (extra supply)	

4. Documentation and Order Forms						
x	Health Care Provider orders	x	Med AdminRecord	x	H & P	x Lab Results
x	Progress Notes	x	Graphic record		Anesthesia/PACU record	x ED Record
x	Medication reconciliation		Transfer orders	x	Standing (protocol) orders	ICU flow sheet
x	Nurses' Notes	x	Dx test reports		Code Record	Prenatal record
x	Actual medical record binder, constructed per institutional guidelines				Other Describe:	

5. Medications (to be available in sim action room)			
#	Medication	Dosage	Route
20 mL	Tegretol Suspension	100 mg/5mL	G-tube
20 mL	Tylenol with Codeine Elixer	7.5 mg (0.5 mg/kg) (Acetaminophen 120 mg w/ Codeine 12 mg in 5 mL)	G-tube

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES

Initiation of Scenario : (Shift Report @ 1600):

Joseph Martinez is a 5-year-old male with cerebral palsy, developmental delay- pretty severe, I guess – mom says he is normally non-verbal, with a vocabulary of approximately 25 words. He has a history of a seizure disorder, is allergic to Dilantin and well maintained on Tegretol Suspension.

Today he had a heel cord lengthening of both Achilles tendons. Both legs are wrapped with ace wrap. No drainage. CMS good. He takes feedings & meds through syringe– he is due for both a feeding and his Tegretol now at 1600. We are to start feedings slowly, so he received a 10 mL feeding at 1200 –tolerated without nausea or vomiting. We are increasing by 10 mL q. 4 h, so you are due to give 20 mL. He received Tylenol w/codeine for pain an hour ago for a lot of moaning, restlessness & a HR of 115. He has settled down, so it appears that pain med effective.

Vital signs: T (Ax) 37.2° C., HR - 100, RR 22 and O2 sat 96% on room air. Lungs a little coarse sounding – he’s still a little lethargic

His mom is very involved in his care and very knowledgeable. She just went down for a cup of coffee when he settled down and she should be right back up.

STATE / PATIENT STATUS	DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>1. Baseline</p> <p>Lying in supine position with one pillow, legs elevated on pillows.</p>	<p>Operator</p> <p>HR 90 RR: 24- coarse lung sounds, occasional cough. Lung sounds stay the same throughout the scenario</p> <p>Trigger: Learners perform initial assessment and actions within 5 -8 minutes</p>	<p>Learner Actions</p> <ol style="list-style-type: none"> 1. Performs hand hygiene 2. Identifies self and engages child at developmental level to participate in assessment. 3. Completes environmental assessment for O2, suction, correct IV solution and rate, amount of solution in volume control chamber 4. Assesses CMS, pain, lungs. 5. Attempts to have child cough and deep breathe Collaborate with team to determine if CPT is needed to keep secretions mobile. 	<p>Debriefing Points:</p> <ol style="list-style-type: none"> 1. NPSG to minimize risk of error and infection 2. Components of focused pulmonary and neurovascular assessment; interventions if not within normal limits 3. Strategies for engaging patient and mother in plan of care; 4. Pain assessment in non-verbal pediatric patient. 5. Strategies for coughing/ deep breathing in non-verbal child 6. Causes of coarse rhonchi in post-op patient

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>2.</p> <p>Mother enters room while child is having seizure. Appears alarmed, but answers questions from learners that this is type of seizure that is typical for him.</p> <p>Very upset with herself because she didn't give the morning Tegretal. Feels that this caused his seizure.</p>	<p>Operator:</p> <p>Short (30-60 sec) seizure VS during seizure: HR ↑ to 140, RR ↓ to 10, O2 sat ↓ to 94%</p> <p>VS return to baseline following seizure over 30 sec.</p> <p>Cues: May need to repeat seizure (30-60 sec.) or have mother cue "Oh, he is having a seizure" if learners do not notice the second seizure.</p> <p>Triggers: Learner actions accomplished within 7-10 minutes</p>	<p>Learner Actions:</p> <ol style="list-style-type: none"> 1. Recognizes onset of seizure; alerts team member 2. Manages child's airway 3. Positions on left side for safety, protecting from side rails or hard objects. 4. Times and assesses seizure activity. 5. One nurse calls charge nurse to report change in status using SBAR 6. Interacts positively with mother allowing her to help with positioning and care. 	<p>Debriefing Points:</p> <ol style="list-style-type: none"> 1. National Patient Safety Goals 2. Agency policy/procedure for seizure precautions in the pediatric populations 3. Potential causes for breakthrough seizures in the post-operative child: <ol style="list-style-type: none"> a. Missed dose ? (onset, peak, duration of med) b. Interaction with anesthetic agents ? c. Effects of anesthesia and stress of surgery, ↓-ing seizure threshold 4. Need for early call for assistance
STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>Seizure stops. Respiratory status effective. Child responsive with moans, but lethargic.</p> <p>Mother comforts child.</p>	<p>VS return to baseline following seizure over 30 sec.</p> <p>Triggers: Lab tech enters room to draw blood. Nurses called to another patient's room.</p>	<ol style="list-style-type: none"> 1. Encourages mother to comfort child and maintain left sided position. 2. Assesses neurovascular and respiratory status. 3. Delivers SBAR to physician as he enters room to assess patient. 4. Physician communicates with mother, orders Tegretal level. 	<ol style="list-style-type: none"> 1. Strategies for involving parent while continuing priority assessments 2. Rationale for physicians order for Tegretal level instead of administering the missed dose.
<p>Scenario End Point: Lab tech enters to draw blood; mother states she is comfortable staying with child.</p> <p>Suggestions to decrease complexity: Scenario A</p> <p>Suggestions to increase complexity: Continuous seizures; status epilepticus; respiratory arrest</p>			

APPENDIX A: HEALTH CARE PROVIDER ORDERS

Patient Name: Joseph Martinez DOB: 09/14/2006 Age: 5 years old MR#:		Diagnosis: Bilateral heel cord lengthening; Cerebral Palsy, seizure disorder
† No Known Allergies: † Allergies & Sensitivities : Dilantin		
Date	Time	HEALTH CARE PROVIDER ORDERS AND SIGNATURE
		1. Admit to Pediatric unit: s/p bilateral Achilles Tendon lengthening. Cerebral Palsy – seizure disorder
		2. D5.45NS w/20 mEq KCl/liter @ 50 mL/hr
		3. Carbamazepine (Tegretol) suspension (100 mg/5mL) 112 mg po q.6 h.
		4. Acetaminophen w/codeine (120 mg/12 mg per 5 mL): give 3 mL (7.5 mg codeine) po q. 4 hours prn pain.
		5. Ibuprofen 75 mg PO q. 6 hrs prn mild pain, fever.
		6. Reg diet for age (soft) when fully awake. 1 can Pediasure b.i.d.
		7. CMS of both lower extremities q. 4 hrs. Keep Ace Wraps on at all times until MD changes dressing.
		8. Elevate legs on pillows
		9. Bed rest until seen by Physical Therapy
		10. Physical Therapy in a.m. – post-op Achilles Tendon lengthening.
		<i>D. Bone, MD</i>
<i>Orders during scenario:</i>		
		Tegretal level stat. Call Pediatrician MD with results.
Signature		<i>D. Bone, MD</i>

APPENDIX B: Digital images of manikin and/or scenario milieu

Insert digital photo here

Insert digital photo here

Insert digital photo here

Insert digital photo here

APPENDIX C: DEBRIEFING GUIDE

General Debriefing Plan			
<input type="checkbox"/> Individual	<input type="checkbox"/> Group	<input type="checkbox"/> With Video	<input type="checkbox"/> Without Video
Debriefing Materials			
<input type="checkbox"/> Debriefing Guide	<input type="checkbox"/> Objectives	<input type="checkbox"/> Debriefing Points	<input type="checkbox"/> QSEN
QSEN Competencies to consider for debriefing scenarios			
<input type="checkbox"/> Patient Centered Care	<input type="checkbox"/> Teamwork/Collaboration	<input type="checkbox"/> Evidence-based Practice	
<input type="checkbox"/> Safety	<input type="checkbox"/> Quality Improvement	<input type="checkbox"/> Informatics	
Sample Questions for Debriefing			
<ol style="list-style-type: none"> 1. How did the experience of caring for this patient feel for you and the team? 2. Did you have the knowledge and skills to meet the learning objectives of the scenario? 3. What GAPS did you identify in your own knowledge base and/or preparation for the simulation experience? 4. What RELEVANT information was missing from the scenario that impacted your performance? How did you attempt to fill in the GAP? 5. How would you handle the scenario differently if you could? 6. In what ways did you check feel the need to check ACCURACY of the data you were given? 7. In what ways did you perform well? 8. What communication strategies did you use to validate ACCURACY of your information or decisions with your team members? 9. What three factors were most SIGNIFICANT that you will transfer to the clinical setting? 10. At what points in the scenario were your nursing actions specifically directed toward PREVENTION of a negative outcome? 11. Discuss actual experiences with diverse patient populations. 12. Discuss roles and responsibilities during a crisis. 13. Discuss how current nursing practice continues to evolve in light of new evidence. 14. Consider potential safety risks and how to avoid them. 15. Discuss the nurses' role in design, implementation, and evaluation of information technologies to support patient care. 			
Notes for future sessions:			

