CINHC *Optimizing Health through Nursing Excellence*

CALIFORNIA INSTITUTE FOR NURSING & HEALTH CARE

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 (CVSC, 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.californiasimulationalliance.org

All scenarios have been validated 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:	Dehydration (Fluid Volume Deficit) (4 mo) r/t vomiting and diarrhea
Original Scenario Developer(s):	Christine Madsen, MSN, RN
Date - original scenario	9/18/2007
Validation:	10/2007
Pilot testing:	10/2007
Revisions:	9/2009, 9/2011, 12/2014 (QSEN) Marjorie A. Miller, MA,RN, CHSE

Estimated Scenario Time: 20 minutes Debriefing time: 40 minutes

Target group: Pre-licensure students in Pediatrics, new graduates, transition students

Core case: 4 month old with nausea and vomiting. Social issues.

Brief Summary of Case: 4 month old admitted 4 hours earlier with vomiting and diarrhea x 3-4 days accompanied by parent. Medical diagnosis: severe dehydration. IV has been started and is infusing at 37 mL/hour.

Learners are expected to assess infant, perform a focused assessment for dehydration, interview the parent, recognize need for teaching and/or need for resources. All assessment, communication and interventions are age appropriate and sensitive to parent needs.

QSEN Competencies

- ❑ Patient Centered Care
- ❑ Patient Safety
- ❑ Quality Improvement
- ❑ Teamwork and Collaboration

EVIDENCE BASE / REFERENCES (APA Format)

McKinney, E., James, S., Murray, S., Nelson, K., Ashwill, J. (2012), Maternal-Child Nursing, 4th ed), St. Louis, Elsevier Saunders.

Niescierenko, M., Bachur, R. (2013) Advances in pediatric dehydration therapy. *Current Opinion in Pediatrics.* Jun; 25(3)304-9. Doi:10.1097/MOP.0b013e328360a1bd

SECTION II: CURRICULUM INTEGRATION

A. SCENARIO LEARNING OBJECTIVES
Learning Outcomes
1. Utilize principles and knowledge of caring practices, age and developmental stage, and cultural awareness to provide safe and effective nursing care for pediatric patients.
2. Apply critical thinking and clinical decision making skills to interpret assessment data and implement appropriate interventions.
3. Integrate understanding of multiple dimensions in patient care.
Specific Learning Objectives
1. Implement safety procedures for identification, hand hygiene and environmental safety
2. Perform 60 second environmental assessment and correct immediate issues.
3. Gather relevant patient, environmental and contextual data.
4. Perform developmentally appropriate communication for 4 month old infant and family member.
5. Demonstrate a focused fluid status assessment on a 4 month old infant.
6. Identify abnormal assessment data indicating dehydration in infants.
7. Assess parent for handwashing technique and fill in learning gaps integrating caring practice and cultural awareness.
8. Recognize safety issues in IV administration and appropriately intervene.
9. Trouble shoot IV administration difficulties.
Critical Learner Actions
1. Identify self and role to parent; perform hand hygiene, update plan of care on white board.
2. Request permission to assess infant; identify infant and parent using 2 patient identifiers.
3. Assess fluid status by feeling fontanelles; assessing skin turgor, mucous membranes, capillary refill.
4. Recognize depressed fontanelles, delayed skin turgor, dry mucous membranes and delayed capillary refill.
5. Recognize discrepancy in report given about IV solution and makes accurate decisions.
6. Trouble shoot IV administration.
7. Assesses parent's readiness to learn and learning styles.
8. Recognize need for additional resources for parent.

B. PRE-SCENARIO LEARNER ACTIVITIES	
Prerequisite Competencies	
Knowledge	**Skills/ Attitudes**
❑ Standard precautions; hand hygiene	❑ Fluid balance assessment for 4 month infant
❑ Pathophysiology and nursing care for infants with dehydration	❑ Fluid loss – weighing diapers; calculation of urinary output in mL/kg/hour.
❑ Urinary output expectations for 4 month old	❑ Agency I/O flow sheet to determine urinary output
❑ Assessment findings/ mod-severe dehydration	❑ Safely administer IV solutions
❑ Accessing social resources for families in need.	❑ Standard Precautions
❑ Effective communication with parent regarding learning gaps & available resources	❑ Patient Centered Care – Assess learning gaps, style and intervene to teach parents.

SECTION III: SCENARIO SCRIPT

A. Case summary
4 month old infant admitted through clinic 4 hours ago with vomiting and diarrhea x 3-4 days. Infant accompanied by parent. Dx with moderate to severe dehydration. IV has been started and is infusing at 37 mL/hr.

B. Key contextual details
Acute care pediatric unit, fully staffed. Scenario begins with "handoff" change of shift report.

C. Scenario Cast		
Patient/ Client	❑ High fidelity simulator – Sim Baby	
	❑ Mid-level simulator	
	❑ Task trainer	
	❑ Hybrid (Blended simulator)	
	❑ Standardized patient	
Role	Brief Descriptor (Optional)	Actor (A) or Learner (L)
Parent	• Asks learners "who are you?" if learner(s) do not identify themselves on entering room. • Watchful, but sitting in chair away from crib; seems detached and keeps looking at watch, using cell phone • Verifies, if asked, that he/she changed one diaper since admission to hospital room. • Responds to learner's questions with little affect; states that neighbor suggested that herbal tea was best for vomiting. • When asked about other parent, states "…. Left last week because baby cried too much" • When asked, states "I have to get to work so I don't lose my job. I have no money for food or rent.	Actor
Nurse #1	Perform assessment; communicates with parent	Learner
Nurse #2	Check orders, labs, etc. Checks IV Updates white board Perform 60 second environmental assessment	Learner

D. Patient/Client Profile				
Last name:	Paul		First name:	Melissa
Gender: Female	Age: 4 mo	Ht: 61 cm	Wt: 5.8 kg	Code Status: Full
Spiritual Practice: unknown		Ethnicity: Caucasian		Primary Language spoken: parent speaks English

1. History of Present Illness	
4 month old infant admitted 4 hours ago from clinic with moderate to severe dehydration r/t vomiting and diarrhea. Weight in MD office one week ago was 6.5 kg. Infant is fed formula at home; parent stopped feeding her anything except diluted herbal tea when she became ill. Has not voiced since admission, but did reportedly void in clinic just prior to admission (estimated around 5 hours ago)	
Primary Medical Diagnosis	Moderate to severe dehydration

2. Review of Systems	
CNS	lethargic
Cardiovascular	Sinus tachycardia – 160 bpm; S_1S_2
Pulmonary	Clear bilaterally, RR 40, O_2 sats 95% on room air
Renal/Hepatic	Within normal limits (wnl) reportedly voided 5 hours ago
Gastrointestinal	Hyperactive bowel sounds
Endocrine	wnl
Heme/Coag	wnl
Musculoskeletal	Moves all extremities
Integument	Tenting skin turgor; depressed fontanel, T. 99° F. axillary
Developmental Hx	Full term normal
Psychiatric Hx	
Social Hx	1st child; American; parent appears tired, anxious, somewhat detached
Alternative/ Complementary Medicine Hx	Unknown except for herbal tea

Medication allergies:	NKDA	Reaction:	
Food/other allergies:	NKFA	Reaction:	

3. Current medications	Drug	Dose	Route	Frequency
	Acetaminophen Elixer (160 mg/5mL)	80 mg	PO	Every 4 hours as necessary for temp ↑ 100.6° F.

4. Laboratory, Diagnostic Study Results					
Na: 145	K: 3.8	Cl: 103	BUN: 18 mg/dL	Cr:	HCO_3:
Ca:	Mg:	Phos:	Glucose: 84 mg/dL		
Hgb: 11 Gm/dL	Hct: 33 %	Plt:	WBC: 15,000	ABO Blood Type:	
PT	PTT	INR	Troponin:	BNP:	
ABG-pH:	paO_2:	$paCO_2$:	HCO_3/BE:	SaO_2:	
VDRL:	GBS:	Herpes:	HIV:		
CXR:	ECG:				

E. Baseline Simulator/Standardized Patient State					
1. Initial physical appearance					
Gender: Female		Attire: diaper/gown			
Alterations in appearance (moulage):					
x	ID band present, accurate On ankle		ID band present, inaccurate		ID band absent or not applicable
	Allergy band present, accurate		Allergy band inaccurate	x	Allergy band absent or N/A

2. Initial Vital Signs Monitor display in simulation action room:					
	No monitor display		Monitor on, but no data displayed	x	Monitor on, data displayed
BP:	HR: 160	RR: 40	T:99.4° F (ax)	SpO_2: 95%	
CVP:	PAS:	PAD:	PCWP:	CO:	
AIRWAY:	$ETCO_2$:	FHR:			
Lungs:	Left: clear	Right: clear			
Heart:	Sounds: S_1S_2				
	ECG rhythm: sinus @ 160x				
	Other:				
Bowel sounds:			Other:		

3. Initial Intravenous line set up							
	Saline lock #1	Site:					IV patent (Y/N)
x	**IV #1**	Site: Rt. ankle		Fluid type: D5/0.25 NS w/20 mEq KCl	Initial rate: 37 mL/hr		IV patent (Y/N)
x	Main						
	Piggyback						
	IV #2	Site: RA		Fluid type:	Initial rate:		IV patent (Y/N)
	Main						
	Piggyback						

4. Initial Non-invasive monitors set up					
x	NIBP		ECG First lead:		ECG Second lead:
x	Pulse oximeter		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: Alaris pump 37mL/hr

Environment, Equipment, Essential props

1. Scenario setting: (example: patient room, home, ED, lobby)

Patient room in Acute Pediatric Unit

2. Equipment, supplies, monitors
(In simulation action room or available in adjacent core storage rooms)

	Bedpan/ Urinal	x	Foley catheter kit		Straight cath. kit	x	Incentive spirometer
x	IV Infusion pump		Feeding pump		Pressure bag	x	Wall suction
	Nasogastric tube		ETT suction catheters	x	Oral suction catheters		Chest tube kit
	Defibrillator		Code Cart		12-lead ECG		Chest tube equip
	PCA infusion pump		Epidural infusion pump		Central line Insertion Kit		Dressing Δ equipment
x	IV fluid Type: D5/0.25 NS w/20 mEq KCl		IV fluid additives:		IV Piggy back		Blood product ABO Type: # of units:

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

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

5. Medications (to be available in sim action room)								
#	**Medication**	**Dosage**	**Route**		**#**	**Medication**	**Dosage**	**Route**
	Acetaminophen Elixer 160 mg/5 mL	80 mg	oral					

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES			
Initiation of Scenario : 3:30 pm "hand-off" change of shift report. Baby is a 4 month old female admitted today at noon from clinic with moderate dehydration r/t vomiting & diarrhea x 2 or 3 days. Weight in MD office 1 week ago was 6.5 Kg; she is 5.8 Kg now. Child normally formula fed at home; mother stopped feeding her anything except diluted herbal tea when she became ill. Has not voided since admit, but the report from the clinic was that she voided just before coming over, around 1100. IV is 1 ½ times maintenance at 37 mL hour. She's kind of lethargic, fontanel is depressed, cap refill >3 sec. Ordered to start pedialyte every 30 minutes. I got 10 mL in her at 2:00 pm, but she is still pretty lethargic - didn't suck well at all. She vomited it and had diarrhea stool right after. Stool didn't look bloody - was very liquid, green, with mucous; I sent a sample to the lab for O&P (ova & parasites), guiac & fat.			
STATE / PATIENT STATUS	**DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE**		
1. Baseline Baby sleeping, no fussing when nurses begin assessment. Parent sitting in chair away from crib. Asks learners who they are if they do not introduce themselves. If asked, parent shows nurses the damp diaper that she/he changed 10 minutes ago.	**Operator** HR – 160 bpm RR – 40 T – 99.4°F. Display temp when thermometer placed in axilla. Fontanel – depressed Peripheral pulses - weak **Triggers:** Learners weigh diaper 5 minutes elapse	**Learner Actions** 1. introduce selves to mother. 2. rapid assessment of child (ABC, I&O, P,S). 3. Recognize KCl added to IV when reported baby had not voided since admission 4. Question mother about whether baby has voided 5. learner #1: begin full shift assessment 6. learner #2: Check Kardex, MAR, & orders if clarification needed. 7. Weighs diaper and calculates urinary output	**Debriefing Points:** 1. Rationale for holding KCl until first void 2. Appropriate initial action when KCl in IV solution is noticed 3. Appropriate action is baby has not voided 4. Patient centered care: Strategies for communicating with parent 5. Safety: hand hygiene, identification of both infant and parent

STATE / PATIENT STATUS	**DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE**		
2. Infant remains lethargic Parent keeps looking at watch &/or texting on cell phone Parent startles at IV pump alarm	**Operator:** No changes in computer settings **Triggers:** Learner Actions complete within 5 minutes	**Learner Actions:** 1. Learners collaborate on determining significance of assessment findings 2. Nurse #1 explains actions and begins to interview parent 3. Nurse #2 trouble shoots IV alarm	**Debriefing Points:** 1. Causes of infant's lethargy 2. Mechanisms for trouble- shooting IV alarms 3. Assessment of parent's behavior and possible reasons 4. Strategies for engaging parent in care of infant
STATE / PATIENT STATUS	**DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE**		
3. Parent responds to questions about other parent by stating that they left a week ago because of baby's crying Expresses worry about getting to work on time and possibly losing job Unable to focus on teaching and becomes defensive if learner pushes	**Operator:** No changes to computer settings **Triggers:** Learner Actions complete within 5 minutes	**Learner Actions:** 1. Learner interacts with parent 2. Attempt to start teaching about benefits of Pedialyte vs. herbal tea. 3. Recognize parent is unable to focus on teaching 4. Offer supportive services to assist with social issues 5. Reassure parent that nurses will care for baby while parent is at work 6. Give phone number of unit for parent to call	**Debriefing Points:** 1. Patient centered care: assessment of ability to focus on teaching/learning style 2. Sensitive ways to assess for social issues and offer resources 3. Learner judgments about parents behavior with infant and about lack of involvement
Scenario End Point: Charge nurse enters room to give learners a break. Nurses give SBAR to charge nurse. Expected to report: urinary output in mL/kg/hr; KCl in IV solution & question if it should have been there; other relevant assessment findings; social service needs; teaching needs.			
Suggestions to <u>decrease</u> complexity: Suggestions to <u>increase</u> complexity:			

APPENDIX A: HEALTH CARE PROVIDER ORDERS

Patient Name: Melissa Paul **DOB:** **Age:** 4 mo. **MR#:**	**Diagnosis:** Moderate to severe dehydration; r/o gastroenteritis

† No Known Allergies
† Allergies & Sensitivities

Date	Time	**HEALTH CARE PROVIDER ORDERS AND SIGNATURE**
Admission Order 12 Noon		Admit to Pediatric Unit: Dx: Moderate to severe dehydration; r/o gastroenteritis
		1. Send stool for Ova & Parasites; guiac; fat
		2. IV D5 ¼ NS at 37 mL/hr; Add 20 mEq KCl after 1st void
		3. Pedialyte 10 mL orally every 30 minutes when tolerated
		4. Call house officer for: a. Sustained heart rate greater than 170 bpm b. Sustained respiratory rate greater than 50 rpm c. Temperature greater than 101°F Axillary
		5. Intake and Output; daily weights

Signature		

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			
☐ Individual	☐ Group	☐ With Video	☐ Without Video
Debriefing Materials			
☐ Debriefing Guide	☐ Objectives	☐ Debriefing Points	☐ QSEN
QSEN Competencies to consider for debriefing scenarios			
☐ Patient Centered Care	☐ Teamwork/Collaboration	☐ Evidence-based Practice	
☐ Safety	☐ Quality Improvement	☐ Informatics	

Sample Questions for Debriefing

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: