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:	Adult Critical Care: Congestive Heart Failure with Fluid Volume Overload
Original Scenario Developer(s):	Mary Pieper-Warren, RN, BA Vicki Casella-Gordon, RN, MS, CNS, CCRN
Date - original scenario	3/07
Validation:	3/09, 1/15
Pilot testing:	3/09
Revisions:	1/2015 Melissa Punnoose, MSN, RN-BC, CHSE melissa.punnoose@providence.org

Estimated Scenario Time: 20 minutes Debriefing time: 40 minutes

Target group: Critical Care and Step Down new grad RN's, Senior level nursing students

Core case: CHF with fluid overload

Brief Summary of Case:

85 year old African American woman admitted 2 days ago for Small Bowel Obstruction secondary to adhesions. She had a small bowel resection today, and is being admitted to the ICU post operatively because of a history of MI, CHF and Hypertension. She has a radial arterial line and an internal jugular triple lumen central venous catheter. She will develop fluid volume overload, which needs to be recognized and managed by the RN and/or team.

QSEN Competencies

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

EVIDENCE BASE / REFERENCES (APA Format)
Albert, N. (2012). Fluid management strategies in heart failure. *Critical Care Nurse*, 32(2), pp. 20-32.
Butler, J. (2012). An overview of chronic heart failure management. *Nursing Times*, 108 (14), pp. 16-20.
Dolansky, M.A., and Moore, S.M. (2013). Quality and safety education for nurses (QSEN): The key is systems thinking. *Online Journal of Issues in Nursing*, 18(3), Manuscript 1.
Lessig, L.M. (2006). The cardiovascular system. In Alspach, J. (Ed.), Core curriculum for critical care nursing (6th ed.) (pp. 185-380). St. Louis, Missouri: Elsevier Inc.
Wagner, J., and Hiatt, J. (2014). B-Type natriuretic peptide for the evaluation of volume status in elderly postoperative patients. *JAMA*, 311 (19), pp. 2017-2018.

SECTION II: CURRICULUM INTEGRATION

A. SCENARIO LEARNING OBJECTIVES
Learning Outcomes
1. Manage care of the unstable critical care client using principles of safety
2. Make accurate decisions based on prioritizing significant assessment data
3. Communicate effectively with inter-professional team
Specific Learning Objectives
1. Recognizes patient change in condition and calls for additional help.
2. Identifies factors that can lead to increased pulmonary congestion.
3. Analyzes significant assessment data and recognizes instability in patient.
4. Performs a focused post op assessment in the critical care setting
5. Administers medications safely.
6. Incorporates therapeutic communication and patient teaching into care.
7. Team members have clearly identified roles and a leader
8. Communicates effectively with inter-professional team using SBAR and closed loop communication
Critical Learner Actions
1. Performs focused post op assessment following attachment of lines and proper leveling and zero-ing CVP and arterial pressure monitoring lines
2. Recognizes dyspnea
3. Perform focused cardiopulmonary assessment
4. Changes patient's position and increases oxygen flow rate
5. Decreases IV flow rate to TKO
6. Calls for help/ notifies and secures new orders from MD after giving SBAR
7. Administers IV medications safely
8. Reassesses following interventions
9. Assesses lab results
10. Takes telephone orders safely using RBAV
11.

B. PRE-SCENARIO LEARNER ACTIVITIES	
Prerequisite Competencies	
Knowledge	**Skills/ Attitudes**
❑ Pathophysiology of heart failure	❑ Administration of IV medications
❑ Pharmacology of medications involved in management of heart failure	❑ Post op and cardiopulmonary physical assessment
❑ Nursing care for the postop patient with heart failure	❑ Appropriate delegation of tasks to team members
❑ Interpretation of CVP values and labs	❑ SBAR communication with inter-professional team
❑ Fluid and electrolyte balance in CHF	❑ Establish clearly defined roles

SECTION III: SCENARIO SCRIPT

A. Case summary
Ms. Edith Connor is an 85 year old admitted 2 days ago with a small bowel obstruction secondary to adhesions. She had a small bowel resection today, and is being admitted to the ICU post operatively because of a history of MI, CHF, and Hypertension. Her estimated blood loss during surgery was 300ml. She received 2 units of PRBC in the recovery room for a post op HNH of 8/23. Her post transfusion HNH was 10/26. She received 1500ml LR intra-operatively and is now saline locked. She has a Foley catheter with 200mL output during surgery. Abdominal dressing dry and intact She was initially awake and cooperative but now she's just a little confused having trouble remembering where she is. Oxygen saturation 93 on 2 liters nasal cannula. Breath sounds decreased throughout She denies pain currently, but has morphine IV available PRN. She has a Right radial arterial line and a Right internal jugular triple lumen central venous catheter. She is a full code. Her last set of vitals before leaving the recovery room were: 144/89, 88, 22, 97.4, 93% on 2L

B. Key contextual details
Hand-off report received from Post-Anesthesia Recovery Nurse 3 hours post-operative.

C. Scenario Cast		
Patient/ Client	X High fidelity simulator	
	❑ Mid-level simulator	
	❑ Task trainer	
	❑ Hybrid (Blended simulator)	
	❑ Standardized patient	
Role	Brief Descriptor (Optional)	Confederate/Actor (C/A) or Learner (L)
PACU Nurse	Handoff report at the start of scenario	Confederate or actor
Primary RN	Directs/leads patient care	L
Secondary RN	Takes direction from Primary RN	L
Family member	Concerned, but not disruptive	C/A
RT	Available if paged	C/A
MD	Available by phone or in person	C/A

D. Patient/Client Profile				
Last name:	Connor		First name:	Edith
Gender: Female	Age: 85	Ht: 60 inches	Wt: 176 pounds	Code Status: Full Code
Spiritual Practice: Baptist	Ethnicity: African American			Primary Language spoken: English

1. Past history	
85 year old African American woman admitted 2 days ago Small Bowel Obstruction secondary to adhesions. She had a small bowel resection today, and is being admitted to the ICU post operatively because of a history of MI, CHF, and Hypertension.	
Primary Medical Diagnosis	Small bowel obstruction

2. Review of Systems	
CNS	A/O
Cardiovascular	S1, S2 – previous MI, CHF, HTN
Pulmonary	Lungs clear, non-smoker
Renal/Hepatic	Wnl
Gastrointestinal	Wnl
Endocrine	Wnl
Heme/Coag	Wnl
Musculoskeletal	Wnl, walks unassisted at home
Integument	Intact
Developmental Hx	Normal senior adult
Psychiatric Hx	None known
Social Hx	Lives alone on ground floor apartment, family nearby
Alternative/ Complementary Medicine Hx	None reported

Medication allergies:	NKA	Reaction:	
Food/other allergies:	NKA	Reaction:	

3. Current medications	Drug	Dose	Route	Frequency
	Digoxin	0.25mg	PO	QAM
	Lasix	20mg	PO	Daily
	K Dur	20 mEq	PO	Daily

4. Laboratory, Diagnostic Study Results – pre op					
Na: 140	K: 4.0	Cl: 100	HCO3:	BUN: 20	Cr: 0.08
Ca: 9.0	Mg:	Phos:	Glucose:	HgA1C:	
Hgb: 11	Hct: 34	Plt: 320	WBC: 11.6	ABO Blood Type:	
PT 13	PTT 25	INR 1.0	Troponin:	BNP:	
ABG-pH:	paO2:	paCO2:	HCO3/BE:	SaO2:	
VDRL:	GBS:	Herpes:	HIV:		
CXR: clear	ECG: NSR				

E. Baseline Simulator/Standardized Patient State
(This may vary from the baseline data provided to learners)

1. Initial physical appearance

Gender: female	Attire: gown

Alterations in appearance (moulage): wig, abdominal dressing, dry, intact. Triple lumen to R neck, arterial line. 1+ pitting edema to BLE.

x	ID band present, accurate		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: 162/90	HR: 96	RR: 26	T: 37.5 C	SpO_2: 92% on 2L

CVP: 16	PAS:	PAD:	PCWP:	CO:
AIRWAY:	$ETCO_2$:	FHR:		
Lungs: Sounds/mechanics	Left: Crackles (level 9)	Right: Crackles (level 9)		
Heart:	Sounds:		S1, S2	
	ECG rhythm:		Sinus	
	Other:			
Bowel sounds:	hypoactive		Other:	

3. Initial Intravenous lineset up							
	Saline lock #1	Site:				IV patent (Y/N)	
	IV #1	Site: IJ		Fluid type:	Initial rate:		IV patent (Y/N)
x	Main						
	Piggyback						
	IV #2	Site:		Fluid type:	Initial rate:		IV patent (Y/N)
	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 monitorsset up							
x	A-lineSite:	x	Catheter/tubing Patency (Y/N)		CVPSite:	PACSite:	
6. Other monitors/devices							
x	Foley catheter	Amount: 200 mL		Appearance of urine: medium, clear, yellow			
	Epidural catheter		Infusion pump:		Pump settings: .		

Environment, Equipment, Essential props

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

ICU patient room

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

	Bedpan/ Urinal		Foley catheter kit		Straight cath. kit	x	Incentive spirometer
x	IV Infusion pump		Feeding pump		Pressure bag		Wall suction
	Nasogastric tube		ETT suction catheters		Oral suction catheters		Chest tube kit
x	Defibrillator	x	Code Cart		12-lead ECG		Chest tube equip
	PCA infusion pump		Epidural infusion pump		Central line Insertion Kit		Dressing Δ equipment
	IV fluid Type:		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		Med Admin Record		H & P		Lab Results
	Progress Notes		Graphic record	x	Anesthesia/PACU record		ED Record
x	Medication reconciliation		Transfer orders		Standing (protocol) orders		ICU flowsheet
	Nurses' Notes		Dx test reports		Code Record		Prenatal record
	Actual medical record binder, constructed per institutional guidelines				Other Describe:		

5. Medications (to be available in sim action room)								
#	**Medication**	**Dosage**	**Route**		**#**	**Medication**	**Dosage**	**Route**
1	Lasix	20mg/ml	IV					
1	KCL	30mEq/100ml	IV					
1	Digoxin	0.25mg/ml	IV					
2	Morphine sulfate	2mg/ml	IV					

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES			
Initiation of Scenario : At bedside in ICU room. PACU Nurse giving report: Post op 3 hour surgery, estimated blood loss in OR 300ml. Post op Hgb and Hct were 8 and 23 and she has received 2 units Packed Red Blood Cells in the last hour. She also received 1500 ml of LR during surgery. Abdominal dressing dry and intact Total urine output per Foley catheter since start of surgery is 200ml. She was initially awake and cooperative but now she's just a little confused trying to pull IV out, probably due to the anesthesia. Oxygen saturation 93 on 2 liters nasal cannula. Breath sounds decreased throughout Labs: Hgb and Hct after transfusion 10 and 28, Potassium 3.8. Glucose 120, Creatinine 1.0 She denies pain currently, but has morphine IV available PRN. She has a R radial arterial line and a R internal jugular triple lumen central venous catheter.			
STATE / PATIENT STATUS	**DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE**		
1. Baseline Slightly confused and agitated. Has tried to pull IV out Denies pain. Occasional mild cough that increases as the scenario progresses.	**Operator** **VS revealed as specific monitoring initiated** T: 37.5 C. HR: 96/SR BP: 162/90 RR: 28 O2 sats: 90% CVP: 16 Lung sounds: crackles bilaterally @ Level 9 Peri Pulses: bounding **Triggers:** Learner actions completed within 3 minutes.	**Learner Actions** o Attaches pt. to monitor o Levels and zero's CVP/Art. line transducers o evaluates waveforms o communicates actions to patient and family member and includes them in the plan of care	**Debriefing Points:** - priority assessments & interventions during hand-off & following post op CHF -possible causes for cough and confusion -significance of assessment findings -decision making priorities

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
2. Baseline "I'm having a little trouble breathing, dear." Coughing becomes more frequent. Becomes a bit more agitated "Be a dear and sit me up, please"	**Operator:** EKG: SR 104 BP: 164/90 O2 sat: 88% RR: 32 **Triggers:** Learner Actions completed within 3 minutes	**Learner Actions:** o Completes focused assessment o increases O2 flow rate o elevates head of bed	**Debriefing Points:** -Rationale for actions -Anticipated results of interventions - Significance of deteriorating VS & O_2 saturation
STATE / PATIENT STATUS	**DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE**		
3. Baseline: Respirations becoming shallower. Anxious; States "It's hard to breathe"	**Operator:** No change in basic parameters above. **Triggers:** Learner Actions completed within 5 minutes	**Learner Actions:** o Call for another nurse/RRT o Gives SBAR report to back up nurse and delegates appropriately o Notify MD o Give SBAR o Take orders per agency protocol (write on chart & repeat back to prescriber) Lasix 20mg IVP now. Portable CXR now dx: CHF, Chem 7 and BNP stat.	**Debriefing Points:** - SBAR Communication - Which nurse communicates with MD - Legalities of taking verbal/phone orders -Prioritizing interventions and MD orders.

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
4. Baseline: Begins to improve over next 3 minutes following medication administration Cough decreases. Breathing becomes less labored. Mental status starts to clear.	**Operator:** Begin improvement trends over next 3 minutes HR 92 RR 20 BP 149/76 O2 sat: 92 CVP: 8 Crackles to volume 5 200ml urine output **Triggers:** Learner Actions within 5 minutes	**Learner Actions:** o Administer IV Lasix safely o Delegates appropriate tasks to secondary nurse o Draws labs from arterial or central line o Validates assessment with secondary nurse o Communicates with patient/family r/t actions & progress	**Debriefing Points** - Rationale and expected effects of medication with time frame -Importance of communication with secondary nurse and with family - Appropriate procedure and safety considerations for administration of IV Lasix.
STATE / PATIENT STATUS	**DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE**		
5. Baseline: Patient becomes alert and oriented Breathing pattern unlabored	**Operator:** Lungs: crackles at 2; RR 20 BP 138/70 EKG: SR@ 80 with occasional PVC O2 sat: 96 % CVP: 8 Critical lab called to RN Potassium 3.0	**Learner Actions:** o Reassess Breath sounds o Assess urine output (500 ml clear light yellow urine) o Report critical lab to MD Receives telephone order for KCL 30mEq IV x1 with repeat chem 7 in the morning.	**Debriefing Points:** Assess-Intervene-Reassess -protocol for critical lab results

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
6. Baseline: Remains stable & conversant with family and nurses	**Operator** Vital signs remain stable **Triggers:** Learner Actions completed within 5 minutes.	**Learner Actions** o Correctly initiates KCl infusion Educates patient and family about need for IV potassium	-High alert medications -Dangers of dosing K too fast -medication education for patient and family
Scenario End Point: Medications hanging properly and patient is stable. RT comes in to check patient; nurse gives SBAR to RT			
Suggestions to <u>decrease</u> complexity: May be too long for pre-licensure learners or for one scenario. Consider breaking into 2 sections with the administration of KCl in the second scenario. Remove arterial line and central line to convert to a med surg or tele scenario. Suggestions to <u>increase</u> complexity: Can increase complexity by having patient not respond to immediate interventions and progress to respiratory failure, requiring intubation. Another scenario dealing with Advance Directives can be included if patient requires intubation.			

APPENDIX A: HEALTH CARE PROVIDER ORDERS

Patient Name: Edith Connor **DOB: 12/31/xx** **Age: 85** **MR#:**	**Diagnosis: SBO**

† No Known Allergies
† Allergies & Sensitivities

Date	Time	**HEALTH CARE PROVIDER ORDERS AND SIGNATURE**
		Bed rest
		NPO
		SL
		Cardiac monitor
		Monitor CVP
		Morphine sulfate 1 mg IV every hour as needed for mild pain
		Morphine sulfate 2 mg IV every hour as needed for moderate pain
		Morphine sulfate 4 mg IV every hour as needed for severe pain
		Foley catheter to gravity drainage; hourly urines
		O_2 to maintain sats above 93%
		Lovenox 40mg subcutaneous daily
		SCDs
		Digoxin 0.25mg IV daily
		Lasix 20mg IV daily
		CBC, Chem 7, BNP, chest x-ray in AM
		DC Foley in AM
Signature		

APPENDIXB: 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: