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 be 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, and 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 on the website www. (Please send signed I.P. release forms to KT at kt@healthimpact.org)

SECTION I: SCENARIO OVERVIEW

Scenario Title:	Management of Blunt Chest Trauma- Adult
Original Scenario Developer(s):	Cleona Cash, DNP, RN
Date - original scenario	February 27, 2017
Validation:	C.Meckler BSN, RN, CCRN, CEN, CFRN, CPEN, TCRN, M.Miller, RN, MA, CHSE
Revision Dates:	
Pilot testing:	4/02/2017
QSEN revision:	

Estimated Scenario Time: 15 -20 minutes Debriefing time: 30-40 Minutes

Target group: Inter-professional Emergency Department Team: ED Physician, Primary Registered Nurse, Respiratory Therapist, Certified Nursing Assistant, Unit Secretary

Core case: Patient Safety, Team work, communication

QSEN/IOM Competencies: Patient Centered Care

Brief Summary of Case: 26-Year-old male brought to the Emergency Depart via ambulance from the field. The Paramedic stated that the patient was struck by a steel beam on the right side of his chest while at work. The patient is a construction worker who works on steel structures helping to install metal studs. The patient stated that he turned to grab a steel stud and accidently ran into the stud his partner was carrying. The stud cut through his clothes and pierced the right side of his chest. The patient is on the gurney sitting upright leaning forward holding a rag to the right side of his chest.

EVIDENCE BASE / REFERENCES (APA Format)

Bouzat, P., Raux, M., David, J. S., Tazarourte, K., Galinski, M., Desmettre, T., ... Vardon, F. (2017). Chest trauma: First 48 hours management. *P. Bouzat et al./ Anesth Crit Care Pain Med*, *36*, 135-145. http://dx.doi.org/

Ludwig, C., & Koryllos, A. (2017). Management of chest trauma. *Journal of Thoracic Disease*, *9 (suppl 3)*, S172-S177. http://dx.doi.org/10.21037/jtd.2017.03.52

Unsworth, A., Curtis, K., & Asha, S. E. (2015). Treatment for blunt chest trauma and their impact on patient outcomes and health service delivery. *Unsworth et al. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine*, *23*(17), 1-9. http://dx.doi.org/10.1186/s13049-015-0091-5

Ulrich, B., & Manning Crider, N. (2017). Using teams to improve outcomes and performance. *Nephrology Nursing Journal*, *44*, 141-152.

SECTION II: CURRICULUM INTEGRATION

A. SCENARIO LEARNING OBJECTIVES
Learning Outcomes: Participants will be able to:
1. Evaluate patient assessment data and recognize signs and symptoms of acute respiratory distress
2. Initiate effective inter-professional team (IP) communication in emergent situation to safely care for and stabilize the patient
3. Distinguish between acute upper respiratory distress and conditions of the lower respiratory tract to safely provide care for the patient
Specific Learning Objectives
1. Recognize symptoms of acute respiratory emergency situation
2. Perform essential assessment for oxygenation and circulation
3. Differentiate IP roles and responsibilities in emergent situation
4. Demonstrate team work and close loop communication
5. Perform effective hand-off communication with the IP team using SBAR tool
6. Demonstrate therapeutic communication skills when communicating with patient and or family members
Critical Learner Actions
1. Recognize the patient have a life-threatening injury because of blunt trauma
2. Recognize signs and symptoms of acute respiratory distress and conduct a focus assessment of the lung auscultation
3. Demonstrates proper management of acute respiratory distress
4. Conduct a focus assessment of the patient neurological status and oxygenation/circulation
5. Notifies the physician using SBAR Communication
6. Implements the appropriate steps for chest tube placement
7. Stabilize airway & titrate oxygen to ensure profusion
8. Communicate to the IP team using SBAR and closed loop communication
9. Reassess patient at 5-10 minutes intervals post interventions until stable
10. Communicate in a therapeutic manner with patient and or family members

B. PRE-SCENARIO LEARNER ACTIVITIES	
Prerequisite Competencies	
Knowledge	**Skills/ Attitudes**
❑ Complete pre-assigned reading assessment	❑ Early recognition of acute respiratory distress
❑ Collaborative management of signs and symptoms of Blunt chest trauma in the adult	❑ Safe decision making regarding patient condition and treatment methods
❑ Pharmacology of basic medications used when inserting a chest tube	❑ Safe administration and management of sedation and or local anesthesia
❑ Current adult patient safety goals	❑ Role of nurse in dealing with patient/family members
❑ QSEN Competency: Completed assigned reading pre-simulation scenario, current ACLS certification	❑

SECTION III: SCENARIO SCRIPT

A. Case summary
A 26-year-old male brought to the ED via ambulance with complaints of being struck with a steel beam on the right side of his chest. Upon admission to the Emergency Department the patient stated that he turned to grab a steel stud and accidently ran into the stud his partner was carrying. The stud cut through his clothes and pierced the right side of his chest. He also stated that he was having difficulty breathing. No known drug or food allergies No significant past medical history. No history of surgery

B. Key contextual details
Emergency Department - Monitor Respiratory status- effective teamwork

C. Scenario Cast		
Patient/ Client	X High fidelity simulator	
	❑ Mid-level simulator	
	❑ Task trainer	
	❑ Hybrid (Blended simulator)	
	❑ Standardized patient	
Role	Brief Descriptor (Optional)	Standardized Participant or Learner (L)
Physician	Emergency services physician	Learner
Respiratory Therapist		Learner
Primary Nurse	Registered Nurses	Learner
Emergency Room Technician		Standardized participant
Assistant Unit Secretary		Standardized participant

D. Patient/Client Profile				
Last name:	Walsh		First name:	Robert
Gender: Male	Age: 26	Ht: 5 ft 11 ins	Wt: 75 kg	Code Status: Full
Spiritual Practice: Christian		Ethnicity: Caucasian		Primary Language spoken: English

1. Past history

No known past medical history

Primary Medical Diagnosis	Acute respiratory distress

2. Review of Systems

CNS	Anxious
Cardiovascular	Normal S_1S_2
Pulmonary	Patient short of breath with absent breath sounds on the right
Renal/Hepatic	Within Normal limits (WNL)
Gastrointestinal	Soft nontender, bowl sounds present all quadrants
Endocrine	WNL
Heme/Coag	WNL
Musculoskeletal	Moving all extremities pulses palpable 2^+ bruised area with ¼ inch laceration right external chest wall
Integument	WNL
Developmental Hx	WNL
Psychiatric Hx	WNL
Social Hx	Lives with significant other

Alternative/ Complementary Medicine Hx		No reports	
Medication allergies:	NKDA	Reaction:	None
Food/other allergies:	None Known	Reaction:	None

3. Current medications

Drug	Dose	Route	Frequency
None			

4. Laboratory, Diagnostic Study Results

Na:	K: 3.4 mEq/L	Cl: 104mmol/L	HCO3:	BUN:8 mg/dL Cr: 0.9 mg/dL
Ca:	Mg:	Phos:	Glucose:70 mg/dl	HgA1C:
Hgb: 12.2 gm/dl	Hct: 33 %	Plt:	WBC: 5700 mm3	ABO Blood Type:
PT	PTT	INR	Troponin:	BNP:
ABG-pH: 7.32	paO2: 65mmHg	paCO2: 50mmHg	HCO3/BE:16mEq/L	SaO2: 88%

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

1. Initial physical appearance

Gender: Male		Attire: short sleeve T-shirt, long jeans pants			
Alterations in appearance (moulage for chest wound):					
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, standard display

BP: 88/60	HR: 140	RR: 30	T: 37^0C	SpO^2: 88 %
CVP:	PAS:	PAD:	PCWP:	CO:
AIRWAY:	$ETCO^2$:	FHR:		
Lungs: Sounds/mechanics	Left: Diminish with strider	Right: Diminish with strider		
Heart:	Sounds:		S^1 S^2	
	ECG rhythm:		Sinus Tachycardia	
Bowel sounds:	WNL		Other:	

3. Initial Intravenous line set up

	Saline lock	Site:					IV patent (Y/N)
	IV #1	Site:	CVC	Fluid type:	Initial rate:		IV patent (Y/N) Yes
X	Main	Lft A/C		Normal Saline	150 mls/hr		
	Piggyback						
	IV #2	Site:		Fluid type:	Initial rate:		IV patent (Y/N)
	Main						
	Piggyback						

4. Initial Non-invasive monitors set up

	NIBP	X	ECG First lead:	II	ECG Second lead:
X	Pulse oximeter		Temp monitor/type		Other:

5. Initial Hemodynamic monitors set up

	A-line Site:		Catheter/tubing Patency (Y/N)		CVC Site:	PAC Site:

6. Other monitors/devices

	Foley catheter	Amount:		Appearance of urine:	
	Epidural catheter		Infusion pump:	Pump settings:	
				Internal	External

Environment, Equipment, Essential props Recommend standardized set ups for each commonly simulated environment
1. Scenario setting: (example: patient room, home, ED, lobby)
Emergency Department Trauma RM 2

2. Equipment, supplies, monitors (In simulation action room or available in adjacent core storage rooms)							
	Bedpan/ Urinal		Foley catheter kit		Straight cath. kit		Incentive spirometer
X	IV Infusion pump		Feeding pump		Pressure bag	X	Wall suction
	Nasogastric tube		ETT suction catheters		Oral suction catheters	X	Chest tube kit
	Defibrillator		Code Cart	X	12-lead ECG	X	Chest tube equip
	PCA infusion pump		Epidural pump		Central line Kit	X	Dressing Δ equip
X	IV fluid Type: NS		IV fluid additives:		Blood products: _____ ABO Type: ___ # of units:__		

X	Nasal cannula		Face tent		Simple Face Mask	X	Non-rebreather mask
X	BVM/Ambu bag		Nebulizer tx kit		Flow-meters (extra supply)		

4. Documentation and Order Forms							
X	Provider orders	X	Med Admin Record	X	Hx & Physical		Lab Results
X	Progress Notes		Graphic record		Anes/PACU record	X	ED Record
	Med Reconciliatn		Transfer orders		Standing orders		ICU flow sheet
X	Nurses' Notes		Dx test reports		Code Record		Prenatal record
	Actual medical record binder			X	Electronic Medical Record		

5. Medications (to be available in sim action room)								
#	**Medication**	**Dosage**	**Route**		**#**	**Medication**	**Dosage**	**Route**
1.	1 Liter Normal Saline	150 mls/hr	IV					
2.	Morphine	4 mg q4 hrs PRN	IV					

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES			
Initiation of Scenario: Paramedic reported off to receiving RN in the Emergency Department that a 26-year-old male brought to the ED via ambulance with complaints of difficulty breathing after being struck with a steel beam on the right side of his chest. The patient stated that he turned to grab a steel stud and accidently ran into the stud his partner was carrying. The stud cut through his clothes and pierced the right side of his chest. The patient is awake appears to have some difficulty breathing, BP 90/60, HR: 132 RR 26 $Sp0_2$ 89%			
STATE / PATIENT STATUS	**DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE**		
1. **Baseline: P**atient sitting upright on gurney in trauma bay #2 holding the right side of his chest, patient states he is having a difficult time catching his breath. Not able to speak in full sentences **Nurse:** What happened, what brought you here today? **Patient:** Nurse I don't feel good, I can't breathe	**Operator:** B/P 89/60 HR: 150 RR: 40 T.37^oC $Sp0_2$: 88% Neuro: awake, verbal, oriented x 4 Resp: tachypneic, nasal flaring Skin: color pale, diaphoretic. Patient moaning **Triggers:** Nurse will need to complete 1, 2, 3, 4 & 5 before moving forward.	**Learner Actions** 1. Primary nurse washes hands prior to touching the patient 2. introduces self & role. 3. Conducts a focus assessment of the patient 4. Recognizes Patient in acute respiratory distress. 5. Places 2 L/m nasal oxygen on the patient 6. Notifies the ED trauma physician using SBAR Communication.	**Debriefing Points:** 1. National Patient safety goal(NPSG)-approaches to minimize the risk of error and infection 2. Recognizes the presentation of acute respiratory distress 3. Recognize signs of altered level of consciousness (ALOC) 4. Potential for respiratory and cardiac arrest

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
Patient: Patient in semi-fowler's position with knees bent on the gurney. Decreased level of consciousness, nasal flaring, anxious unable to speak in a full sentence. 0_2 Sat 88% via nasal cannula.	**Operator:** B/P: 84/50 HR: 155 RR: 44 $SP0_2$: 86% Monitor: ST **Physician orders:** 1. Stat ABG 2. portable chest X-ray 3. chem 7, CBC, PT, PTT, INR 4. NS at 150 mls/ hr. 5. Continuous 0_2 to keep sats at 90% or above 6. Prepare for chest tube insertion **Triggers:** *After 1-2*	**Learner Actions:** 1. Recognizes the need for immediate assessment by the physician. 2. Deliver SBAR to physician upon arrival to patient room 3. Manage Acute respiratory distress 4. Place patient on 100% non-re-breather oxygen mask 5. Place 18 gage intravenous line. (left antecubital) 6. Nurse sets up for chest tube insertion 7. Physician inserts chest tube after receiving consent	**Debriefing Points:** 1. Factors in patient status indicating need for physician assistance 2. Elements in management of acute respiratory distress 3. Chest tube insertion-nursing role. 4. Assess chest tube drainage, continuous drainage greater than 200 mls/hr report to physician

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
If all goes well **Scenario Ends** Patient's awake alert oriented x 4, skin pink warm & dry, heart rate within normal limits, patient awake able to speak in full sentences **Incorrect Steps** Nurse assesses patient vital signs. Patient anxious, restless, tachypneic gasping breaths, tachycardic, hypotensive, skin diaphoretic, pale, cyanotic, **Scenario Ends**	**Operator:** B/P: 110/70 HR: 100 RR: 18 $SPO_{2:}$ 97% Monitor: SR **Operator:** B/P: 80/50 HR: 165 RR: 46 SPO_2: 87% on 100% non-re-breather mask **Breath sound**: diminish on Right side **Skin**: Pale diaphoretic **Monitor:** SVT	**Learner Actions:** 1. Assess for air leak at chest tube insertion 2. Monitor chest tube connection site 3. Monitor chest tube drainage (no gurgling sounds noted) 4. Interacts positively with patient and 5. keep patient updated of care.	**Debriefing Points:** 1. Potential for air leaks after chest tube insertion 2. Ensure all connections on chest tube are secured 3. Recognize the need to secure chest tube insertion site with Xeroform dressing after insertion 4. Knowledge of placement of chest tube drainage container during transport (should never be placed level with the patient) 5. Patient knowledge of self-care
Scenario End Point: All team members present, and intervention is timely			
Suggestions to <u>decrease</u> complexity: Suggestions to <u>increase</u> complexity:			

APPENDIX A: HEALTH CARE PROVIDER ORDERS

Patient Name: Robert Walsh **DOB: 03/25/1991** **Age: 26 yeas** **MR#: 001003410**	**Diagnosis: Acute Respiratory Distress**

† No Known Allergies
† Allergies & Sensitivities

Date	Time	**HEALTH CARE PROVIDER ORDERS AND SIGNATURE**
3/20/17	09:00	1. Normal Saline 1000 milliliters at 150 mls/hr
		2. Stat ABG
		3. Portable chest X-ray
		4. Chemistry 7
		5. Titrate oxygen to keep 02 saturation 90% or greater
		6. Prepare chest tube set-up for chest tube placement
		7. Morphine 4 mg IV push q4 hours PRN pain
Signature		Dr. David Jones M.D.

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	**X** QSEN
QSEN Competencies to consider for debriefing scenarios			
X Patient Centered Care	**X** Teamwork/Collaboration	**X** Evidence-based Practice	
X 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: