



Instructions: Fill out this template as best as you can and email it to ASTEC@medadmin.arizona.edu. One of the ASTEC simulation staff will review it and follow up on any specific questions.

Case Title:		ECMO Transport Simulation				
Facilitator:		Lisa Grisham NNP, Jeanne Scott RN, Marc Berg, MD				
Basic Information	Target Audience:	ECLS Specialists from the Adult and Pediatric ICU's				
	Specialty:	ECLS				
	Other:					
Learning Objectives: (2-3 specific technical, cognitive, and/or behavioral skills desired)						
1.	Participants will demonstrate the roles of the health care providers during transport of an ECMO patient.					
2.	ECLS team will demonstrate an effective and coordinated team performance during ECMO transport.					
3.	Participants will describe value of the check sheet.					
4.	Participants will list several possible complications that may occur during transport.					
5.	Participants will describe common technical causes of acute desaturation during ECMO transport.					
Provide a brief overview of the case for the LEARNERS: (Chief Complaint, age, gender, nature of the scenario, etc.) Include any history you want given at the beginning of the scenario.						
<p>This is a 67 yo male (Natso) who was involved in a car accident 1 week ago. He was on his way to the hospital to have a scheduled robotic CABG procedure. He had no obvious injuries from the accident so proceeded to have the surgery. Postoperatively, NATSO had some extensive bleeding so the surgeons had to perform an emergency thoracotomy at the bedside to relieve his cardiac tamponade. Natso went into cardiac arrest and was internally defibrillated during this resuscitation. That night, Natso's cardiac output was inadequate and he was severely hypotensive on max dose vasopressors, so the decision was made to place him on VA ECMO to allow his heart time to recover. Over the past 5 days, Natso's heart shows little improvement, and he has been placed on the transplant list. He is scheduled for a Head CT to assess for any permanent injury from his cardiac arrest. Your job is to transport him to and from CT on ECMO.</p>						
Patient History: Onset, timing/frequency, quality descriptors, severity, sign/symptoms, allergies, medications, review of systems, past medical history, family/social history, etc.						
To be given later in the scenario when learners ask for this info.						
<p>ECMO cannulas: 21fr venous cannula in the right femoral vein, 17fr arterial cannula in the left femoral artery with 8fr retro cannula (for distal reperfusion) ECMO settings: flow 4.0LPM, sweep 3.0, FiO2 70% Ventilator settings: Volume Control, Rate 12, Peep 10, TV 600mL, FiO2 40% Intravenous Infusions through right IJ Swan-Ganz catheter: Maintenance fluid D5 1/2 NS with 20KCL/L at 60 mL/hr, Fentanyl drip at 50mcg/hr and Versed drip at 2mg/hr. Vasopressors were weaned off after initiation of ECMO.</p>						
Provide a brief overview of the case for the SIMULATION SPECIALIST: (How the case scenario should progress).						
The exercise is for the learners to transport the patient to and from CT so they can work on the elements of team dynamics with a very complex patient. The vitals will remain constant until entering the CT room when they change as described below.						
Initial State	Vital Signs	HR 70	RR 12	BP MAP 65	SpO₂ 96	Temp 98.4
	Heart Sounds			EKG: ST-Elevation		12 Lead EKG:



ASTEC Template for Simulated Case Scenarios

	Lung Sounds	Left: Clear	Right: Clear	
	Pupils	Left: Sluggishly Reactive	Right: Sluggishly Reactive	
	Mental Status	Sedated		
	Level of Orientation			
	Behavior			
	Glascow Coma Scale	Eyes Opening		
	Verbal Response			
	Motor Response			
Describe any additional preparation of the mannequin (angioedema, dry mucous membranes, burns, fractures, etc)		Swan-Ganz in R IJ, R Radial Arterial line, PIV in left hand, ECMO circuit threaded through pelvic skin or taped in place of femoral vessels, intubated on ventilator		

For the following, include both verbal dialog to be given to the learners and specifics as to what the Simulation Specialist needs to change on the mannequin (vitals, chest excursion, etc.).

Critical Actions and Patient Response:
Patient to be transported to CT - no change in settings
Critical Actions and Patient Response:
During transport, the RPM dial is accidentally turned while entering the CT room. The MAP drops to 40, the HR drops to 55, and the saturation drops to 80%. The alarm on the ECMO pump beeps. The problem is noted, RPMs are increased and the MAP returns to 70, Sat to 96% and HR to 72.
Critical Actions and Patient Response:
Patient is moved to and from CT bed and back to ICU. No changes in settings unless something is done incorrectly or goes wrong (e.g. the ECMO circuit becomes disconnected, then the patient vitals would crash dramatically).
Potential Errors or Lack of Appropriate Intervention and Patient Response:



Equipment and Supplies: code cart and IV present for all cases	
<input checked="" type="checkbox"/> Arterial Line	<input type="checkbox"/> C-MAC
<input type="checkbox"/> Cricothyrotomy Kit	<input type="checkbox"/> ECMO Set-up
<input type="checkbox"/> Lumbar Puncture	<input type="checkbox"/> OB Kit
<input type="checkbox"/> Thoracotomy Tray	<input type="checkbox"/> Tracheostomy Kit
Other:	
<input type="checkbox"/> Central Lines	<input type="checkbox"/> Chest Tube Insertion Tray
<input type="checkbox"/> IO Drill	<input type="checkbox"/> Sutures
<input checked="" type="checkbox"/> PPE/Sterile Wear	<input type="checkbox"/> Defibrillator
<input type="checkbox"/> UVC	
Separate Files: Indicate the documents or supplements that support the case and attach in an email	
<input type="checkbox"/> 12-Lead EKG	<input type="checkbox"/> Misc Diagnostics
<input type="checkbox"/> MRI	<input type="checkbox"/> Ultrasound
<input type="checkbox"/> Physician Orders	<input type="checkbox"/> Cardiac Echo
Other:	
<input type="checkbox"/> Labs	<input type="checkbox"/> CT Scan
<input type="checkbox"/> X-ray	
<input type="checkbox"/> Medical Record/SBAR	
Interpersonal/Interprofessional Variables:	
Work on the Elements of Team Dynamics. No distractions added to this simulation.	
Anything else you would like to include that did not get addressed in the above:	
References: please give us at least 2 references to support the above case	
1.	ELSO Guidelines for Training and Continuing Education of ECMO Specialists. 2010. Accessed at http://www.elseo.med.umich.edu/Guidelines.html .
2.	Interprofessional Education Collaborative Expert Panel. (2011). Core competencies for interprofessional collaborative practice: Report of an expert panel. Washington, D.C.: Interprofessional Education Collaborative.
3.	Burton KS, Pendergrass TL, Byczkowski TL, et al. Impact of simulation-based extracorporeal membrane oxygenation training in the simulation laboratory and clinical environment. Simul Healthc, 2011;6(5):284-91.
4.	Short B, Williams L. ECMO Specialists Training Manual. Ann Arbor: Extracorporeal Support Organization; 2010.