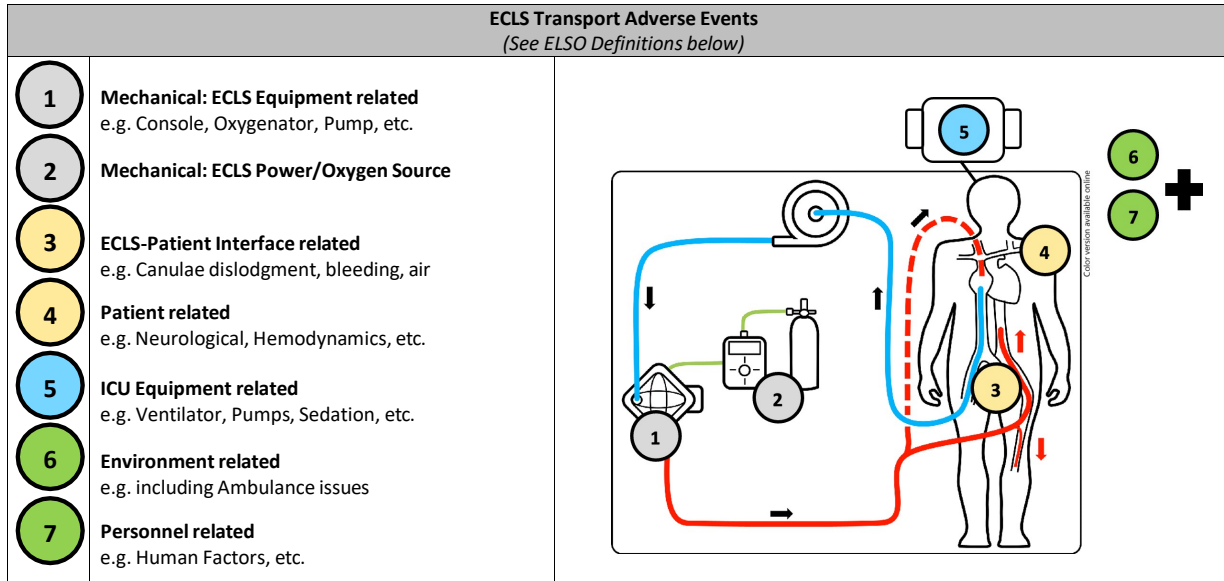


BC ECLS Transport Adverse Events



ECMO Transport Adverse Events - Categorization	
I.	High risk for morbidity and mortality without response within seconds
II.	High risk for morbidity and mortality with no response within minutes
III.	Need of attention, with no risk to morbidity or mortality
IV.	Low risk needed to be noted

Mechanical	
Oxygenator failure	Change indicated due to clot formation, gas exchange failure or blood leak
Other tubing rupture	Rupture of ECLS tubing
Pump Failure	Change indicated due to equipment failure
Console Failure	Requiring hand-cranking or console change out
Temp Regulation Device Malfunction	Malfunction of temperature regulation device leading to unintentional hypothermia <35C or hyperthermia >39
Air in circuit	Requiring circuit intervention or circuit clamping for bubble detector alarm, visualized air, air entry into patient
Cannula problems	Requiring intervention (reposition or exchange) for misplacement, dislodgement, replacement due to clots/fibrin, mechanical failure or inappropriate position
Circuit change	Entire circuit (with exception of cannulae) changed due to clot formation or mechanical failure
Clots and Air Emboli	If a clot or an air embolus causes a mechanical failure or change out of a circuit component - please indicate the complication below.
Thrombosis/Clots: circuit component	Circuit component (e.g. pigtails, connectors, bridge, arterial or venous tubing) requiring change due to clot formation or mechanical failure of the component, not equipment.
Neurologic	
Brain death	Brain death or neurologic determination of death
Seizures: clinically determined	Clinically determined by assessment
Neurosurgical intervention performed	Neurosurgical procedure performed during ECLS run (e.g. intracranial pressure monitor, external ventricular drain, craniotomy)

BC ECLS Transport Adverse Events

Hemorrhagic	
GI hemorrhage	Upper or lower GI hemorrhage requiring PRBC transfusion (>3U PRBCS/24 hrs), and/or endoscopic intervention, and/or hemostatic agent deployment
Surgical site bleeding	Requiring PRBC transfusion (>3U PRBCS/24 hrs), and/or surgical intervention
Peripheral cannulation site bleeding	Peripheral cannulation site bleeding requiring PRBC transfusion (>3U PRBCS/24 hrs) and/or, surgical intervention (includes intravascular hemostatic agent deployment). A reperfusion cannula is a type of peripheral cannulation site.
Mediastinal cannulation site bleeding	Mediastinal cannulation (aka central cannulation) site bleeding requiring PRBC transfusion (>3U PRBCS/24 hrs) and/or surgical intervention.
Cardiovascular	
CPR required	Chest compressions and cardiopulmonary resuscitation required during ECLS run
Cardiac arrhythmia	Requiring antiarrhythmic medication infusion, overdrive pacing, cardioversion or defibrillation
Tamponade (blood)	Tamponade during ECLS run requiring pericardial drain or mediastinal washout
Tamponade (not blood)	Tamponade during ECLS run requiring pericardial drain or mediastinal washout
Pulmonary	
Pneumothorax requiring treatment	Requiring insertion of chest drain
Pulmonary hemorrhage	Requiring pRBC transfusion (>3U PRBCS/24 hrs)
Tracheostomy complication/bleeding	Requiring pRBC transfusion, and/or surgical intervention, and/or bronchoscopy for pulmonary toilet for bleeding
Limb	
Ischemia	Post peripheral cannulation, requiring addition of limb reperfusion cannula \geq 6 hrs post cannulation
Compartment Syndrome	Compartment syndrome
Infectious/Metabolic	
Moderate hemolysis (slight visible hemolysis)	Peak plasma hemoglobin (Hemoglobin, plasma visual) noted as “slight visible hemolysis” occurring at least once during ECLS run. Sustained for at least 2 consecutive days.
Severe hemolysis (severe visible hemolysis)	Peak plasma hemoglobin (Hemoglobin, plasma visual) noted as “severe visible hemolysis” occurring at least once during ECLS run. Sustained for at least 2 consecutive days or if the level of hemolysis leads to a major component change namely the membrane lung, blood pump or entire circuit.
ICU Equipment	
Endotracheal Tube/Trach	Dislodgment, extubation, cuff rupture etc.
Mechanical Ventilator	Malfunction, power loss, etc.
IV Pump	Malfunction, power loss, etc.
Medication related complication	Medication error, run out of infusion, etc.
Environment Related	
Ambulance or Aircraft	Mechanical problem, fuel, MVI, re-routing due to weather, etc.
Human Factors	Personnel issues, staffing, illness, injury, etc.
Communication	Delays in dispatch, charting, consent, etc.