**Pediatric Criteria:**

***Any one of the following criteria qualifies the patient for ECLS:***

Any one of the below signs of hypoperfusion or severe cardiac dysfunction, following appropriate volume resuscitation (≥ 60 mL/kg and/or CVP > 10) and inotropic/vasopressor support:

* + Plasma lactate > 45 mM/L and not improving for > 30 minutes
	+ SV02 < 55% (estimated Cardiac Index < 2) for > 1 hour
	+ Rapidly deteriorating or severe ventricular dysfunction
	+ Intractable arrhythmia with poor perfusion
	+ Failure to wean from cardiac bypass
	+ Need for CPR
	+ Inotropic equivalent (IE) > 50 for 1 hour, > 45 for 8 hours

For patients with acute myocarditis or post cardiotomy, IE > 40.

IE= Dopamine(mcg/kg/min) + Dobutamine(mcg/kg/min) + Epinephrine(100Xs mcg/kg/min) + Norepinephrine(100Xs mcg/kg/min) + Isoproterenol(100Xs mcg/kg/min) + Milrinone(15Xsmcg/kg/min).

Any one of the following signs of severe respiratory failure with predicted high mortality rate; all values assume an attempt to optimize mechanical ventilation.

**Additional indications: CO2 removal for asthmatics, support of the tracheal bronchial tree, mediastinal masses, pulmonary embolism.**

* Oxygenation Index (OI = MAP x FiO2 x 100 divided by PaO2
	+ - OI > 45 for 6 hours on Conventional Ventilation and/or HFOV
		- OI > 35 for > 12 hours

* Aa gradient
	+ - * Aa gradient= FiO2 713 – PaCO2- (PaO2/FiO2). Historically used in neonatal respiratory failure, an AaDO2 > 610 for 8 hours correlated with an 80% mortality. Pediatric patients AaDO2 > 470, was noted in some studies to have 80% mortality.

* Exceeding recommended maximal ventilator settings of:

Conventional PIP of > 35 for 8 hours or HFOV Amplitude of > 55 for 8 hours.

 ***Any one of the following underlying imminently fatal or irreversible disease states may exclude the patient from ECLS:***

* Severe CNS injury or asphyxia
* Persistent plasma lactate > 225 mg/dl (is highly predictive of death); (Note: > 135 mg/dl is highly predictive of adverse neurologic sequel in neonates)
* Base deficit > 30 on 2 ABG’s
* Severe neurological exam persistent after respiratory and metabolic resuscitation
* End-stage malignancies or advanced AIDS
* Severe acquired or congenital immunodeficiency
* Major burn
* Advanced liver failure
* Evidence of ongoing uncontrolled bleeding (a potentially correctable coagulopathy is not exclusion).
* Severe fibrosis on lung biopsy
* Severe pulmonary disease ventilated aggressively for > 10 days
* Lethal condition incompatible with long life, including trisomy 13 and 18
* If concern about CNS prognosis during off-hours, consider portable head CT scan, followed by official reading by on-call radiologist.