

Subject: Criteria for ECMO

Date Reviewed: 11/2006

This is a guideline and may not apply to the individual circumstances of each infant. This guideline is intended to assist individualized decision making, not replace it.

All criteria assume optimal support of respiratory and/or cardiovascular failure including mechanical ventilation, trial of nitric oxide, volume expansion, and appropriate inotropic support. We recommend not exceeding a PIP of 35 (30 for diaphragmatic hernia patients) on conventional ventilation, an HFOV AMP of 40 (35 for CDH patients), or a MAP of 20 (18 for CDH patients), prior to qualifying for ECMO. A transient improvement should not cancel plans for ECMO.

Any 1 of the following criteria qualifies a patient for ECMO.

Respiratory Criteria-

_____ **Oxygenation Index (OI) = $MAP \times FiO_2 \times 100 / PaO_2$:**

>60 for 30 min	Infants with Diaphragmatic Hernia:
>40 for 60 min	>35 for 30 min
>35 for 6 hours	>30 for 2 hours
>30 for 24 hours	>25 for 4 hours
>25 for 72 hours	OR need for MAP>18 or AMP>35

_____ **Acute Deterioration**
PaO₂ <30 at a single time point or productal SaO₂ <70%

_____ **Barotrauma:**
Severe air leak unresponsive to other therapies

Cardiovascular/Oxygen Delivery Criteria-

_____ **Plasma lactate** >45 mg/dl (5mM/L) and not improving after repeat in 30-60 min.

_____ **Mixed Venous Sat** of <55 % for 30-60 min (<60% for CDH patients)

_____ **Metabolic acidosis** (base deficit >7) for 30-60 min, despite volume expansion and inotropic support.

_____ **Hypotension** (<5th %tile) and acidosis (< 7.25) for 30-60 min despite volume expansion and high dose inotropic support (ex. dopamine \geq 20 mcg/kg/min).

_____ **Cardiac Arrest**

Exclusions & References: see Exclusions to Neonatal ECMO

_____ MD _____ Date