

**Appendix:**

**Supplemental Table 1: Inclusion Criteria for Neonatal Respiratory ECMO at CHOA-E**

1. Gestational age at least 34 weeks
2. Not more than 10 prior days of mechanical ventilation
3. Absence of severe underlying non-pulmonary disease (unless expected to be reversible)
4. Cranial ultrasound without evidence of intracranial hemorrhage greater than Grade 2
5. No evidence of severe brain injury (moderate HIE acceptable)
6. No evidence of uncontrolled bleeding or known major bleeding diathesis
7. Evidence of severe, refractory respiratory failure as indicated by at least one of the following:
  - a. Oxygenation index > 40 on 3 of 5 blood gases each drawn 30 to 60 minutes apart
  - b. Severe, refractory respiratory failure with sudden decompensation unresponsive to medical management
  - c. Failure to wean high ventilator settings, including failure of sustained wean from 100% oxygen after 4 or more days
  - d. 3 or more decompensation episodes requiring hand-bagging or other interventions, within a 12 hour period
8. Severe primary or secondary cardiac dysfunction unresponsive to other available measures
  - a. Echocardiographic evidence of severe right ventricular dysfunction
  - b. Inotropic support with VIS >30 and/or continued volume expander

Abbreviation: CHOA-E = Children's Healthcare of Atlanta at Egleston; ECMO = extracorporeal membrane oxygenation; HIE = hypoxic ischemic encephalopathy; VIS = Vasoactive Inotropic Score