

## **The State of Utah ECMO referral crisis educational document**

The University of Utah, Intermountain Medical Center and Primary Children's are working together to provide this educational document to assist referral centers in patient selection for expert consultation for Extracorporeal Oxygenation Membrane Support (**ECMO**) in the management of progressive respiratory failure.

### **FAQS:**

- **Timing of ECMO initiation is critical to the ECMO patient survival.**
- **For potential candidates EARLY REFERRAL (< 48 hours of intubation is IDEAL)**
- **Candidacy for ECMO for patients with COVID-19 is the same criteria as other patients**
- **ECMO candidacy can be considered at the time of ICU admission**

### **Good Candidates:**

- **Isolated (single organ) acute respiratory or cardiac failure**
- **Healthy people without chronic medical problems or organ dysfunction**
- **Younger age confers survival benefit even with chronic medical problem**

### **Poor Candidates:**

- Mechanical Ventilation > 7d or >10d for pediatric patients
- Advanced Age, or frailty index
- Recent or current treatment for malignancy or immunocompromised state
- Complex social family dynamics without support
- Recent (14 days) stroke or surgery
- Coagulopathy with significant hematemesis, hematochezia, or hemoptysis

### **Additional information to consider prior to ECMO consultant evaluation:**

- 1) Is the underlying disease process permanent?
- 2) Do patient's goals of care express a preference against nursing home, long term facility or prolonged support?
- 3) Does the patient have chronic co-morbidities?
- 4) Does the patient have acute coexisting organ failures?
- 5) Is the patient morbidly obese (BMI > 45)?
- 6) Is the patient's neurological status known?
- 7) Is the patient's cardiac function normal? Is TTE possible?
- 8) If central line access needed, consider preserving right IJ

### **Call for evaluation and possible transfer to ECMO center when:**

- Any of the following clinical parameters persist:
  - PH < 7.20, PCO<sub>2</sub> > 75, P/F ratio <150, FiO<sub>2</sub> > 70%, Plateau P > 28
- Patient condition continues to worsen despite 6-12 hours of any one item:
  - Low tidal Volume Ventilation (LTVV) with PEEP titration
  - Prone Position trial
  - Sedation titration including neuromuscular blockade administration

Referral centers:  
UofU  
IMC  
PCH

## State of Utah Crisis Planning for ECMO referral

Acute Hypoxemic Respiratory Failure

Initiate LTVV and ARDSnet therapy  
titrate for 6-12hrs

Any of the following for >6 h?  
PEEP > 15; FiO<sub>2</sub> > 70%; Ppl>28  
PH < 7.2; PCO<sub>2</sub> > 75

ECMO  
candidate?  
\*see FAQ

Assess:  
- Neurological Function  
Trial of NMB  
- Cardiac Function  
(TTE) if available

P/F < 150  
Consider if available  
- Prone Position  
- NMB infusion  
- Pulmonary vasodilator

Discuss:  
Goals of Care  
Assent to DNR  
Logistics

Call  
ECMO  
consult

Intermountain Medical Center  
855-932-3648  
University of Utah Transfer Center  
801-587- 8980  
Primary Children's:  
855-932-3648