Lucile Packard Children's Hospital DEPARTMENT OF PATIENT CARE SERVICES

PATIENT CARE GUIDELINE: Circuit Management of the Pediatric Patient Requiring ECMO

This guideline is intended to provide the nurse with a description of recommended courses of action to address a specific diagnosis/clinical condition or need of a particular patient population. It is not necessarily the only acceptable and appropriate approach to patient care. Patient care continues to require individualization based on patient needs and responses.

Overview:

Caring for a pediatric patient on Extracorporeal Membrane Oxygenation (ECMO) requires the nurse to have a strong understanding of the function of the cardiovascular system, respiratory system and anticoagulation status.

The bedside nurse must use proper assessment tools in caring for the pediatric patient requiring ECMO and the circuit itself. He/she must make interventions that are appropriate, as these patients typically have severe cardio-respiratory dysfunction and the circuits require constant vigilance to maintain.

Key Assessments:

Respiratory:

Impaired gas exchange

Cardiovascular:

- Impaired tissue perfusion
- Arrhythmias
- Decreased peripheral pulses .
- Hypotension .
- Edema

Gastrointestinal:

Decreased calorie intake

Neurological:

Decreased level of consciousness

Immunology:

Malnutrition .

Invasive cannulation

- **Coagulation Status:**
- Bleeding

Renal:

- Impaired renal status .
- Electrolyte imbalance
- Family/Psychosocial History

Stress

Circuit

- Inspection for clot, air, membrane pressures
- Constant vigilance
- Emergency preparedness

Interdisciplinary Treatment Goals:

- Protect airway and respiratory status 1.
- Optimize respiratory and cardiovascular status 2.
- 3 Family teaching in regards to ECMO

Nursing Orders and Interventions:

Common Problems: 1. Follow Standards of Care 1. Alteration in respiratory function Record pump flow rate, gas mix and flow rate and mixed venous saturation every hour 2. 3. Make changes on sweep gas and flow rate based on blood gases

4. Draw triple gases every eight hours with co-oximeter measurement of oxygen Documents involving the evaluation and improvement of quality of care road to be printed, copied or distributed in anyway that may jeopardize this protection.

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Complications/Contact MD:

Any changes in patient or ECMO circuit status Change in vital signs such as decreased/ increased heart rate, hypotension, hypertension, fever.

Teaching Content:

Documents involving the evaluation and improvement of quality of care may be privileged under Ca. Evidence Code section 1157 and should be treated as confidential documents. These documents should not be printed, copied or distributed in anyway that may jeopardize this protection.

Provide specific patient instructions related to the following and document on the plan of care on IPOC, Teaching Record and/ or Progress Note.

 Symptom Management/ Risk Factors: Describe changes in hemodynamics, bleeding issues, respiratory status related to ECMO Discuss acuity and why the patient has two nurses
 Medications:

Will vary

3. Procedures/Equipment:

Describe bedside and ECMO equipment

Related Data/Resources:

LPCH CVICU Nursing Standards of Care Curley, M.A.Q. & Moloney-Harmon, P. A. (2001). Critical Care Nursing of Infants and Children 2nd Ed. EMCO Specialist Manual (1999). ELSO

Written By: Sandy Staveski RN, MS, CCRN Reviewed By: Stephen Roth MD, MPH Approved By: Stephen Roth MD, MPH and Sandy Staveski RN, MS, CCRN

Original Date: _11/2003

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