

Extracorporeal Membrane Oxygenation (ECMO) Specialist Training Course
2017
Thomas Jefferson University

LEARNING OBJECTIVES

At the conclusion of this course, participants should be able to:

- Identify and discuss the evolution of ECMO technology, concepts and supportive technology
- Explain and identify the pioneers of ECMO supportive therapy and analyze their contributions to the field
- Describe and illustrate the key components of the ECMO circuit
- Explain and analyze the functionality of pump technology including the various types of oxygenators and pump heads
- Evaluate the indications and contraindications for ECMO support
- Evaluate the modality of ECMO support most appropriate for the patient
- Identify and illustrate the most effective cannulation strategy
- Differentiate cannula size, location and modality and safely initiate V-A and V-V ECMO support
- Identify and evaluate cardiac indications and effectiveness for V-A ECMO support
- Assess and troubleshoot V-A ECMO complications
- Identify and interpret respiratory indications of V-V ECMO
- Illustrate and evaluate the effectiveness of V-V ECMO support
- Assess and troubleshoot through a variety of V-V ECMO complications
- Recognize, Identify and assess causes and response to treatment for inadequate oxygen delivery
- Identify and assess appropriate medical management of cardiac failure
- Identify and assess appropriate medical management of respiratory failure
- Identify and analyze technical management of ECMO circuit on V-V and V-A ECMO
- Assess and illustrate the physiology of coagulation and how anticoagulation medication affects the coagulation cascade
- Identify and explain the risks and limitations of anticoagulation therapy while on ECMO support
- Explain and distinguish specific guidelines and protocols for managing anticoagulation on ECMO
- Identify and follow specific anticoagulation recommendations for patients on ECMO support.
- Explain and describe appropriate time to start weaning from ECMO including success or failure of weaning
- Describe and illustrate timing of appropriate decannulation and potential decannulation techniques
- Identify ethical considerations surrounding use and withdrawal of ECMO support
- Consider and distinguish when to consult specialists in the field of ethics and palliative care as part of complex ECMO medical decision making

- Assess and identify the need to discuss ethical considerations with patients and families in the ECMO setting
- Apply and demonstrate troubleshooting algorithms to ECMO complications
- Identify and differentiate between V-A and V-V ECMO case studies, utilizing appropriate management for continuous improvement process
- Perform the basic bedside troubleshooting of ECMO complications
- Communicate clearly with multi-disciplinary team using closed loop communication
- Assess individual practices in light of the information and discussions during the course, and identify specific strategies to implement as part of a continuing improvement process for their practices within the field of ECMO