COMPREHENSIVE SIMULATION-BASED ADULT ECMO COURSE

OCTOBER 24 - 27, 2023

HEART AND VASCULAR CENTER
CONFERENCE ROOM (4999 JPP)
UNIVERSITY OF IOWA HOSPITALS AND CLINICS
200 HAWKINS DRIVE
IOWA CITY, IOWA

Provided by:
University of Iowa Heart and Vascular Center
University of Iowa Health Care

UNIVERSITY OF IOWA HEART AND VASCULAR CENTER
University of Iowa Health Care

Changing Medicine.
Changing Lives.®

OVERVIEW

The University of Iowa ECMO program has been active for nearly 30 years and has been offering ECMO courses since 2009. As a Platinum Level Center of Excellence, we are pleased to present this four-day comprehensive simulation-based adult ECMO course. It is intended to train all levels of ECMO providers (APP, CCP, Physician, RN, RRT) through a combination of didactic presentations and high-fidelity simulation. We understand that everyone's experience may be different and not necessitate a full comprehensive course so, at our course, you have the option of attending the didactic portion only, the simulation portion only, or both. The didactic portion of our course content includes management of VenoVenous and VenoArterial ECMO, covering all one hundred and six ELSO objectives intended to meet the requirement for step one of the E-AEC certification application. The high-fidelity simulation experience includes the necessary scenarios to satisfy the requirements for step two of the E-AEC certification application.

INTENDED AUDIENCE

- Physicians
- Advanced practice providers
- Nurses
- Respiratory Therapists
- Perfusionists
- Any other healthcare professional who provides direct care for patients supported on extracorporeal membrane oxygenation devices

REGISTER NOW

Full Comprehensive Course $2,500

Simulation Only $1,500

Didactic Only $1,000

https://bit.ly/40DB0ai

HOTEL

Courtyard by Marriott
Iowa City University Heights
901 Melrose Avenue
Iowa City, Iowa
Phone: 319-569-6777

Event Summary:
UI ECMO Training
Start Date: Monday, October 23, 2023
End Date: Friday, October 27, 2023

Room rates are $129 per night, excluding taxes.

Book room via the link below or by calling the hotel directly. If calling directly, request group rate for *UI ECMO Training*. Conference rate will be available through 9/23/23.

https://bit.ly/3I0j0tU

CREDITS

AMA PRA Category 1 Credits™ (21.50 hours)
Non-Physician Attendance (21.50 hours)

ACCREDITATION

In support of improving patient care, the University of Iowa Roy J. and Lucille A. Carver College of Medicine is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Physician: The University of Iowa Carver College of Medicine designates this live activity for a maximum of 21.25 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Nurse: Effective March 18, 2020, Iowa nurses may use participation in ACCME-accredited education toward their CE requirement for licensure. A certificate of participation will be available after successful completion of the course. (Nurses from other states should confirm with their licensing boards that this activity meets their state's licensing requirements.)

Other Provider: All other participants will receive a certificate of participation for this conference upon completion of the online evaluation. It is the responsibility of each attendee to determine if the continuing education programs they attend meet the requirements of their professional licensure board.

DISCLOSURE POLICY

University of Iowa Roy J. and Lucille A. Carver College of Medicine adheres to the ACCME's Standards for Integrity and Independence in Accredited Continuing Education. Any individuals in a position to control the content of a CE activity, including faculty, planners, reviewers or others are required to disclose all financial relationships with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients. All relevant financial relationships have been mitigated prior to the commencement of the activity.

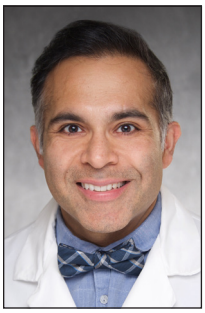
QUESTIONS ABOUT THE COURSE

Daniel Dietzel, BSN, RN, E-AEC
ECMO Program Clinical Practice Leader
Heart and Vascular Center
University of Iowa Health Care
Iowa City, Iowa

Email: daniel-a-dietzel@uiowa.edu

Phone: 319-353-6569 | Cell: 319-329-6556

FACULTY



Course Director

Lovkesh Arora, MD, E-AEC
ECMO Medical Director
Clinical Associate Professor of Anesthesia
University of Iowa Health Care
Iowa City, Iowa

Course Co-Director

Daniel Dietzel, BSN, RN, E-AEC
ECMO Program Clinical Practice Leader
Heart and Vascular Center
University of Iowa Health Care
Iowa City, Iowa

Mohammad Bashir, MBBS
Director, Adult Cardiac Surgery Division
Clinical Associate Professor, Cardiothoracic Surgery
University of Iowa Health Care
Iowa City, Iowa

Kevin C Doerschug, MD, MS, FCCP
Clinical Professor of Internal Medicine
University of Iowa Health Care
Iowa City, Iowa

Elizabeth A Moore, BSN, MBA, RN, E-AEC
Director of Clinical Functions
Heart and Vascular Center
University of Iowa Health Care
Iowa City, Iowa

Tony Naber, PT, DPT
Physical Therapist
University of Iowa Health Care
Iowa City, Iowa

Mark Pedersen, MPH, MD
Clinical Assistant Professor of Anesthesia
University of Iowa Health Care
Iowa City, Iowa

FACULTY (CONTINUED)

Charles Rappaport, MD
Clinical Assistant Professor of Internal Medicine-Pulmonary, Critical Care and Occupational Medicine
University of Iowa Health Care
Iowa City, Iowa

Gregory A Schmidt, MD
Professor of Internal Medicine-Pulmonary, Critical Care and Occupational Medicine
Associate Chief Medical Officer of Critical Care
University of Iowa Health Care
Iowa City, Iowa

Kristina Rappaport, MSN, RN, E-AEC
Core ECMO Specialist
Heart and Vascular Center
University of Iowa Healthcare
Iowa City, Iowa

Archit Sharma, MBBS
Clinical Associate Professor of Anesthesia
University of Iowa Health Care
Iowa City, Iowa

Kristina Rudolph, BSN, RN, E-AEC
ECMO Program Coordinator
Heart and Vascular Center
University of Iowa Health Care
Iowa City, Iowa

Jonathan Simmons, DO
Clinical Professor of Anesthesia and Emergency Medicine
University of Iowa Health Care
Iowa City, Iowa

AGENDA

TUESDAY, OCTOBER 24, 2023

8:00 - 8:25	**Welcome & ECMO Training Overview** Daniel Dietzel, BSN, E-AEC
8:30 - 8:55	**ECMO Components** Kristina Rudolph, BSN, E-AEC
9:00 - 9:25	**Cannulation for ECMO** Mohammad Bashir, MBBS
9:30 - 10:00	**Physiology of ECMO** Gregory Schmidt, MD
10:00 - 10:30	**Break**
10:30 - 10:55	**Respiratory Failure and Indications for ECMO** Kevin Doerschug, MD
11:00 - 11:25	**Management of VV ECMO** Gregory Schmidt, MD
11:30 - 12:00	**VV Case Studies** Charles Rappaport, MD
12:00 - 1:00	**Lunch**
1:00 - 1:25	**Emergency Management of the ECMO Patient** Lovkesh Arora, MD, E-AEC
1:30 - 1:55	**Emergency Management of the ECMO Patient II** Kristina Rappaport, MSN, E-AEC
2:00 - 2:25	**ECMO Complications** Mark Pedersen, MD
2:30 - 3:00	**ECMO Transport**
3:00 - 4:00	**Discussion and Adjourn**

WEDNESDAY, OCTOBER 25, 2023

8:00-8:25	**Cardiac Failure and VA ECMO Indications** Mark Pedersen, MD
8:30-8:55	**Management of VA ECMO** Lovkesh Arora, MD, E-AEC
9:00-9:25	**Managing VA ECMO Complications** Archit Sharma, MD
9:30-10:00	**VA Case Studies** Jonathan Simmons, DO
10:00 - 10:30	**Break**
10:30 - 10:55	**Medical Management of the ECMO Patient** Jonathan Simmons, DO
11:00 - 11:25	**Physiotherapy** Tony Naber, DPT
11:30 - 12:00	**ECMO for Special Indications Case Studies** Lovkesh Arora, MD, E-AEC
11:40 - 12:00	**VA Case Studies** Jonathan Simmons, DO
12:00 - 1:00	**Lunch**
1:00 - 1:25	**ECMO Program Development** Elizabeth Moore, MBA, BSN
1:30 - 1:55	**ECMO Research** Charles Rappaport, MD
2:00 - 3:00	**Discussion and Adjourn**

AGENDA

THURSDAY, OCTOBER 26, 2023

8:00 - 10:00	**Simulations**
10:00 - 10:15	Break
10:15 - 12:00	**Simulations**
12:00 - 1:00	Lunch
1:00 - 4:00	**Simulations**

FRIDAY, OCTOBER 27, 2023

8:00 - 9:45	**Simulations**
9:45 - 10:00	Break
10:00 - 12:00	**Simulations**

DIDACTIC OBJECTIVES

- Describe the different modes of ECMO Support
- Discuss global trends in ECMO utilization
- List the Key milestones in the development of ECMO
- Describe the evolution of the Extracorporeal Life Support Organization
- Define the main components of an ECMO circuit
- List circuit monitoring tools
- Describe the difference in ECMO cannula design
- List the considerations for selecting the appropriate ECMO cannula
- Describe the requirements of a blood pump used in ECMO
- Explain the physics and working principles of a centrifugal pump
- Describe the structure and function of the membrane lung
- Describe the function of the blender
- List the different pressures zones of an ECMO circuit
- Discuss the utility of monitoring drainage pressure
- Discuss the utility of monitoring pre and post membrane lung pressures
- Describe the utility of the flowmeter
- Describe the function of the heater
- Describe the utility of circuit clamps
- List the differences between percutaneous and open cannulation
- Outline the process of percutaneous cannulation

DIDACTIC OBJECTIVES (CONTINUED)

- Discuss the role of ultrasound in cannulation
- List the difference configurational options for VV ECMO
- Review the benefits and limitations of specific configurations
- List the different configurational options for VA ECMO
- Review benefits and limitations of specific configurations
- Identify complications of ECMO cannulations
- Describe steps to prevent, recognize, and treat complications
- Describe the normal physiology of oxygen delivery and uptake
- Describe the key determinates of oxygen uptake in the membrane lung
- Describe the key determinants of carbon dioxide removal in the membrane lung
- List the hemodynamic changes that accompany VV ECMO
- Describe the changes in hemodynamic monitoring on VV ECMO
- Discuss the hemodynamic changes that accompany VA ECMO
- Describe the changes in hemodynamic monitor in VA ECMO
- Define and diagnose drainage insufficiency
- Troubleshoot drainage insufficiency
- Define return obstruction and identify its causes
- Diagnose and manage return obstruction
- Provide an overview of respiratory failure
- List standard management strategies for respiratory failure
- Discuss the rational of VV ECMO in respiratory failure
- List the indications and contraindications for VV ECMO support
- Describe the steps in initiation a patient on VV ECMO
- Describe titration of blood flow and gas flow to achieve adequate support on VV ECMO
- Describe the concept of native lung rest
- Define and identify recirculation
- Troubleshoot recirculation
- Describe the process of weaning VV ECMO support
- List exit strategies for the VV ECMO patient
- Provide an overview of cardiac failure
- List standard management strategies for cardiac failure
- Discuss the rational of VA ECMO in cardia failure
- List the indications and contraindications for VA ECMO support
- Describe the steps for initiating a patient on VA ECMO
- Describe vasopressor use and blood flow titration for cardiovascular support
- Describe the concept of native heart rest
- Describe ventilator management and blood and gas flow titration for pulmonary support
- Describe the mechanism of LV distention
- List strategies to unload the left ventricle
- Define and identify differential oxygenation
- Troubleshoot differential oxygenation
- Describe the process of weaning VA ECMO support
- List exit strategies for the VA ECMO patient
- Identify the role of sedation during ECMO support

DIDACTIC OBJECTIVES (CONTINUED)

- Discuss the paradigm shift toward awake ECMO
- Describe the rational for physiotherapy during ECMO
- Identify appropriate candidates for physiotherapy on ECMO
- List anticoagulation strategies on ECMO
- Discuss anticoagulation monitoring on ECMO
- Discuss considerations for procedures on the ECMO patient
- Identify the benefits and limitations of administering RRT via dialysis catheter
- Identify the benefits and limitations of administering RRT via the ECMO circuit
- Identify considerations and logistics for intrahospital transport
- Identify considerations and logistics for interhospital transport
- List medical and mechanical complications of ECMO
- List the etiology and risk factors for neurological complications
- Discuss the management of ischemic and hemorrhagic strokes
- List the etiology of bleeding
- Discuss the management of bleeding
- List the etiology of thrombosis
- Discus the management of thrombosis
- Understand the etiology and risk factors for hemolysis on ECMO
- Discuss how to prevent and manage hemolysis
- List the risk factors for developing limb ischemia on VA ECMO
- Describe how to monitor limb perfusion
- Discuss the prevention and management of limb ischemia
- Discuss the management of cardiac arrest on VV ECMO
- Discuss the management of cardiac arrest on VA ECMO
- Define pump failure
- Describe how to identify and manage pump failure
- Define membrane lung dysfunction
- Describe how to diagnose and manage membrane lung dysfunction
- Define air embolism and its determinants
- Define strategies to prevent air embolism
- Describe how to detect and manage air embolism
- Identify determinates of circuit disruption
- Recognize early signs of circuit disruption
- Manage circuit disruption
- Manage an accidental decannulation
- List the indications for coming off ECMO emergently
- List the steps required to come off and back on ECMO emergently
- List the historical ECMO studies and identify their limitations
- Interpret the results and limitations of the main cohort studies on VV ECMO
- Interpret the results and limitations of the CEASER and EOLIA trials
- Interpret the results and limitations of the main cohort studies on VA ECMO
- Describe the results of trials comparing ventricular assist devices to VA ECMO