
ELSO NEWSLETTER

*The official newsletter of the
Extracorporeal Life Support Organization*



From the President of ELSO

Mark Ogino, MD



In this most extraordinary year – 2020 – the world as we know it has been displaced from its axis of comfortable predictability. We have ventured forth into a way of life that includes not only day-to-day adjustments, but a constant element of instability. As the author Mary Anne Radmache so eloquently put it: "Sometimes courage is the quiet void at the end of the day saying, 'I will try again tomorrow.'"

Whether with resignation or with gusto, we are each adapting in our own way to the rapid pace of change spurred by COVID-19. Many assumptions about how we approach our work no longer apply and so we must acclimate to this altered landscape. For ELSO, supporting the needs of our members is at the forefront of every decision we make.

We look forward to our virtual Annual Meeting this year, to be held **September 25-26, 2020**. New features are possible with this format, and we are excited to have you join us. To encourage attendance and inclusivity, the virtual meeting is **free to members**. Continuing Medical Education (CME) will be available for a fee.

ELSO is pleased to offer new services and solutions, including data to help front line teams of clinicians. A few highlights: 1) we expect to launch the ELSO Academy - our roadmap to individual certification this Fall; 2) we are surveying ELSO's ECMO centers to better understand equipment needs and issues (pre- and during COVID-19); 3) we are preparing to facilitate more regional coordination in resource-constrained environments; and 4) our webinars will continue to be an essential engagement opportunity for our global community.

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We honor and appreciate the hard work, dedication, and commitment of our members in every corner of the globe. Thank you for your flexibility and teamwork – thank you for everything you do.

Stay safe and healthy. We need you.
Mark Ogino, MD
President, ELSO

Note from the Editor & Co-Editor, Omar Alibrahim, MD and Kennethia Banks

We are excited to announce this new format for our Newsletter. We want to thank our Interns for helping develop something new for ELSO and we hope you enjoy it.

We also want to acknowledge ELSO's first class of Interns, noted on the next page.

We would like to personally welcome all new center and individual ELSO members! We look forward to working with all of you.

Please share any feedback on this newsletter with us by emailing newsletter@elso.org.



Meet The ELSO Team

ELSO INTERNS 2020



Christopher Cooley
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Policy



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Nicholas Shiland
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Aidan Stead
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Mechanical Engineering



Yonathan Tessema
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ELSO TEAM



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Elaine Cooley
Clinical Program
Manager



Elizabeth Moore
Education Director



Peter Rycus
Executive Director



Christine Stead
CEO



Committee Roundup

Conference Committee

Annual Meeting- This year's 31st Annual ELSO Conference is going virtual!

In light of the COVID-19 pandemic, ELSO made a difficult but necessary decision to change the format of the 31st Annual Conference to a virtual program, which will be held on **September 25 and 26, 2020**. Please check [here](#) for updates:

<https://www.elseo.org/Education/2020ELSOMeeting.aspx>

We will be offering a robust scientific program, including plenary sessions, COVID-19 focused talks, specialty breakouts, heart, lung and hemodynamic labs and much more.

Call for Abstracts

Abstracts will be accepted until August 15, 2020. Registrants will be able to participate in live sessions as well as have access to the content after the meeting. We are excited to share some of the new sessions that are possible because of the virtual platform.

Click here to submit abstracts: <https://app.oxfordabstracts.com/stages/1427/submitter>

Registration is now open!

Registry Committee

Registry is Open

The ELSO Registry is now open for data entry and for centers to generate their reports. Center specific reports can be found in the data entry section. Center members, individual member and corporate members will soon be able to download the standard reports from www.elseo.org under the Registry tab. You will first need to log in to access these reports. The January 2020 reports will be updated with all data through the end of 2019. This includes data that was entered into the Registry prior to the July 12, 2020 closing. 2020 data will be included in the next round of reports when all 2020 data has been collected. Your center specific data contains all submitted cases through July 12, 2020.

Changes to Registry

Addition of the new ECLS Mode Venopulmonary (VP) to describe ECLS characterized by respiratory support via a membrane lung combined with partial, or complete, right heart support. Additionally, the COVID-19 Addenda was originally added to the Registry in March of 2020 and updated in June of 2020.



Device & Technology Committee

ELSO Equipment Survey Coming Soon

In the next few days, ELSO will be sending our centers a survey to assess equipment supply issues that our centers may have. The survey will distinguish between ongoing issues and those that you may have experienced during the pandemic. We are working closely with the partners on this survey, including the FDA.

ELSO Evidence Explorer

ELSO is excited to announce a new offering with our partner, ArborMetrix. The ELSO Evidence Explorer is an excellent data visualization tool to understand how your company's ECMO devices and technologies perform in real-world clinical settings. It is an exclusive resource from the Extracorporeal Life Support Organization and ArborMetrix. Data is based on the ELSO Registry. For more information for our industry partners, please visit here:

<https://elso-explorer.arbormetrix.com/>

Communications Committee

ELSO is currently working on the **Sixth Edition of The Red Book**. We anticipate the publication will be released in early 2022.

ELSO has had several requests for translations of The Red Book and Training Manual to additional languages. We are proceeding with several of these, including Korean and a vocal translation in Spanish.

Award of Excellence

Award of Excellence announcements went out recently. Congratulations to our new Platinum, Gold, and Silver centers! Please take a look our current Award of Excellence awardees here: <https://www.elso.org/AwardofExcellence/CentersofExcellence.aspx>

For centers interested in apply for the Award of Excellence, the next applications admissions period opens October 15, 2020. In addition, please find our guidance document on how to have the best chance of success here (noted as Award Evaluation & Improvement Tool): <https://www.elso.org/AwardofExcellence/Resources.aspx>

Guidelines & Protocol Committee

Grant Applications Open

ELSO 2021 Research grants must be submitted by September 30, 2020. Details can be found using the link below. Note you must be logged in to start the process.

<https://www.elso.org/Resources/ELSOResearchGrantApplication.aspx>

ELSO Guideline Updates

ELSO has several guideline updates that we will be publishing soon. Please check here for the latest ELSO Guidelines. <https://www.elso.org/Resources/Guidelines.aspx>



Education and Logistics Committee

NEW Online ECMO Course

The ELSO Education Committee & the ELSO ECMOed Taskforce - a globally nominated group of 40 healthcare professionals and educators with an expertise in care for ECMO patients - have joined forces to work towards a goal of bringing an online ECMO training course to the ECMO community in early 2021.

Providing timely access to high quality ECMO education has been a foundational component of our organization for many years. Even through the challenging times that the Covid-19 pandemic has produced, our commitment to this focus has not faltered. Please stay tuned for updates on our progress with this important initiative and release dates.

Adult ECMO Certification Exam

Work is underway to bring an Adult ECMO Certification Exam to individual practitioners in late 2020/early 2021. Over the past two years global ECMO experts have worked diligently to construct an knowledge assessment exam aimed at evaluating a learners comprehensive understanding of key ECMO concepts.

ELSO Academy - A New Era in ECMO Education

ELSO Academy is an ECMO training program uniquely designed by world-renowned experts to develop, strengthen and refine clinical skills related to extracorporeal membrane oxygenation (ECMO) patient care: providing individual healthcare providers access to the most up-to-date standards of practice, evidence-based recommendations & immersive simulation practices to optimize clinical decision making.

Learners can progress through the activities in a self-paced, stepwise fashion to best prepare themselves to sit for the ELSO Individual Practitioner Certification Exam or to simply enhance their clinical knowledge in this specialized field.

ELSO Academy

ECMO 101



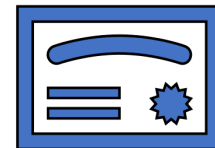
Live & Virtual* Training Courses



Hands-On Simulation Lab



Certification*

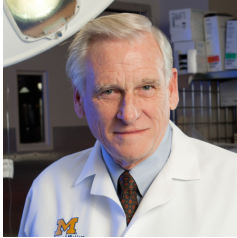


*Coming very soon

Special Report: Bedside in COVID-19

Robert Bartlett, MD
 Founder, ELSO

Professor Emeritus of Surgery, University of Michigan



Dr. Robert Bartlett, Professor Emeritus of Surgery at the University of Michigan, is considered by many to be the "Father" of ECMO. He has nearly 50 years of experience in acute care settings. He has served as Director of the Surgical Intensive Care Unit, Program Director of the Surgical Critical Care Fellowship and Director of the Extracorporeal Life Support Program at the University of Michigan Medical Center. He was previously on the faculty at the University of California, Irvine.

Case Description

A 55 year old man with obesity but no other comorbid factors has severe infection with COVID-19. He is on a mechanical ventilator for 5 days. Ventilator pressures 35/15, rate 30, FiO₂ 100%. His arterial blood gases are PO₂ 60, PCO₂ 60, pH 7.2. His blood pressure is 100/60 on 2 vasopressor drugs. He has been managed with prone positioning and is currently on decadron. He is paralyzed but was alert and awake before paralysis 2 days ago.

Question 1: Is this patient a candidate for ECMO?

Answer: In the early days of the pandemic, ECMO centers were overwhelmed with conventional care patients. As the caseload came under control, ECMO was possible for certain patients. This patient meets the indications for ECMO for any patient with viral pneumonia. There are no contraindications so ECMO is indicated as long as the team and the equipment is available and expected to be available for 2-3 weeks of ECMO support.

Question 2: In the 55 year old COVID patient, what is the best vascular access and how should the patient be cannulated?

Answer: This patient is in combined cardiac and septic shock requiring vasopressor drugs to maintain his blood pressure. In addition, he has severe respiratory failure. You could certainly make a case for starting with venoarterial access to provide both cardiac and respiratory support. However, in other viral pneumonia cases, beginning with venovenous access usually results in significant improvement in cardiac output so that VA access is not necessary. One reason for this is that during conventional management the high intrathoracic pressure limits venous return which in turn limits left ventricular filling and cardiac function. As soon as the patient is on VV-ECMO ventilator pressures can be dropped to rest levels which solves this problem. In addition, simply providing good oxygenation and CO₂ clearance improves general perfusion so the vasopressors can be turned down to low levels or off altogether. So, the initial way to proceed in this patient is with venovenous access. Considering the unstable nature of the patient, this is best achieved by 2-catheter access, drainage from the inferior vena cava via the femoral vein and return to the right atrium via the jugular vein. This access can be achieved at the bedside and does not require specific imaging for catheter placement. At some later time, it may be desirable to use a double lumen catheter via the jugular vein and this can be considered after days of support depending on how the patient is responding and how long the run is expected.

(continued on next page)



Question 3 (Patient Management): When initially placed on ECMO, the patient is paralyzed and on vasopressor drugs, how should management during the first several days proceed?

Answer: The high ventilator settings and 100% oxygen are the most damaging to the patient. As soon as the patient is established on extracorporeal support, the ventilator should be turned down to rest settings (pressure 20/10, FiO₂ 30%, rate 10 or less). The ECMO flow should be adjusted to maintain arterial saturation 80-90%. CO₂ should be controlled by the sweep gas to approximately 40 mmHg. Since the CO₂ is 60, this should be done gradually over a few hours to avoid sudden decrease in PaCO₂ which can cause intracranial bleeding. As soon as the patient is stabilized, the paralysis can be removed and sedation maintained with drugs like propofol or dexmedetomidine. Avoid the use of benzodiazepines which have a long lasting effect and are difficult to wean. The patient should not have significant pain so narcotics or other analgesics are not necessary. This will result in the patient waking up which offers the opportunity for a thorough neurologic exam. After that the patient is maintained under mild sedation with a RAS score -1 or -2. Blood flow and hemoglobin are maintained to assure complete oxygenation because the lungs will probably become totally consolidated within a few hours of time and remain totally consolidated for a week or more. For this patient this means flow rates around 4 L/min and hemoglobin of 12 or higher. After a day or two, management of the airway via extubation or tracheostomy should be considered.

Question 4: The COVID patient has now been on ECMO for a week, is alert and awake, mildly sedated, and has no lung function. When should activity and ambulation begin?

Answer: Activity, including active and passive range of motion exercises, should begin within 2 days of the institution of ECMO. By one week the patient should be able to conduct active range of motion exercises. After about one week, it is reasonable to sit the patient at the bedside and start bedside standing and ambulation. Because this increased activity doubles the metabolic rate, it is important to be sure the patient has adequate hemoglobin levels and to increase the flow and the sweep gas as activity increases.

Do you have a suggestion for a future Bedside Report? Please send a note to newsletter@elso.org.

Research Corner

Below are surveys that have been submitted by ELSO Member Centers. If you have a survey that you would like to share on our next newsletter, please email newsletter@elso.org.

Blood Management During ECMO for Cardiac Support (OBLEX)

This study has been endorsed by the international ECMONet and aims to observe the practice in up to 50 centres and 500 patients worldwide to generate the largest ever published database on this topic. It will concentrate on patients with severe heart failure and will be able to identify specific risk factors for thromboembolic and bleeding events. Some of these factors may be modifiable by change in practice and can subsequently be evaluated in clinical trials. Some of these factors may include target values for heparin therapy and infusion of clotting factors. This study will directly improve patient management by informing clinicians which measures are associated with the best outcome and indirectly helps building trials to increase the evidence further.

<https://clinicaltrials.gov/ct2/show/NCT03714048>

Contact: Dr Hergen Buscher, FCICM, EDIC, DEAA; St. Vincent's Hospital, Sydney (Australia); Hergen.Buscher@svha.org.au.

ECMO, Ethics and the Pandemic

*What is the impact of COVID-19 on ethical decisions in your unit?
Business as usual or need for a different approach?*

ECMO is a potentially life-saving treatment, but is highly resource intensive and in limited supply.

There are many scientific and medical questions about ECMO. But some of the most difficult and controversial are ethical questions. Decisions about providing/not providing and also about continuing (or stopping) extracorporeal support are always challenging. Right from the start of this pandemic there have been questions about whether those decisions might be even more difficult in the setting of the pandemic and an anticipated high level of demand due to refractory respiratory failure.

There were some pandemic guidelines developed in individual centres as well as by international groups such as ELSO.

But there is no evidence about what has happened on the ground across the world. It is crucial to learn from the experience of those who are working in ECMO centres, so that regional, national and international ethical guidelines can be reviewed and revised appropriately for subsequent phases of the pandemic.

What is your experience? How are decisions made?

The short survey that we developed is designed to assess ethical principles in decisions about ECMO in usual times, and any modifications that centres have adopted in the pandemic. (It takes about 8 minutes to complete the survey).

The survey is here: tinyurl.com/ecmoethics

It has been approved by ethics in Oxford, and has been developed in conjunction with the COVID-19 Critical Care Consortium



ELSO & ECMO Training

ELSO Adult ECMO & Cannulation Training Course

Providing timely access to high quality ECMO education has been a foundational component of our organization. Even through the challenging times that the COVID-19 pandemic has produced, our commitment to this focus has not faltered.

At this time, it is still our intention to proceed with a training course and cannulation workshop in November. We are exploring virtual options for the didactic training portion of the course and exploring other on-site options. Your safety and the safety of our staff is our primary focus as we approach continuation of on-site educational offerings.

Interested in Working With ELSO to Offer On-Site Training?

ELSO is looking for partners that are interested in working with us to provide regional simulation and cannulation training options as we all adjust to our 'new normal' during the pandemic. If you might be willing or able to talk more about this, please contact Elizabeth Moore at emoore@elso.org, ELSO's Education Director.

ELSO & ELSO-Endorsed Courses

During the pandemic, courses and delivery of them are changing. Please visit our website for the latest updates:

<https://www.elso.org/Education/ELSOandELSOEndorsedCoursesWorkshops.aspx>



The Extracorporeal Life Support Organization

Our Mission

To provide support to institutions delivering extracorporeal life support through continuing education, guidelines development, original research, publications and maintenance of a comprehensive registry of patient data.

Guiding Principles

Innovation

Seeking to identify and promote advances for the application of extracorporeal therapies.

Expertise

Bringing together world leaders in the care of critically ill patients for collaboration to advance quality of care through education and publication.

Clinical Support

Maintaining a comprehensive registry of data to assist in reducing morbidity and improving survival of patients requiring extracorporeal therapies.

Community

Fostering communication and collaboration among professionals who apply advanced technologies in the treatment of refractory organ failure.

Our Vision

ELSO will be the premier organization providing education, training, research, and data management for the advancement of extracorporeal life support throughout the world.

Keep In Touch



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