

Winter 2020

The role of ECMO in treating your critically ill patients

Extracorporeal membrane oxygenation (ECMO) is an advanced critical care intervention that manages the function of the heart and lungs when treating an acute illness. It assures that vital tissue and organs receive enough blood flow to remain healthy while the heart and lungs recover.

ECMO evolved from cardiac bypass surgery. Deoxygenated blood is diverted from the venous system using large central venous and arterial catheters, oxygenated by a special membrane, and then returned to either the venous system or arterial system, depending on the underlying condition. Venous-venous ECMO is typically used for pulmonary conditions, while venous-arterial ECMO is typically used for cardiac conditions.

Implementing and managing ECMO is an intensive process requiring many resources, invasive monitoring and a significant amount of practice. Emergency physicians, cardiologists, cardiothoracic surgeons, anesthesiologists, perfusionists and intensive care physicians must work together to identify patients who qualify for ECMO, initiate ECMO therapy in a timely manner, and fix the underlying medical condition. This is why ECMO is usually only performed at high-volume hospitals, which are equipped with the necessary resources and expertise.

Our team of experts at OhioHealth Riverside Methodist Hospital and OhioHealth Grant Medical Center are always ready to initiate ECMO for your critically ill patients in a timely manner, but patients must meet well-defined criteria to qualify. Such patients include those with profound hypothermia, advanced lung disease, severe heart failure and massive pulmonary embolism. We are also exploring ECMO for refractory ventricular fibrillation cardiac arrest. This is known as ECMO-CPR or ECPR.

The use of ECMO is evolving as we learn more about how it improves survival with good neurological function after critical illnesses. The body of literature is growing and results from scientific studies are helping inform our ECMO programs and practices. For additional information on ECMO, contact Jon Enlow, DO, a cardiothoracic surgeon and the surgical director of Mechanical Circulatory Support at OhioHealth Riverside Methodist Hospital. He can be reached by email at Jonathan.Enlow@OhioHealth.com.

Eric Cortez, MD, FACEP, FAEMS
OhioHealth System EMS Medical Director

IN THE FIELD

Short stay units deliver hospital-quality care at a lower cost

Christopher M. Esber, MD, MPH
Duane Perry MBA, BSN CENP

OhioHealth has two short stay units open 24/7 at our Pickerington and Westerville medical campuses. These units provide acute medical care for lower-risk patients within their communities.

Patients can receive care in the short stay units through multiple visits spanning several days, or overnight if they require continuous monitoring or treatment. The units are also equipped to provide IV antibiotics, diuretics and fluids, electrolyte replacement, rapid diagnostic testing (CT scans, X-rays, ultrasound and stress tests), and oxygen and breathing treatments. All of the services can be provided for a lower cost than a typical emergency department visit or hospital stay.

Each unit has 12 rooms: Eight larger rooms with private bathrooms and four large infusion-style clinic rooms. They are staffed by OhioHealth physicians, advanced practice providers and nurses.

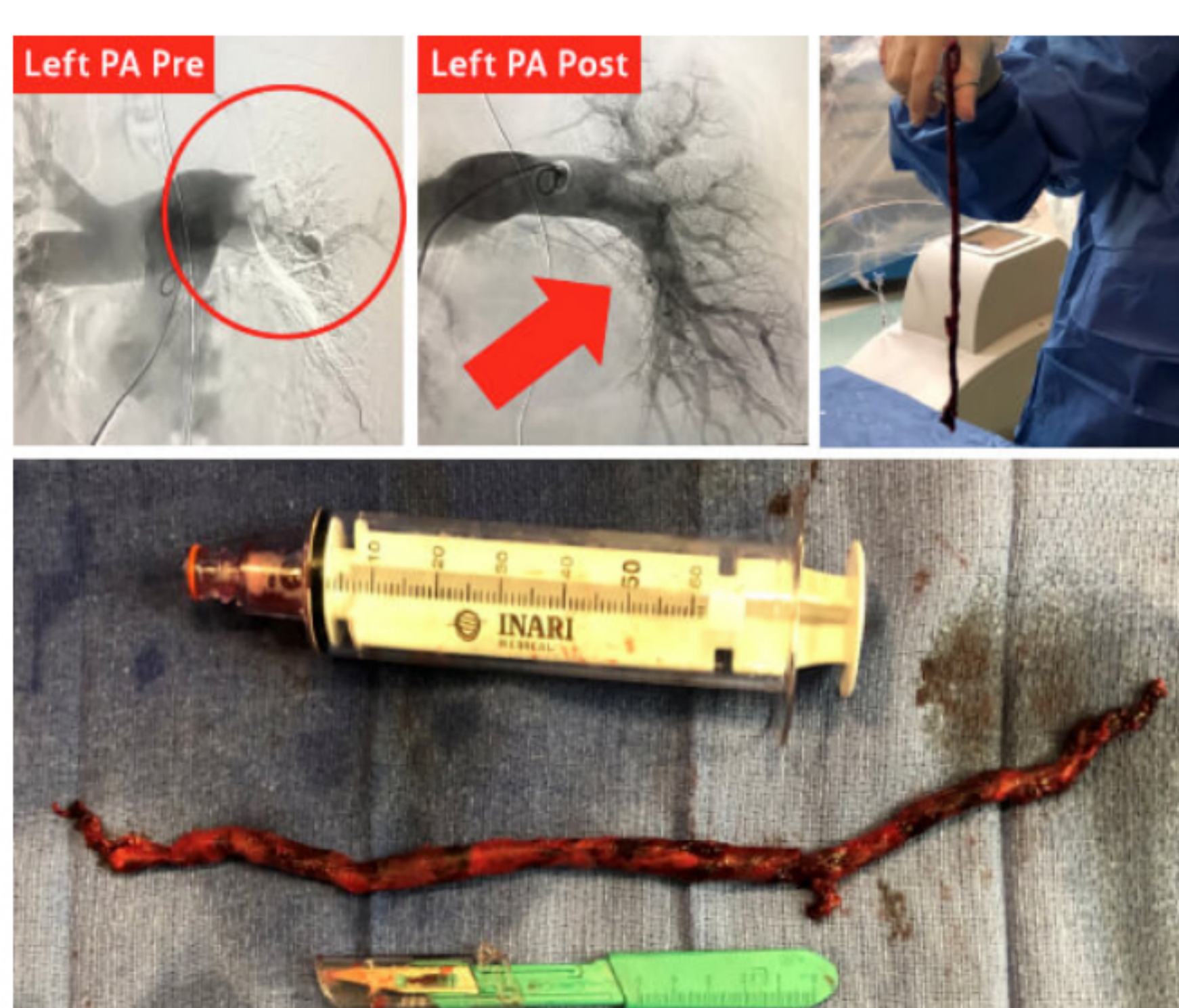
If your team would like to discuss how the short stay units can partner with your community paramedicine program, contact Christopher Esber, MD, MPH, medical director of the short stay units, at Christopher.Esber@OhioHealth.com, or reach out to your OhioHealth EMS liaison.

SERVICE LINE FEATURE

Riverside Methodist Hospital remains a national leader in pulmonary embolism care

Michael Jolly, MD, FACC

Riverside Methodist physicians routinely present at national and international meetings to share expertise in embolism care. Our Embolism program has developed into a truly comprehensive Venous program, with capabilities that include life-saving emergency care for massive pulmonary embolisms, chronic care for venous ulcers, complex inferior vena cava filter retrieval, management of modern anticoagulants, and superficial venous ablation.



Our physicians have also standardized formal protocols for pulmonary embolism care throughout the hospital system to improve patient outcomes. Care has become safer through increased use of highly effective, nonthrombolytic treatment paradigms. Physicians are also using newer treatment modalities with catheter-based techniques for patients that previously may have required open heart surgery, as well as successful ECMO in patients who would have otherwise died of acute pulmonary embolism.

To learn more about how Riverside Methodist provides advanced care to your pulmonary embolism patients, listen to our interactive discussion on a recent episode of MedFlight Radio.

LISTEN NOW

Please visit OhioHealthEMS.com for more information about our EMS programs.

EDUCATION CALENDAR

EMS Quarterly Update

OhioHealth Grant Medical Center
Saturday, January 18

EMS Regional Quarterly Updates

OhioHealth Grady Memorial Hospital
February 26 and 27

OhioHealth Riverside Methodist Hospital
Friday, April 24

Ohio EMS Conference

Greater Columbus Convention Center
May 18 and 19

EVENT DETAILS

CASE STUDY

See how EMS saved the life of a man with hypothermia.

READ MORE

DIRECTOR'S CORNER

Keep your eyes on the road

Holly Herron, DNP, RN, CNP
System Director, OhioHealth EMS

The Ohio Department of Transportation reports that more than \$2.05 billion was invested in roadway improvements in 2019 to mitigate the challenges of increasing traffic volume, construction and weather. Emergency responders should be alert for changing traffic patterns. In total, 1,002 projects are underway across several counties, affecting 5,408 pavement miles and 951 bridges. Two of these projects in central Ohio will take multiple years to complete:

Interstate Highways 70 and 71 in Columbus: Over a six-year period, ODOT will spend nearly \$500 billion on I-70 and I-71. The project involves roadway, bridge and interchange improvements. Highway ramps at Third Street and 18th Street closed recently. Many other significant construction changes will occur over the next few years.

I-71 mega fix on the south side of Columbus: Construction has been underway since 2015 to expand travel lanes and improve capacity from state Route 665 through the Interstate 270 and I-71 interchange. Completion is expected in 2020.

Visit OhioHealthEMS.com for links to updates about OHGO real-time traffic, ODOT construction, Columbus street projects and other resources.

FAST FACTS: EMS EDUCATION

Cold emergencies

- "Not dead until warm and dead" typically is used in reference to patients whose metabolic state is suspended through rapid core cooling, such as by immersion in near freezing water.
- It's possible to survive cardiac arrest from hypothermia, but not after a certain point. The longest a person has survived is close to seven hours, and case reports seem to indicate greater survivability in pediatric patients.
- Cold exposure that results in a frozen torso or airway is not survivable.
- High serum potassium levels can be used as an indicator that patients may survive, but it's not commonly available in the field.
- When buried in snow, patients can survive if an airway pocket is present, but there has never been a successful resuscitation for patients buried greater than one hour or six feet deep, or with snow packed in their airway.