Hartford HealthCare

Heart & Vascular Institute

Hartford Hospital ECMO Program

What is ECMO?

Extracorporeal Membrane Oxygenation (ECMO) refers to an outside the body ("extracorporeal") system that can directly add oxygen and remove carbon dioxide from the blood. ECMO functions as a temporary artificial heart and/or lung to work in addition to the patients failing heart/lung. This advanced resuscitation system is reserved for patients who are acutely deathly ill from a potentially reversible cause. ECMO provides temporary support with the heart/lung machine to allow the patient to recover and act as a bridge to recovery or definitive care.

Typically catheters are placed in central arteries and veins near the heart. A mechanical pump draws blood from the patient, passes it along a membrane (referred to as an oxygenator) where carbon dioxide is removed and oxygen is added, and then returned to the patient. The blood may be warmed or cooled as needed.

Veno-venous (VV) ECMO provides respiratory (lung) support alone, while Veno-arterial (VA) ECMO provides both respiratory and hemodynamic (heart and lung) support. The best ECMO strategy is determined on a case-by-case basis depending on the status of the patient.

ECMO is reserved for the "sickest-of-the-sick." It is a complex procedure which involves multiple resources, many medications and very intensive care.

About our program:

Hartford Hospital established its Extracorporeal Membrane Oxygenation (ECMO) program in April, 2013. Under the direction of Dr. Jason Gluck (medical director) and Dr. David Underhill (surgical director), the multidisciplinary team at Hartford Hospital has the ability to provide this cutting edge support to patients both inside Hartford Hospital and at neighboring facilities via "ECMO on the GO."

"ECMO on the GO," is a program established by Hartford Hospital where an experienced team of ECMO providers will travel to an outside facility to initiate ECMO support for appropriate patients at another institution and then transfer the patient to Hartford Hospital for definitive care.

Our Patient-Centered Model:

Our ECMO program uses a patient-centered, disease-specific model for this potentially life-saving therapy. All forms of support, including non-ECMO modalities, are considered carefully for each patient. The ECMO patient is cared for in our Cardiothoracic ICU or Cardiac ICU where the multidisciplinary care team cares for the patient. This ensures the immediate availability of relevant medical expertise based on the patient's underlying condition.

In addition to physicians, our multidisciplinary team includes perfusionists, critical care nurses, advanced practice providers, respiratory therapists, pharmacists, physical and occupational therapists, nutritionists, speech therapists, social workers and staff from pastoral care.

What to expect if you are considering ECMO:

If your physician feels that ECMO should be considered for you or a loved one, you should expect an evaluation by the ECMO team to determine candidacy for this technology. The team is looking carefully for a patient who cannot be helped by standard medical therapy alone **AND** who has a reversible underlying cause for their grave condition. If the patient is deemed a candidate, informed consent will be obtained (wherever possible) and initiation of ECMO support will be started.

One should expect to see blood filled tubes where blood is being pumped from the patient, to the ECMO circuit and then returned to the patient. There will be a lot of medications running for this patient, the patient will likely be on a ventilator (breathing machine) and may require dialysis. The major side effects of this technology are bleeding (ECMO patients often require blood transfusions) and infection. Careful attention is paid to minimize the bleeding and infectious risk.

Please ask your provider any questions that you may have regarding this potentially life-saving resuscitation therapy.