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Surgeon-led ECMO Treatment Improves Survival Rates in Surgical Cardiac Care Unit

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Overview



Charles J. Yeo, MD, FACS

Samuel D. Gross Professor and Chair, Department of Surgery

The academic year 2011/2012 is now four months old, and we are off to a splendid start! We (a) have welcomed several new faculty members and a bolus of categorical interns (see below), (b) had a leadership transition at our Methodist Hospital, (c) are in growth mode at Methodist with initiatives in General Surgery, Vascular Surgery, Wound Care and Surgical Oncology (see the cover story), and (d) with the leadership of Dr. Nicholas Cavarocchi have seen remarkable growth in our adult ECMO program with outstanding clinical results and several research projects brought to fruition. Exciting times again this year at Jefferson!

I want to take this opportunity to also praise the Jefferson Foundation and particularly Lara Goldstein who returned from her recent maternity leave at full throttle. As Director of Development for the Department of Surgery, Lara has been instrumental in the tripling of philanthropic support to the Department between 2006 and 2011. She has partnered well with our researchers to assist with grant submissions and with our clinicians in building relationships with our grateful patients. Lara's efforts have also culminated in a recent estate gift to the Department (see *Those Who Give*) directed towards the support of our surgical fellowships. It is important that we all redouble our efforts to bring support to the Department, as we grow our volumes and our footprint in the Delaware Valley.

Addendum:

Just prior to going to press, we learned of the passing of our esteemed colleague, Dr. John H. Moore, Jr., on September 26, 2011. John was a committed Jeffersonian who touched the lives of thousands of patients, residents, students and staff. He was also a sage advisor. A fund, "The John H. Moore Jr., MD, Surgical Residency Fund" has been initiated in his honor.

Clinical Integration



Four board-certified thoracic surgeons, Drs. Cavarocchi, Haddad, Pitcher and Hirose, staff the Surgical Cardiac Care Unit at Jefferson – the only service in the nation led by cardiothoracic surgeons.

Surgeon-led ECMO Treatment Improves Survival Rates in Surgical Cardiac Care Unit

The Jefferson Surgical Cardiac Care Unit (SCCU), reorganized in July 2010, delivers the best survival rates in Pennsylvania for patients plagued by serious lung and/or heart dysfunction. Nicholas Cavarocchi, MD, FACS, FCCP, the SCCU Director and Associate Professor of Surgery, leads a highly trained team that uses extracorporeal membrane oxygenation (an ECMO machine) to provide respiratory and cardiac support to patients whose lungs and/or hearts cannot function on their own. Because of the excellent outcomes – 70 to 80 percent survival rates for patients with life-threatening situations, up from a previous zero-based survival rate – Dr. Cavarocchi believes the Jefferson SCCU model will ultimately be adopted by all hospitals.

"Our SCCU model brings together the ECMO technology and a team of cardiac physicians, nurses and mid-level providers all trained in complex critical care," Dr. Cavarocchi says. "We have implemented standardized management of patient care using established protocols built with evidence-based medicine." Jefferson's SCCU is currently the only service in the nation led by cardiothoracic surgeons, rather than anesthesiologists or other medical doctors. The team physicians, who are all board-certified in thoracic surgery, also include Harrison Pitcher, MD, Hitoshi Hirose, MD, PhD, FACS, and Michel

Haddad, MD. The rest of the team is comprised of physicians assistants Angela Kelley, PA, Tamara Boucher, PA and Sarah Langan, PA-C, and nurse practitioner Megan McCullough, CRNP.

Based on the principles of a machine that was invented in the 1950s and first used successfully in humans at Jefferson Hospital by John Gibbon, Jr., MD, ECMO takes a patient's blood, gives it oxygen, warms it and returns it to the patient. Today's ECMO machine, with its innovative circuitry, newer membrane oxygenator and centrifugal pump is a completely different machine but the concept is the same. Complemented by the SCCU team's comprehensive approach, ECMO treatment helps avoid serious complications such as bleeding and hemolysis (the breakdown of red blood cells) and allows the heart and/or lungs to recover. At Jefferson, patients are placed on ECMO earlier than usual, ideally before the patient has organ failure. This improves their chances of either being successfully weaned from ECMO or having surgery with fewer complications, and that reduces costs for both the hospital and the patient.

The SCCU currently treats about 30 patients annually but that number is expected to increase by 50% this year with referrals from within and out-of-state. "Our team has been trained to deliver a level of complex critical care that is sophisticated and consistent," notes Dr. Cavarocchi, "Our patients are benefiting and our colleagues are noticing."

Meet Our Surgical Interns



We have welcomed an amazing new group of categorical interns, selected from over one thousand applicants to our program. These doctors, who recently matched with Jefferson Medical College (JMC), started on June 20, 2011. Just a few months into their Jefferson surgical residency, we have all noticed their dedication to patient care, their energy and their excitement in joining the Jefferson community.

Please welcome (from left to right):

- Christine Feldmeier, MD, JMC**
- James Crawford, MD, New York University**
- Kate Holoyda, MD, University of Wisconsin**
- Vishen Sooppan, MD, SUNY Upstate - Syracuse**
- Caitlyn Johnson, MD, JMC**
- Jonathan Sarik, MD, JMC**