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## **UC San Diego Cardiology Team Performs 100th Extraction Procedure with 100 Percent Success Rate**

A multidisciplinary team from the Sulpizio Cardiovascular Center at University of California, San Diego Health System has performed its 100th lead (pronounced “leed”) extraction surgery, a delicate procedure to replace the thin wiring of lifesaving heart devices such as pacemakers or implantable defibrillators (ICDs). The collaborative program, pioneered at UC San Diego Health System, has a 100 percent success rate.

Pacemakers and implantable cardioverter-defibrillators (ICDs) deliver energy to the heart through thin, flexible wires or “leads.” When these leads are not working properly – due to infection, damage, or scar tissue – the wires need to be removed and replaced. In particular, old leads can shift over extended periods of time and become improperly attached to the heart and blood vessel walls, and need repair. Each year, about 700,000 new heart devices are implanted into patients worldwide, involving about 1.4 million lead wires.

“Lead extractions are becoming a more common procedure as more cardiac devices are implanted and the complexity of the devices increases,” said Ulrika Birgersdotter-Green, MD, director of Pacemaker and ICD Services, UC San Diego Sulpizio Cardiovascular Center, and professor of medicine, UC San Diego School of Medicine. “As we put more and more leads in, we must be able to offer our patients a comprehensive care package, from implantation through recovery to getting back into life.”

When needed, the leads can be removed using a minimally invasive procedure called “lead extraction.” The leads are accessed through a small incision at the site of the device, just above the heart. The surgeon slides a tube or sheath with a long wire inside the vein and over the lead that needs to be removed. This forms a stable platform for removal. Using X-ray guidance, the surgeon then applies laser energy to dissolve the scar tissue around the lead. This allows the lead to be freed from the blood vessel wall and eventually from its attachment inside the heart. Once the old lead has been removed it can be replaced with a new one.

The 100th patient, JenyLyn Carpio, was 22 years old when she experienced a total heart blockage and was diagnosed with a genetic heart disorder that makes her prone to sudden death events. After seven years, she needed a lead extraction procedure.

“Without the quick action of the UC San Diego cardiac team, I would not be alive. They keep me going, even today,” said Carpio who is now 29, a full-time mom, wife and active 5k runner.

“We have a specialized cardiac team dedicated to entire sequence of this procedure,” said Green. “These are high-risk procedures where complications can occur quickly. At the Sulpizio Cardiovascular Center we perform our extractions in a hybrid operating room – the only hybrid operating room in the San Diego Region – so if necessary we can instantly switch to a full-blown operating suite.”

“From anesthesiology, to surgery to electrophysiology and the after-care coordinators, every member plays a significant role in the care of the patient,” explained Victor Pretorius, MD, cardiothoracic surgeon, Sulpizio Cardiovascular Center, and assistant clinical professor of surgery, UCSD School of Medicine. “There is a big variance in the patients we see, but for the most part, these patients are very complex with heart tissues that are challenging to manage. Our approach is customized for each patient.”

### **About UC San Diego Sulpizio Cardiovascular Center**

UC San Diego Sulpizio Cardiovascular Center is dedicated to innovative care and the prevention, diagnosis and treatment of cardiovascular disease. The state-of-the-art facility, which opened in La Jolla in 2011, is the region’s first academic-based facility to combine all heart and vascular-related services, programs and technology under one roof. For more information, visit [www.heartcenter.ucsd.edu](http://www.heartcenter.ucsd.edu)

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