A significant portion of patients with aortic stenosis in need of valve replacement are at excessively high risk for conventional open-heart surgery due to their advanced age, frailty or other medical conditions. But these individuals have a poor prognosis if they do not undergo corrective surgery. Fortunately, a less-invasive therapy called transcatheter aortic valve replacement (TAVR) has emerged that provides the same life-extending benefits as open surgical aortic valve replacement.

Candidates for this new technology include high- or prohibitive-surgical-risk patients with severe, symptomatic aortic stenosis. The new procedure involves inserting, via the femoral artery, a specially designed stent containing a tissue valve. The replacement valve is positioned inside the diseased aortic valve in a process similar to cardiac catheterization—and thus without the need for chest incisions or heart-lung bypass.

More than five years of international experience has proven the safety, effectiveness and durability of this procedure. As compared with no surgical valve replacement, TAVR significantly reduces the risk of mortality from aortic stenosis. “TAVR is game-changing technology. There has never been a cardiovascular therapy, including angioplasty for heart attacks, with this magnitude of benefit for an individual,” said interventional cardiologist Steven Kernis, MD, FACC, FSCAI, Medical Director of the Structural Heart Division and TAVR program at Lourdes.

Sophisticated Team and Stringent Criteria Keep Success High

A minority of medical centers in the U.S. with advanced cardiovascular programs offer this groundbreaking technology. Some patients have undergone balloon aortic valvuloplasty as a bridge to TAVR.

This year, Lourdes became one of just a handful of centers in New Jersey performing TAVR.

In the U.S., the medical community has established stringent prerequisites in staffing, facilities and experience for a hospital to become a center for TAVR. In order to optimize success and safety of this innovative technology, a CMS National Coverage Decision mandated very strict criteria requiring the highest level of training and experience for a TAVR team, which is led by an interventional cardiologist and a cardiothoracic surgeon. The TAVR heart team also includes a large group of multidisciplinary physicians and nonphysician staff.

While briefly pacing the right ventricle, the TAVR team expands the stent-based bovine-leaflet valve directly inside the diseased valve, compressing the native valve to the side. Pressure from the expanded stent keeps the valve permanently situated within the aortic root.

Valve a Natural Fit. Eligibility May Expand. Less is More.

“TAVR is the latest addition to our catheter-based interventional armamentarium, building on our previous structural and other procedural techniques,” said interventional cardiologist Thierry Mom plaisir, MD, a member of the TAVR team at Lourdes.

The PARTNER (Placement of Aortic Transcatheter Valve) trial, initiated in 2007, led to FDA approval of TAVR in November 2011. “Commercial use of TAVR started at that time, with the procedure offered only to patients refused for surgery. In the fall of 2012, eligibility expanded to include high-surgical-risk individuals. We anticipate further candidacy expansion in the near future, possibly extending to intermediate-risk patients,” said Dr. Kernis, who adds, “One of the lessons learned in the interventional and surgical cardiovascular communities over the last several decades is that less invasive is typically more attractive.”

For more information, visit www.lourdesnet.org or call 1-888-LOURDES (1-888-568-7337).
Noted Surgeon Joins Lourdes Cardiothoracic, Vascular Programs

Steven V. Curiale, MD, FACS, FAAPC, an accomplished cardiothoracic and vascular surgeon, recently joined the staff of Lourdes Medical Associates (LMA) Cardiothoracic Surgical Services in Haddon Heights, New Jersey. Dr. Curiale is a graduate of Brooklyn College of the City University of New York and the Uniformed Services University of the Health Sciences in Bethesda, Maryland. He did his general surgery internship and residency at the National Naval Medical Center, and completed a cardiothoracic surgery residency at Yale-New Haven Medical Center, as well as a fellowship in peripheral vascular surgery at the Jobst Vascular Center of The Toledo Hospital, Toledo, Ohio. He is a fellow of the American College of Surgeons and the American College of Chest Physicians. He will team with world-class robotic surgeon Arthur T. Martella, MD, Chief of Cardiothoracic Surgery at Lourdes.

“With training and experience in all the current modalities of cardiovascular surgery, our group can offer patients the care best suited to them and their specific case, including endovascular or robotic procedures, and minimally invasive open surgery,” said Dr. Curiale. Among procedures he will focus on in Lourdes’ future hybrid lab is repair of abdominal and aortic aneurysms.

Dr. Curiale served as Director of Cardiothoracic and Vascular Surgery at the Arnot Health Heart and Vascular Institute in Elmira, New York, Chief of Vascular Surgery at the National Naval Medical Center, Bethesda, Maryland and Head of Surgery aboard the hospital ship USNS Comfort.

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Valve Surgery Now More Patient Friendly

At Lourdes Health System’s second annual “Cardiology for the Primary Care Physician” symposium, accomplished cardiothoracic surgeons Arthur Martella, MD, and Paul Davis, MD, described improvements in valve repair and replacement that have continued to decrease the invasiveness of these procedures as well as length of stay and recovery associated with them. Minimally invasive aortic valve replacement (miniAVR) and minimally invasive mitral valve repair (miniMVR), like TAVR (see page 1), are part of an evolution away from certain open-heart operations, the surgeons explained.

“Isolated valve surgeries should not need a sternotomy,” said Dr. Martella, who explained that miniAVR uses a small incision through the ribs in the right chest. Post-surgical limitations are few, with patients generally able to resume activities after one week.

In the U.S., most mitral valve disease is degenerative leaflet prolapse. But experienced centers can offer repair even to patients with very low ejection fraction. The surgical approach includes conserving as much of the native leaflet tissue as possible while maximizing coaptation and preserving the normal motion and shape of the valve (in part by stabilizing the annulus of the valve with a ring implant).

“Access for a miniMVR is via the right ribs but through the left atrium directly over the mitral valve, so that only the mitral valve is exposed,” said Dr. Davis, who has been using the smaller incision for almost 15 years. Repair of the mitral valve provides better long-term outcomes than replacements, with survival in fact equivalent to that of individuals who have never had mitral valve disease.