OCHSNER OUTCOMES
Cardiovascular Services
Patient referrals, transfers and consults are critically important, and we want to make it easy for referring providers and their staff. To refer your patient for a clinic appointment, call our Clinic Concierge at 855.312.4190.

Ochsner’s longstanding tradition of bringing physicians together to improve health outcomes continues today. Our goals are to work together with our referring providers to serve the needs of patients and to provide coordinated treatment through partnerships that put patients first. We have automated physician-to-physician patient care summaries for hospital encounters and enhanced the patient experience by giving patients the ability to schedule appointments online.

Close coordination and collaboration begin with transparency and access to the data you need to make informed decisions when advising your patients about care options. Ochsner Outcomes, a compilation of clinical data, represents only part of our efforts to better define the quality of Ochsner’s care and to share that information with you.

Trusted, independent organizations give the highest marks to Ochsner’s quality. Ochsner Medical Center was the only healthcare institution in Louisiana, Mississippi and Arkansas to receive national rankings in four adult specialties from U.S. News & World Report for 2017-2018. Ochsner Hospital for Children has been ranked among the top 50 children’s hospitals in the country for Cardiology and Heart Surgery in the 2017-2018 U.S. News & World Report Best Children’s Hospitals rankings, making it the only nationally ranked children’s hospital in Louisiana.

Additionally, CareChex® named Ochsner Medical Center, Ochsner Baptist and Ochsner Medical Center – West Bank Campus among the top 10% in the nation in Medical Excellence for 16 different specialties. Ochsner was also named #1 in the nation in Medical Excellence for Organ Transplants and, for the fifth year in a row, #1 in the nation in Medical Excellence and Patient Safety for Liver Transplant.

Ochsner is expanding its already robust research program with two new partnerships. The first, with TGen, brings early-phase cancer clinical trials to the region. The second, with TriNetX, an international data research network, will allow Ochsner clinicians to have the opportunity to provide new therapies to their patients sooner, as well as provide our researchers access to new tools with which to analyze data on our own patients and refine treatments.

Ochsner Multi-Organ Transplant Institute is one of 19 transplant hospitals in the United States to participate in the initial pilot phase of the Collaborative Innovation and Improvement Network (COIIN) project, a three-year study by the United Network for Organ Sharing (UNOS) intended to increase transplantation, with a particular focus on utilization of deceased donor kidneys.

Ochsner consistently earns the respect of independent evaluators. We do not rest on these achievements, but use them as a benchmark to continuously improve. We will continue to share the data you need to care for your patients, provide services you may not have in your community and develop the collaborative relationships essential to ensuring the best outcomes for every patient, every time.
New solutions for chronic and complex cardiovascular problems

The John Ochsner Heart & Vascular Institute (JOHVI) at Ochsner Medical Center diagnoses and treats patients using the most advanced technologies and outstanding subspecialty physician expertise. As demonstrated in this report, this translates to outstanding outcomes for our patients. We've established a national and international reputation for excellence in patient care and innovation in technology and treatments. Over the years, we have been recognized by U.S. News & World Report, CareChex® and Healthgrades® for our heart and vascular achievements.

Ochsner is the first and only medical center in our region to perform heart transplants, and the only center in Louisiana to offer the artificial heart and left ventricular assist devices (LVADs).

We were the first to perform heart valve replacement without surgery, and we continue to rank nationally with our high volume and low complication rates. Our arrhythmia physicians offer new and effective ablation procedures for ventricular tachycardia and atrial fibrillation. We offer the only Adult Congenital Heart Disease Program in the region, which serves adults who were diagnosed and treated for birth defects of the heart as infants or children. We are constantly looking for new ways to help our patients manage complex or ongoing cardiovascular problems.

To serve even more patients, we now offer same-day access and convenient online appointment scheduling. Our patients have full access to their medical records and can review all test results to maximize transparency. We have novel programs for repairing failing coronary stents (brachytherapy), implanting leadless pacemakers, repairing aortic aneurysms with customizable grafts and preventing strokes without surgery by placing carotid stents. We remain a national leader in treating patients with advanced heart failure, and we are a second-opinion center for complex cardiovascular conditions. We are excited about all the potential benefits we will continue to offer patients throughout the Gulf South.

At JOHVI, we are eager to help our referring physicians manage their patients’ most challenging diagnoses and treatments. Through our advanced cardiovascular services, we strive to restore patients’ health and improve their quality of life. We hope to become your trusted partner in delivering the best possible cardiovascular care to your patients.

For information about the John Ochsner Heart & Vascular Institute, visit us online at Ochsner.org/heart or contact us by phone at 888.317.3717. We look forward to hearing from you.

Christopher J. White
MD, FSCAI, FACC, FAHA, FESC
Professor and Chairman of Medicine
The Ochsner Clinical School, University of Queensland
System Chairman of Cardiovascular Diseases
Medical Director, John Ochsner Heart & Vascular Institute at Ochsner Medical Center
John Ochsner Heart & Vascular Institute

The John Ochsner Heart & Vascular Institute offers state-of-the-art diagnostic and leading-edge therapies for adult and pediatric cardiology patients in a program that is ranked among the top in the nation.

In 2016, Ochsner transitioned from ICD 9 to 10 (International Statistical Classification of Diseases and Related Health Problems). The 10th edition allows for greater accuracy with the addition of more than 14,000 new diagnostic codes and subclassifications.

While this tool permits greater specificity, the additional classifications have resulted in outcomes metrics that may appear inconsistent from 2015 to 2016.

We have a team of experts available in:
- Advanced Heart Failure and Cardiac Transplantation
- Adult Congenital Heart Disease
- Arrhythmia and Heart Rhythm Disorders
- Cardiac PET Imaging
- Cardiovascular MRI and CTA Imaging Services
- Consultative Cardiology
- Heart and Vascular Surgery
- Interventional Cardiology
- Nonsurgical Heart Valve Replacement and Repair
- Pediatric Cardiology
- Pulmonary Hypertension
- Stroke Prevention and Carotid Stents
- Vascular Medicine

Overview of Subspecialties with Volume:

**Advanced Heart Failure and Cardiac Transplantation**
- Implanted Mechanical Assist Devices – 49 patients
- Heart Transplants – The only heart transplant center in Louisiana, performing 23 heart transplants in 2016 and more than 900 throughout the history of the Ochsner heart transplant program

**Consultative Cardiology**
- Conducted more than 13,000 clinic visits annually and interpreted more than 76,000 EKGs annually for the Ochsner system

**Electrophysiology**
- Device Clinic Volume – nearly 12,000 device clinic assessments performed in 2016
- 265 pulmonary vein isolations (PVIs) for patients with AFib performed in 2016

**Interventional Cardiology**
- Nearly 5,000 procedures performed in the cardiac catheterization laboratory

**Heart Valve Program**
- Transcatheter Aortic Valve Replacement (TAVR) – 191 cases in 2016 and more than 600 cases since 2011
- Minimally invasive mitral valve repair

**Cardiovascular Research**
- More than 110 active cardiovascular clinical research trials for investigational therapies not available at other health systems

**Noninvasive Cardiovascular Imaging**
- Annually perform more than 24,000 echo stress tests
- Annually perform more than 1,000 cardiac PET scans
- Annually perform more than 5,400 vascular ultrasounds through the Vascular Medicine department
- Annually perform more than 400 cardiac MRI tests that support referrals from the entire Louisiana region

Ochsner is the only heart transplant center in Louisiana, performing 23 heart transplants in 2016 and more than 900 throughout the history of the Ochsner heart transplant program.
Heart Transplant

Heart transplant patients at Ochsner have three-year survival rates higher than the national average. In 2016, the three-year survival rate was 87.8 percent, compared to 85.1 percent nationally.

Ochsner Heart Transplant 1-Year Adult Patient Survival Hazard Ratio Comparison with Other Programs
Ochsner Medical Center Program Volume for Transplants, 7/1/2013 – 12/31/2015

The data reported here were prepared by the Scientific Registry of Transplant Recipients (SRTR) under contract with the Health Resources and Services Administration (HRSA). Based on data available as of October 31, 2016. Publication date December 2016.

Keenen Shields
Heart Transplant Patient

Two days before Christmas 2014, Keenen Shields, a 24-year veteran of the New Orleans Police Department, was on duty when he suffered his fourth heart attack. He experienced his first heart attack in 2006 and struggled with heart disease for eight years. He was admitted to Ochsner Medical Center in need of a heart transplant, and received his new heart on January 25, 2015. Now Keenen, a 53-year-old husband, father and grandfather of three, is embracing his second chance at life. In 2016, he participated in the Transplant Games of America. Keenen feels that competing in the Games will get him “one step closer to returning to the work I love – being a police officer.”
Ochsner’s Cardiomyopathy and Heart Transplant Program is the only Medicare-approved heart transplant program in Louisiana, performing over 20 heart transplants per year. It is also Louisiana’s only pediatric heart transplant program.

Ochsner Heart Transplant 3-Year Adult Patient Survival Hazard Ratio
Comparison with Other Programs
Ochsner Medical Center Program Volume for Transplants, 1/1/2011 – 6/30/2013

The data reported here were prepared by the Scientific Registry of Transplant Recipients (SRTR) under contract with the Health Resources and Services Administration (HRSA). Based on data available as of October 31, 2016. Publication date December 2016.
Left Ventricular Assist Device (LVAD) Implantation

The John Ochsner Heart & Vascular Institute (JOHVI) has been providing ventricular assist device (VAD) services for patients across the Gulf Coast region for over 20 years. These devices help preserve the heart function of patients awaiting a heart transplant, otherwise known as a bridge to transplant, or as a permanent treatment option, known as destination therapy. New technology and identification of patients earlier in the heart failure disease process will enhance the long-term VAD patient's survival and quality of life. At JOHVI, our team of seven advanced heart failure cardiologists works closely with the patients' primary cardiologist to share in the management of patients with heart failure.

Heart Transplant & VAD Volume
Ochsner Medical Center, 2000–2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Adult Heart Transplants</th>
<th>Pediatric Heart Transplants</th>
<th>VADs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>3</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>2001</td>
<td>5</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>2002</td>
<td>5</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>2003</td>
<td>6</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>2004</td>
<td>3</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>2005</td>
<td>2</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>2006</td>
<td>1</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>2007</td>
<td>1</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>2008</td>
<td>1</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>2009</td>
<td>2</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>2010</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2011</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>2012</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2013</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2014</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2015</td>
<td>2</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>2016</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Patient Survival After LVAD

Ochsner’s vast array of advanced heart failure cardiologists, VAD coordinators, heart failure coordinators, advanced practice providers, pharmacists, social workers and support personnel work diligently with patients, their family members and referring providers in the ongoing care of patients after implantation. These “shared care” partnerships contribute greatly to the consistent success of Ochsner VAD patients exceeding national standards in patient survival at the one-year and three-year milestones.

The experienced members of our VAD team also work closely in training emergency medical services providers in communities across the Gulf South and in neighborhoods where our VAD patients live. Our goal is to ensure local medical providers can perform tests, discuss symptoms and consult with our specialists to determine if patients need additional care in a hospital setting or if modifications can be made at home to prevent a hospital admission. At Ochsner, we have VAD coordinator and VAD physician services on call 24 hours a day, seven days per week.

Ventricular Assist Devices (VADs) Overall Survival
Ochsner Medical Center, 2015–2016

1-Year 3-Year
Ochsner 85.3% 71.6%
Intermacs* 81.7% 60.6%

*The Interagency Registry for Mechanically Assisted Circulatory Support is a registry for patients who are receiving durable mechanical circulatory support device therapy to treat advanced heart failure.

Indicators for referrals for patients with advanced heart failure:

- Class III/IV heart failure symptoms
- LVEF <35%
- End-stage organ dysfunction
- Hemodynamic instability
- Hospitalization for heart failure in the past six months
- Intolerance or withdrawal of oral agents
- Nonresponsive to CRT/BIV pacing
- Being considered for or currently on inotropes
Ventricular Assist Devices (VADs) Bridge to Transplant Survival
Ochsner Medical Center, 2015–2016

*The Interagency Registry for Mechanically Assisted Circulatory Support is a registry for patients who are receiving durable mechanical circulatory support device therapy to treat advanced heart failure.

Ventricular Assist Devices (VADs) Destination Therapy Survival
Ochsner Medical Center, 2015–2016

Ochsner  |  Intermacs*

The Interagency Registry for Mechanically Assisted Circulatory Support is a registry for patients who are receiving durable mechanical circulatory support device therapy to treat advanced heart failure.
Pulmonary Hypertension

The Ochsner Pulmonary Hypertension Program is the largest in the region, caring for more than 450 patients and evaluating more than 250 patients for treatment options annually. The program’s team of cardiologists, pulmonologists, rheumatologists, radiologists, nurses, pharmacists and other providers work with each patient to develop an individualized treatment plan. Through this coordinated approach to care, patients will have access to care across the continuum including inpatient care, outpatient care, access to complex medical management, support groups, enhanced education and even lung transplantation if necessary.
Electrophysiology

According to the American Heart Association, more than five million Americans have arrhythmias, with the most common being atrial fibrillation (AFib). Many are undiagnosed, and as the population ages and people live longer the incidence continues to rise. The risks for patients include increased risk for stroke and worsening heart failure and quality of life.

To meet the growing demand, Ochsner has added its sixth adult specialist and constructed its fourth dedicated Electrophysiology Lab. Along with two pediatric specialists, the John Ochsner Heart & Vascular Institute continues to lead the largest and most comprehensive center for management of complex arrhythmias and heart rhythm disorders in the Gulf South.

Leading the Way in Ablation Therapy & Rhythm Disorders

Radiofrequency ablation is a nonsurgical, catheter-based therapy designed to eliminate small pieces of heart tissue within the heart that create electrical dysfunction. At Ochsner, we work with cardiologists throughout the region to assist their patients with complex AFib, ventricular tachycardia, supraventricular tachycardia and pulmonary vein isolation procedures. Furthermore, through the Ochsner group practice, we have developed special Integrated Group Practice Units (IGPUs), where physicians from multiple disciplines come together to organize care around certain medical conditions. Placing the patient at the center of care, these providers develop team-based models that ensure the best course of therapy and outcomes for the patient.

A prime example, within the electrophysiology department, is the collaboration between electrophysiologists and structural heart specialists who manage patients with left atrial appendage disease. This disease, if not corrected, results in a high risk for stroke-producing blood clots among patients with AFib.

Cardiac Rhythm Management

Implantable technology, such as pacemakers and implantable cardioverter defibrillators (ICDs), continue to advance and serve as life-saving tools for managing a variety of heart rhythm disorders. Within the electrophysiology section, we have a robust team of device management specialists on site to provide in-person, remote web-based and telephonic management.

Conditions we treat:

- Lead extractions
- Radiofrequency ablation for supraventricular arrhythmias
- Radiofrequency ablation for atrial fibrillation
- Radiofrequency ablation for ventricular tachycardia
- Comprehensive evaluation for unexplained syncope

Conditions we treat:

- Lead extractions
- Radiofrequency ablation for supraventricular arrhythmias
- Radiofrequency ablation for atrial fibrillation
- Radiofrequency ablation for ventricular tachycardia
- Comprehensive evaluation for unexplained syncope
Radiofrequency Ablation / Pulmonary Vein Isolation Procedures
Ochsner Medical Center, 2014–2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>124</td>
</tr>
<tr>
<td>2015</td>
<td>175</td>
</tr>
<tr>
<td>2016</td>
<td>261</td>
</tr>
</tbody>
</table>

Anhytthmia Procedures
Ochsner Medical Center, 2016

<table>
<thead>
<tr>
<th>Procedure</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Extraction</td>
<td>64</td>
<td>317</td>
<td>776</td>
</tr>
<tr>
<td>Pacemaker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implantable Cardiac</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defibrillator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ablation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Interventional Cardiology

The John Ochsner Heart & Vascular Institute is a regional referral center for complex, high-risk percutaneous coronary interventions (PCI).

In 2016, nearly 5,000 cardiac catheterization procedures were performed by our expert team of adult and pediatric interventional cardiologists. Our interventional cardiologists are experts in coronary and peripheral interventions as well as arterial and venous diseases. The range of services offered goes from the carotid arteries to the feet with procedures ranging from diagnostic to advanced endovascular therapies.

The program offers the latest technology, including brachytherapy, atherectomy, fractional flow reserve and intravascular ultrasound. Regionally, we collaborate with providers from across the Gulf South to offer high-risk angioplasty, including unprotected left main intervention and chronic total occlusions. We also take great pride in training tomorrow’s physicians through our ACGME-accredited program, which includes eight fellows annually training in interventional coronary and peripheral vascular diseases. We also work with insurers and employer groups for second opinions.

Advanced Interventional Cardiology Services:
- Brachytherapy
- PCI of chronic total occlusions (CTOs)
- TandemHeart and Impella implantation
- Paravalvular leak repair
- Carotid stenting
- Endovascular treatment for chronic limb ischemia

The rate of in-hospital mortality among patients who had PCI procedures at Ochsner in 2016 was lower when compared to rates at similar hospitals. Our team includes national leaders from both the American College of Cardiology (ACC) and the Society for Cardiovascular Angiography and Interventions (SCAI), who are dedicated to the nonsurgical treatment and prevention of heart attack, stroke and limb loss.
In 2016, the rates for major vascular complications, including death, emergency coronary artery bypass grafting and stroke with PCI procedures, at John Ochsner Heart & Vascular Institute were far better than the rates at comparable hospitals.

To serve these patients, our award-winning team has developed innovative strategies to treat coronary heart disease, even in people who have been told they have no options; renal artery stenosis and renovascular hypertension; chronic mesenteric ischemia and peripheral arterial disease.

As national leaders in acute stroke prevention, we are experts in carotid stenting and other cerebrovascular disease interventions. And we are regional leaders in valvuloplasty, TAVR and limb salvage using the latest vascular rescue therapies for patients with severe ischemia or complex wounds.

Use of fractional flow reserve (FFR) to validate lesions with stenosis between 40 and 70 percent is a best practice measure to determine the appropriateness for PCI. At JOHVI, we use FFR at nearly twice the rate of comparable hospitals. This is beneficial to patients because, with angiography alone, it is not always clear which narrowed area is most problematic. FFR offers a functional evaluation to confirm the PCI procedure will be effective or to guide the specialist to investigate other narrowed areas.
At Ochsner, our expert interventionalists pay particular attention to the management of fluoroscopy agents and patient hydration during cardiac catheterization procedures to prevent acute kidney injury (AKI). At Ochsner, our patients are less likely to develop AKI versus those at comparable hospitals.

In 2016, John Ochsner Heart & Vascular Institute interventional cardiologists performed more procedures using radial access. Use of radial access has demonstrated reduced bleeding complications, lower readmission rates, fewer infections and shorter recovery times versus femoral access. The graph below shows a comparison between Ochsner 2016 data and the aggregate value for that metric across all U.S. patients in the National Cardiovascular Data Registry.
The Structural Heart and Valve Program is unrivaled in the region, and the Transcatheter Aortic Valve Replacement (TAVR) program is recognized as having the best outcomes combined with one of the shortest lengths of stay in the United States.

TAVR is a procedure for select patients with severe symptomatic aortic stenosis who are not candidates for traditional open chest surgery or are moderate and high-risk nonsurgical candidates. TAVR uses a catheter to replace the heart valve instead of opening up the chest to remove the diseased valve. Since 2011, the Ochsner Structural Heart Team has performed over 600 TAVR procedures. We launched our nonsurgical mitral valve repair program with MitraClip® as well as multiple methods of left atrial appendage closure. We take into account the total patient, including frailty, lung function and patient wishes. We specialize in nonsurgical and minimally invasive treatment.
Structural Heart and Valve Program

Transcatheter Aortic Valve Replacement

Since the inception of the TAVR program in 2010, Ochsner has become the regional leader in use of this specialized treatment for high-risk nonsurgical patients with aortic valve disease. More than 704 patients had this procedure at Ochsner with excellent outcomes and demonstrated quality of life improvement.

The Ochsner group practice integrated approach to patient-centered multidisciplinary care is highly effective in its management of heart valve disease. Patients from across the Gulf South are seen in our outpatient Heart Valve Clinic and receive their full medical evaluation, diagnostic workup and treatment plan in one visit to enhance their patient experience. Services include all imaging studies, lab work and physician consultations with the necessary providers (i.e., interventional cardiology, cardiovascular surgery, noninvasive cardiologist).

TAVR In-Hospital Mortality

Ochsner Medical Center, Q3 2015 – Q2 2016

In 2016, 173 TAVR procedures were performed at Ochsner. The In-Hospital Mortality Rate was 0.8 percent. U.S. hospitals performing at the 90th percentile achieved a 1 percent mortality rate. Ochsner ranked among the best in the United States for In-Hospital Mortality.

Methodology and Source: American College of Cardiology – National Cardiovascular Data Registry (ACC-NCDR)

TAVR Length of Stay

Ochsner Medical Center, Q3 2015 – Q2 2016

Ochsner patients with TAVR procedures had a hospital length of stay averaging one day. Comparative hospitals performing at the 90th percentile achieved a length of stay of 1.6 days. TAVR patients at Ochsner enjoyed the benefit of returning home sooner than those in comparative hospitals.

Methodology and Source: American College of Cardiology – National Cardiovascular Data Registry (ACC-NCDR)
TAVR Stroke Complications
Ochsner Medical Center, Q3 2015 – Q2 2016

Methodology and Source: American College of Cardiology – National Cardiovascular Data Registry (ACC-NCDR)

TAVR Access Site Complications
Ochsner Medical Center, Q3 2015 – Q2 2016

Methodology and Source: American College of Cardiology – National Cardiovascular Data Registry (ACC-NCDR)
EIGHTY-FIVE PERCENT OF ADULT CONGENITAL HEART DISEASE PATIENTS HAVE MODERATE TO SEVERE DEFECTS THAT HAVE BEEN REPAIRED BUT NOT CORRECTED. LIFELONG MONITORING BEFORE SYMPTOMS OCCUR IS ESSENTIAL.

THE ADULT CONGENITAL HEART DISEASE PROGRAM IS THE ONLY ONE IN THE GULF SOUTH TREATING CONGENITAL HEART DISEASE PATIENTS IN AN ADULT SETTING. THE TEAM WORKS HAND IN HAND WITH REFERRING PHYSICIANS TO PROVIDE CARE TO PATIENTS WITH COMPLEX DISEASES.

AT THE CORE OF THE PROGRAM IS THE COLLABORATION BETWEEN ADULT AND PEDIATRIC CARDIOVASCULAR SPECIALISTS, WHO ARE EXPERTS IN MANAGING CONGENITAL HEART DISEASE.

THE ADULT CONGENITAL HEART DISEASE PROGRAM OFFERS COMPREHENSIVE CARE TO ADULTS WITH REPAIRED OR NEWLY DIAGNOSED CONGENITAL HEART DISEASE.
Noninvasive Cardiovascular Imaging

We offer the most broadly based, state-of-the-art cardiovascular imaging services in the Gulf South, including cardiac PET imaging and advanced echocardiography services, such as 3D transesophageal echo.

For cross-section imaging, we offer cardiac MRI services and computed tomography angiography. All noninvasive imaging labs have achieved national certification through the Intersocietal Accreditation Commission, ensuring high-quality patient care. We often use multiple modalities to assess and diagnose complex problems. This is a strength that particularly benefits our adults with congenital heart disease, structural heart disease and other highly complex cardiovascular diseases. These patients are often at a higher risk for irregular heartbeats, blood clots, congestive heart failure, heart attacks and even sudden cardiac death if they are not regularly monitored through multiple modalities.

We offer state-of-the-art cardiac PET imaging services, including stress myocardial perfusion with integration of absolute myocardial flow, viability assessment and assessment of cardiac sarcoidosis. We specialize in assessment of regional and global myocardial ischemia in both straightforward and complex cases and assist in subsequent decisions for revascularization. We serve as the major referral center in the Southeast for second opinions and are also the site of several clinical trials. We are the only facility in the Southeast with the capabilities and experience to incorporate absolute myocardial flow into standard perfusion images such that subsequent decisions for revascularization can be achieved.
Preventive Medicine and Cardiac Wellness

Ochsner’s Cardiac Rehabilitation Program is professionally supervised to help patients recover from heart attacks, heart surgery and percutaneous coronary intervention procedures.

Patients begin rehabilitation while they are in the hospital. Once discharged, patients are enrolled in a 12-week monitored rehabilitation program that includes everything from diet plans to exercise programs. Once a patient completes the process, they are encouraged to continue their own cardiac rehabilitation and make routine appointments at our center.

Quality of Life Metrics
Ochsner Medical Center, 2016

<table>
<thead>
<tr>
<th>Metric</th>
<th>Pre</th>
<th>Post</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Function</td>
<td>22.4</td>
<td>24.5</td>
<td>+10%</td>
</tr>
<tr>
<td>Energy/Tiredness</td>
<td>13.6</td>
<td>16.4</td>
<td>+20%</td>
</tr>
<tr>
<td>Pain</td>
<td>7.8</td>
<td>8.8</td>
<td>+12%</td>
</tr>
<tr>
<td>Total QOL</td>
<td>99.0</td>
<td>111.6</td>
<td>+13%</td>
</tr>
</tbody>
</table>

higher number indicates improvement
Exercise Metrics
Ochsner Medical Center, 2016

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak VO₂</td>
<td>18.1</td>
<td>19.7</td>
</tr>
<tr>
<td>Heart Rate Recovery</td>
<td>11.8</td>
<td>14.8</td>
</tr>
</tbody>
</table>

Exercise Metrics: Heart Rate Recovery
Ochsner Medical Center, 2016

<table>
<thead>
<tr>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>44%</td>
</tr>
<tr>
<td>Post</td>
<td>45%</td>
</tr>
</tbody>
</table>
Patient Experience

Ochsner Clinic and the John Ochsner Heart & Vascular Institute are committed to delivering excellent clinical outcomes while ensuring patients and their families receive the best overall experience in the process. We believe in transparency and seek feedback from our patients in efforts to improve our clinical care and patient experience opportunities.

Patient feedback based on national survey results of discharged patients for 2016 from all U.S. hospitals medicare.gov/hospitalcompare.

Cardiology – Clinician and Group Consumer Assessment of Healthcare Providers and Systems (CGCAHPS)
Ochsner Heart & Vascular Institute, 2016

CGCAHPS information was based on provider specialty with a visit date between 1/1/2016 – 12/31/2016; adjusted per Press Ganey methodology for accuracy.

Cardiology – Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)
Ochsner Heart & Vascular Institute, 2016

The HCAHPS data was based on the specialty field in discharge for patients with a discharge date between 1/1/2016 – 12/31/2016. The specialty field is based on the DRG that is on the record and the CMS specialty group that is tied to the DRG.
Research

The John Ochsner Heart & Vascular Institute research program comprises a unique group of individuals dedicated to providing clinical research opportunities to our patients. In general, clinical trials are used to test the safety and effectiveness of drugs, devices and medical procedures in the human population. This ongoing collaboration between physician investigators and study volunteers is one of the foundations of modern healthcare because clinical trials help set the standards for patient care.

At any given time, more than 60 clinical trials are actively enrolling patients across the spectrum of conditions in the cardiology research program.

Clinical Trials

Heart Failure

DREAM HF: This study is evaluating the benefits of stem cells vs placebo in heart failure patients with left ventricular systolic dysfunction that are on maximum, optimized, medical therapy. The stem cells are injected directly into the cardiac muscle during a cath lab procedure. The aim of the study is to repair damaged heart tissue and reduce overall heart failure symptoms.

Fire HF: The purpose of this study is to see if Injectafer® is efficient and safe to improve quality of life, reduce death, and lower hospitalizations associated with heart failure.

GRAHF 2: The goal of this trial is to determine if genetic testing can determine which African American patients will respond to Bidil treatment for heart failure. African American patients with a reduced ejection fraction are followed for two years while taking Bidil to determine the status of heart failure symptoms and heart failure functional class while on this medication.

PATISIRAN: This study is an expanded access protocol which allows patients with polyneuropathy associated with hATTR amyloidosis to receive a study drug called Parisian.

INVESTED: The INVESTED trial is designed to determine which of two formulations of influenza vaccine, the standard dose or an investigational higher dose, is more effective in reducing deaths and heart- or lung-related admissions to the hospital. The targeted population for this study is individuals across the spectrum of conditions in the cardiology research program. More than 1,500 patients are enrolled in over 100 trials.

LIFE: This study is evaluating the benefits of LCZ696 (an approved drug for Heart Failure that combines sacubitril and valsartan) when compared to valsartan alone in the management of heart failure symptoms in patients diagnosed with CHF class IV or patients receiving ongoing inotropic infusion therapy.

OAR: This registry observes the clinical long-term management and outcomes of heart transplant recipients with the regular use of AlloMap testing. The AlloMap blood test is intended to help determine if a heart transplant recipient has a low probability of acute rejection at the time of testing. This test, first commercially introduced in 2005, identifies the expression of genes on white blood cells that circulate in the blood and cause the heart to be rejected.

THAOS: This is an observational survey open to all patients with Transthyretin-associated amyloidosis, including both inherited and wild type disease and participants with TTR mutations without a diagnosis of ATTR. Because transthyretin-associated amyloidosis is very rare, there are many unanswered questions about this disease. In order to understand the disease better and improve the care of patients, the Transthyretin-Associated Amyloidosis Outcome Survey (THAOS) was created.

Consultative

ADAPTABLE: This is a three-year pragmatic clinical trial that will compare the effectiveness of two different daily doses of aspirin widely used to prevent heart attacks and strokes in individuals living with heart disease. Ochsner is using Epic notifications to help cardiologists identify patients for this PCORI study. This has allowed the research team to reach patients at several locations.
PARADISE: The purpose of this study is to test if LCZ696 (Entresto) taken twice a day, compared to ramipril taken twice a day, is safe and effective in reducing complications following an acute myocardial infarction (heart attack), such as death from cardiovascular causes, hospitalization for heart failure, or outpatient heart failure.

TELEX: This study hopes to establish whether the angiostenin receptor blocker (ARB) telmisartan improves walking performance in people with peripheral artery disease (PAD), a condition in which cholesterol blockages in the leg arteries prevent blood from getting down to the legs and feet during exercise. It also aims to determine whether telmisartan plus supervised exercise improves walking performance more than telmisartan alone and more than supervised treadmill exercise alone.

Electrophysiology
AdaptResponse: This trial compares electrical treatment between standard device programming and adaptive resynchronization therapy programming in patients with newly implanted, Medtronic CRT devices.

aMAZE: The aim of this study is to determine if the combination of two non-surgical treatments (pulmonary vein isolation (PVI) and closure of the left atrial appendage utilizing the LARIAT system) are more effective in reducing atrial fibrillation symptoms and the quality of life for those with atrial fibrillation.

BEAT HF (Barostim): The Barostim implantable device stimulates the baroreceptors in an effort to improve blood flow to the heart, kidneys and blood vessels in patients with heart failure. The goal of the study is to improve overall heart failure symptoms and the quality of life for those with an advanced heart failure diagnosis.

BRADY MRI PAS: The primary objective of this study is to evaluate the long-term safety of the Tendril MRI lead implanted with a SJM Brady MRI System in subjects with a standard bradycardia pacing indication through 60 months of follow-up. Additionally, this study will evaluate the MRI scan related complications rate through one-month post MRI scan in subjects who undergo a clinically indicated MRI scan according to the MRI Conditions of Use.

EnSite: The EnSite Precision Observational Study is looking to characterize the usage of the EnSite Precision Cardiac Mapping System and its unique features in a real world cardiac ablation environment.

LEADLESS II: The intent of this study is to evaluate the safety and effectiveness of the implanted Nanostim Leadless Pacemaker for treatment of bradycardia in a subject population indicated for a single wire pacemaker.

Left Atrial Transport Function Following Cryoballoon PVI: Patients undergoing pulmonary vein isolation for atrial fibrillation with cryoballoon. Impact of procedure on the left atrium of the heart is compared using pre and post-procedure MRI scans.

MultiPoint Pacing Post Market Study (MPP PMS): Evaluating real-world use of MPP technology in patients indicated for a cardiac resynchronization therapy (CRT) device. This is a prospective, multicenter, non-randomized registry/ observational study enrolling up to 2000 patients with successful Abbott (formerly SJM) CRT MP device implant.

Optimizer IV’s Studies: Ochsen is participating in four Optimizer studies. These studies assess the different generations of the Optimizer IV’s systems which are used to treat heart failure. The device is an implantable that is similar to a pacemaker, however, the Optimizer IV does not initiate a new heartbeat or change the heart rate. The device uses a therapy called Cardiac Contractility Modulation which improves the pumping function of the heart.

QPE-EXCELS: The purpose of this study is to confirm long-term safety of the BIOTRONIK Senos QP lead used with the BIOTRONIK CRT-D device. The Senos QP lead may offer more possibilities for locating a stable and optimal position during lead placement, thus potentially avoiding/reducing future surgical interventions.

RESPOND CAS: The objective of this continued access study is to gather confirmatory evidence on the safety of the Sonopac lead and performance of the automatic atrioventricular (AV) delay and interventricular (VV) delay optimization algorithms used in the PARADYM PFO Sonar Cardiac Resynchronization Therapy with Defibrillation (CRT-D) device (Model 9770) in a patient population that is reflective of current heart failure treatment practice.

UNTOUCHED: The primary aim of the study is to estimate the rate and causes of shocks in patients suffering from severely reduced cardiac function, who have been implanted with the Emblem S-ICD System. The results will allow physicians to take appropriate measures for primary prevention of sudden cardiac arrest (SCA) in such patients. The S-ICD system can be placed just under the skin and provides the patient with the same protection from cardiac arrests as Trans venous-ICDs. However, it leaves the heart and vasculature untouched thus minimizing the risk of complications associated with TV-ICDs.

Cardiothoracic Surgery
MOMENTUM 3 CAP (HeartMate III): Comparison of the HeartMate III LVAD to the HeartMate II LVAD. The HeartMate III data shows decreased bleeding events and no pump related thrombosis. The smaller size of the HeartMate III pump allows for implantation in a greater population of patients.

PREVENT II: This is a double-blind placebo-controlled study for subjects receiving the HeartMate II (LVAD). Subjects will be randomized to receive warfarin + placebo in the treatment arm or warfarin + aspirin in the control arm. This is to determine if subjects in the treatment arm experience a reduced incidence of bleeding without an increased risk in thromboembolic events.

SynCardia 50cc TAHi-t (total artificial heart): The SynCardia TAHi-t 50cc provides circulatory support in bridge-to-transplant patients with biventricular heart failure. The 50cc version of the device is smaller than the FDA approved TAHi-t 70cc model, and thus can be used for children and adults with smaller chest cavities.

RESPOND: The purpose of this study is to determine if the Amulet device is a safe and effective option for left atrial appendage closure when compared to theWATCHMAN device.

BEST-CLI: A study to evaluate the effectiveness of the best endovascular compared to best surgical revascularization in patients with chronic limb ischemia. Subjects must be eligible to undergo both endovascular therapy and surgical bypass in order to qualify for the trial. CLI is defined as arterial insufficiency with gangrene, non-healing surgical ulcer, or rest pain consistent with Rutherford categories 4–6.

CLODAD: This trial utilizes passive tomography to identify significant coronary artery disease without an invasive procedure. The primary objective is to show that the technology can identify coronary blockage as well as the current “gold standard” of angiography.

CALM II: This study looks at reshaping the carotid sinus by implanting the MobiusHD device into the carotids. The goal of the trial is to control patients with treatment resistant hypertension through reducing strain on the baroreceptors. The CALM II protocol is a follow-up of the CALM clinical trial. The CALM study was a “First in Man” safety study in which only 8 sites, including Ochsen, were asked to participate.

CREST II: The purpose of this study is to compare carotid artery disease treatment options. The study consists of three options: carotid endarterectomy plus intense medical therapy, carotid artery stenting plus intense medical therapy, medical therapy alone. The overall goal of the study is to prove if intervention is more effective than medical therapy alone, and if so, which intervention produces better outcomes. (Vascular surgery/ interventional)

Interventional
AMULET: The purpose of the AMULET study is to determine if the Amulet device is a safe and effective option for left atrial appendage closure when compared to the Watchman device.

BEST-CLI: A study to evaluate the effectiveness of the best endovascular compared to best surgical revascularization in patients with chronic limb ischemia. Subjects must be eligible to undergo both endovascular therapy and surgical bypass in order to qualify for the trial. CLI is defined as arterial insufficiency with gangrene, non-healing surgical ulcer, or rest pain consistent with Rutherford categories 4–6.

CLODAD: This trial utilizes passive tomography to identify significant coronary artery disease without an invasive procedure. The primary objective is to show that the technology can identify coronary blockage as well as the current “gold standard” of angiography.

CALM II: This study looks at reshaping the carotid sinus by implanting the MobiusHD device into the carotids. The goal of the trial is to control patients with treatment resistant hypertension through reducing strain on the baroreceptors. The CALM II protocol is a follow-up of the CALM clinical trial. The CALM study was a “First in Man” safety study in which only 8 sites, including Ochsen, were asked to participate.

CREST II: The purpose of this study is to compare carotid artery disease treatment options. The study consists of three options: carotid endarterectomy plus intense medical therapy, carotid artery stenting plus intense medical therapy, medical therapy alone. The overall goal of the study is to prove if intervention is more effective than medical therapy alone, and if so, which intervention produces better outcomes. (Vascular surgery/ interventional)
REDUCE III: The goal of this trial is to improve the quality of life in patients with diastolic heart failure with a preserved ejection fraction. The study uses the IASD device to shunt blood flow from left atrium to the right atrium and potentially lowers left atrial pressure. This is a non-surgical, interventional procedure in which a small opening is created in the wall between the atria. The device is inserted into the opening to keep it open over time. The primary objective is to show a reduction in left atrial pressure and an improved quality of life through reduction in shortness of breath.

Pulmonary Hypertension

Soprano: This is a double blind randomized study to assess the efficacy and safety of macitentan for the treatment of pulmonary hypertension in patients with an LVAD (left ventricular assist device).

SPHERE: This is a prospective observational drug registry being conducted in order to further outline the clinical characteristics, outcomes and dosing/titration regimens of patients treated with Upravi in patients with pulmonary hypertension.

RESEARCH

Publications


O’Keefe EL, DiNicolantonio JJ, Patil H, Helzberg JH, Lavie CJ. Exercise rehabilitation paradox: less may be more? Ochsner J 2016 Fall; 16(3); 297–303.


Parto P, O’Keefe JH, Lavie CJ. The exercise rehabilitation paradox: less may be more? Ochser J 2016 Fall; 16(3); 297–303.


OCHSNER
OUTCOMES
CARDIOVASCULAR SERVICES


Ventura HO. Cosas del Corazon. Semana News (weekly Spanish newspaper, Houston, TX) February 2016.


Physician Team

Ochsner Medical Center – New Orleans
Consultative Cardiology
Patrick Broussard, MD
Section Head, Consultative Cardiology
Medical Director, Cardiac Step-Down Unit
Maurizio Capogrossi, MD
Christopher Damm, MD
Mark Effron, MD
David Elizardi, MD
Guergana Enikova, MD
Gary Rich, MD
Nichole Polin, MD
Advanced Heart Failure/Transplant
Hector Ventura, MD
Section Head, Advanced Heart Failure/Transplantation
John Biglane, MD
Sapna Desai, MD
Hamang Patel, MD
Stacy Mandras, MD
Clem Eiswirth, MD
Selim Krim, MD
Electrophysiology
Sammy Khatib, MD
Vice Chairman, Department of Cardiology
Section Head, Electrophysiology
Program Director, Clinical Cardiac Electrophysiology
Freddy Abi-Samra, MD
Daniel Morin, MD
Glenn Polin, MD
Michael Bernard, MD
Paul Rogers, MD
Interventional Cardiology
John Reilly, MD
Section Head, Interventional Cardiology
Vice Chairman, Clinical Affairs
Department of Cardiovascular Disease
Director, Cardiovascular CT
Program Director, Interventional Cardiology In-Hospital Program
Tyrone Collins, MD
J. Stephen Jenkins, MD
Rajan Patel, MD
Stephen Ramee, MD
Jose Tafur, MD
Christopher White, MD
Noninvasive Cardiology
Michael Cash, MD
Section Head, Non-Invasive Cardiovascular Imaging
J. Alberto Bernal, MD
Robert Bober, MD
Homayor Dinshaw, MD
Yvonne Gilliland, MD
Carl “Chip” Lave, MD
Richard Milani, MD
Salima Qamruddin, MD
Sangeeta Shah, MD
Ochsner Medical Center – North Shore
Tim Carden, MD
Section Head, Interventional Cardiology
Michael Bennett, MD
Abhijit Ghatak, MD
James Lam, MD
Glenn Polin, MD
Ochsner Medical Center – Baton Rouge
17000 Medical Center Dr.
Baton Rouge, LA 70816
225.752.2470
Ochsner Medical Center – Hammond
16045 Doctors Blvd.
Hammond, LA 70403
985.543.3664
Ochsner Medical Complex – Iberville
25455 Hwy. 1
Plaquemine, LA 70764
225.761.5200
Ochsner Health Center – Central
11424-2 Sullivan Rd.
Central, LA 70818
225.261.9790
Ochsner Health Center – Denham Springs South
139 Veterans Blvd.
Denham Springs, LA 70726
225.761.5200
Ochsner Health Center – Covington
1000 Ochsner Blvd.
Covington, LA 70433
985.875.2828
Ochsner Specialty Health Center One – Slidell
1850 E. Gause Blvd.
Slidell, LA 70461
985.639.3777
Ochsner Health Center – Sherwood
17000 Medical Center Dr.
Baton Rouge, LA 70815
225.761.5200
Ochsner Health Center – Summa (Bluebonnet Boulevard)
9001 Summa Ave.
Baton Rouge, LA 70809
225.761.5200
Greater New Orleans
Ochsner Medical Center
1514 Jefferson Hwy.
New Orleans, LA 70121
504.842.4135 or 866.Ochsner
West Bank
Ochsner Medical Center – Covington
2500 Belle Chasse Hwy.
Gretna, LA 70056
504.371.9355
For patient referral and transfer information, please see page 72.
About Ochsner Health System

Ochsner Health System is Louisiana’s largest non-profit, academic healthcare system. Driven by a mission to Serve, Heal, Lead, Educate and Innovate, coordinated clinical and hospital patient care is provided across the region by Ochsner’s 29 owned, managed and affiliated hospitals and more than 80 health centers and urgent care centers. Ochsner is the only Louisiana hospital recognized by U.S. News & World Report as a “Best Hospital” across four specialty categories caring for patients from all 50 states and more than 80 countries worldwide each year. Ochsner employs more than 18,000 employees and over 1,100 physicians in over 90 medical specialties and subspecialties, and conducts more than 600 clinical research studies. Ochsner Health System is proud to be a tobacco-free environment. For more information, please visit ochsner.org and follow us on Twitter and Facebook.

Patient referrals, transfers and consults are critically important. We make it easy for referring providers and their staff. To refer your patient for a clinic appointment, call our Clinic Concierge at 855.312.4190. To initiate a transfer to any Ochsner hospital, call our Regional Referral Center, staffed 24/7 by clinicians, at 855.OHS.LINK (647.5465).

For patients needing to schedule their own appointments, please call 866.OCHSNER (624.7637).

Visit us online at ochsner.org