LETTER FROM THE CHAIR OF CLEVELAND CLINIC’S SYDELL AND ARNOLD MILLER FAMILY HEART & VASCULAR INSTITUTE

We are proud to present 2018 outcomes from the cardiology and cardiovascular surgery program at St. Luke’s Hospital, which has an ongoing collaborative relationship with Cleveland Clinic’s Sydell and Arnold Miller Family Heart & Vascular Institute to promote best practices and optimal quality in cardiovascular caregiving.

This overview of outcomes, volumes and quality metrics reflects some of the fruits of that collaboration, which involves members of the St. Luke’s Heart & Vascular Institute ranging from physicians and other healthcare providers to administrative personnel. It refers to national benchmarks established by the American College of Cardiology and Society of Thoracic Surgeons and stems from our commitment to give every patient the best possible outcome and experience. We believe that transparency around clinical outcomes is essential to improving quality and efficiency as we all continue to move toward ever more value-based care delivery.

Cleveland Clinic’s Heart & Vascular Institute is gratified by the success of our collaborations with partners like St. Luke’s Hospital. Our goal is to develop relationships with providers nationwide to enhance the quality and value of cardiovascular care in our communities. We welcome your comments and feedback, and we thank you for your interest.

Sincerely,

Lars G. Svensson, MD, PhD
Chairman, Sydell and Arnold Miller Family Heart & Vascular Institute
Cleveland Clinic

Measuring and understanding outcomes of medical treatments promotes quality improvement. Created by St. Luke’s Hospital and Cleveland Clinic, this Outcomes book is designed for the physician audience and contains a summary of surgical and medical treatments, with data on patient volumes and outcomes and a review of new technologies and innovations.
Since our inception, St. Luke’s Heart & Vascular Institute has been instrumental in creating an environment in which patient-focused collaboration and growth are not only endorsed, but thrive. This year, we have embarked on a course that will leverage expansion and enhance access to the wealth of cardiovascular services available at St. Luke’s.


With the addition of nationally recognized practitioners and the acquisition of St. Luke’s Des Peres Hospital, we are continuously looking to enhance care by bringing together cardiologists, cardiac surgeons, anesthesiologists, cardiac imaging specialists and radiologists, specialized nurses, and technicians to produce the best possible outcomes for our patients.

We take pride in our cardiologists, cardiac surgeons and cardiac rehabilitation specialists who work together to provide nationally recognized cardiac care.

Among the recent honors we are most proud of is being named one of America’s 50 Best Hospitals for Cardiac Surgery™ by 2019 Healthgrades®. St. Luke’s is the only hospital in Missouri to achieve this honor, which places us among the top 50 in the U.S. for superior results in coronary artery bypass graft procedures and heart valve surgery.

In this report you will see the faces and read the stories of just a few of our exceptional staff. In every corner of our institute, there are many more just like them who are engaged in patient-focused collaboration to optimize clinical outcomes and the patient experience. It is through these individuals that St. Luke’s Heart & Vascular Institute has become one of the region’s leading facilities for care.
St. Luke’s Hospital Named One of America’s 50 Best Hospitals for Cardiac Surgery

St. Luke’s Hospital in Chesterfield has been named one of America’s 50 Best Hospitals for Cardiac Surgery™ by 2019 Healthgrades. St. Luke’s is the only hospital in Missouri to achieve this distinction.

The honor places St. Luke’s among the top 50 U.S. hospitals for superior results in coronary artery bypass grafting procedures and heart valve surgery.

The Healthgrades 2019 Report to the Nation evaluated Medicare inpatient records from 2015 through 2017 for about 4,500 short-term acute care hospitals nationwide, and it assessed hospital performance related to more than 30 of the most common inpatient conditions and procedures.

Healthgrades is an independent healthcare ratings organization. Hospitals cannot opt out of the Healthgrades analysis, and no hospital pays to be rated.

St. Luke’s Hospital cardiothoracic surgeons Michael Ryan Reidy, MD; Ronald Leidenfrost, MD; and Jeremy Leidenfrost, MD

St. Luke’s Hospital, Society of Thoracic Surgeons Quality Ratings, Isolated Coronary Artery Bypass Graft Outcomes, Cleveland Clinic Alliance, Patient Experience, Interventional Cardiology, Innovations, Physician Listing, and Contact Information
About St. Luke’s Hospital

St. Luke’s Hospital is an independent, nonprofit healthcare provider committed to improving the quality of life for its patients and the community. Since its founding in 1866, St. Luke’s has grown from a single hospital location to an advanced network of care. It provides personalized healthcare services in over 60 specialty areas at its 493-bed hospital in Chesterfield, Mo., and the 143-bed St. Luke’s Des Peres Hospital. It also offers more than 30 other locations across the greater St. Louis area, bringing quality healthcare services close to home. St. Luke’s is nationally recognized for quality care and consistently earns high patient satisfaction scores. In St. Louis, St. Luke’s is the exclusive alliance provider for the nation’s No. 1 heart hospital, Cleveland Clinic Heart & Vascular Institute.

Regional Provider Mortality Comparison

St. Luke’s Hospital has a rich history of excellence in heart care and has been recognized for the following:

Among the Lowest Readmissions in the Region

St. Luke’s continues to be a leader in preventing readmissions, as evidenced by our 30-day readmission rate of Medicare patients, which is better (lower) than the regional rate. Highlights include the following:

Exceptional Patient Satisfaction

We take great pride in delivering exceptional care to people who are newly diagnosed and living with heart and vascular disease – and our patients notice.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>St. Luke’s Hospital</th>
<th>Missouri Average</th>
<th>National Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coronary Artery Bypass Graft</td>
<td>1.29%</td>
<td>2.26%</td>
<td>2.07%</td>
</tr>
<tr>
<td>Valve Surgery</td>
<td>3.19%</td>
<td>4.42%</td>
<td>3.30%</td>
</tr>
<tr>
<td>Coronary Interventional Procedures</td>
<td>2.38%</td>
<td>3.25%</td>
<td>3.02%</td>
</tr>
<tr>
<td>Heart Attack</td>
<td>4.55%</td>
<td>6.66%</td>
<td>6.50%</td>
</tr>
</tbody>
</table>

Source: Healthgrades Regional Provider Comparison, MEDPAR 2015-2017

<table>
<thead>
<tr>
<th>Procedure</th>
<th>St. Luke’s Hospital</th>
<th>Missouri Average</th>
<th>National Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coronary Artery Bypass Graft</td>
<td>4.94%</td>
<td>7.32%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Premier Quality Advisor, 1/1/2018 to 12/31/2018

<table>
<thead>
<tr>
<th>Overall Rating</th>
<th>St. Luke’s Hospital</th>
<th>Missouri Average</th>
<th>National Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willingness to Recommend</td>
<td>83.0%</td>
<td>72.0%</td>
<td>73.0%</td>
</tr>
</tbody>
</table>

Source: HCAHPS, Top Box, 10/1/2017 to 9/30/2018
The Society of Thoracic Surgeons (STS) has developed a comprehensive rating system for the quality of coronary artery bypass graft (CABG) surgery among hospitals across the country. For isolated CABG procedures, 7.36% of participants that were scored received the “3 star” rating, 88.27% received a “2 star” rating and 4.37% received a “1 star” rating for the current reporting period.

For isolated mitral valve repair/replacement (MVRR) procedures, 10.53% of participants that were scored received the “3 star” rating, 87.06% received a “2 star” rating and 2.41% received a “1 star” rating for the current reporting period.

For MVRR + CABG procedures, 7.96% of participants that were scored received the “3 star” rating, 89.97% received a “2 star” rating and 2.08% received a “1 star” rating for the current reporting period.

For isolated aortic valve replacement (AVR) procedures, 5.20% of participants that were scored received the “3 star” rating, 92.84% received a “2 star” rating and 1.96% received a “1 star” rating for the current reporting period.

For AVR + CABG procedures, 4.81% of participants that were scored received the “3 star” rating, 93.03% received a “2 star” rating and 2.16% received a “1 star” rating for the current reporting period.
St. Luke’s consistently performs above the national average in postoperative CABG complications and mortality.
St. Luke’s Heart & Vascular Institute takes pride in our alliance with Cleveland Clinic’s Sydell and Arnold Miller Family Heart & Vascular Institute. This unique alliance builds upon our rich history of excellence in heart care by offering patients in the St. Louis region the highest level of cardiac and vascular care in the country. Our alliance with Cleveland Clinic’s Heart & Vascular Institute – ranked No. 1 in the nation for heart care since 1995 – helps our doctors achieve award-winning patient outcomes. In turn, St. Luke’s patients benefit from having access to world-class heart specialists close to home.

CLEVELAND CLINIC ALLIANCE

31-Year-Old Turns to St. Luke’s Following Heart Disease Diagnosis

At 31, Molly began to experience chest pain, which she initially attributed to anxiety and stress. Following a cardiac catheterization, she was diagnosed with early-onset coronary heart disease and was referred to St. Luke’s Heart & Vascular Institute and Craig Reiss, MD, for follow-up care.

“Dr. Reiss was extremely caring and thorough,” said Molly. “The thorough part was really something that hit home with me,” said Molly, largely because of her unique circumstance and because she felt she needed the assurance and experience that Dr. Reiss possesses.

Dr. Reiss also referred Molly to the cardiac rehabilitation program at St. Luke’s. Cardiac rehabilitation was important for Molly so she could return to living the life she was accustomed to. According to the American Heart Association, cardiac rehabilitation can reduce cardiovascular mortality by over 50% compared with those who don’t participate.

St. Luke’s Hospital offers patients both Pritikin Intensive Cardiac Rehabilitation (ICR) and traditional cardiac rehabilitation (CR). Patients are referred to the appropriate program by their physician depending on their individual needs and capabilities. Both programs concentrate on strengthening the heart and spirit through lessons focused on three areas: heart-healthy meals, proper exercise, and modified behaviors that lead to a longer and healthier life. Molly also had access to monitored exercise sessions and education. The security of being monitored helped reduce her anxiety about exercise and physical activity at home.

“It was very pleasant to be able to come twice or three times a week to meet with all the friendly faces,” said Molly. Through the cardiac rehabilitation program and her own lifestyle efforts, which included working out five days a week, Molly has been able to lose 50 pounds.

“I feel better now than I ever have,” said Molly. “I’m more active and stronger and would definitely refer anybody else I know to St. Luke’s and the cardiac team here. My quality of life has improved significantly, and a lot of that has to do with the care I received here.”
INTERVENTIONAL CARDIOLOGY

**Mortality**

<table>
<thead>
<tr>
<th>Percent</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Luke’s Hospital</td>
<td>1.0%</td>
<td>2.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td>NCDR Average</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**STEMI Median Door to Balloon Time**

<table>
<thead>
<tr>
<th>Minutes</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Luke’s Hospital</td>
<td>20</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>NCDR Average</td>
<td>60</td>
<td>40</td>
<td>20</td>
</tr>
</tbody>
</table>

**Discharge Medications**

<table>
<thead>
<tr>
<th>Percent</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Luke’s Hospital</td>
<td>90%</td>
<td>92%</td>
<td>94%</td>
</tr>
<tr>
<td>NCDR Average</td>
<td>92%</td>
<td>90%</td>
<td>88%</td>
</tr>
</tbody>
</table>

**Radial Artery Usage**

<table>
<thead>
<tr>
<th>Percent</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Luke’s Hospital</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>NCDR Average</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>
Fluoroless Catheter Ablation in Adults

The team of top-tier electrophysiologists at St. Luke’s Hospital Heart & Vascular Institute offers a wealth of experience and the most advanced techniques available to diagnose and treat heart rhythm disorders commonly known as atrial fibrillation.

One treatment option is catheter ablation, in which heat or cryotherapy can help fix an irregular heartbeat. St. Luke’s electrophysiologist J. Mauricio Sanchez, MD, FHRS, uses fluoroless catheter ablation to treat arrhythmias in patients with atrial fibrillation. Instead of the fluoroscopic imaging traditionally used to guide catheter positioning, Dr. Sanchez uses advanced three-dimensional mapping technology. Fluoroless catheter ablation is a groundbreaking technique that significantly reduces exposure to radiation for patients, physicians and staff. Since 2014, Dr. Sanchez has performed more than 1,000 ablations without fluoroscopy, and he’s authored two chapters in the recently published cardiology book *Fluoroscopy Reduction Techniques for Catheter Ablation of Cardiac Arrhythmias*.

**WATCHMAN™ Left Atrial Appendage Closure Device for the Prevention of Stroke in A-Fib**

The average person with atrial fibrillation is five times more likely to have a stroke than someone with a regular heartbeat. Blood thinners, also called anticoagulants, are an effective way to lower the risk of stroke in people with atrial fibrillation not caused by heart valve problems. There’s now an alternative treatment option for those who are unable to take blood thinners. The WATCHMAN™ left atrial appendage closure device is the only FDA-approved implant proven to reduce stroke risk in people with atrial fibrillation not caused by a heart valve problem. WATCHMAN™ is implanted into the heart during a one-time procedure. It’s about the size of a quarter and made from light and compact materials commonly used in many other medical implants. WATCHMAN™ effectively reduces the risk of stroke by permanently closing off the LAA to keep blood clots from escaping. WATCHMAN™ can eliminate the bleeding risks and the regular blood tests and food-and-drink restrictions that come with blood thinners. In a clinical trial, 9 out of 10 people were able to stop taking blood thinners just 45 days after the WATCHMAN™ procedure. J. Mauricio Sanchez, MD, FHRS, began offering the procedure at St. Luke’s in 2018 and is currently the only physician at the hospital who performs it.

St. Luke’s Becomes the Only Cardiac Stress PET Imaging Provider in the St. Louis Region

St. Luke’s Hospital Heart & Vascular Institute is proud to be the only provider in the St. Louis metropolitan area offering the cardiac positron emission tomography (PET) myocardial perfusion imaging exam to patients who have symptoms or risk factors for heart disease. The cardiac PET myocardial perfusion imaging exam offers the following advantages:

- A complete gated rest/stress cardiac PET procedure can be performed in as little as 30 minutes for optimal patient comfort, convenience and satisfaction.
- The rubidium-82 (82Rb) tracer used in cardiac PET myocardial perfusion imaging supplies a substantially lower radiation dose than do other methods.
- The exam works well for patients with inconclusive previous stress tests, those with high BMI and individuals with large chests.
- Studies have shown cardiac PET images have the greatest accuracy of all stress testing.

Cardiac PET stress test results are interpreted by Vikram Agarwal, MD, an expert in multimodality cardiovascular imaging and medical director of the St. Luke’s cardiovascular imaging team. He is a Harvard-trained physician and an accomplished researcher who has authored multiple articles in leading medical journals.

St. Luke’s is currently the only hospital in the region offering PET rubidium-82 myocardial perfusion imaging.

Illustrations courtesy of Boston Scientific
INNOVATIONS

Septal Myectomy Procedure for Hypertrophic Cardiomyopathy (HCM)
St. Luke’s Hospital offers septal myectomy to reduce obstruction caused by HCM and to address severe symptoms. The procedure involves cutting away the thickened heart muscle to restore blood flow to the hypertrophic heart. By using advanced imaging techniques, surgeons are able to cut deeper and remove even more of the fibrous tissue that obstructs blood flow, achieving better results. During this operation, the surgeon excises a portion of the thickened septal wall to widen the outflow channel from the left ventricle to the aorta. Many patients experience significant relief immediately after surgery.

PHYSICIAN LISTING

Cardiac Anesthesiology
- Heidi Coco, DO
- Phillip Copper, MD
- Narasimha Gondipalli, MD
- Keelara Gopalan, MD

Cardiothoracic Surgery
- Jeremy Leidenfrost, MD, FACS
- Ronald Leidenfrost, MD
- Michael Ryan Reidy, MD

Critical Care Medicine
- Julianne Donnelly, MD

Cardiology
- Vikram Agarwal, MD
- Jorge Alegre, MD
- Patricia Cole, MD, FACC
- Joseph Craft III, MD, FACC
- Glenn Davison, MD, FACC
- James Ellison, MD

- Siddhesh Gowda, MD
- Jackie Grosklos, MD, FACC
- Maged Haikal, MD, FACC
- Edward Hurley, MD, FACC
- Daryl Jacobs, MD

Cardiology and Cardiovascular Surgery/St. Luke’s Hospital | 19
PHYSICIAN LISTING

Cardiology

Tshiswaka Kayembe, MD
Keith Mankowitz, MD
Clark McKenzie, MD, FACC
David Meyers, MD
Leslie Mezei, MD

Andrea Moyer, MD, FACC
Anthony Pearson, MD, FACC
William Phillips, MD
Craig Reiss, MD, FACC
Morton Rinder, MD, FACC

Paul Robiolio, MD, FACC
Bakr Salem, MD, FACC
Allen Soffer, MD, FACC
William Southworth, MD, FACC
Chowdary Tangipula, MD

Electrophysiology

Jonas Cooper, MD, MPH, FACC
Carey Fredman, MD
Ali Mehdirad, MD
Stephen Peper, MD, FHRS
J. Mauricio Sanchez, MD, FHRS

CONTACT INFORMATION

St. Luke’s Heart & Vascular Institute
232 South Woods Mill Road
Chesterfield, MO 63017

Phone: 314-205-6801
stlukes-stl.com/hearthealth

PICTURED, FIRST ROW, FROM LEFT: Jackie Grosklos, MD; Jorge Alegre, MD; Ronald Leidenfrost, MD; Craig Reiss, MD; Jeremy Leidenfrost, MD, Maged Haikal, MD; Bakr Salem, MD; Julianne Donnelly, MD
SECOND ROW: Keelara Gopalan, MD; Jonas Cooper, MD; Siddhesh Gowda, MD; Andrea Moyer, MD; Joseph Craft III, MD; J. Mauricio Sanchez, MD; Heidi Coco, DO; James Ellison, MD; Morton Rinder, MD; Daryl Jacobs, MD
THIRD ROW: Glenn Davison, MD; Vikram Agarwal, MD; Patricia Cole, MD; William Phillips, MD; Clark McKenzie, MD; Stephen Peper, MD; Paul Robiolio, MD; Keith Mankowitz, MD, Edward Hurley, MD; Michael Ryan Reidy, MD