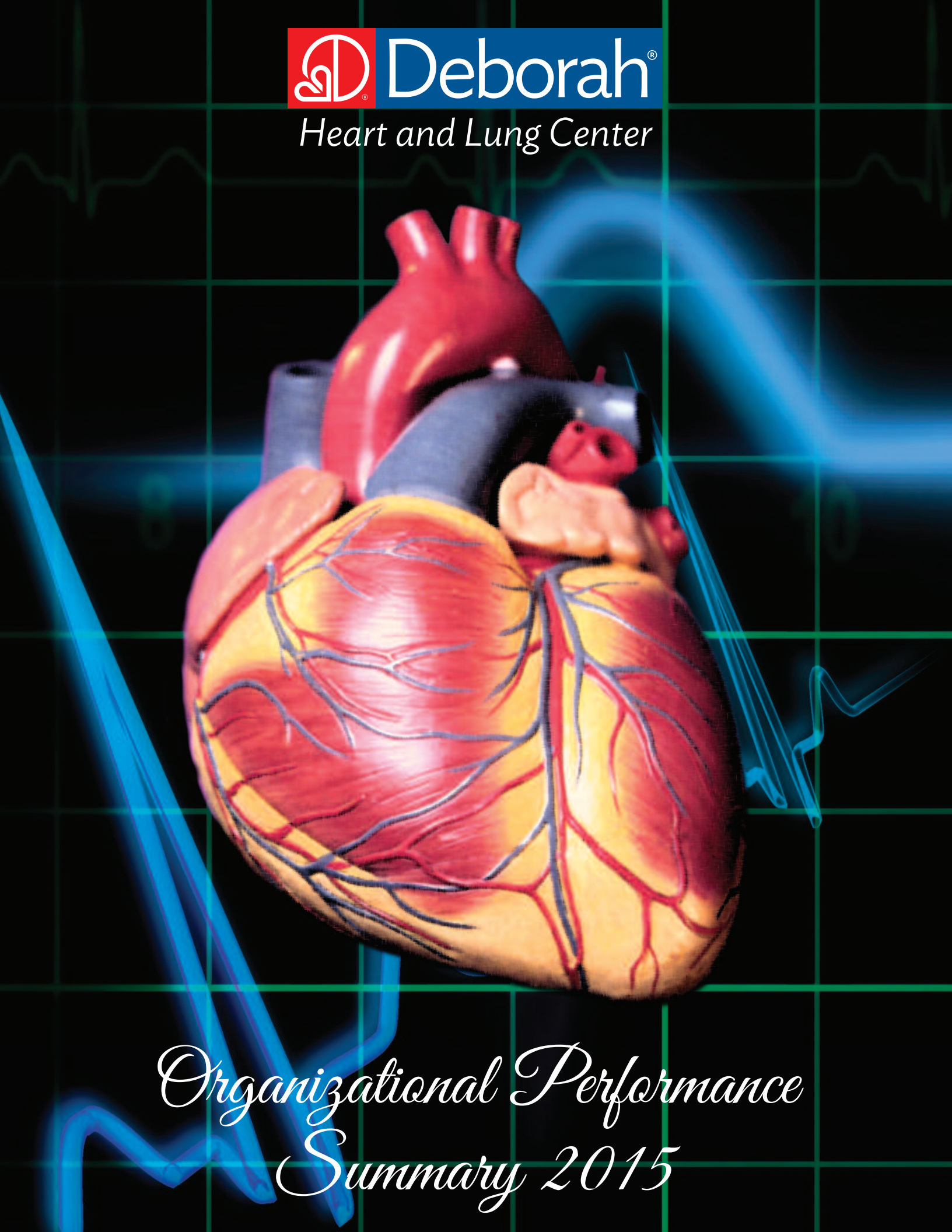
Deborah®

Heart and Lung Center

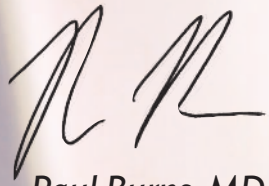


Organizational Performance Summary 2015

Dear Colleague,

Deborah Heart and Lung Center is pleased to share with you our most recent cardiovascular outcomes data from 2015. We are committed to a policy of transparency at our institution and are proud of both our staff and results. We have included the results produced by our Cardiac Surgery, Cardiology, Electrophysiology and Vascular Surgery divisions in this publication for you to review. At Deborah we maintain that the close integration of specialties – often treating similar disease processes – leads to the best and most efficient model of delivering quality health care.

Our commitment to state-of-the-art excellence, while providing compassionate care, separates us from other regional medical centers. The most recent government HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems) report again recognized Deborah as the top overall rated hospital in New Jersey! We remain appreciative of your continued support of Deborah's mission and look forward to partnering with you to provide the highest and most efficient quality of care for our patients.



Paul Burns, MD
Chair of Surgery

The Deborah Story

Deborah is an extraordinary story, with beginnings traced to its founding in 1922 as a tuberculosis sanatorium and pulmonary center. According to legend, the therapeutic pine barren air of rural Burlington County was key to patient recovery. In reality, thousands of TB patients were medically treated and successfully cured by a heroic team of Deborah physicians. The heart of the Deborah Mission has always been compassion.

Historic Leadership.

With the development of antibiotic medications leading to the eradication of TB, Deborah began expanding its focus to other chest diseases. Dr. Charles Bailey, a pioneer in heart surgery, performed Deborah's first open heart surgery. The specialty of cardiac diseases was immediately embraced, transforming Deborah into New Jersey's only cardiac and pulmonary specialty hospital.

Next-Generation Healing.

Today, Deborah offers leading-edge surgical techniques and non-surgical alternatives for diagnosing and treating all forms of cardiac, vascular and pulmonary diseases in adults, including congenital heart disease in children.

Deborah is consistently recognized as a leader in patient care and innovative healing.

New advances in cardiac, pulmonary, and vascular care for patients are almost always available first at Deborah. New innovations and procedures brought to the Center this year include: CardioMEMS, a computerized remote-monitoring system for patients with advanced heart failure, offering daily pulmonary artery pressure measurement for proactive management of the condition; MultiPoint Pacing Technology allowing for cardiac resynchronization therapy defibrillators and pacemakers to pace at two left ventricular sites; Pantheris™ lumivascular artherectomy system, which incorporates real-time optical coherence tomography imaging with a therapeutic catheter for treatment of PAD; Fully-Percutaneous Endovascular Aneurysm Repairs (PEVAR) for AAAs performed through small punctures made directly through the skin into the femoral arteries; and Robotic Ablations for treating ventricular tachycardia. As well, the Center's Clinical Research Department is enrolling patients in exciting new trials exploring the treatments of tomorrow.

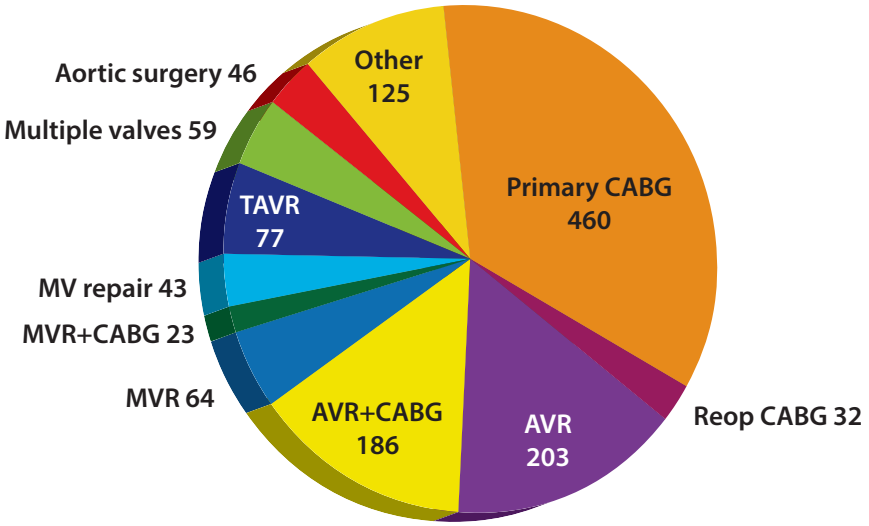
When it's your family's health, don't settle.
Demand Deborah[SM].

Cardiac Surgery Outcomes

Program Volume and Performance

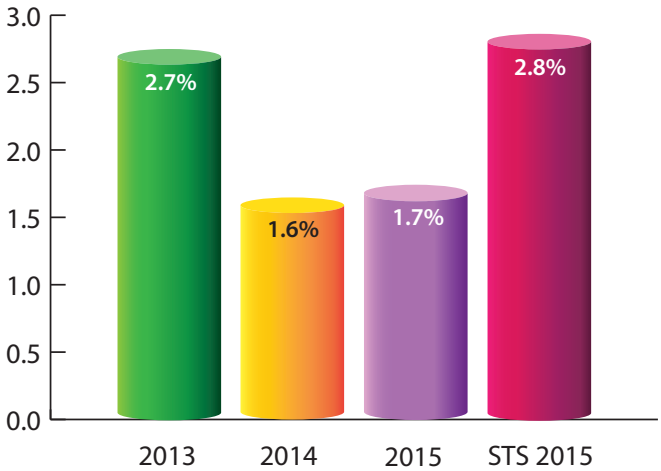
Deborah Heart and Lung Center surgeons have performed more than 1200 cardiovascular procedures over the last four years (January 2012 to December 2015). As the management of cardiovascular disease develops, referrals for surgical management continue to evolve due to advances in medical management and the effectiveness of improving percutaneous interventions. Deborah surgeons perform a higher percentage of complex procedures such as redo surgery, multiple valve surgery and aortic surgery than were traditionally performed in the past, while maintaining excellent outcomes!

Total Cardiac Surgeries 2012-2015



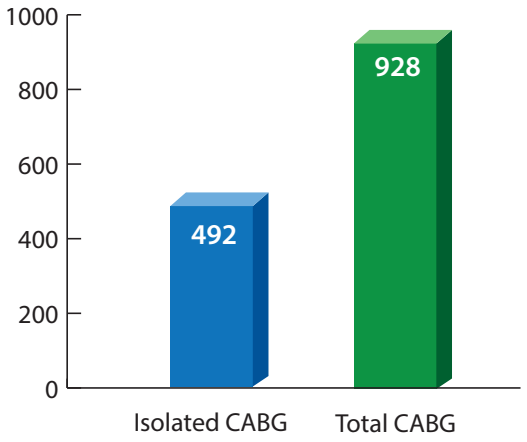
The Society of Thoracic Surgeons (STS) collects data from cardiac surgery programs throughout the country to benchmark Deborah's results.

Major Procedures Operative Mortality



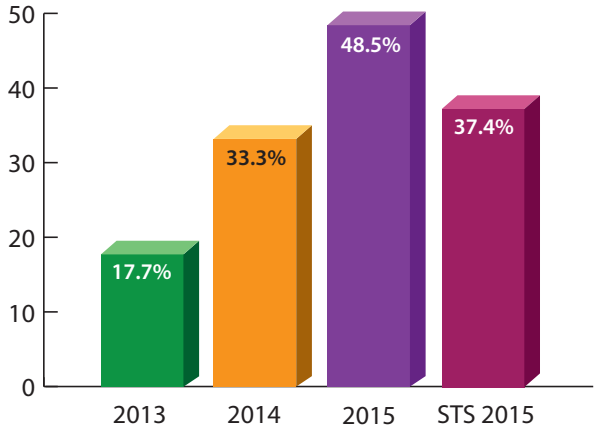
Coronary Artery Disease 2012-2015

Coronary artery bypass graft surgery (CABG) was developed more than fifty years ago. Over the past decade, national mortality rates have progressively improved. In addition to overall mortality rates, CABG success rates are measured by avoidance of complications.



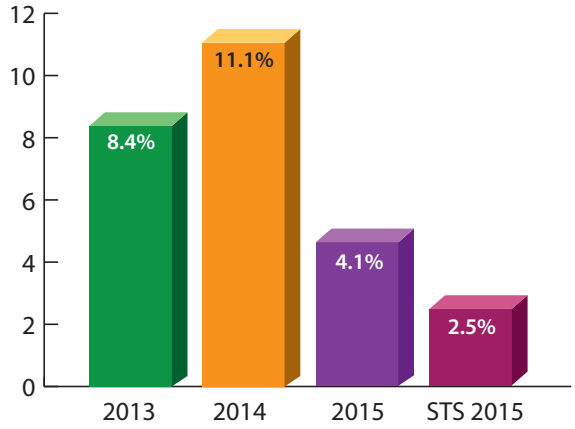
Number of Bypasses Performed 2013-2015

The number of bypasses performed during a CABG is reflective of the severity of a patient's coronary artery disease. Full revascularization at the time of surgery provides optimal benefit, not only for survival, but additionally for freedom from future myocardial infarction and an improved quality of life, free from angina. At Deborah we have been performing more distal bypasses over the past few years as patients present for surgical revascularization with more advanced levels of coronary artery disease.



Redo CABG 2013-2015

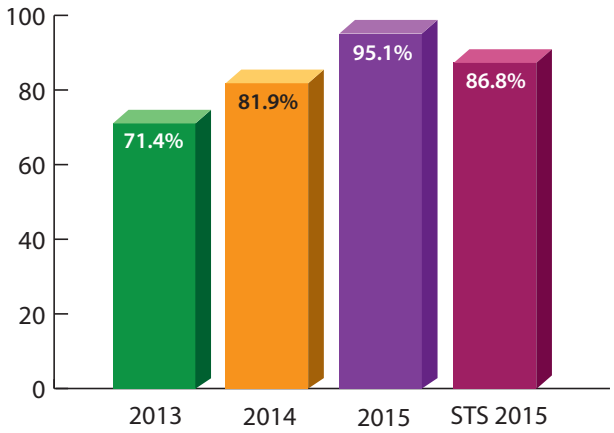
Patients undergoing second (or more) cardiac operations have an inherently higher risk compared to first-time surgeries. Deborah has a long history of performing such complex procedures.



Endoscopic Greater Saphenous Vein Harvesting

Endoscopic vein harvesting is a minimally invasive method of obtaining bypass conduit from a patient's leg, usually through one small incision, which permits faster recovery of ambulation while reducing wound healing problems. The skilled cardiac surgery team at Deborah is committed to providing this technology to our patients requiring CABG.

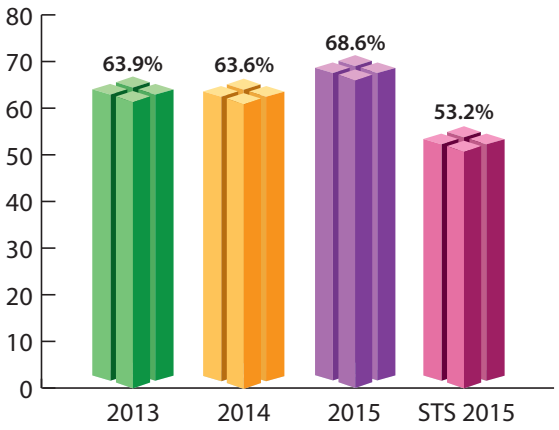
Endoscopic Greater Saphenous Vein Harvesting 2013-2015



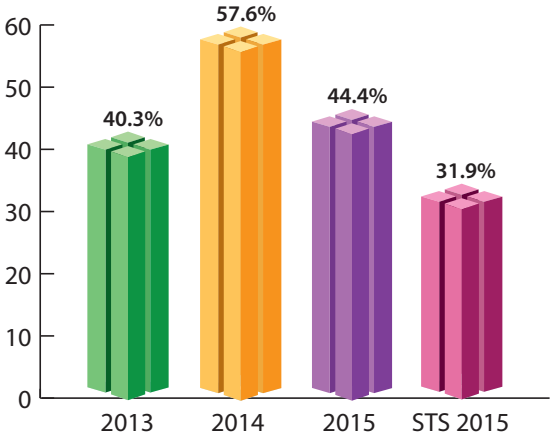
Severity of Risk

Various cardiac risk factors indicate that patients with more advanced coronary disease come to Deborah for surgery, compared to other heart centers.

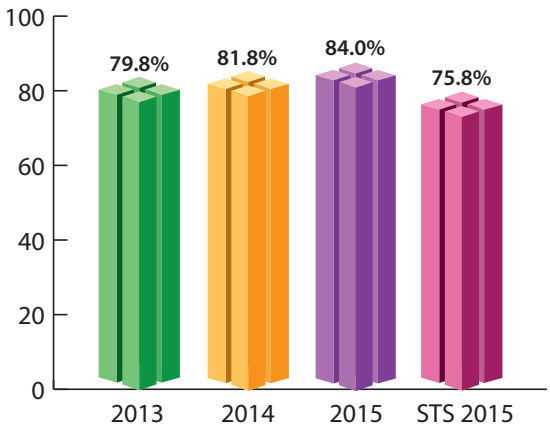
Previous Myocardial Infarction 2013-2015



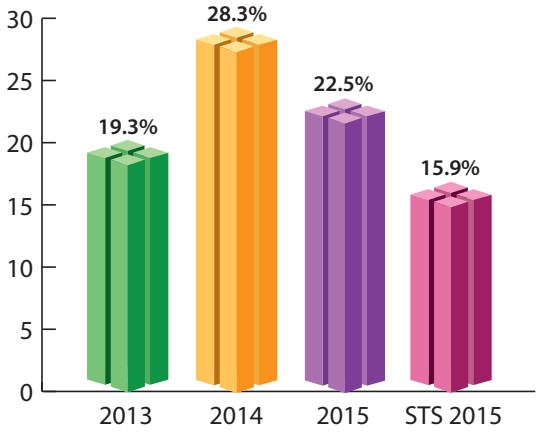
Left Main Coronary Disease 2013-2015



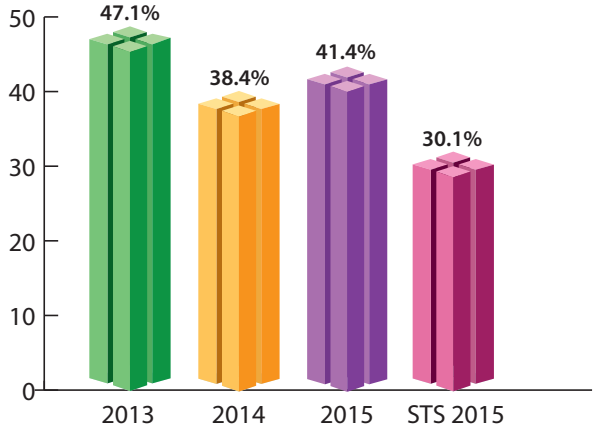
Triple Vessel Disease 2013-2015



Ejection Fraction < 40% 2013-2015



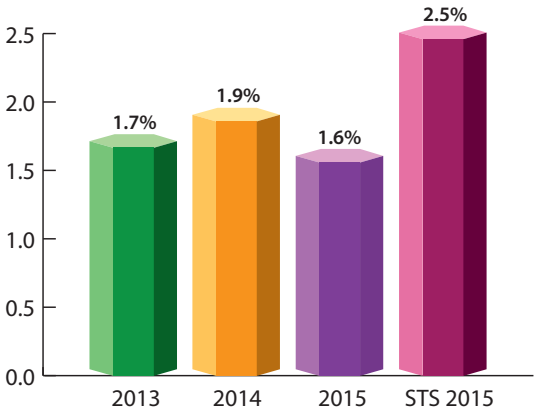
Previous Percutaneous Coronary Intervention (PCI) 2013-2015



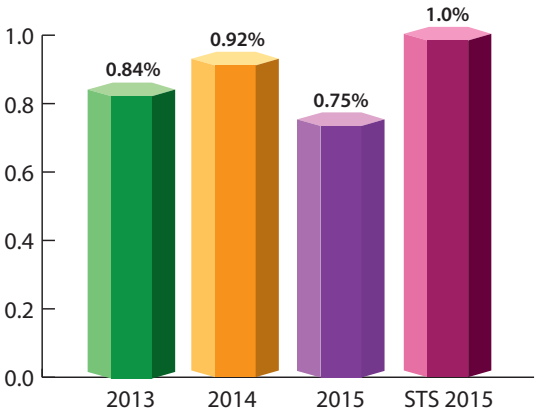
Cardiac Surgery Results:

Mortality rates are the percentage of patients who do not survive either an operative procedure or the associated recovery time. These rates are "risk-adjusted" by the STS based upon past experience of patients undergoing surgery in the United States. Observed to Expected Mortality Ratios (O:E Ratio) measure how an observed result can be compared to an expected result based upon patient risk factors. A ratio less than 1.0 exceeds expectations. Deborah has a long history of maintaining O:E ratios below this benchmark.

CABG Mortality 2013-2015



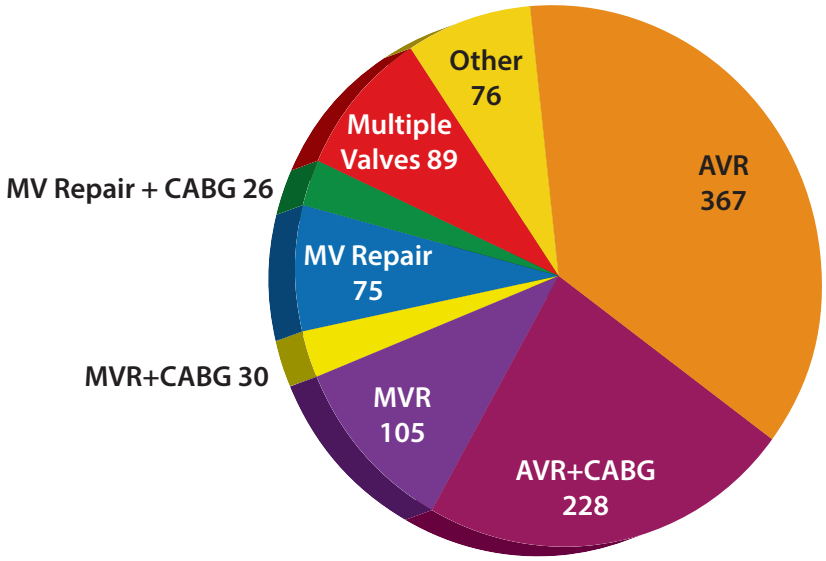
CABG O:E Ratio 2013-2015



CABG Complication Rates

In addition to low mortality rates, Deborah patients experience low complication rates that include cerebral vascular accident, renal failure, sternal wound infection and reoperations for bleeding.

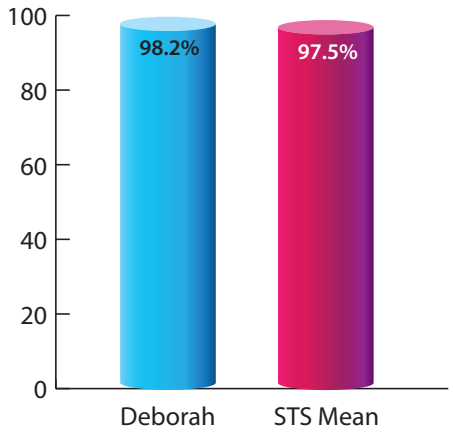
Valvular Heart Surgery 2012-2015



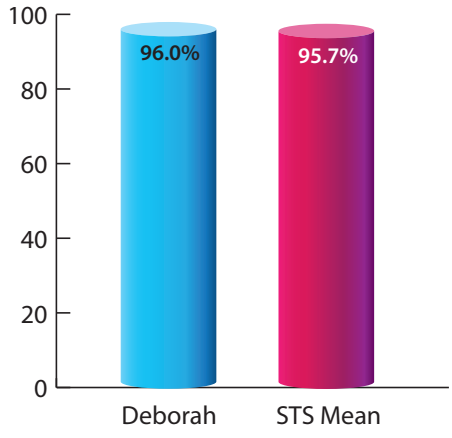
Aortic Valve Replacement

More than 350 patients underwent surgical replacement of their aortic valve at Deborah between 2012 to 2015. These replacements occurred either as the primary indication for surgery or in combination with CABG, other valve or aortic surgery. The STS provides quality measures comparing Deborah to other cardiac surgery centers.

Isolated AVR Absence of Operative Mortality 2013-2015



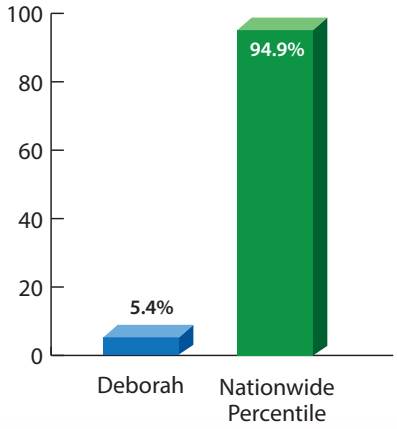
AVR+CABG Absence of Operative Mortality 2013-2015



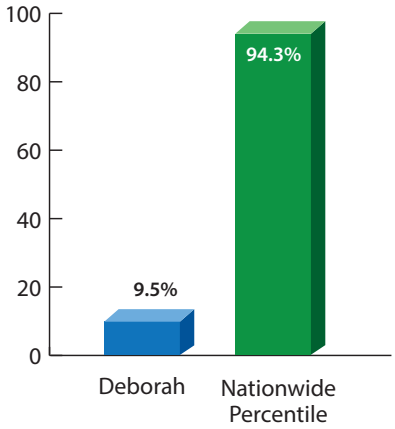
Mitral Valve Surgery

Patients who are candidates for mitral valve repair, especially those with degenerative valvular disease, undergo a high percentage of successful repair at Deborah. Elderly patients with severely calcified valves, patients with endocarditis and patients with severely ischemic mitral valve disease usually require mitral valve replacement. STS quality measures continue to favorably compare Deborah to other cardiac surgery programs.

Isolated MVR Operative Mortality 2013-2015



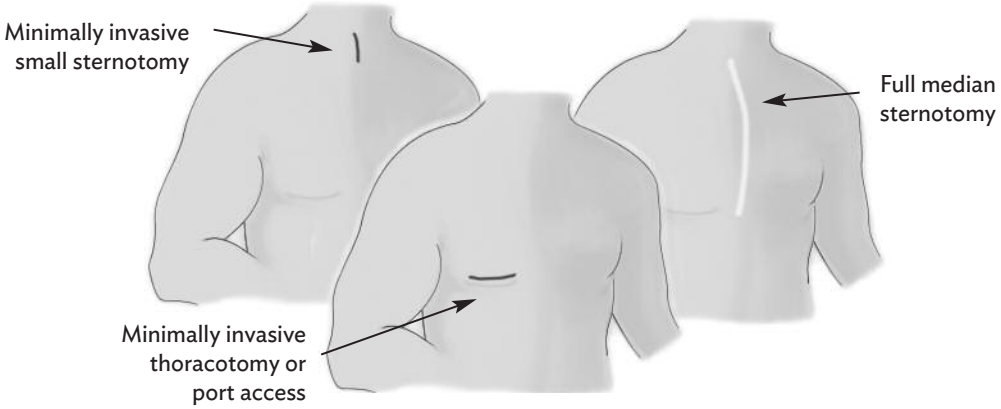
Isolated MVR+CABG Operative Mortality 2013-2015



Ronald E. Ross, MD
Attending Cardiothoracic Surgeon

Minimally Invasive Surgery

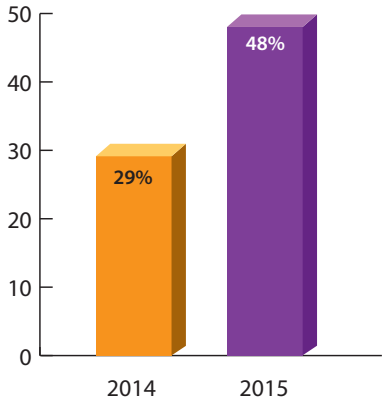
Isolated valve surgery can often be performed through smaller incisions than the traditional full median sternotomy. While not all patients are candidates for minimally invasive procedures, surgeons at Deborah evaluate each individual to determine the best operative approach.



Transcatheter Aortic Valve Replacement (TAVR)

TAVR is a minimally invasive method of replacing an aortic valve through catheters percutaneously placed through either peripheral arteries or a small thoracotomy incision. Deborah started performing this surgery in 2014 and has now placed more than 100 of these valves, with excellent results. Utilizing the latest generation of these devices, Deborah surgeons and interventional cardiologists are routinely placing these transcatheter valves with just local anesthesia. This permits an even faster recovery post procedure.

TAVR Volume 2014-2015



Deborah's 100th Successful TAVR Procedure

Lewis Stayton of Pemberton pulled the lucky lottery ticket when he arrived at the Center in April for valve replacement surgery. He was Deborah's 100th successful transcatheter aortic valve replacement (TAVR) patient, marking the Center as one of the country's leading TAVR facilities.

Performed in the hybrid operating room, Deborah's skilled multi-disciplinary team of surgeons and cardiac interventionalists replaced Mr. Stayton's valve through a catheter inserted into his groin artery, saving the long recovery time of an open-heart surgery procedure.

The 83-year old, who confesses to "not liking hospitals" was out the door in less than 48 hours.

"I'm getting around good now," he says.

Mr. Stayton served in the Navy and retired from the New Jersey National Guard and the police force on the Burlington-Bristol Bridge. He spent 15 years of retirement in West Virginia before relocating back to New Jersey to be closer to his family. He had plenty of former cardiac care.

"In 1997 I had four bypasses. I got to the hospital just in time. It was rough, because then they opened up my chest."

Seven stents and one cow valve later, he is scrappily optimistic.

"My valve was leaking for years. The only thing wrong with me now is old age," he jokes.

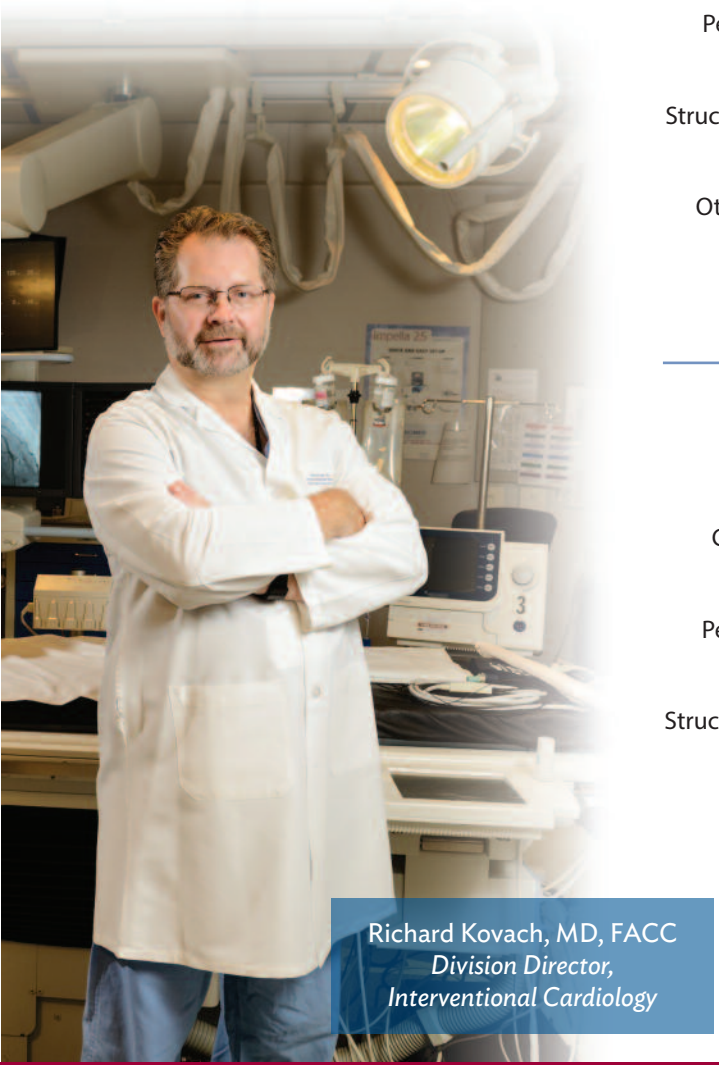
And with the backing of Deborah, he is confident of his ongoing care.

"They treated me just fine here."

Interventional Cardiology

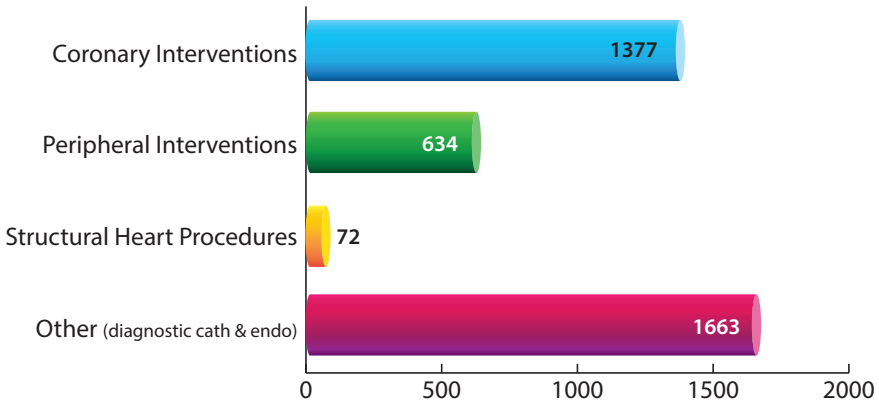
Over the past three years our procedure acuity has increased with a very minimal mortality rate.

We are now opening up arteries in the heart and the periphery that have been chronically occluded.

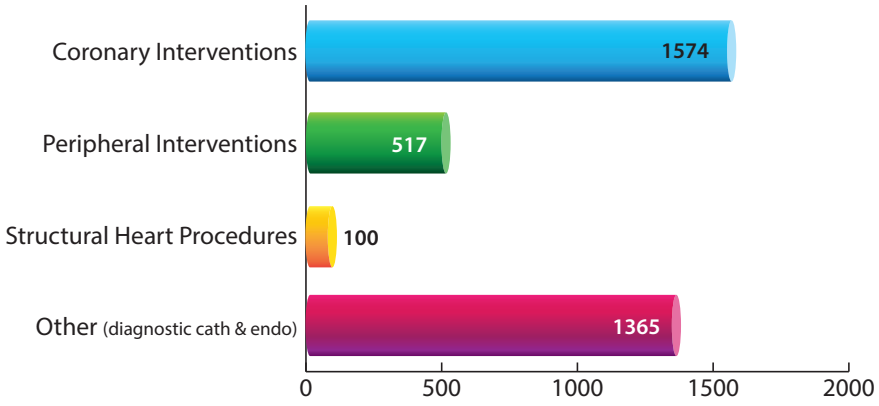


Richard Kovach, MD, FACC
Division Director, Interventional Cardiology

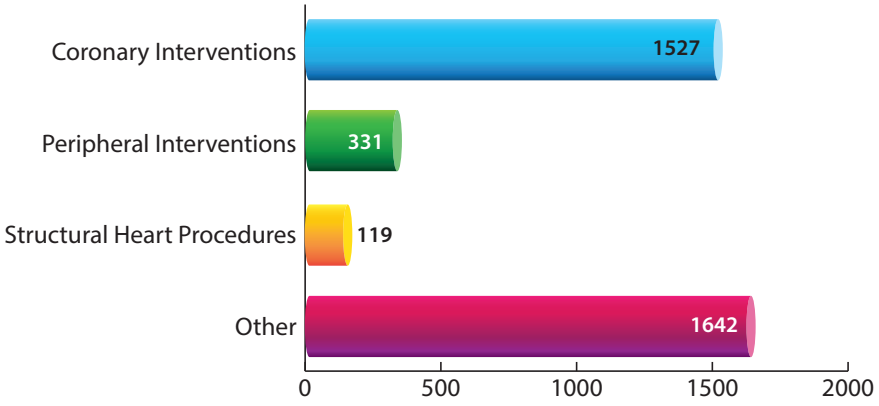
2013: Total-3746



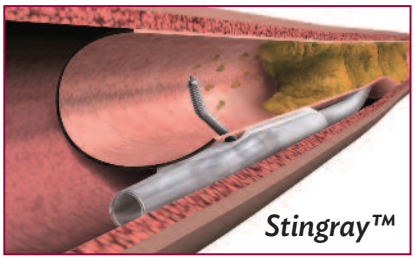
2014: Total-3556



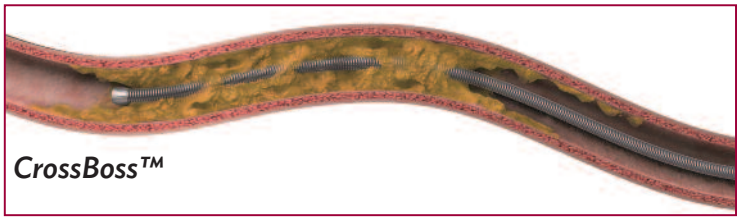
2015: Total-3,619



Chronic Total Coronary Occlusion Program (CTO)



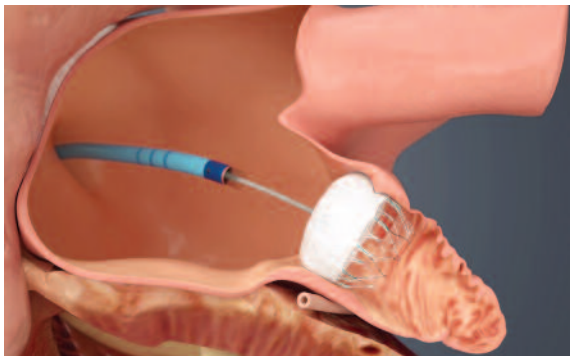
Technological advances for treating 100% chronically occluded coronary arteries are enabling numerous Deborah patients to avoid open heart bypass surgery, and have given them a new lease on life. Deborah's Chronic Total Coronary Occlusion (CTO) Program uses novel tools and techniques to approach CTOS, and is achieving significant procedural success rates in crossing and opening these complex lesions.



In conjunction with new technologies—such as CrossBoss™ and Stingray™ Coronary CTO Crossing and RE-Entry System, FDA-cleared for use in CTOs—the Center's program offers a fresh approach to these complex cases, especially for those considered too risky for bypass operations, those with difficult anatomy, and whose surgical bypass grafts have become occluded.

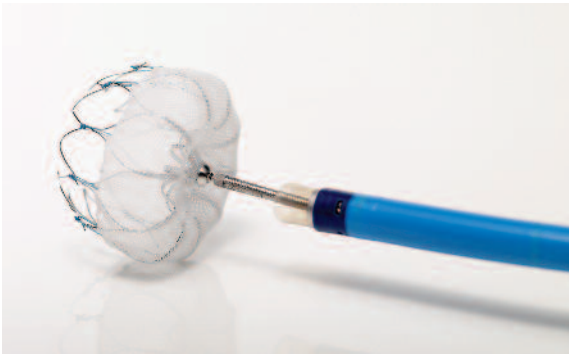
With these new technologies, Deborah's specially-trained interventional cardiologists are now able to create new pathways for the treatment of completely blocked arteries.

Watchman



Patients with non-valvular atrial fibrillation (AF) now have an alternative to long-term warfarin medication therapy.

Deborah was among the first in the region to implant the newly FDA-approved WATCHMAN Left Atrial Appendage Closure (LAAC) Implant. This is a breakthrough for patients with AF who are suitable for warfarin therapy by their physicians, but who have reason to seek a non-drug alternative. The WATCHMAN LAAC Implant is an alternative to reduce the risk of AF-related stroke.



The WATCHMAN Implant closes off the left atrial appendage to keep harmful blood clots in the LAA from entering the bloodstream and potentially causing a stroke. By closing off the LAA, the risk of stroke may be reduced and, over time, patients may be able to stop taking warfarin.

Hybrid OR Procedures

Deborah's state-of-the-art Hybrid Operating Room features a 3-station computer system for continuous monitoring of a patient's hemodynamics. Real-time imaging is delivered through the robotic Siemens Artis Zeego® multi-axis angiography system, which permits integration with retrospective scans to drive extensive data analysis, increasing both the precision and safety of complex cardiovascular interventions.

The operations performed at the center represent collaboration among Deborah's skilled cardiac surgical staff, vascular surgeons and interventional cardiologists, working side-by-side in one operating suite for blended procedures which combine multiple disciplines. With a full surgical and interventional team, joined with echocardiography and anesthesia professionals, the new Hybrid OR offers minimally invasive approaches to challenging cardiovascular procedures.

Team Approach to Structural Heart Procedures

Deborah's Hybrid OR offers a unique opportunity for providing innovative care for patients with advanced and complex structural heart disease who are considered too high-risk for conventional open heart surgery procedures.

The integrated Hybrid OR team – including cardiologists, interventional cardiologists, surgeons, imaging specialists, and anesthesiologists – work as a coordinated unit. Combining these areas of expertise enables the team to perform complex, yet minimally invasive procedures, including Transcatheter Aortic Valve Replacement (TAVR) for aortic stenosis and MitralClip for mitral regurgitation.

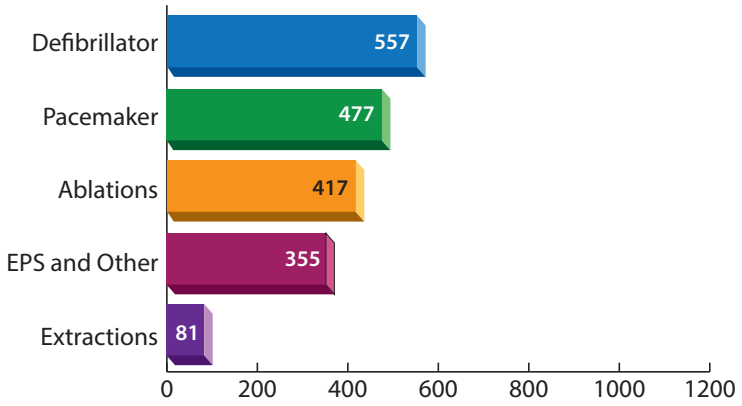
Electrophysiology

Deborah's electrophysiology services are devoted to the evaluation, consultation and treatment of complex cardiac arrhythmias, including atrial fibrillation and flutter, supraventricular tachycardia including Wolff-Parkinson-White-Syndrome, and ventricular tachycardia.

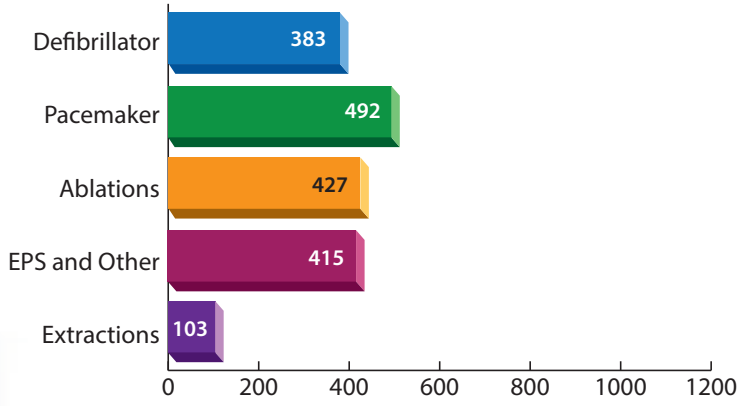
Comprehensive device therapy is also included in the EPS service. Pacemaker and defibrillator implants–as well as lead extractions–are offered for standard indications. Biventricular devices are available for emerging indications, including congestive heart failure.

Raffaele Corbisiero, MD, FACC
Division Director,
Eectrophysiology and Pacing

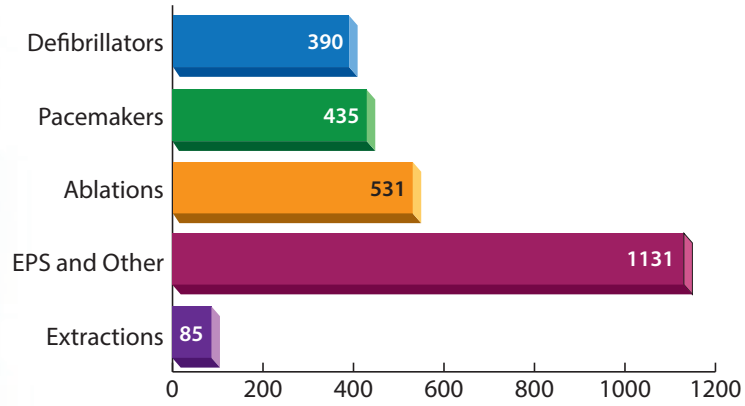
2013: Total-1887



2014: Total-1820



2015: Total-2572



Robotic Ablations

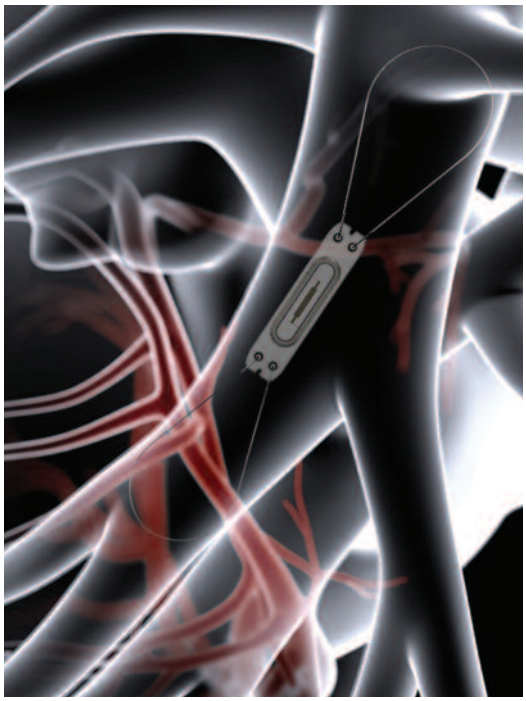
Deborah, long-renowned as a Top Ten National Center in robotic ablations for treating A-Fib, has now pioneered the next step in complex ablations of ventricular tachycardia (VT) using the Stereotaxis Remote Navigation System.

Many patients at risk for VT have implantable cardiac defibrillators (ICDs), which can rescue them from this life-threatening arrhythmia by delivering electric shocks. This complex ablation procedure, using radiofrequency energy delivered through the Stereotaxis System, is a treatment strategy to prevent recurrence of VT and ICD shocks. Ablation therapy delivers significant benefits by not only preventing uncomfortable ICD shocks, but also allowing for a gradual reduction of many anti-arrhythmic medications.

Stereotaxis, in the hands of the skilled physicians at Deborah, represents the safest and most effective way to deliver this therapy. With the enhanced safety offered – 60% less damaging X-rays than radiation and ten times less likelihood of major complications like heart perforations – during the robotic procedure, Deborah is also able to perform epicardial ablation, an even more complicated procedure which targets radiofrequency energy to not only the inside of the heart, but also the outside.

CardioMEMS – state-of-the-art monitoring of heart failure patients

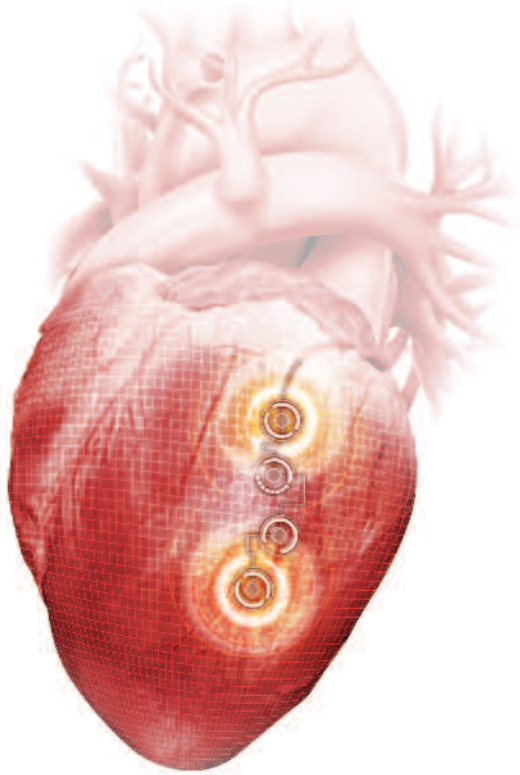
The CardioMEMS™ HF System uses a miniaturized, wireless monitoring sensor that is implanted in the pulmonary artery during a minimally invasive procedure, to directly measure PA pressure. The system allows patients to transmit PA pressure data from their homes to their health care providers, allowing for personalized and proactive management to reduce the likelihood of hospitalization.



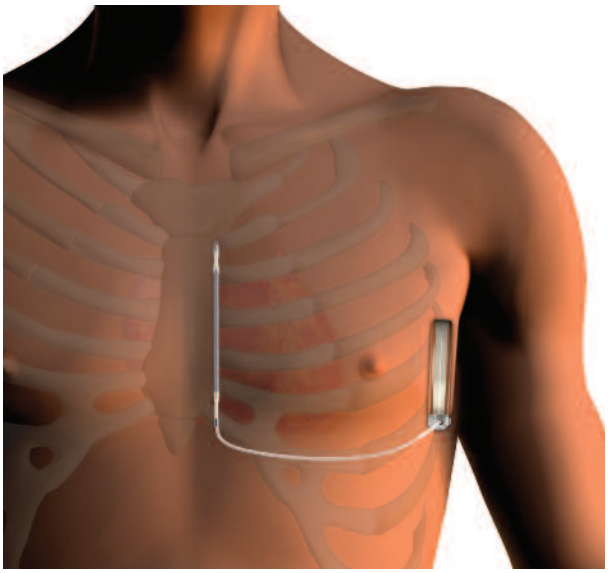
The CardioMEMS HF System is the first and only FDA-approved HF monitoring device that has been proven to significantly reduce hospital admissions and improve quality of life in class III HF patients who have been hospitalized in the previous 12 months. More than 5 million Americans have HF, with 670,000 new cases diagnosed each year. Roughly 1.4 million patients in the U.S. have class III HF, and historically these patients account for nearly half of all HF hospitalizations.

MultiPoint Pacing

Deborah has long been a pioneering regional leader in introducing quadripolar pacing (versus traditional bipolar) in its cardiac resynchronization therapy defibrillators and pacemakers. Now the Center has begun implanting a new MultiPoint Pacing Technology, which is the next step in this evolution. MultiPoint Pacing allows the device to pace at two left ventricular sites, giving an added time dimension, as well as increasing the amount of cardiac tissue being stimulated at one time. This can enhance cardiac performance in those patients not responding to traditional bi-ventricular pacing.



State-of-the-Art ICDs



Deborah has remained a leader, always on the cusp of device technology embracing each new ICD generation offering easier placement, enhanced performance, ability to implant devices with complex vascular access, reduce complications, employing remote monitoring technology, and providing improved patient comfort and cosmetic outcomes. Deborah's arsenal includes today's subcutaneous implantable defibrillators (S-ICD) with leads implanted just below the skin with no need to "touch" the heart and the EMBLEM™S-ICD which is twenty-percent thinner with a forty-percent longer life and offers remote patient monitoring.

ICD Lead Extraction

Implantable cardioverter defibrillators (ICDs) have been in use since the 1980s. Since the technology's introduction, ICDs have saved and prolonged thousands of lives. A side consequence, however, is that over time the leads can become infected or ineffective and need to be extracted and replaced. Deborah stands as a regional leader in this advanced procedure.

Deborah's extraction techniques adhere to the Heart Rhythm Society's recommendations. In addition, the center uses Cook Medical's lead extraction tools, backed by 25 years of extraction experience. The extraction system relies primarily on a locking stylet and the concept of countertraction, as well as a telescoping sheath — a vast improvement from the early days of lead extraction when physicians tried various methods of pulling leads out using a weighted pulley system, or resorting to open heart surgery.

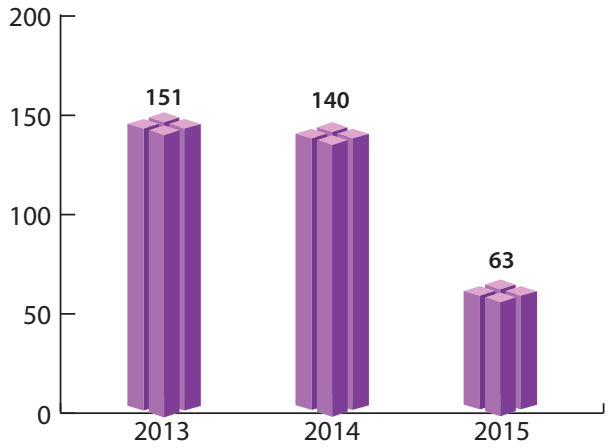
Vascular Surgery

Deborah's Vascular Surgery Program includes four vascular surgeons who provide a comprehensive range of procedures. These include the full range of traditional open and endovascular surgical procedures, including carotid endarterectomy and stenting, and stent graft repair of aortic aneurysms.

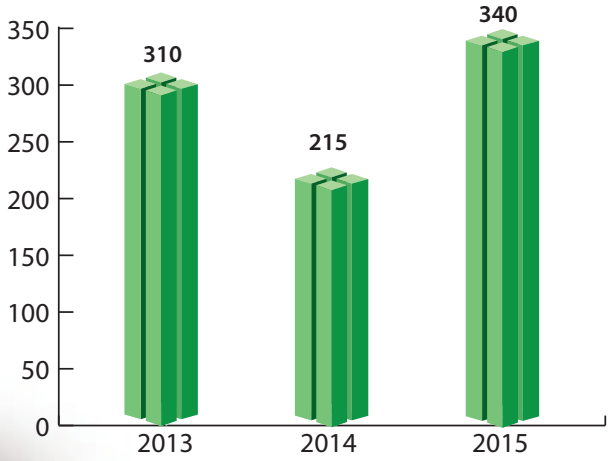
We also treat venous disease with both open and endovascular techniques, provide dialysis access surgery, lower extremity revascularization, and distal bypass surgery of lower extremities. The surgeons have outstanding expertise in open and endovascular limb salvage procedures.

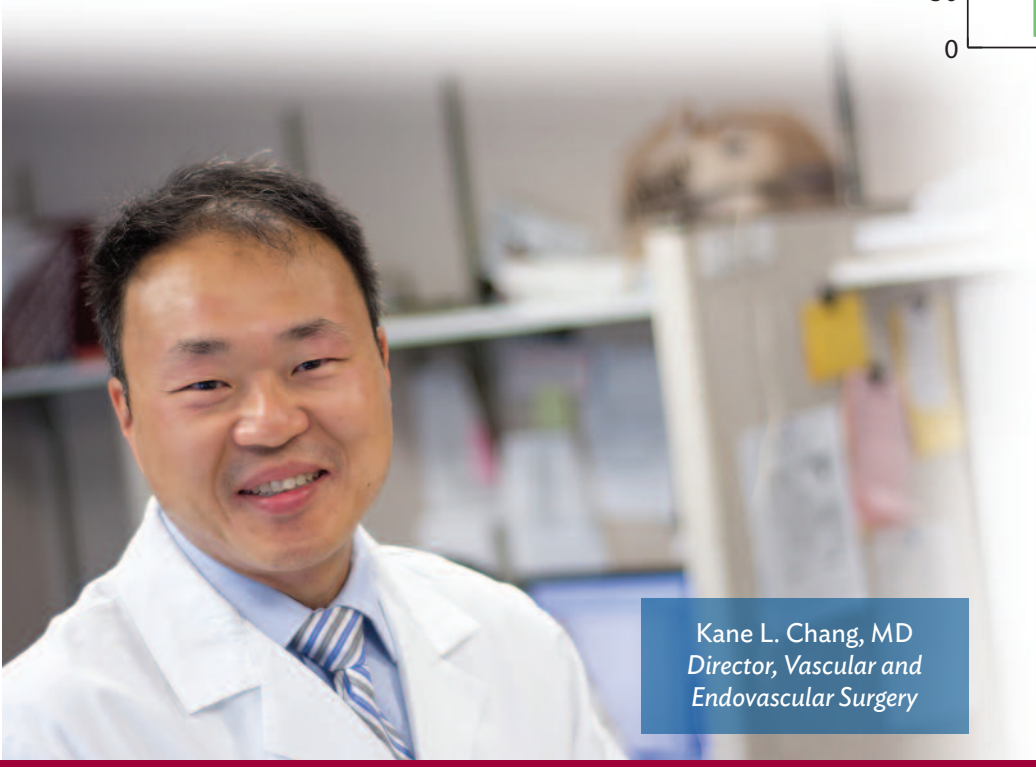
We have access to high-level imaging for following aneurysmal disease and provide management of general surgery needs, including abdominal issues, airway and venous access.

Open Peripheral Vascular Bypass



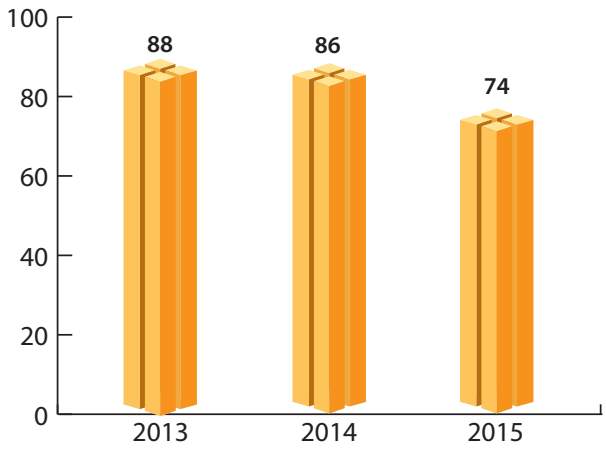
Endovascular Peripheral Intervention



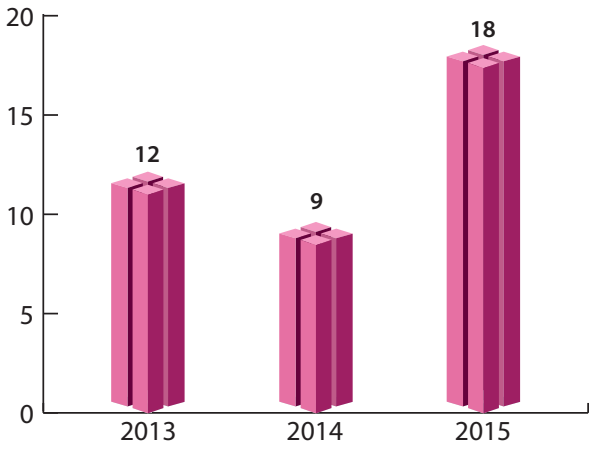


Kane L. Chang, MD
Director, Vascular and Endovascular Surgery

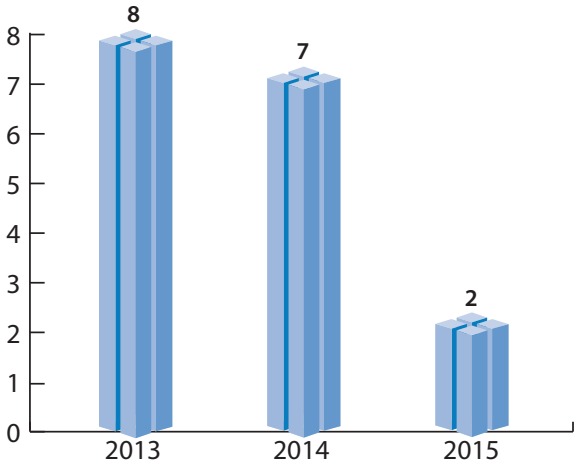
Carotid Endarterectomy



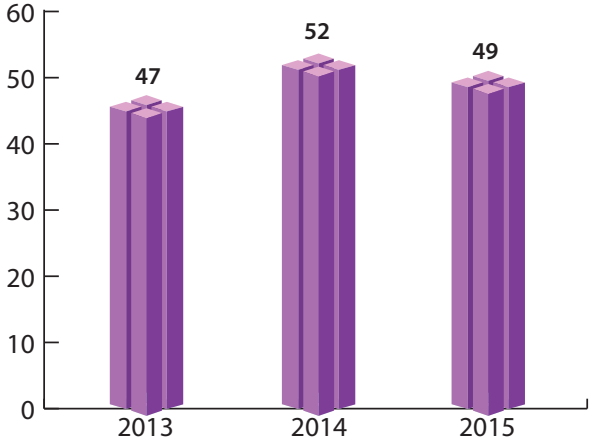
Carotid Stent



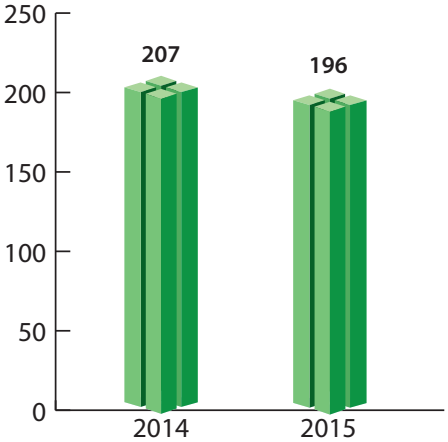
Open Aortic Aneurysm Repair



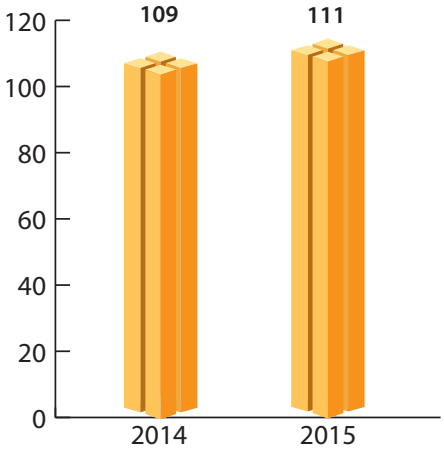
Endovascular Aortic Aneurysm Repair



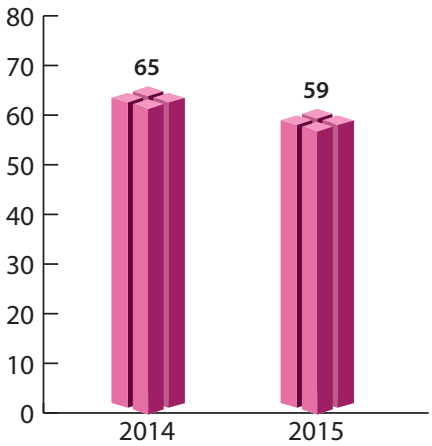
Endovascular Venous

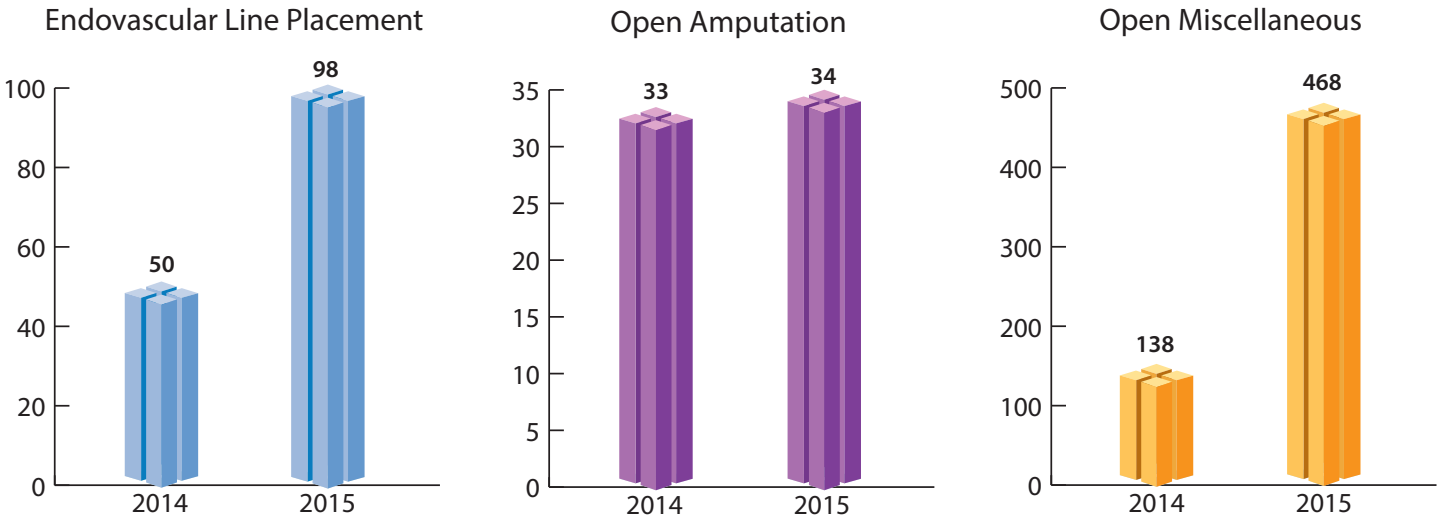


Endovascular Dialysis Access



Open Dialysis Access





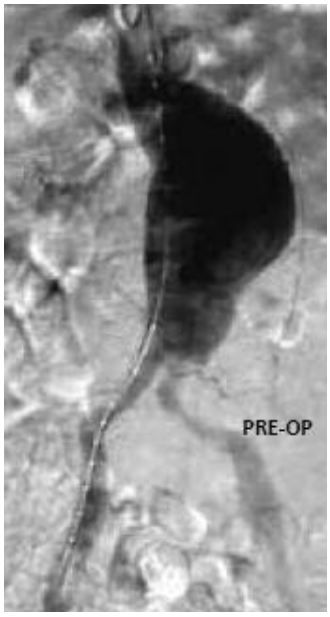
The Vein Center

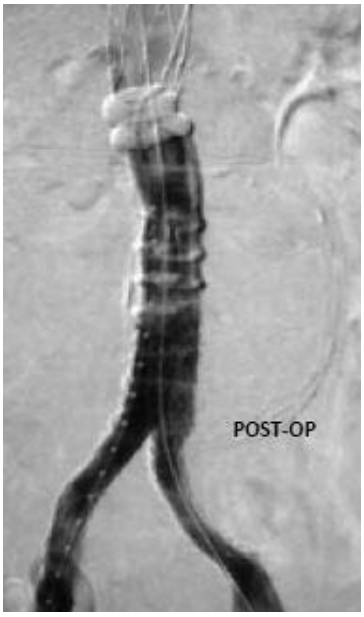
Deborah's Vein Center looks below the surface of unsightly spider and varicose veins, to determine whether these unattractive – and easily removed – veins are a sign of a deeper circulation problem or more severe condition.

Deborah's highly qualified staff is able to appropriately diagnose and treat these vein conditions. If the veins are superficial, recommendations – including the use of compression stockings and elevating legs while sitting – can offer conservative management. If they need treatment, Deborah's Vein Center specialists have a range of tools in their arsenal, including: radiofrequency ablation, the Venefit Closure, sclerotherapy, and phlebectomy, among other treatments.

If, however, the veins are the sign of a more serious condition such as deep vein thrombosis (DVT), Deborah's team is highly skilled in appropriate surgical options.

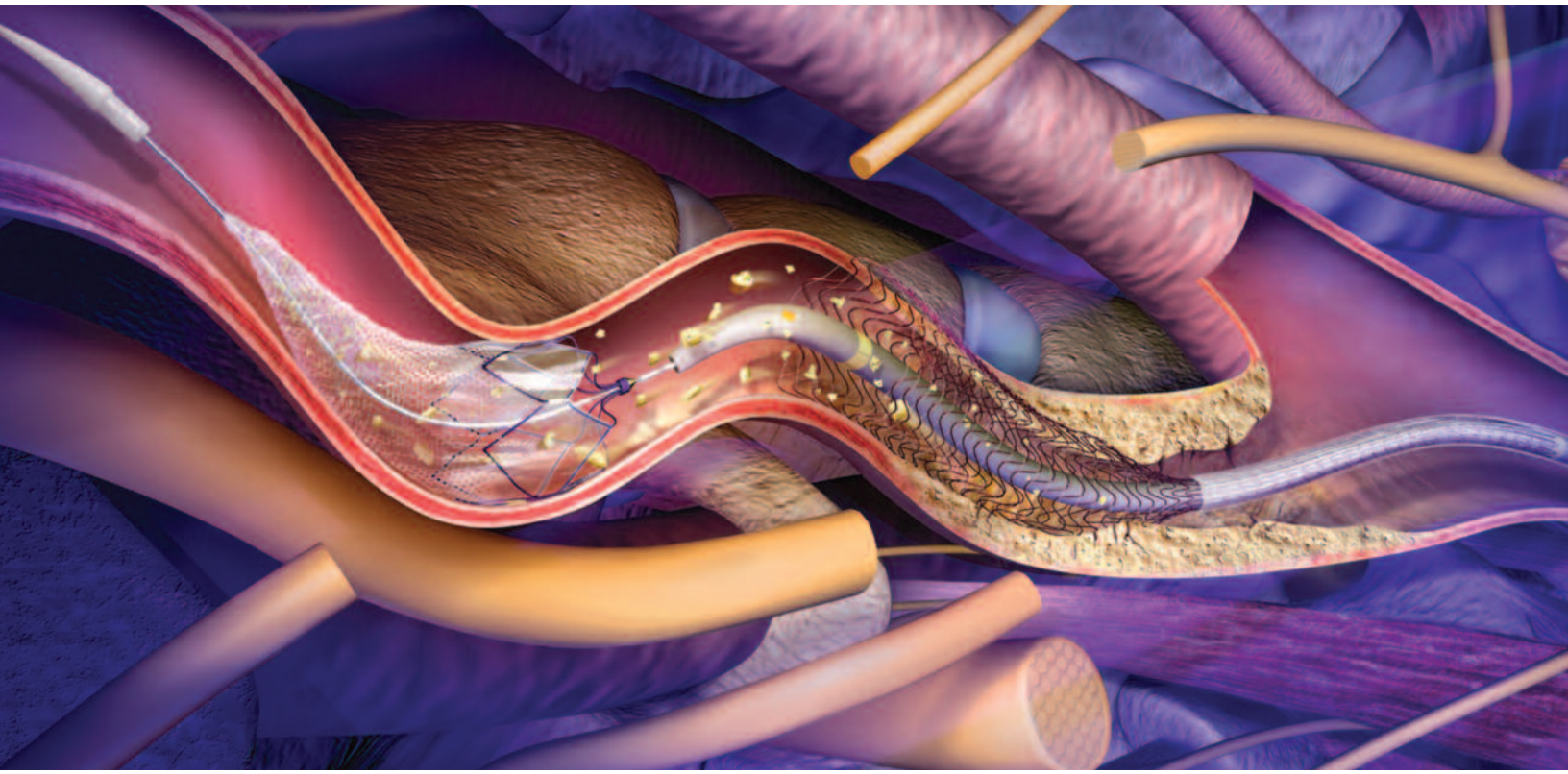
Abdominal Aortic Aneurysms





Deborah's team is expert in evaluating and treating Abdominal Aortic Aneurysms (AAA), silent killers that affect more than a million people in the country. When an AAA is detected, treatment options will be discussed and will vary based on size, with smaller aneurysms being monitored. When an aneurysm requires treatment, Deborah is expert in both open surgery and endovascular repair (EVAR).

In addition to EVAR – the standard of minimally invasive AAA repair – Deborah is also expert in fully-percutaneous EVAR (PEVAR), which is the next step in even more minimally invasive repair, replacing groin incisions with small punctures made directly through the skin into the femoral arteries, with vascular sheaths then advanced over small wires through which the catheters and stent graft devices are advanced. In each procedure, open surgery, EVAR, or PEVAR, Deborah maintains excellent AAA repair outcomes.



Clinical Cardiology

Deborah's clinical cardiology services provide consultations for all patients with acute and chronic heart diseases. The scope of care includes congenital and acquired heart diseases, coronary artery disease, rheumatic heart disease, other forms of valvular and myocardial disease, cardiomyopathy and hypertensive heart disease, disorders of the coronary and non-coronary circulation systems, myocardial function, cardiac conduction system and cardiac valves.

Deborah cardiologists also focus on issues relating to women and heart disease with factor evaluation and modification. After assessment, the cardiologist always consults with the referring physician to determine the most appropriate therapy for the patient. Deborah's cardiologists are specialists in both managing cardiac diseases and determining the appropriate time for surgical intervention.

In 2015 Deborah served 69,058 outpatient visitors and had 3,640 inpatient admissions.

Hospital Subspecialties

Cardiac Intensive Care

Deborah's highly specialized surgical intensive care unit is under the direct supervision of an Attending Cardiologist providing state-of-the-art care and close monitoring of post-surgery patients who require one-on-one individualized attention. The unit is staffed by a team of physicians, nurses, and other healthcare professionals who are specially trained with high-tech devices and monitors, IV and feeding tubes, catheters, ventilators and other life-saving equipment that ensure a patient's safe recovery from complex surgery.

Mark Moshiyakhov, MD
Attending Cardiologist

Heart Failure Experts

More than two-thirds of heart failure patients are under the care of a primary care physician. Assessing a patient's level of heart failure via the American Heart Association and American College of Cardiology (AHA/ACC) levels of heart failure – Stages A-D – offers excellent guidelines for when to bring Deborah's specialty expertise into play.

Deborah's electrophysiologists know that a Stage A patient is best served with their family PCP, who can best manage them with suggested lifestyle modifications, such as quitting smoking and exercising, and prescribing medications for conditions such as hypertension. When a patient transitions into Stage B, with its early diagnosis of heart failure, Deborah's cardiologists are available for consult, and the Electromechanical Therapy Institute team can evaluate early procedural interventions. As heart failure worsens through Stages C and D, the Deborah team works well with PCPs in transitioning their patients into Deborah's specialty program.

This partnership with primary care physicians is a Deborah hallmark. Recently this patient-centric collaborative spirit was expanded to include patients who have undergone implantation of a left ventricular-assist device (LVAD) at another regional implant center. Deborah has joined a regional LVAD outpatient sharing group that provides outpatient care to monitor these patients. This is a win-win for all, but particularly for patients whose quality of life is dramatically improved by receiving follow-up care close to home.

Imaging

Deborah offers a wide variety of sophisticated non-invasive, minimally invasive, cardiac and non-cardiac nuclear imaging and diagnostics to accurately pinpoint a patient's medical condition. With state-of-the-art imaging services – some of which can accommodate patients up to 500 pounds – Deborah's highly skilled technicians provide detailed and multi-dimensional images. These imaging services are offered both to Deborah patients and to the general public with a physician prescription and, if required, an insurance referral. All results are shared with the ordering physician with a quick turnaround time. A full list of Deborah's imaging can be found at demanddeborah.org/medicalservices/imaging/

The Women's Heart Center

Deborah's Women's Heart Center is focused on closing the healthcare gap for women who too often miss the early warning signs of heart disease, the number one killer among American women.

The Women's Heart Center team blends multi-disciplinary expertise in the areas of cardiology, endocrinology, pulmonology, imaging, congestive heart failure and diabetes. The program also has extended Deborah resources from its Institute for Sleep Medicine, the Diabetes Center at Deborah, and on-site, highly skilled nutritionists. Deborah's female physician specialists offer dedicated women's clinic time to focus on their patients and build an overall health profile. With this "big picture" in mind, Deborah's specialists can then recommend a pro-active plan for reducing stress, losing weight, quitting smoking, eating better, sleeping more soundly, managing diabetes, and teaching about the early signs and symptoms of heart disease.

Deborah's Women's Heart Center team is also actively involved in education, clinical research, and ongoing professional development. Among the team's recent accomplishments are publication in the *New England Journal of Medicine* at the close of the PROMISE study, which examined the efficacy of cardiac CT vs. stress testing to diagnse heart disease in women, as well as leading the pre-eminent regional conference "The Role of Cardiac Imaging in Women," which drew together the area's top specialists to provide the most comprehensive, up-to-date information for clinicians.

The James Klinghoffer Center for Wound Healing and Hyperbaric Treatment

For the estimated five million Americans suffering with chronic non-healing wounds, technology holds a remarkable promise. At The James Klinghoffer Center for Wound Healing and Hyperbaric Treatment, Deborah is able to provide sophisticated wound care technology and hyperbaric oxygen therapy to enhance healing through a multidisciplinary team approach directed by John Cooper, DO, FACOS, Vascular Surgeon.

Treatment applies proven wound care practices and advanced clinical approaches to heal patients suffering from chronic ulcers and wounds. Deborah's expansive program provides state-of-the-art integrated care for slow-healing wounds.

In the first year, the Center saw over 2,279 patients, performing 868 Hyperbaric Treatments.

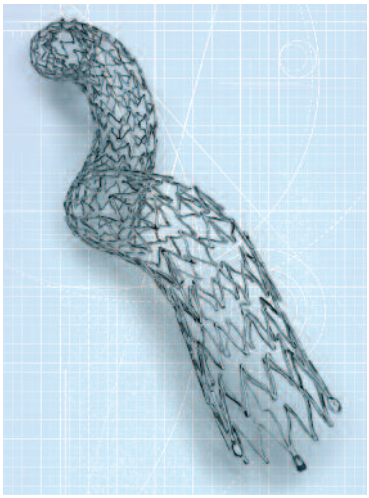
Clinical Research and Education

Deborah's innovative Clinical Research Department is currently involved in over 30 innovative trials exploring new treatments and procedures in Electrophysiology, Interventional Cardiology, Peripheral Vascular Disease, and Preventive Cardiology. In addition to highly committed and talented Principal Investigators, the Clinical Research Team at Deborah provides superior patient support through its research associates, who keep both referring physicians and patients apprised of not only their progress, but that of the clinical research study, at each step of the way.

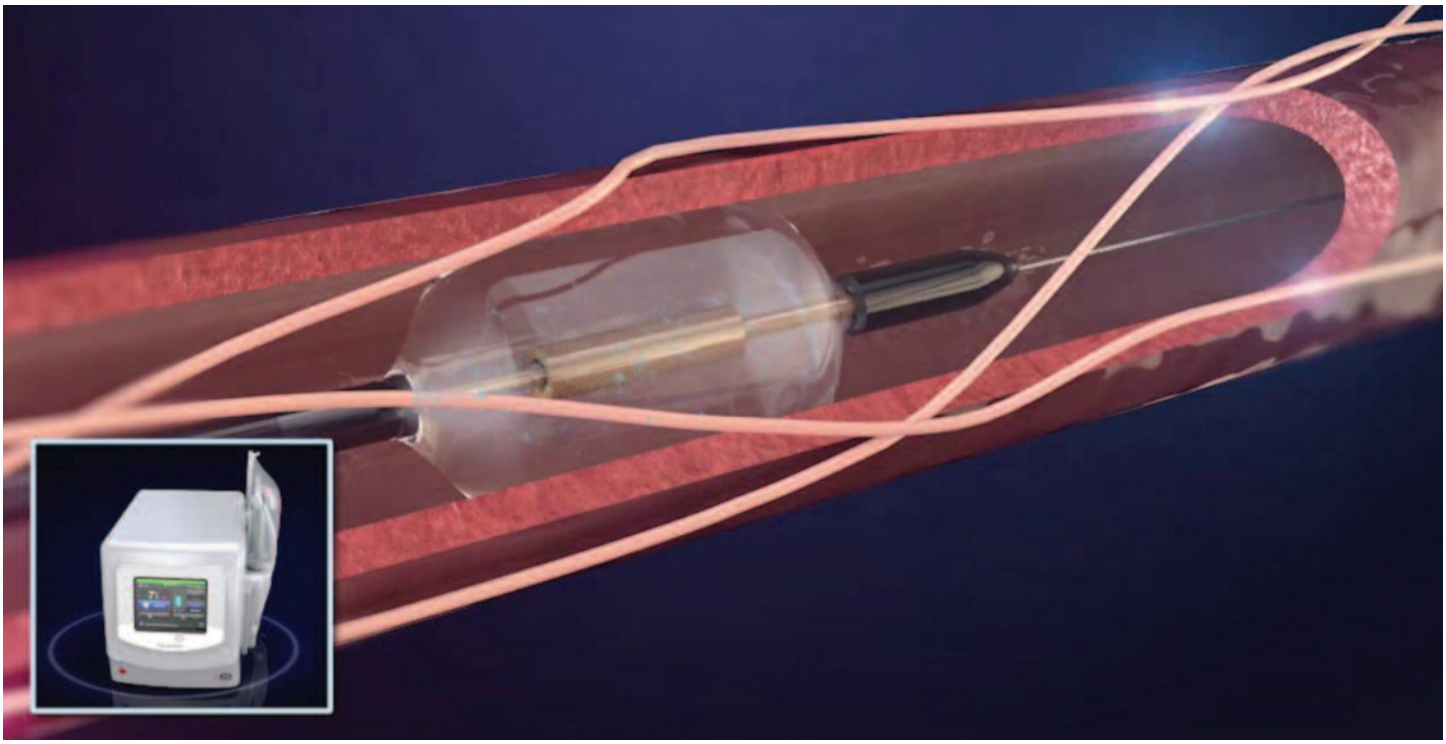
New, Exciting Trials Accepting Enrollment

- The LUCY study, "TriVascular Evaluation of Females Who Are Underrepresented Candidates for Abdominal Aortic Aneurysm Repair," examines the potential for improved clinical outcomes associated with using the Ovation Abdominal Aortic Stent Graft platform for endovascular repair of abdominal aortic aneurysms (EVAR) in women as well as men. The lack of adequate treatment options – primarily due to more conventional large bore EVAR systems – is a persistent issue for female AAA patients. Clinical literature shows that women diagnosed with AAAs experience aortic expansion at a rate that is 40-80% faster than men, which can result in aortic rupture at smaller diameters. Due to their smaller stature, women with AAAs also typically have smaller femoral arteries, resulting in more challenges with vascular access. Often there may also be hostile aortic neck anatomy, resulting in significantly decreased options for on-label EVAR treatment.

- The BioMimics 3D® stent technology involves adapting traditional straight stent designs to a patented three-dimensional helical shape, which more closely mimics the natural geometry of the human vascular system. BioMimics 3D technology is designed to enhance clinical performance by improving flow conditions in, and biomechanical performance of, stented vessels. The advanced, biomimetic design of the BioMimics 3D stent is intended to provide more flexibility, as well as kink and fracture resistance, in comparison to other laser-cut nitinol tube stents, making its unique design of particular importance in the hostile environment of the femoropopliteal artery.



- The Paradise® Renal Denervation System is a minimally invasive procedure to treat overactive nerves leading to the kidney. The treatment involves a small incision made in the groin; a small flexible catheter is then inserted, and placed in the artery supplying the kidney. Ultrasound energy (sound waves) is delivered to the tissue surrounding the artery for several seconds. The ultrasound energy generates heat to decrease the over-activity of the nerves leading to the kidney. Following treatment of both kidneys, the device is removed. The RADIANCE-HTN clinical study is a randomized, controlled study to provide additional information about the Paradise Renal Denervation System intended to treat high blood pressure. The study is designed to evaluate the Paradise Renal Denervation System, both in patients currently uncontrolled on three or more blood pressure medications (termed "resistant hypertension") and in participants taking two or fewer blood pressure medications to manage their blood pressure. In the study, half the participants will receive the ultrasound therapy and half the patients will receive a "sham" therapy (no ultrasound treatment). Participants will not be told which group they are in. Participants receiving the "sham" procedure may have the opportunity to have the therapy at a later time. Clinical studies with the Paradise Renal Denervation System have indicated that the therapy may be effective in reducing blood pressure in patients with Resistant Hypertension.



Recently Published Results

- The PROMISE study concluded after its inception in 2011, and the study results were released in the New England Journal of Medicine, as well as being presented at the American College of Cardiology's annual scientific meeting. Deborah was one of 5 enrolling sites in New Jersey. The research, which looked at cardiac CTs versus stress echoes as a diagnostic tool for detecting coronary artery disease (anatomical versus functional testing), has concluded that both are effective. Understanding that cardiac CTs are just as effective will enable patients to bypass multiple tests, which at times can present inconclusive results.

Teaching Center of Excellence

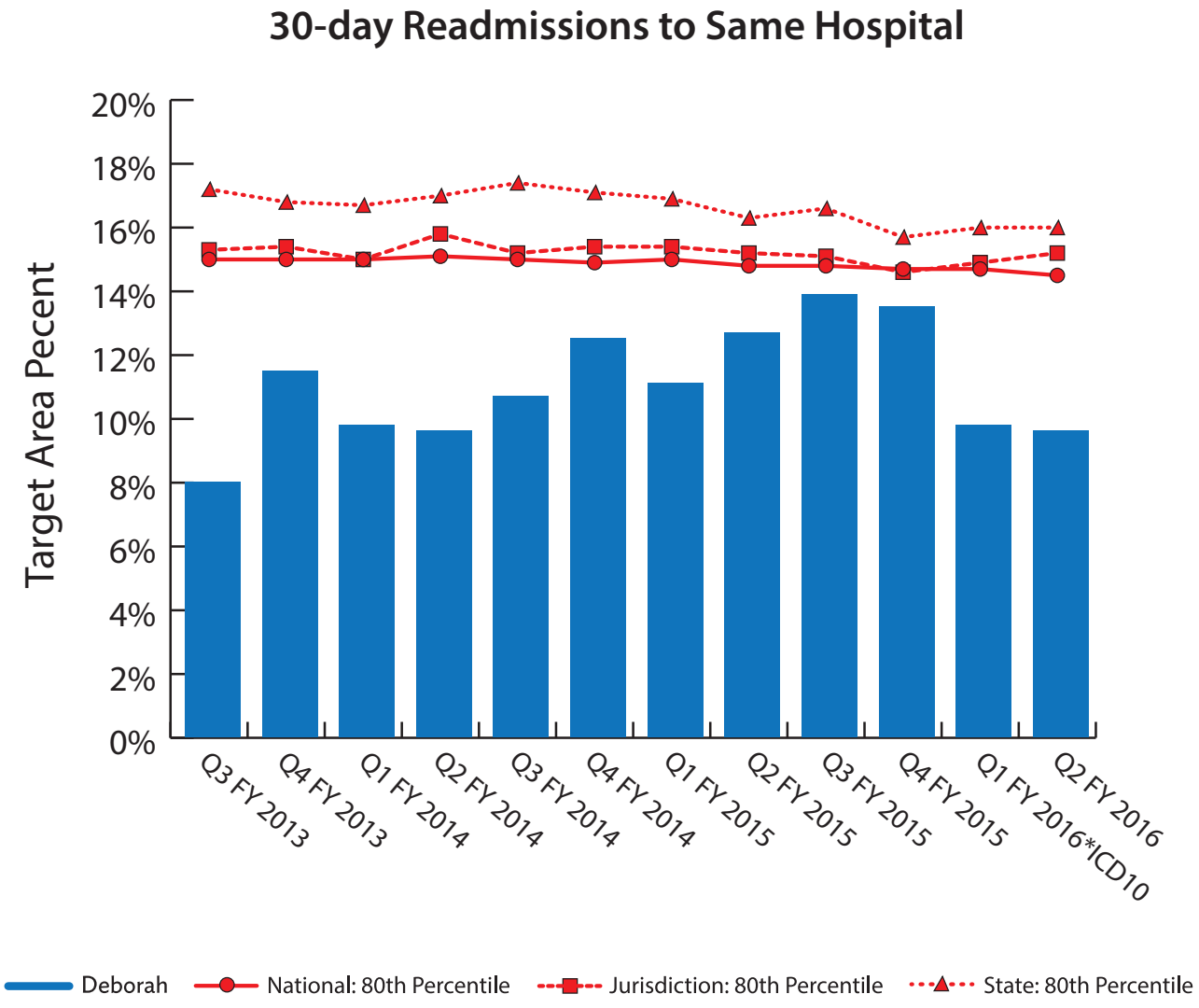
Deborah has had a long-standing commitment to teach not only the next generation of physicians, but to also ensure that practicing professionals have access to the latest information on new technologies, procedures, and practices. To both ends Deborah maintains robust Cardiovascular, Interventional Cardiology, and Vascular Fellowship Programs. In addition to a highly competitive three-year program, the Center also offers advanced training programs in Interventional Cardiology and Electrophysiology, as well as a one-year Echocardiography-Nuclear training program.

Deborah's fully-comprehensive training program draws over 40 applicants annually to fill 12 slots. Altogether there are 24 Cardiovascular, 4 Interventional Cardiology, and 2 Vascular Fellowship spots. These rigorous programs on topical and timely cases at the Center, has trained hundreds of physicians over the years, whose professional successes reflect the thorough training received at Deborah.

In addition to its nationally renowned Fellowship Program, the Center sponsors regular continuing education programs on topical and timely cases through its on-site Grand Rounds, as well as numerous off-site symposia and conferences.

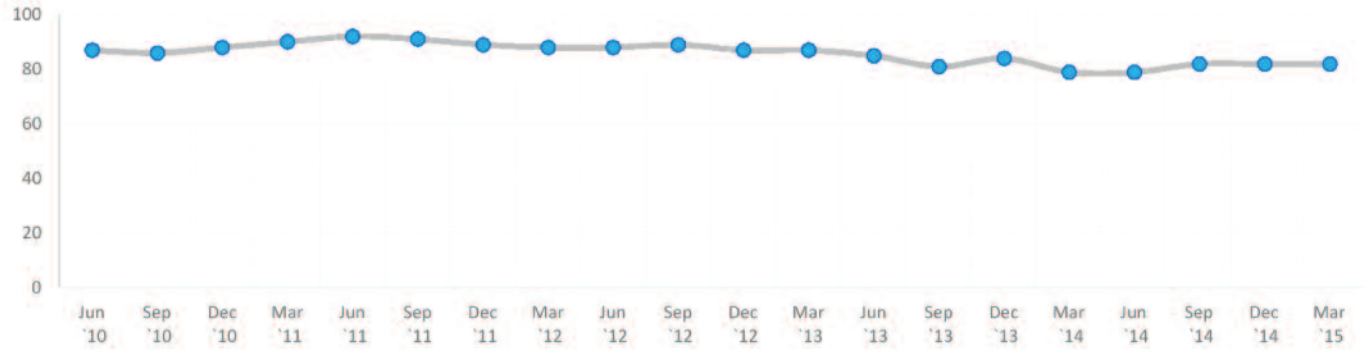
In tandem with Deborah's drive for teaching and education, many of its faculty are deeply engaged in research and writing. Deborah specialists routinely are published in the leading trade journals, "think tank" magazines, and participate in peer-reviewed publications analyzing trends, topics, and techniques that are the leading-edge cusp of the field.

Organizational Performance

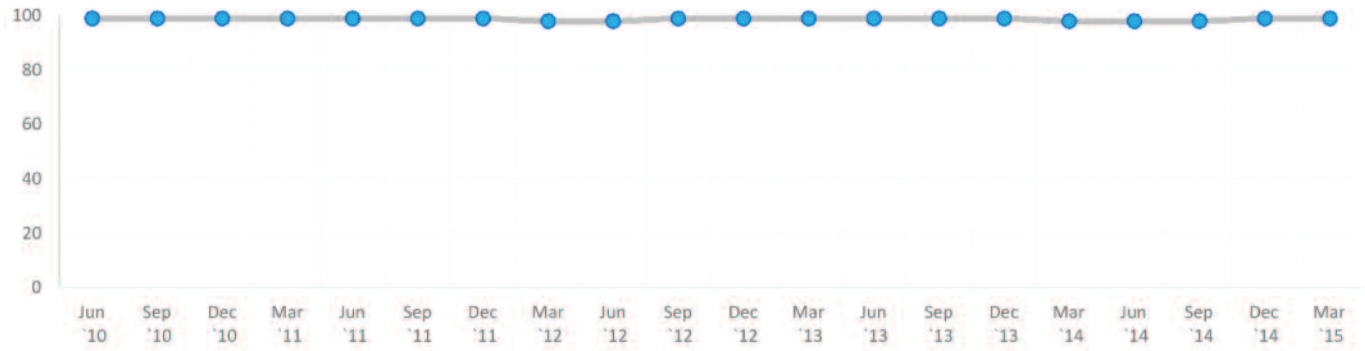


The following charts reflect scores over time for the HCAHPS Composite. Composite scores prior to December 2013 do not include the Transition of Care measure since it was not reported by CMS before then. Note that CMS did not release scores for discharges from the April 2013 through March 2014 reporting period. For purposes of this report, scores from this period are copied from the following period.

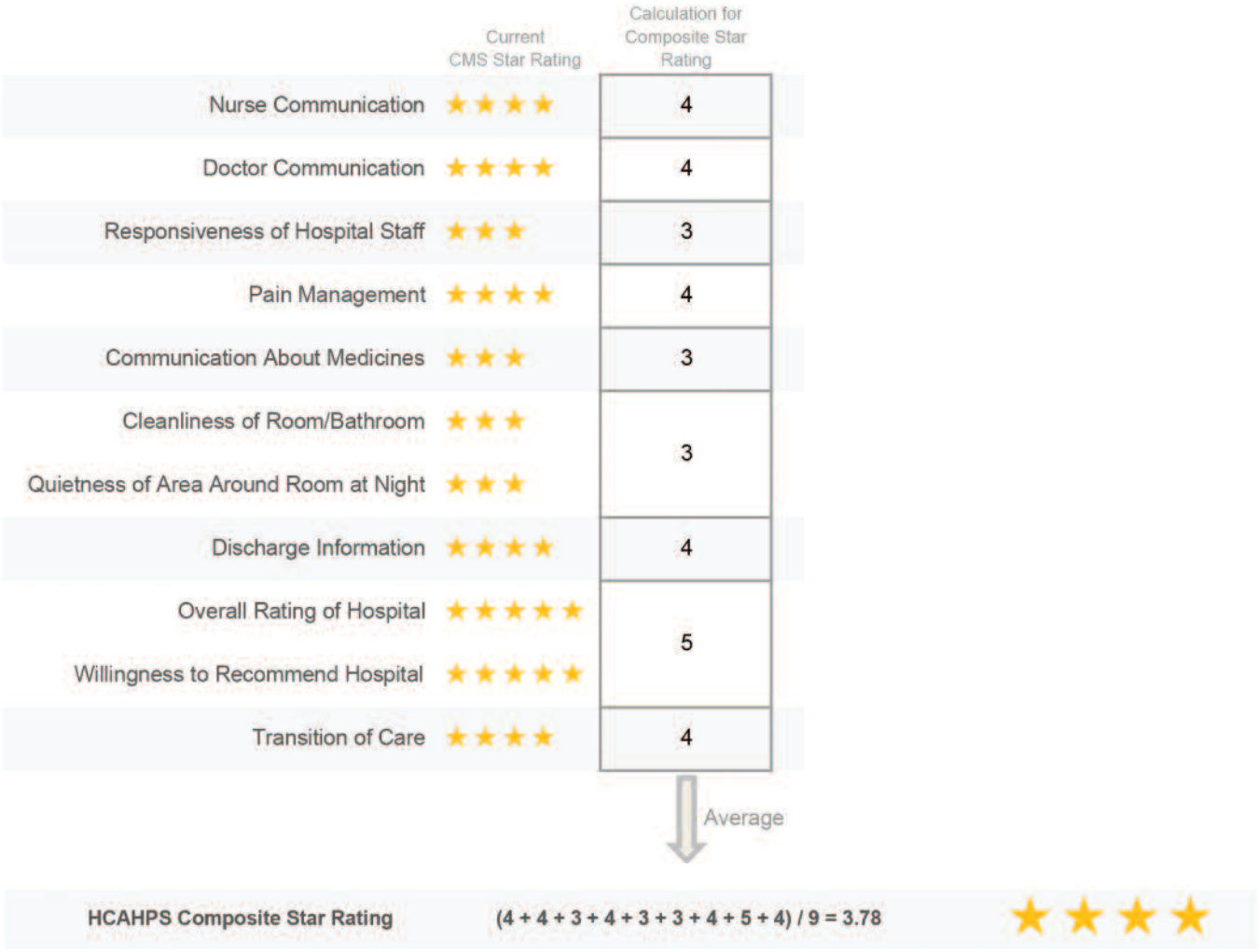
National Percentile Rank over Time



State Level Percentile Rank over Time (New Jersey)



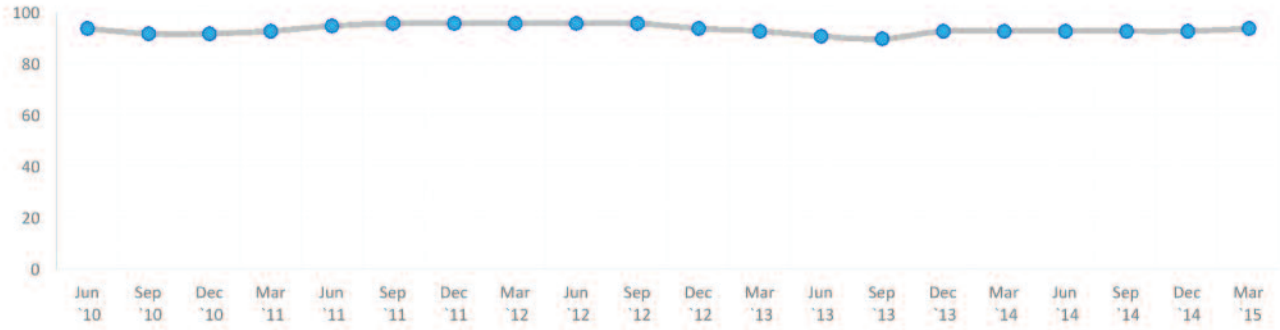
The Star Ratings were implemented by CMS to serve as an indicator of how well a hospital is performing in relation to other facilities in the country. Each HCAHPS measure is given one to five stars depending on the hospital's performance in that area. There is also an HCAHPS Composite Star Rating, which is an average of the stars for each measure. All of these are reported publicly on the Hospital Compare website.



National and Peer Comparisons

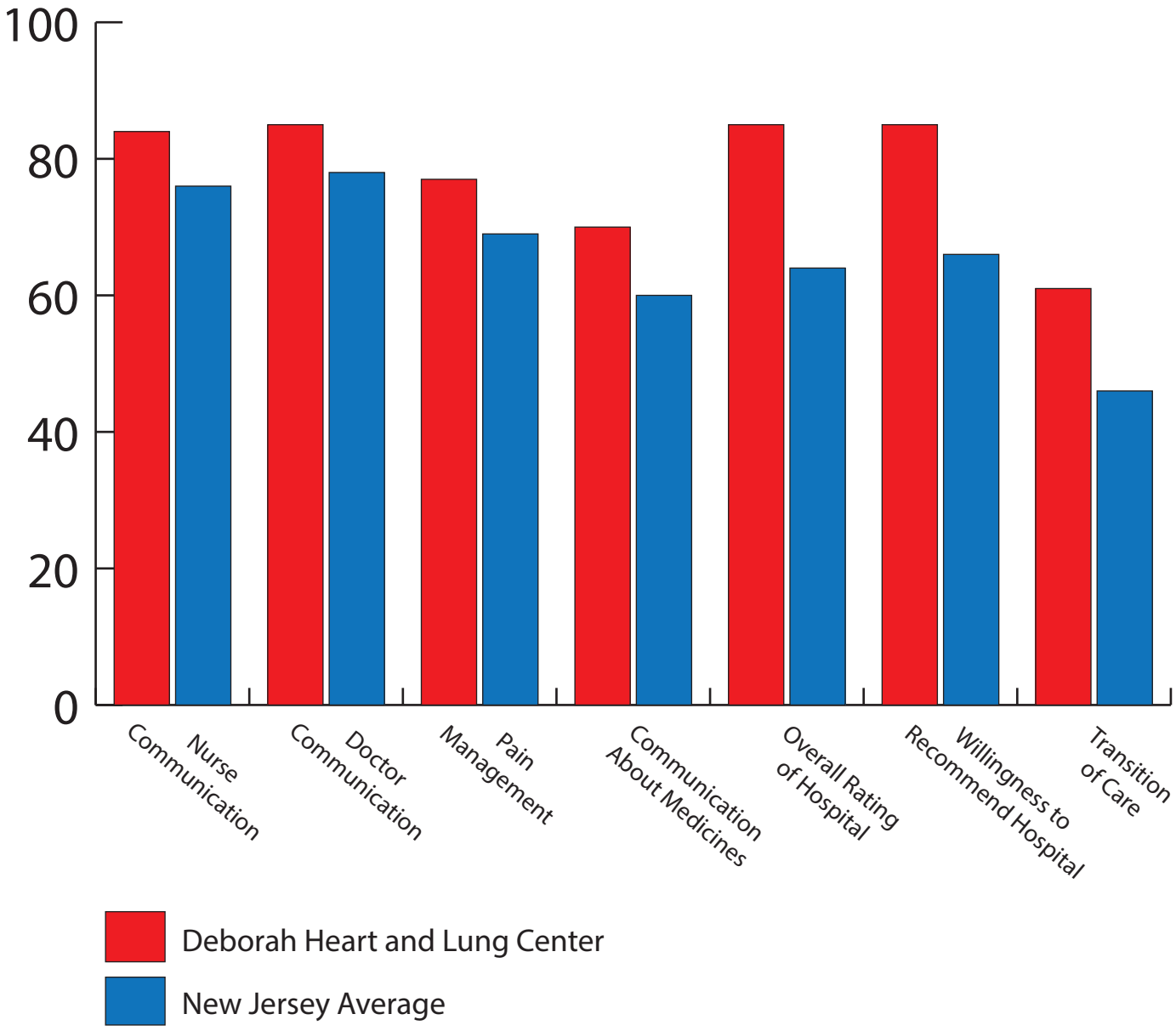
	National Top Box Score	Facility Percentile Rank
National Average	71%	94
Region - Middle Atlantic	66%	96
State - New Jersey	64%	99
Location - Urban	70%	94
Acute Care Hospitals	70%	95
Non-teaching	71%	93
Ownership - Non-profit	71%	95
100 to 249 beds	68%	99

National Percentile Rank over Time



Deborah Heart and Lung Center vs. Hospitals in New Jersey

Deborah Ranks #1 *out of 64*



Deborah Heart and Lung Center Financial Data

	2015	2014	2013
Revenues and Support			
Patient Insurance Revenue	163,282,795	149,473,752	139,123,618
Other Operating Income	8,590,040	16,292,534	17,372,613
Foundation Support	6,585,000	5,340,000	4,786,000
Total Revenues and Support	178,457,835	171,106,286	161,282,231
Expenses			
Medical and Surgical Care	110,448,098	104,819,481	99,374,813
General and Administrative Services	29,892,560	31,486,736	27,322,896
Employee Benefits	19,566,965	16,178,685	17,631,719
Depreciation	5,204,952	5,974,826	5,206,815
Interest	836,066	1,155,779	1,385,352
Total Expenses	165,948,641	159,615,507	150,921,595
Excess of Revenues Over Expenses	12,509,194	11,490,779	10,360,636
Charges forgone for free care in excess of third-party reimbursement	8,925,373	7,276,906	9,522,595
Total amount contributed from Deborah Hospital Foundation *	11,672,689	16,693,833	11,617,474

* *Foundation support plus estates, restricted gifts, and Children of The World Trust distributions, all of which were included in Other Operating Income.*

SURGERY

Paul Gerard Burns, MD

Attending Cardiothoracic Surgeon
Chair, Department of Surgery

- Board certified: surgery and thoracic surgery
- Over 15 years practicing cardiac surgery in NJ with exceptional outcomes
- General surgery residency: Harvard Medical School Deaconess Hospital
- Personal achievements: Several distinguished awards, including "Top Doctor" by state and national magazines, including *U.S. News & World Report* 2011-2014
- Widely published in well-known medical and scientific journals
- Special interests: minimally invasive cardiothoracic surgery

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Ronald E. Ross, MD

Attending Cardiothoracic Surgeon

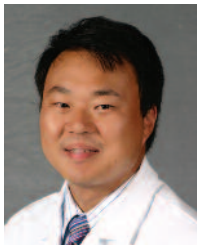
- Board certified: general and thoracic surgery
- Cardiothoracic fellowship: Strong Memorial Hospital, Rochester, NY
- Written extensively for peer-reviewed publications
- Special interests: all aspects of adult cardiac surgery

Walter Boris, DO, FACOS

Attending Thoracic Surgeon
Attending Thoracic Surgeon, Robert Wood Johnson University Hospital Hamilton
Clinical Assistant Professor, Philadelphia College of Osteopathic Medicine

- Board certified: general surgery and thoracic cardiovascular surgery
- General surgery: Community General Hospital, Harrisburg, PA
- Specialized training–thoracic cardiovascular surgery: Deborah Heart and Lung Center
- Adjunct thoracic surgeon: Robert Wood Johnson University Hospital, Hamilton
- Board of Directors: Cardiothoracic Section Chair, American Osteopathic Board of Surgery. Serves also as Board Examiner
- Special interests: cardiac surgery, thoracic surgery, vascular surgery, and surgical critical care

Kane L. Chang, MD



Director, Vascular and Endovascular Surgery

- Medical degree: New York University School of Medicine
- Board certified: general and vascular surgery
- Presented at various professional meetings, including NY Vascular Society and Eastern Vascular Society
- Has conducted scientific research
- "Top Doc" and "Rising Top Doc" by *Philadelphia Magazine*
- On cutting edge of latest minimally invasive techniques, particularly endovascular treatment for abdominal and thoracic aortic aneurysms and peripheral arterial diseases.

John H. Cooper, DO, FACOS

Attending Vascular and Endovascular Surgeon
Director, Vascular Surgery Fellowship Program
Director, The James Klinghoffer Center for Wound Healing and Hyperbaric Treatment

- Specialized training: University of Medicine and Dentistry of NJ, School of Osteopathic Medicine
- Chief Clinical Faculty Advisor for Clinically Integrated Human Anatomy, UMDNJ School of Osteopathic Medicine
- Board certified: American Osteopathic Board of Vascular Surgery and American Osteopathic Board of General Surgery
- "Top Doc" and "Top Physician" awards
- Surgery Mentor of the Year; The Frederick G. Meoli Scientific Paper Award and The Elmer Grimes Memorial Award
- Special interests: endovascular surgery, venous disease, complex lower extremity revascularization, wound care and medical illustration

Vijay Kamath, MD
Attending Vascular Surgeon

- Specialized training: Jobst Vascular Institute, Toledo, OH
- Member of Society of Vascular Surgeons, American College of Surgeons, American Venous Forum, Society of Clinical Vascular Surgery and Registered Physician in Vascular Interpretation
- Presents at symposiums and lectures; published in peer-reviewed medical and scientific journals; contributed chapter in medical textbooks
- Special interests: peripheral vascular disease, venous disease and cerebrovascular disease

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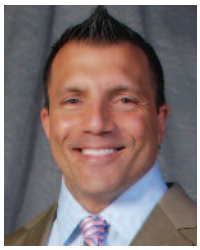
Matthew S. Samra, DO
Attending Vascular and Endovascular Surgeon
Director, Vein Center



- Board certified: general, vascular and cardiothoracic surgery
- Chief of Vascular Surgery: Southern Ocean Medical Center, Manahawkin, NJ
- Clinical instructor for multiple medical schools
- Special interests/expertise: all aspects of vascular and endovascular surgery, treatment and repair of thoracic and abdominal aneurysms, arterial blockages, venous disease, treatment of varicose and spider veins, and carotid stenosis
- Multiple "Patient Choice" and "Best Physician" awards, including Compassionate Doctor Recognition, an honor accorded to a small percentage of physicians nationwide

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CARDIOLOGY

William Hirsch
Attending Cardiologist
Chair, Cardiology

- Specialized training: Albert Einstein Medical Center, Philadelphia, PA
- Board Certified: Cardiovascular Diseases; Internal Medicine; Nuclear Cardiology; Echocardiography; Transthoracic; Stress Echo; Transesophageal

ELECTROPHYSIOLOGY

Raffaele Corbisiero, MD, FACC
Divisional Director, Electrophysiology and Pacing

- Board certified: internal medicine, cardiovascular disease, and clinical cardiac electrophysiology
- Clinical Professor: Philadelphia College of Medicine's Division of Cardiology
- Memberships: Heart Failure Society of America; Heart Rhythm Society; American College of Cardiology Fellow; North American Society of Pacing and Electrophysiology; and committee member of International Multi-Site Left Ventricular Pacing Committee
- Lectures at numerous national and international symposiums, and primary investigator in several ongoing research projects
- Extensively published in diverse peer-reviewed journals and publications
- Multiple awards as "Top Doc," "Best Physician," and "Readers Choice"
- Special interests: device therapy, heart failure therapy, resynchronization therapy and complex ablations

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Pedram Kazemian, MD, MSc, FRCPC, FACC, FACP
Attending Cardiac Electrophysiologist

- Board certified: internal medicine, cardiovascular medicine and cardiac electrophysiology
- Specialized training: Tufts University, Steward St. Elizabeth's Medical Center, Boston, MA
- Memberships: American Board of Internal Medicine and American Board of Cardiovascular Medicine
- Extensive research experience and widely published
- Special interests/expertise: atrial fibrillation, heart failure, supraventricular tachycardia, ventricular tachycardia, ICD/pacemaker implantation, lead extraction, and BiV pacemaker/CRT-D

INTERVENTIONAL

Richard Kovach, MD, FACC

Division Director, Interventional Cardiology
Director, Cardiac Catheterization Laboratory

- Board certified: internal medicine, cardiovascular disease and interventional cardiology
- Positions: Assistant Clinical Professor of Medicine, Thomas Jefferson University Hospital, Philadelphia, PA; Assistant Professor of Medicine, Hahnemann University, Philadelphia, PA
- Appointment: Vascular Disease Management Editorial Board
- Serves as principal investigator in wide array of laboratory research projects
- "Top Doc" awards
- Extensively published in medical and scientific journals
- Presents at numerous professional meetings and conferences

Harit Desai, DO

Attending Interventional Cardiologist

- Specialized training: cardiovascular disease
- Board certified: internal medicine
- Published in several peer-reviewed journals
- Special interest: cardiac interventions

Daniel S. Ice, MD, FACC

Attending Cardiac Interventionalist

- Specialized training: interventional cardiology and cardiology — Lankenau Medical Center, Wynnewood, PA
- Board Certified: internal medicine; nuclear cardiology; echocardiography; cardiovascular disease; interventional cardiology
- Special Interests: complex coronary intervention; peripheral vascular intervention; venous disease; structural heart disease

Kintur A. Sanghvi, MD, FACC, FSCAI

Attending Cardiac Interventionalist
Director, Transradial Program

- Board certified: internal medicine, cardiovascular disease, nuclear cardiology, and interventional cardiology
- Memberships: Society of Cardiovascular Angiography and Interventions, the American College of Cardiology, The American Society of Nuclear Medicine
- Acknowledged for his contribution to preparation of the "Patel's Atlas of Transradial Intervention—The Basics," a first-ever published comprehensive atlas on transradial intervention
- Extensively published in medical and scientific journals, and has presented at the Society of Cardiovascular Angiography & Intervention, the Asian Pacific Interventional Cardiology Conference, and the Southeast Asian Cardiology Meeting
- Editoral Board member: *Journal of Interventional Cardiology*
- Awarded second prize for three consecutive years: Annual Peter Cyrus-Rizzo Scientific Seminar
- Special interests: sympathetic nervous system modulation/renal denervation for treatment beyond HTN, transradial catheterization, complex coronary and endovascular interventions, CTO revascularization, and structural heart disease

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Vincent Varghese, DO, FACC, FSCAI

Attending Cardiac Interventionalist
Director, Interventional Cardiology Fellowship Program

- Board certified: internal medicine, cardiovascular disease, interventional cardiology, and nuclear medicine
- Serves on NJ State Board of Examiners
- Recipient of respected Compassionate Doctor Recognition-2014
- Broadly published in medical and scientific journals, contributing to textbook chapter on interventional cardiology and endovascular medicine

For a complete listing of all Deborah physicians, go to our website: demanddeborah.org/find-a-physician/physicians/

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