CARDIAC SURGERY
at Gagnon Cardiovascular Institute
Morristown Memorial and Overlook Hospital

The destination for comprehensive cardiac surgical care, where experience and innovation yield exceptional results.

THE PASSION TO LEAD
Award-Winning Care

• The Society for Thoracic Surgery (STS) awarded Morristown Memorial Hospital its prestigious “Three Star Award,” the highest possible rating. This honor places our cardiac surgery performance in the highest tier among the hospitals across the country; only 15 percent of the hospitals in the US attain this distinction.

• Magnet Award—The most esteemed accolade for nursing excellence from the American Nurses Credentialing Center.

• Beacon Award—National recognition of the top US critical care units by the American Association of Critical Care Nurses.

• Thomson Reuters Top 100 Hospital—Prominent award saluting hospitals that have achieved excellence in clinical outcomes, patient safety and patient satisfaction.

• ACTION Registry—Get with the Guidelines Gold Performance Achievement Award
Top honor recognizing hospitals that consistently treat patients with heart attacks according to American College of Cardiology and American Heart Association guidelines.

• Blue Distinction Center for Cardiac Care
A designation for medical facilities that have demonstrated expertise in delivering quality care, resulting in better outcomes for cardiac patients, awarded by the Blue Cross and Blue Shield companies.

• Gold Seal of Approval for Ventricular Assist Device Program
A nationally recognized stamp of approval from the Joint Commission that demonstrates that the hospital’s VAD program is patient-centered, comprehensive and well developed, and has met stringent standards of care.

• North East Regional Quality of Excellence Award
An annual award for significant advances in perfusion services.

Morristown Memorial Hospital has been a leader in cardiac surgery in New Jersey since 1988. During that time much has changed here and nationally. What is constant is the commitment of Morristown Memorial and all of its physicians and surgeons to offer the best care available in the state and to be one of the best centers in the United States.

With hard work and thanks to a generous and supportive community, a 230,000-square-foot expansion now houses the Gagnon Cardiovascular Institute. This entity is a collection of cardiologists, cardiovascular surgeons, nurses and allied health personnel with a common goal: to provide outstanding health care; educate physicians and health care professionals; focus on clinical and translational research to improve care, and develop drugs and technology; and demonstrate improved patient outcomes and effects on health care systems.

The following pages describe our efforts and accomplishments in cardiothoracic surgery.

Frank W. Smart, MD
Chair of Cardiovascular Medicine
Gagnon Cardiovascular Institute

John M. Brown III, MD
Chief, Section Cardiothoracic Surgery
Gagnon Cardiovascular Institute
Coronary Artery Disease (CAD) is the most common form of acquired heart disease, and remains a leading cause of death in United States for men and women. According to the American Heart Association, advancements continue to be made in preventive medical therapies as well as interventional therapy for the treatment of CAD. Studies still show that coronary artery bypass graft (CABG) remains the most effective intervention for multi-vessel CAD.

Research shows that cardiac surgery programs with experienced surgeons and medical staff have better patient outcomes than hospitals with less experienced staff.

At Morristown Memorial, our experienced cardiac surgeons have performed upward of 24,000 heart operations. Our surgeons consistently perform three times more procedures each year than the national average; one of the many reasons we have some of the lowest mortality rates and best outcomes in the tri-state area and for that matter the country.

In fact, for the last decade, mortality rates at Morristown Memorial are statistically less than the Society of Thoracic Surgeons’ national database benchmark. In 2009, our in-hospital mortality and operative mortality rates were both 0.8, well below the rates of hospitals in our area.

Gagnon Cardiovascular Institute is a pioneer in cardiac surgery thanks to our highly skilled surgical team. Our surgeons offer a full range of surgical options for the treatment of cardiovascular disease, including:

- Standard and minimally invasive coronary artery bypass surgery
- Valve repair, including minimally invasive valve surgery
- Endovascular thoracic aortic surgery
- Robotic assisted bypass surgery
- Valve-sparing aortic root replacement
- Left ventricular assist device for destination therapy and bridge to cardiac transplant
- Heart failure restraint placement
- Multiple modalities for mechanical circulatory support
- Ventricular reconstruction
- Thoracoscopic pacemaker and CRT placement
- Laser lead removal
- Bi ventricular support to recovery
- Curative MAZE and modified MAZE
- Hybrid approaches to aneurysms of the aortic arch
- Procedures to treat congenital heart disease in adults
The cardiac surgery program at Gagnon Cardiovascular Institute at Morristown Memorial, which began in 1988, is the largest in New Jersey with over 1,000 surgical procedures performed each year. We perform more CABGs than any other hospital in New Jersey. CABGs account for 60 percent of all cardiac procedures.

Research shows that using the left mammary artery for grafts increases long-term survival and reduces risk of re-operation in CABG patients. Our surgeons use this artery as a conduit for more than 95 percent of isolated CABG cases. Often surgeons can do a complete revascularization with arterial conduits.
Cross-clamp times have been associated with improved outcomes. Despite more complex revascularization procedures, the cross-clamp times of Gagnon surgeries are significantly less than the national average, even when comparing robust programs in like-hospitals locally and nationally.

Valve Center/Minimally Invasive Surgery

The last decade has seen a change in valve surgery and a vastly expanded patient indication. Now, aortic valve surgery for senile aortic stenosis is commonplace, even with patients over the age of 80.

Similarly, no longer is a very low ejection fraction an absolute contraindication for mitral valve repair. Emerging data suggests that due to improved safety and durability of a mitral valve repair, patients benefit from early intervention rather than waiting for severe symptoms or ventricular dysfunction.

Morristown Memorial performs close to 500 operations involving valvular surgery every year, placing it in the top two percent of all cardiac surgical programs in the US. Our surgical team is able to repair over 60 percent of the damaged mitral valves as opposed to replacing them.

Morristown Memorial surgeons have AVRs cross-clamp times that are 60 percent below the national average.

Benefits of minimally invasive valve surgery include:
- Faster recovery
- Cosmetic advantages
- Decreased risk of infection and dehiscence
Mitral repair has become so efficient and commonplace that valve replacement is only necessary when patients have heavily calcified or rheumatic valves.

Thoracic Endovascular Aortic Repair (TEVAR)
Over 45,000 people in the US die annually from diseases of the aorta and its branches. Traditional surgery to approach these problems has been the standard of care. Recently, Morristown Memorial developed an extensive thoracic endovascular aortic repair (TEVAR) program. This technique involves the deployment of a catheter-based endograft through the femoral or iliac artery and guides into the area of damaged aorta.

This type of approach is such a major advantage we recently opened two endovascular operating rooms with the state-of-the-art imaging. Surgeons can do a CT scan with the patients on the operating table to assure precise endograft or percutaneous valve placements.

Ventricular Assist Device Program
A Ventricular Assist Device (VAD) is a mechanical device used to partially or completely replace the function of a weakening heart. The device is surgically attached to the heart’s left ventricle and assists with heart function as the patient waits for a new heart via transplant (bridge to transplant), recovers from a heart attack or heart surgery (bridge to recovery) or lives long term with the device (destination therapy).

Morristown Memorial is among 60 hospitals nationwide to be awarded the Gold Seal of Approval from the Joint Commission, achieving Disease-Specific Care Certification for its ventricular assist device (VAD) program. Morristown Memorial is one of only three hospitals in New Jersey and one of only three non-transplant centers in the country with this certification.

Surgeons also have a multitude of VAD options to support patients. Devices are available that can be placed at the bedside, in the interventional suite or in the operating room.

Robotic Surgery
Morristown Memorial is among a few select hospitals in the US with the daVinci surgical robotic system to perform minimally invasive cardiac surgery. The robotic technology allows for minimally invasive incisions to harvest the left internal mammary artery during bypass surgery.
Blood Conservation

Our Blood Conservation program contributes to successful outcomes. Patients benefit from a much lower risk of infection and faster recovery. This represents a true team effort on the part of our surgeons, anesthesiologists and perfusion team.

Clinical Research

Morristown Memorial is at the forefront of research to develop novel, life saving diagnostic, medical, surgical and interventional treatments and engages in a rigorous selection process to participate in important national and international cardiac clinical trials. Our physicians and medical staff use data from our research to increase their knowledge of promising advances in electrophysiology, cardiac surgery, vascular surgery, interventional cardiology and clinical cardiology. As a result, our physicians are well-versed in the most up-to-date and effective remedies and can not only deliver the highest standard of care to their patients, but also have access to novel therapies long before they are normally available.

Recent Research Trials and Publications in Cardiac Surgery

PEERLESS HF

Randomized prospective, two-arm comparison, multicenter trial to evaluation the safety and efficacy of the Heart Net Ventricular Support System. This wire mesh is used to restrain and reshape a failing heart. By restraining the heart, the remaining muscle has less work and may allow the patient to feel better and exercise longer.

EVEREST II REALISM

A study of the Evalve Cardiovascular Valve Repair System (CVRS) Endovascular Valve Edge to Edge Repair Study: Morristown Memorial is the only site in the northeast to offer this modality. This exciting new treatment permits mitral valve surgical repair in select patients with a ½ inch incision in the groin. A patient can have a mitral valve repair and then go home, usually within 48 to 72 hours.

Medtronic ADVANTAGE Prosthetic Heart Valve Study—

Study of a prosthetic mitral/aortic bileaflet heart valve. With the most experienced surgeons comes the ability to get the latest innovation in valve technology when a valve does require replacement. Our research team tracks all aspects of clinical improvement in patients treated with this new valve technology.

PREVENT IV

Phase II, multicenter, randomized, double-blind, placebo-controlled trial of the Ex Vivo Treatment with CGTOO3 of coronary vein grafts in patients undergoing coronary artery bypass procedures. Despite advances in revascularization with arterial conduits, vein grafts remain an important part of the CABG procedure. This trial uses a novel compound to preserve vein endothelial function and hopefully reduce long term stenosis rates in saphenous vein grafts.

Patient Transfer Center

At Atlantic Health our patient transport center provides experienced critical care transport to the hospital when needed. Our team of registered critical care nurses—available 24 hours a day, seven days a week—transport thousands of patients each year from all over the tri-state area to Morristown Memorial for advanced diagnostic testing, interventional procedures and surgery. Our transport team can be anywhere in New Jersey within 20 minutes.

To arrange for a patient’s transfer call one number, Atlantic Health Patient Transfer Center at 877-441-4450.
SOMANETICS
Randomized trial of cerebral oximetry monitoring in patients undergoing coronary artery bypass surgery.

Since the beginning of cardiac surgery little has been known about the optimal perfusion pressure and flow while on bypass. The surgeons, anesthesiologists and neuro-psychology specialists at Morristown Memorial have developed a procedure for monitoring brain oxygen delivery during bypass so every patient can be individually optimized. When the technique was employed we showed improved brain cognitive function following cardio-pulmonary bypass.

PRIMO CABG II
Multicenter, randomized, double-blind, parallel-group, placebo-controlled study of 2mg/kg Bolus plus 24 hour 0.05 mg/kg infusion of pexelizumab in patients undergoing coronary artery bypass grafting with cardiopulmonary bypass.

This study used a monoclonal antibody to preserve heart function and reduce death in people undergoing bypass operations. While there was no difference, the study opened the way for other specific antibody targeted research in the future.

ECLIPSE-SNP
Evaluation of Clevelox in the peri-operative treatment of hypertension assessing safety events (with sodium nitroprusside as active comparator)

Research does not stop at the operation room. This trial uses a titratable calcium channel blocker to control post-op blood pressure without the wide blood pressure swings or toxicity of other agents.

Patient Case # 1
Pulmonary emboli (PE) continue to be the cause of mortality in the United States. When a saddle pulmonary embolus caused severe hemodynamic collapse in a 45-year-old man, a team of cardiologists and pulmonologists diagnosed the patient. When normal treatments failed they called cardiothoracic surgeon, James Slater, MD, who performed a thrombo-embolectomy, restoring normal cardio-pulmonary function.

Morristown Memorial has multiple ongoing efforts to reduce the rate of deep vein thrombosis and subsequent PE. Our goal is to eventually eliminate the need for thrombo-embolectomy acuity, though there may always be a place for this type of surgery in patients with chronic PE and pulmonary hypertension.

Patient Case # 2
An 87-year-old woman with debilitating angina and underlying coronary artery disease was an unsuitable candidate for percutaneous stent procedure and required bypass surgery. Christopher Magovern, MD, used robotic technology to harvest the patient’s left internal mammary artery through three one-cm incisions. Off-pump CABG surgery was then performed via a three-cm incision in the patient’s chest without dividing the sternum. This less traumatic and less painful approach resulted in a speedier recovery and avoided pulmonary compromise that often affects the elderly.

Patient Case # 3
A 46-year-old woman with a leaking mitral valve was reluctant to have standard heart surgery despite symptoms of shortness of breath and heart palpitations; because she feared prominent scarring. John Brown, MD, chief of Cardiothoracic Surgery at Morristown Memorial, repaired her valve through a small, three-inch incision in the right mid axillary line. Not only was there less scarring, but the patient was discharged and back to a normal life weeks earlier than with a standard median sternotomy.

Patient Case # 4
After a severe motor vehicle accident, a 70-year-old woman was rushed to Morristown Memorial with several injuries, including a transection of her aorta. Steve Xydas, MD, performed an endovascular repair of her aorta with an aortic stent through a small incision in her groin, enabling the patient to be discharged quickly and receive therapy for her other injuries. The endovascular repair of the aorta allowed trauma and orthopedic surgeons to repair her other multiple injuries rather than wait for her to recover from major thoracic surgery.

Patient Case # 5
A 51-year-old musician/teacher presented to an affiliate hospital with a massive anterolateral ST elevation infarct. He had the onset of symptoms some 30 hours prior to his presentation. Despite his cardiogenic shock, he was air transported to Morristown Memorial and sent straight to the catheterization lab where the waiting team opened his artery in less than 60 minutes from his arrival. His shock persisted so his cardiologist placed a percutaneous IMPELLA LVAD to stabilize him. Ten days later when his organ function had improved, Dr. Slater and Dr. Xydas, placed a HEARTMATE II LVAD to allow the patient to fully recover at home and await a suitable donor for a heart transplant.
Our Cardiothoracic Surgical Team

John Brown, III, M.D.*  
Chief Section of Cardiothoracic Surgery

John Brown, MD, earned his undergraduate degree at Colgate University in Hamilton, New York, and his MD at Weill Cornell Medical College in New York City. After graduating, he completed his residency in general surgery and fellowship in cardiac surgery at New York Hospital. Dr. Brown’s expertise includes all aspects of adult cardiac surgery with particular emphasis on minimally invasive valve repair and replacement.

Christopher Magovern, MD*
Attending Cardiothoracic Surgeon

Christopher Magovern, MD, earned his undergraduate degree at the College of Holy Cross, Worcester, Massachusetts, and his MD at Baylor College of Medicine in Houston, Texas. After graduating, he completed his residency at New York Hospital. Dr. Magovern specializes in all aspects of adult cardiothoracic surgery, including minimally invasive robotic surgery and off-pump bypass.

James Slater, MD*
Attending Cardiothoracic Surgeon

After graduating from Franklin and Marshall College in Lancaster, Pennsylvania, James Slater, MD, earned his MD at Case Western Reserve University School of Medicine in Cleveland, Ohio. He completed his residence in general surgery and fellowship in cardiac surgery at Columbia-Presbyterian Medical Center in New York City. Dr. Slater’s professional expertise includes off-pump surgical revascularization and mechanical circulatory assistance.

Steve Xydas, MD**
Associate Cardiothoracic Surgeon

Steve Xydas, MD, is a native of Long Island, New York, and a graduate of Harvard College and John Hopkins School of Medicine. Dr. Xydas completed his general surgery and cardiothoracic training at New York Presbyterian Hospital. He completed additional training in endovascular approaches to cardiac and aortic disease and served as a clinical instructor at Presbyterian Hospital in Cardiothoracic Surgery focusing on cardiac transplantation and ventricular assist device support. He is proficient in all aspects of adult cardiac surgery and specializes in open, hybrid and valve sparing approaches on aortic surgery.

*Certified by the American Board of Surgery and American Board of Thoracic Surgery  
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For a referral to a cardiologist at Gagnon, call 1-800-247-9580 or visit atlantichealth.org