A Guide to the Lenox Hill Heart and Vascular Institute of New York

Setting the World Standard for Complex Cardiovascular Care
Located on Manhattan’s Upper East Side, Lenox Hill Hospital is a 652-bed hospital that serves as an important resource for the residents of its community—offering outstanding emergency and primary care services, and specialized programs in cardiovascular disease, maternal/child health, orthopedic surgery and sports medicine, to name a few. Here patients find the highly specialized skills and technology needed to tackle some of the country’s most challenging diseases and disorders in an environment that is small enough to promote personalized, attentive care.

The Hospital is home to the Lenox Hill Heart and Vascular Institute of New York—among the leading cardiovascular care programs in the nation. From diagnosis to treatment and recovery, the Institute provides a continuum of progressive care through its distinguished team of cardiologists, interventional cardiologists, electrophysiologists, cardiothoracic and vascular surgeons, and radiologists. These physicians are highly respected in their fields, have expertise and experience in caring for patients with simple and complex conditions, and constantly seek to broaden the understanding of heart and vascular disease and expand the boundaries of care through research and clinical trials.
The Lenox Hill Heart and Vascular Institute continues to contribute groundbreaking achievements in the treatment of cardiac and vascular disease. For example, the Institute’s interventional cardiologists have served as leaders in studies of various techniques to clear blockages in the coronary and peripheral arteries and prevent their recurrence (restenosis). These include the use of drug-eluting stents to prevent restenosis and, working closely with the pharmaceutical industry, developing and testing investigational approaches, drugs and devices. In working with an FDA-approved research study, they are examining techniques to prevent complications that may accompany stenting in the carotid arteries.

The Institute’s cardiothoracic surgeons continue in the vanguard of minimally invasive surgical techniques, including investigating the role of robotics in cardiac surgery. They were among the first to perform coronary artery bypass surgery off-pump (OPCAB) without the use of a heart-lung machine and have accumulated a wealth of experience in this area. Today, they use the OPCAB technique in close to 99 percent of their bypass cases. They were also among the earliest to incorporate minimally invasive techniques for valve replacement and repair.

Lenox Hill Heart and Vascular Institute of New York

The Lenox Hill Heart and Vascular Institute addresses cardiac and vascular disease on three fronts:

Patient Care. The Institute’s team of caring physicians and allied health professionals offers the most appropriate and effective treatment options available today for all types and stages of cardiovascular disease.

At the Forefront of Cardiac Care

Lenox Hill Hospital has established a tradition of pioneering work in the field of heart disease with such notable milestones as:

- Performing the first angiogram in the United States (1938)
- Establishing one of the first cardiac catheterization laboratories in New York City (1955)
- Performing the first coronary angioplasty in the nation (1978)
- Implanting the first coronary stent in New York City (1991)
- Performing the first rotational atherectomy in New York City—a procedure which uses a miniature, high-speed blade to open blocked arteries (1993)
- Introducing minimally invasive direct coronary artery bypass (MIDCAB) surgery to the United States (1994)
- Implanting the first drug-coated stent in the United States (2001)
Research. These same physicians are investigating and developing the techniques and devices that will influence the future of cardiovascular care. Many of them are often asked to lead and participate in national multi-center research trials.

Education. The Institute serves as a valuable resource for physician training and sponsors conferences that focus on and teach these new techniques to practicing physicians throughout the world.

A Comprehensive Spectrum of Care

The Lenox Hill Heart and Vascular Institute is a major referral center for cardiovascular care, treating thousands of patients with heart and vascular disease annually. Its services are designed to treat the entire cardiovascular system—the coronary arteries that lead to the heart, the carotid arteries leading to the brain, renal arteries that feed the kidneys, and the peripheral arteries that direct blood flow to the limbs and other organs.

The Institute treats thousands of patients each year, and has some of the highest volume in New York State in coronary and peripheral interventions, cardiovascular surgery and electrophysiology procedures. This level of volume and range of expertise translates into high quality care and successful patient outcomes.

The Institute’s comprehensive services benefit patients who:

- suffer from symptoms of coronary, valvular, carotid, and/or peripheral vascular disease;
- are at risk for a major cardiac event or stroke;
- have structural heart disease, including valve conditions;
- have cardiac conduction abnormalities;
- present with complex symptoms and/or multiple medical problems in addition to heart disease;
• have undergone prior or unsuccessful interventional or surgical procedures;
• are at high risk for complications during procedures due to age or medical history.

The Institute’s full range of diagnostic and therapeutic services ensures continuity of care from assessment through treatment. These include:

**Evaluation and Diagnosis**
A complete evaluation of the cardiovascular system is a key component of care. Diagnostic testing services can be performed at Lenox Hill Hospital or test reports can be brought from other facilities. Non-invasive laboratory studies include electrocardiograms, Holter monitoring, echocardiography, exercise and thallium stress testing, stress echocardiograms, MRA and cardiac MR. The Institute provides state-of-the-art angiography and vascular ultrasound procedures, which enable physicians to evaluate blood vessels for blockages and to determine the extent of disease.

**Emergency Care**
Patients requiring urgent attention for cardiac-related pain or symptoms can be seen in the Lilli and Allan Shedlin Chest Pain Center of the Hospital’s Emergency Services Department. Specially trained medical, nursing and allied healthcare professionals evaluate the symptoms and determine if a diagnostic cardiac angiogram, followed by angioplasty, is indicated. If an angioplasty is determined necessary the cardiac catheterization team is available 24 hours a day. The response time for emergency treatment of a major cardiac event at Lenox Hill Hospital is less than the required benchmark of 90 minutes from diagnosis to angioplasty.

**Stroke Program**
Recent advances in stroke therapy now make it possible to prevent some strokes and lessen the severity of others when treated. A rapid-response stroke team evaluates and treats patients exhibiting symptoms of stroke. Eligible patients receive a clot-dissolving medication within the first three hours of symptoms to increase blood flow to the brain. Immediate recognition of symptoms by patients, coupled with prompt treatment in the hospital, make these advances possible.
Treatment

The medical and surgical teams of the Lenox Hill Heart and Vascular Institute have vast expertise with virtually every clinical intervention and therapy available for the management of coronary, carotid, renal and peripheral vascular disease. Through the close interaction and collaboration of team members, the Institute provides patients with a seamless progression of care from medical therapies to interventional and surgical procedures as needed.

Interventional Cardiology

Interventional cardiology is a field in which specially trained cardiologists use non-surgical interventions to treat arterial disease. The Institute’s interventional cardiology service is a premier program offering the latest techniques to open or clear blockages in the arteries, such as balloon angioplasty with stents. This minimally invasive procedure is performed to open one or more clogged arteries with a tiny, expandable stainless steel “scaffolding” device that is used to prop open an artery after a blockage has been cleared. While angioplasty and stent procedures are traditionally performed by inserting a catheter through an artery in the groin, they may also be performed through a radial artery in the arm. This approach helps decrease bleeding, improve comfort, and enable the patient to be walking soon after the procedure.

The Institute’s interventional cardiologists also played a leading role in the development of methods to prevent blockages from recurring (restenosis) a common problem following angioplasty or placement of a stent. Their studies were instrumental in FDA approval of drug-eluting stents, which have significantly reduced the growth of scar tissue that can contribute to reblockage.

Interventional cardiology techniques are increasingly being applied to the treatment of structural heart diseases such as Patent Foramen Ovale (PFO), an abnormal opening between the right and left sides of the heart. This congenital heart defect is a common cause of stroke in patients under 60 years old. Interventional cardiologists are able to non-surgically seal the opening by placing a small umbrella-like device in the heart.
Endovascular Therapies

Procedures that were once only used on the heart are now commonly being used on other major vessels throughout the body. The Institute’s endovascular specialists are paving the way for exciting breakthroughs in endovascular therapies for treating blockages in the carotid, renal and peripheral arteries. These lifesaving treatments include the use of stents in the carotid arteries to prevent or treat stroke.

The technique of stenting is applied to the renal and peripheral arteries as it is to the coronary arteries — opening up blocked or narrowed vessels with an expandable, stainless steel device. This technique helps to preserve kidney function and eliminate severe limb pain depending on the artery involved. To enhance the safety of carotid artery stenting, the Institute’s interventional specialists, working within an FDA-approved study, are evaluating neuroprotection systems to reduce the risks associated with these procedures, including filter devices that are placed in the artery to catch any debris that may be loosened during a carotid artery procedure.

Endovascular therapies are also appropriate for approximately half of patients who require treatment of an abdominal aortic aneurysm. In this minimally invasive procedure, a combination of a stent and fabric is used to repair the aneurysm.

Cardiothoracic Surgery

When surgery is the recommended treatment for coronary artery disease, patients benefit from the innovative and pioneering expertise of the Institute’s cardiothoracic surgeons in coronary artery bypass surgery. They are advancing the use of “beating heart” surgery or Off-Pump Coronary Artery Bypass (OPCAB), which lessens some of the possible risks associated with using the heart-lung bypass machine. This important advance is especially significant for patients with severe and multiple coronary blockages, as well as for older patients with complex medical problems, who need open heart surgery.

The Institute’s cardiothoracic surgical team introduced and refined the technique of Minimally Invasive Direct Coronary Artery Bypass (MIDCAB) Surgery in this country. The technique requires only a two-inch incision and can be performed on a beating heart, eliminating the need to use a heart-lung bypass machine during surgery.
Patients are able to leave the hospital sooner and experience a much quicker recovery. The MIDCAB alternative is particularly beneficial for patients who previously had conventional bypass surgery and have new blockages, or whose medical condition prevents them from having a more involved procedure. The Institute is also a leading center for endoscopic vein harvesting and radial artery harvesting, which require only a small incision to remove a vein from the patient’s leg or forearm for grafting to a blocked coronary artery during bypass surgery.

Surgeons in the Institute’s Minimally Invasive Robotic Cardiac Surgery Program have experience with robotics—both in the U.S. and in Europe—dating back to 1998. Robotic instruments are introduced in the thorax through incisions the size of a pencil and are telemanipulated by the surgeon from a console. With the assistance of these tiny instruments, complex surgical techniques are performed without the need for a large incision while enhancing surgical precision and ensuring faster recovery.

Patients with disorders of the aortic or mitral valve are also finding treatment options at the Institute. Here, cardiothoracic surgeons are employing techniques to repair the mitral valve rather than replace it with a mechanical valve. This extends the life of the valve and avoids the need for lifelong use of blood thinners. For aortic valve problems, the Institute’s surgeons are skilled in replacing damaged valves with an aortic homograft or human valve rather than with a mechanical or biological valve.

When an aneurysm (abnormal dilatation or pouching) occurs in the aorta of the chest, it can be repaired surgically with a replacement graft and repair or replacement of the neighboring heart valve. Lenox Hill Heart and Vascular Institute surgeons have considerable experience with this complex surgery.
Vascular Surgery
The Institute’s vascular surgeons have significant experience in the treatment of aortic aneurysms and other disorders of the circulatory system. Treatment of abdominal aortic aneurysms includes traditional surgical repair involving replacement with a hand-sewn artificial graft, as well as endovascular repair utilizing stents.

The vascular surgeons also perform carotid endartarectomy surgery to remove a blockage from the carotid artery. This is an established procedure which has been shown to have a significant benefit in reducing stroke with excellent long-term benefits.

Electrophysiology Services
Electrophysiology is the study of abnormal heart rhythms, also known as arrhythmias. Lenox Hill Heart and Vascular Institute’s electrophysiology services aid in the diagnosis and treatment of these abnormal rhythms.

The Hospital’s state-of-the-art electrophysiology lab includes sophisticated technology to diagnose and map the abnormal electrical pathways in the heart that create arrhythmias. Once the cause of an arrhythmia is identified, there is a wide array of procedures to treat and, in some cases eliminate, the abnormal rhythms. These include the implantation of pacemakers and cardioverter-defibrillator devices. Some arrhythmias can be cured with ablation techniques that use an ultrasound current to selectively destroy tiny areas of heart muscle responsible for a rhythm disturbance. New advances now enable some resynchronization devices to help the heart to pump blood more effectively in patients with congestive heart failure.

Lenox Hill Heart and Vascular Institute’s electrophysiology team is comprised of highly-experienced physicians and nurses. Together they have created a stellar program to deliver comprehensive care with compassion for patients and their families.

A Commitment to Service

Coordinating Care
The Lenox Hill Heart and Vascular Institute of New York is committed to excellence in service. Its staff coordinates patient referrals, schedules appointments and necessary testing, maintains
verbal and written communications with referring physicians, and serves as a resource to patients during follow-up care.

**The Finest Facilities**

Patients are cared for in modern facilities that are equipped with the latest technology and situated for easy accessibility throughout the diagnostic and treatment process. There are three operating rooms dedicated to open heart surgery as well as a new cardiac surgery intensive care unit and step-down unit where personalized care is delivered in a technologically advanced environment. The 11th floor of the main hospital building is dedicated to the interventional cardiology and endovascular program, and houses six state-of-the-art cardiac catheterization labs as well as all necessary support services. Comfortable family waiting lounges, overlooking the Manhattan skyline, include private consultation rooms where physicians can meet with family members.

**Patient Education**

Education plays a key role in patient care. Prior to any intervention or surgical procedure, specially trained cardiac nurses provide patients with specific information about preparing for the procedure, and what to expect before and after the procedure. They also present patients with instructions for recovery, and are readily available to answer questions of patients and family members.

**Community Education**

Lenox Hill Hospital offers community education programs on cardiovascular disease including free health screenings, lectures, and written materials.

**For More Information**

If you would like to learn more about the physicians, programs and services of the Lenox Hill Heart and Vascular Institute of New York, schedule an appointment or consultation, or find out about community education programs, please call 1-877-HEART BEAT. You may also visit our Web site at www.lenoxheart.org.