New State-of-the-Art Cardiovascular Center Opens

The new Carl J. and Ruth Shapiro Cardiovascular Center at Brigham and Women’s Hospital co-locates our multidisciplinary team of heart and vascular specialists with state-of-the-art diagnostic and treatment technologies.

New Center Builds on History of Advances in Cardiovascular Imaging

The Non-invasive Cardiovascular Imaging Program – part of the new Carl J. and Ruth Shapiro Cardiovascular Center – is comprised of an integrated team of radiologists and cardiologists who provide the latest in diagnostic technologies for the evaluation of patients with cardiovascular disease.

Minimally Invasive Gynecologic Surgery Program Expands Advanced Treatment and Personalized Care

Expert gynecologists who specialize in treating a wide range of gynecologic conditions using advanced, minimally invasive approaches are now offering services at our Faulkner Hospital program.

Thoracic Oncology Specialists Pioneer in the Study and Understanding of Mesothelioma

Thoracic cancer specialists in the International Mesothelioma Program recently completed a two-year genomic study that identified unique genetic mutations in the tumors of patients with mesothelioma.

Continuing Medical Education

Learn about upcoming continuing medical education course offerings from Brigham and Women’s Hospital, through the Harvard Medical School Department of Continuing Education.
State-of-the-Art Cardiovascular Center Opens

The New Carl J. and Ruth Shapiro Cardiovascular Center at Brigham and Women’s Hospital

The newly-opened Carl J. and Ruth Shapiro Cardiovascular Center at Brigham and Women’s Hospital co-locates a world-renowned, multidisciplinary team of cardiovascular specialists – including cardiologists, cardiac surgeons, cardiovascular imaging specialists, electrophysiologists, and many other specialists – and state-of-the-art diagnostic and treatment technologies to provide advanced, coordinated heart and vascular care. The only hospital building in the region completely dedicated to heart and vascular diseases, the Shapiro Cardiovascular Center includes:

• Watkins Cardiovascular Clinic – a comprehensive outpatient clinic with 30 exam rooms, integrated clinics, diagnostic capabilities, centralized scheduling and one-stop access to multidisciplinary cardiovascular practices;

• Patient- and Family-centered Philosophy – Designed using input from patients and their families, the Shapiro Cardiovascular Center features dedicated family and patient education and visiting areas. All 136 inpatient rooms in the Center are private and acuity-adaptable;

• Advanced, Non-invasive Cardiovascular Imaging – An integrated team of radiologists and cardiologists uses the newest technologies, including 320-slice CT, hybrid 64-slice PET/CT, 3 Tesla MRI, and advanced echocardiography;

• State-of-the-Art Electrophysiology Suites – Expert electrophysiologists provide state-of-the-art treatment modalities, including complex ablation, implantable cardioverter-defibrillator (ICD) placement, cardiac resynchronization, laser extraction of transvenous pacemaker and ICD leads, antiarrhythmic drug therapy, and investigational devices and ablation technologies, in the Center’s four electrophysiology suites;

• Next-generation Operating Rooms – 16 new operating suites accommodate next-generation minimally invasive technology, including robotic surgery, image-guided technology, and other advanced technologies. Two operating rooms have been designed as first-of-their-kind hybrid operating rooms, enabling cardiac surgeons, vascular surgeons, and cardiologists to more easily perform hybrid therapies, including endovascular treatment of thoracic aortic aneurysms, percutaneous ablation of cardiac arrhythmias, combinations of percutaneous coronary interventions and minimally invasive valve repair, robotic approaches to cardiac repair, and robotic placement of biventricular pacing leads.

Information and Referrals

For more information, or to refer a patient, please contact our Referral Coordinators at (617) 732-9894 or email bwhtele.services@partners.org. To refer a patient to the Watkins Cardiovascular Clinic, please call the Clinic’s centralized scheduling line at (857) 307-4000.
The Non-invasive Cardiovascular Imaging Program at Brigham and Women’s Hospital unites the many components of cardiovascular imaging with the goals of improved patient care, advanced research, and physicians who have been cross-trained in multiple modalities.

Located at the new Carl J. and Ruth Shapiro Cardiovascular Center at Brigham and Women’s Hospital, the Non-invasive Cardiovascular Imaging Program is comprised of an integrated team of radiologists and cardiologists who provide the latest in diagnostic technologies for the evaluation of patients with cardiovascular disease – all in one setting. In addition, the Program offers a single source for consultation and imaging reports for referring physicians.

Imaging specialists in the Program provide broader guidance to the suite of options, the optimal starting point to answer a given set of questions, and advisable additional tests to provide further information. With the ability to choose any test needed, physicians in the Program also are able to design strategies to answer critical clinical questions, and to integrate data from different imaging modalities and translate it into more appropriate clinical recommendations.

An advanced post-processing, visualization, quantification, and image-management system will allow interpreters to access all current and previous studies, from any imaging modality, to assist them in making the most informed patient care decisions.

**Pioneering New Imaging Technologies**

Director of Cardiac CT and Vascular CT/MRI Frank J. Rybicki, MD, PhD, works with the newest technologies for imaging the heart. In addition to offering all major FDA-approved cardiac CT technologies, the Shapiro Center was the first in the United States to use the first 320-slice CT scanner to perform a heart scan.

In the first paper validating its utility, the images have “consistently excellent quality,” Dr. Rybicki and his colleagues reported recently in the *International Journal of Cardiovascular Imaging*. This technology also allows significant reductions in the x-ray dose to patients and

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Indications for Referral
The Non-invasive Cardiovascular Imaging Program offers advanced diagnostic procedures including:

Cardiac CT:
- Exclusion of coronary artery disease and anomalies (coronary CT angiography);
- Chest pain imaging (performed jointly with Emergency Radiology).

Vascular imaging by MR and CT for:
- Evaluation of arterial pathology, including stenosis and aneurysm of the aorta and all its major branches;
- Venous imaging, including deep venous thrombosis, and anatomic mapping for interventions.

Cardiac MR imaging for evaluation of:
- Adult congenital heart disease;
- Adult acquired heart disease.

opens up new research opportunities that are difficult or impossible with traditional 64-slice scanners—in particular the study of myocardial perfusion and the noninvasive assessment of endothelial shear stress.

Cardiologist Raymond Kwong, MD, MPH, Director, Cardiac Magnetic Resonance Imaging, is evaluating different cardiovascular diseases with a 3 Tesla MRI scanner. The scanner’s increased signal can translate to a faster scan or more imaging detail. In addition, the quantitative data and detailed images derived from the 3 Tesla MRI scanner may improve evaluation of heart muscle damage for better treatments after heart attacks, myocardium blood flow in people with diabetes, and carotid plaque accumulation—all areas of current research.

Advancing Cardiovascular Imaging Research
The Program’s primary mission, in addition to featuring the most advanced technology, is to conduct clinical research that will validate the place of each technology in the evaluation of patients with cardiovascular disease.

Marcelo F. Di Carli, MD, Director, Non-invasive Cardiovascular Imaging Program, is the national principal investigator for the large prospective, multicenter trial known as SPARC (Study of Myocardial Perfusion and Coronary Anatomy Imaging Roles in CAD). The trial is in the follow-up phase of evaluating the relative effectiveness of coronary CT, nuclear stress testing, PET, and advanced PET/CT imaging in the evaluation of patients with suspected coronary disease. Researchers in the study expect that it will provide important information about the benefits of each modality to help physicians make informed clinical decisions.

Comprehensive Imaging Technologies
The Shapiro Cardiovascular Center features the newest technologies for cardiovascular imaging, including:

- Advanced 320-slice CT;
- Hybrid 64-slice PET/CT;
- 3 Tesla MRI with high performance gradients for dedicated cardiovascular imaging;
- Advanced echocardiography, including contrast and 3-D echo;
- Access to a cyclotron on the Brigham and Women’s Hospital campus for production of advanced radiopharmaceuticals for PET and SPECT imaging.

Information and Referrals
For more information regarding the Non-invasive Cardiovascular Imaging Program at Brigham and Women’s Hospital, or to refer a patient, please contact our Referral Coordinators at (617) 732-9894 or email bwhteleservices@partners.org.

Marcelo F. Di Carli, MD
Chief, Division of Nuclear Medicine; Director, Non-invasive Cardiovascular Imaging Program

Frank J. Rybicki, MD, PhD
Director, Cardiac CT and Vascular CT/MRI; Attending Physician, Non-invasive Cardiovascular Imaging Program

Raymond Kwong, MD, MPH
Director, Cardiac Magnetic Resonance Imaging
Minimally Invasive Gynecologic Surgery Program Expands Advanced Treatment and Personalized Care

Specialists in the Brigham and Women's Hospital Minimally Invasive Gynecologic Surgery Program are offering interdisciplinary care and advanced laparoscopic and hysteroscopic techniques at Faulkner Hospital.

The Brigham and Women's Hospital Minimally Invasive Gynecologic Surgery Program is expanding its services at Faulkner Hospital – the community teaching hospital of Brigham and Women's Hospital.

The Program brings together expert gynecologists who specialize in treating a wide range of gynecologic conditions using advanced, minimally invasive approaches, including many techniques that are designed to preserve uterine function. Patients with multiple gynecologic issues may be seen and treated by several specialists in the Program simultaneously.

**Advanced Techniques**
Specialists in the Program collaborate to offer a wide range of treatment options, including:

**Uterine Fiboids**
- *Laparoscopic uterine occlusion* – This technique interrupts the blood supply to the fibroid by using clips on the surrounding blood vessels, while preserving uterine function.

**Urinary Incontinence**
- *Single incision sling* – Among few in New England to offer this treatment for stress incontinence, specialists in the Program are performing this procedure on an outpatient basis in less than 20 minutes under local anesthesia. The procedure is suitable for older patients and those with medical conditions that contraindicate invasive surgery and general anesthesia.

**Pelvic Prolapse**
- *Mesh or graft augmentation* – New techniques in mesh or graft augmentation for patients with prolapse offer success rates between 80 and 90 percent – compared to 60 to 70 percent success rates for traditional colporrhaphy techniques. Patients with advanced prolapse may benefit from this technique to avoid hysterectomy and preserve a healthy uterus;
- *Laparoscopic uterine suspension* – This uterine-preserving procedure offers a minimally invasive alternative to hysterectomy for patients with symptomatic uterine prolapse.

**Sterilization**
- *Outpatient sterilization* – Among the first in New England to offer Essure®, a permanent, hysteroscopic sterilization technique, gynecologists in the Program perform this procedure in the office. The procedure involves the placement of an expandable micro-insert in each fallopian tube. Scar tissue develops in the micro-insert, forming a barrier that prevents fertilization of the egg. No general anesthesia is required and the procedure is typically complete in less than 15 minutes.

Additional techniques include laparoscopic hysterectomy, laparoscopic myomectomy, laparoscopic excision of endometriosis and ovarian cysts, hysteroscopic excision of fibroids, hysteroscopic lysis of adhesions, and hysteroscopic endometrial ablation.

**Indications for Referral**
Patients with the following conditions may be referred to the Minimally Invasive Gynecologic Surgery Program for evaluation and treatment:

- Uterine fibroids;
- Endometriosis;
- Ovarian cysts;
- Urinary incontinence;
- Pelvic prolapse;
- Overactive bladder syndrome;
- Abnormal bleeding or menorrhagia.

**Information and Referrals**
For more information or to refer a patient, please contact our Referral Coordinators at (617) 732-9894 or email bwhteleservices@partners.org.
Thoracic Oncology Specialists Pioneer in the Study and Understanding of Mesothelioma

For the first time, cancer specialists have reported a comprehensive, unbiased analysis of all genes expressed in a cancerous tumor.

David J. Sugarbaker, MD, Chief of Thoracic Surgery and Director of the International Mesothelioma Program at Brigham and Women’s Hospital, led a two-year genomic study of mesothelioma tumors in collaboration with Raphael Bueno, MD, Associate Chief of the Division of Thoracic Surgery at Brigham and Women’s Hospital, pathologist Lucian R. Chirieac, MD, and Steven R. Gullans, PhD, a scientist with RxGen.

Identifying Unique Mutational Profiles

Published in the March 4, 2008 edition of the *Proceedings of the National Academy of Sciences of the United States of America*, the study concluded that each of the tumor samples taken from four patients with malignant pleural mesothelioma (MPM) had unique genetic mutations.

Transcriptome sequencing using software developed by Dr. Sugarbaker and Dr. Bueno, in conjunction with the National Center for Genomic Resources in Santa Fe, New Mexico, uncovered a specific set of three to four genetic mutations in the coding regions of genes in each of the mesothelioma tumors. From this data, researchers developed a mutational profile for each patient with MPM.

Current genetic studies of tumors typically focus only on genes already known to be involved in cancer. This approach is limited, as it does not account for the individual mutations specific to each tumor and does not allow for the discovery of previously uncharacterized human cancer mutations. The study demonstrated that each cancer had multiple types of mutations in genes not previously implicated in cancer or mesothelioma.

Impact on the Future of Patient Care

The study’s outcome is expected to have a profound impact on the future of individualized patient care, as cancer specialists will be able to better tailor and develop treatment combinations based on overly-expressed mutated genes that are evident in the unique mutational profile of the patient's tumor. The insights gleaned from transcriptome analysis also may result in the identification of potential targets for new biologic agents used to treat mesothelioma and other cancers.

About the International Mesothelioma Program

Founded by Dr. Sugarbaker, the International Mesothelioma Program is one of the largest programs of its kind in the world. It focuses on developing treatment strategies to significantly extend the lives of patients with mesothelioma.

In addition to advancing the understanding of malignant pleural mesothelioma through transcriptome sequencing, Dr. Sugarbaker has conducted multi-modality clinical trials combining advanced surgical resection by extrapleural pneumonectomy or pleurectomy with intrathoracic/intraperitoneal heated chemotherapy.

Specialists in the International Mesothelioma Program also are an integral part of a multidisciplinary team of specialists who deliver innovative treatment options for patients with thoracic malignancies at the Thoracic Oncology Program at Dana-Farber/Brigham and Women’s Cancer Center, including thoracic surgeons, pulmonologists, medical oncologists, medical and radiation oncologists, nurses, radiologists, and pathologists.
New Electrophysiologists Expand Cardiac Arrhythmia Team

Two expert electrophysiologists, Roy M. John, MD, PhD, and Gregory F. Michaud, MD, formerly in leadership positions at Lahey Clinic, have joined the Cardiac Arrhythmia Service at Brigham and Women's Hospital.

Dr. John has been named Associate Director of the Electrophysiology Laboratory and Director of the Experimental Arrhythmia Research Laboratory. A nationally recognized expert in arrhythmia management, Dr. John’s technical skills span all aspects of arrhythmia management – from simple device implants to the most complex ablations. In addition, he has a strong experience in investigating the underlying causes of arrhythmias and developing the next generation of treatment options.

Dr. Michaud is a nationally recognized expert in the diagnosis and treatment of arrhythmias with a particular interest and expertise in atrial fibrillation. He serves as the Director of the Center for Advanced Management of Atrial Fibrillation. This new Center provides a regional, national and international resource for the treatment of atrial fibrillation. In addition to the active clinical center providing cutting-edge, compassionate, patient-centered care, the Center will include epidemiological research, genomics, and the development and testing of new technologies. It also will incorporate an educational center dedicated to physician and patient education.

Information and Referrals
For more information or to refer a patient, please contact our Referral Coordinators at (617) 732-9894 or bwhteleservices@partners.org.

Continuing Medical Education

Brigham and Women’s Hospital is pleased to offer the following courses, occurring in September 2008, through the Harvard Medical School Department of Continuing Education. Please call (617) 584-8600 or visit www.med.harvard.edu/conted for more information.

September

SEPTEMBER 12-13
4th Annual Harvard Medical School Brachytherapy Review
Location: Hilton Boston Back Bay, 40 Dalton Street, Boston, MA
Director: Phillip M. Devlin, MD
Offered by: Brigham and Women's Hospital, Department of Radiation Oncology

SEPTEMBER 21-26
28th Annual Office Practice of Primary Care Medicine
Location: The Fairmont Copley Plaza Hotel, 138 St. James Avenue, Boston, MA
Director: Robert J. Mayer, MD
Offered by: Brigham and Women's Hospital, Department of Medicine; Massachusetts General Hospital, Department of Medicine; Dana-Farber Cancer Institute, Department of Medicine

SEPTEMBER 12-15
Advances in Rheumatology
Location: Four Seasons Hotel, Boston, 200 Boylston Street, Boston, MA
Directors: Dwight R. Robinson, MD; Allen C. Steere, MD; Michael E. Weinblatt, MD
Offered by: Brigham and Women's Hospital, Department of Medicine; Massachusetts General Hospital, Department of Medicine; Brigham and Women's Hospital, Division of Rheumatology; Massachusetts General Hospital, Division of Rheumatology

HARVARD MEDICAL SCHOOL
DEPARTMENT OF CONTINUING EDUCATION
PHYSICIAN NEWS

The newly-opened Carl J. and Ruth Shapiro Cardiovascular Center co-locates our multidisciplinary team of heart and vascular specialists with state-of-the-art diagnostic and treatment technologies.

Access to Brigham and Women’s Hospital

Physician Referral Service
1-800-MD-TO-BWH (1-800-638-6294)
Experienced referral coordinators assist with outpatient appointments, access to our physicians, and information regarding our specialists and services.

Physician Liaison
Physician Liaison Ellen Steward provides direct assistance with patient referrals and consultations with our specialists. Ellen can be reached at (617) 732-9598, esteward@partners.org, or pager (617) 732-5700, ID #36031.

MD Connect
(Inpatient Transfers and Transportation Services)
1-877-637-3337

Care Coordination
(Facilitation of Care Plan and Discharge Planning)
(617) 732-6469

Cardiovascular Access Manager
Cardiovascular Access Manager Justin Precourt, RN, BSN assists with inpatient transfers and consultations with our team of cardiovascular experts. Justin can be reached at (617) 543-4170.

Watkins Cardiovascular Clinic
(857) 307-4000