BAYLOR HEART AND VASCULAR SERVICES AT DALLAS

Nationally recognized heart care. Right in the heart of Dallas.
Contents

Board of Managers......................................................... 4
Hospital Leadership .................................................. 4
Medical Leadership .................................................... 5
BHCS Circle of Care.................................................. 6
Accreditations, Awards and Accolades....................... 8
Admissions and Registrations................................. 10

INNOVATION
Research Initiatives.................................................. 12
Center for Valve Disorders.................................. 13
Minimally Invasive Valve Surgery......................... 14
Center for Complex Arrhythmias......................... 15
Interventional Cardiology.................................. 16
Heart Failure Program ........................................ 18
Vascular Surgery.................................................. 20
Cardiovascular Surgical Procedures .................. 22
Cardiac Rehabilitation ........................................ 24
Non-Invasive Imaging and Radiology.................. 26
Clinical Trials and Studies................................ 27
Physician Publications........................................ 32
Graduate Medical Education............................ 35

QUALITY
Centers for Medicare and Medicaid Services .... 38
Performance Report ............................................. 39
Readmissions ....................................................... 40
Interdisciplinary Quality and Safety Committee . 41
Patient Falls ......................................................... 42
Hospital-Acquired Conditions ......................... 43

SERVICE
Patient Satisfaction................................................. 44
Community Outreach ......................................... 46

PEOPLE
Employee Retention .............................................. 48
Employee Awards and Accolades ....................... 49
Shared Governance ............................................. 49
Nurse Certification ................................................ 50
Welcome

Over the course of the past year, the health care environment has become increasingly complex and in many ways, more challenging. However, it was in the face of these challenges that our team showed their true character. Guided by our founding principles of compassion, honesty, transparency, and patient-centered care, our board of managers, leadership team and staff came together as one to achieve some of the biggest milestones in the history of Baylor Jack and Jane Hamilton Heart and Vascular Hospital.

In March, we received the 2014 Texas Award for Performance Excellence (TAPE), the state’s highest honor for quality and organizational performance. Awarded by the Quality Texas Foundation, TAPE is an annual recognition of Texas organizations that have achieved performance excellence and applied outstanding quality principles in their day-to-day operations. It is presented to organizations that serve as role models for quality, customer satisfaction and performance excellence. The TAPE award is patterned after the Malcolm Baldrige National Quality Award criteria – the nation’s highest honor for quality and an award that I believe will be within our reach in the coming years.

While significant, the TAPE honor is far from being the only prestigious award we received over the past year. We also received the 2014 Mission: Lifeline® Gold Achievement award from the American Heart Association for our efforts to provide prompt, evidence-based care for heart attack patients. In addition, Becker’s Hospital Review named Baylor Hamilton Heart and Vascular Hospital among the “Great 150 Places to Work in Healthcare”. Modern Healthcare also named Baylor Hamilton Heart and Vascular Hospital as “Best Places to Work” in 2014.

These are just a few of the many recognitions we received from outside organizations during the past fiscal year. But the most important recognition we receive comes from our patients who are at the center of everything we do. That is why we are so proud that, for the fifth year in a row, our inpatient satisfaction scores ranked among the 95th percentile in the Press Ganey national patient satisfaction database. Beyond numbers and scores, the words of praise and thanks we receive daily speak to the quality, value and difference we are making in the lives of our patients, their families and our community.

It takes everyone on our team in his or her own unique specialty working towards a common goal to achieve these outstanding outcomes, which is the reason we all come to work each and every day. Moving forward in our rapidly changing industry, we hope to continue to serve as a model of efficiency and quality, and be a national leader in health care reform for all others to follow.

Sincerely,

Nancy Vish, PhD, RN, NEA-BC, FACHE
President and Chief Nursing Officer
Baylor Hamilton Heart and Vascular Hospital
Board of Managers

Baylor Hamilton Heart and Vascular Hospital

Michael Graham, JD, Chairman
Timothy Owens
John McWhorter, III, DSc, MHA

C.T. Beckham
J. Kent Newsom, JD
Don Wills, JD

John Schumacher, MD
Kevin Wheelan, MD
James Shelton, MD

Richard Lockwood
Robert C. Kowal, MD, PhD

Cindy Decoursin
Bertram Smith, MD, FACS

HOSPITAL LEADERSHIP

Baylor Hamilton Heart and Vascular Hospital

Brenda Bassett, MBA, MLS (ASCP), CPHQ, CIC, Manager of Infection Prevention and Control
Tim Bilbrey, Cardiac Rehabilitation Manager
Sabrina Bortey-Johnson, Financial Analyst
Kishore Chukkala, BBA, RRT-NPS, CPFT, Respiratory Care Manager
Renee Cooper, Nutrition Services Manager
Mike Davis, ThM, Chaplain
Sandra DeJong, BSN, RN, BC, Electrophysiology/Non-Invasive Manager
Jacie Edelstein, RN, SCU Supervisor
Rodney Fuller, MBA, LP, HEM, Environmental Safety and Community Outreach Team Leader
Amanda Gonzalez, Administration Office Manager
Angelina Hernandez, Access Services Supervisor
Mia Hupert, Care Coordination
Mini Iype, MSN/MHA, RN-BC, SCU Supervisor – Nights
Brenda Keeton, Service Excellence Manager
Kim Krause, PHR, gHRBP, Human Resources Business Partner
Jennifer Lenge, RN, SCU Supervisor and Magnet Coordinator
Laura Linker, BSN, RN-CNOR, Director of Surgical Services
Tracy Ordrop, MSN, RN, NE-BC, Director of Scheduling
Julio Perez, Access Services Director and Hospital Compliance Officer
Leda Perez, Environmental Services Director
Diana Pitts, Accounting Manager
Susan Riley, Director of Supply Chain Management
Mark Sanders, MSN, RN, NEA-BC, Director of Nursing – SCU/ICU/Recovery Room
Art Signo, MS, RN-BC, Director of Education
Andres Sisneros, RT(R), ARRT, Director of Cardiology – Cath Lab and Imaging
Mindy Smart, BSN, RN-BC, Cath Lab and Imaging Supervisor
Jacob Thomas, RN, BSN, Manager of Clinical Informatics
Terri Thompson, Health Information Management Director
Rema Thyagarajan, Director of Pharmacy
Henry Viejo, BSN, RN-BC, SCU Supervisor – Weekends
Chris Wahlenmaier, Marketing Manager
Mike Walsh, MSN, RN-BC, Director of Cardiology, Electrophysiology and Non-Invasive
Deborah White, MHA, BSCLS, Director of Laboratory
Trey Wicke, Vice President of Finance
Jeff Wilcox, RN-BC, CPAN, Recovery Room Supervisor
Robert Williams, MBA, RN, NEA-BC, SCU/ICU/Recovery Room Manager
Annabelle Zakarian, MSN, RN, CVRN, Director Health Care Improvement
Medical Leadership

Baylor Hamilton Heart and Vascular Hospital

Kenneth Ausloos, MD
Medical Director,
Lung Transplant and the Pulmonary Hypertension Clinic

William Dockery, MD
Medical Director of Radiology

Kenneth Ausloos, MD
Medical Director,
Lung Transplant and the Pulmonary Hypertension Clinic

Jeffrey Schussler, MD, FACC, FSCAI, FSCCT
Medical Director of Critical Care and Cardiac Rehab

Bertram Smith, MD, FACS
Medical Director of Non-Invasive Vascular

Kevin Wheelan, MD
Chief-of-Staff, Co-Medical Director of Cardiology

Cara East, MD
Medical Director of Soltero Research Center

Gonzalo V. Gonzalez-Stawinski, MD
Chief of Cardiovascular Surgery and Chief of Heart Transplantation and Mechanical Circulatory Support for BUMC and Surgical Director of the STI Heart Transplant Program

Paul Grayburn, MD, FACC
Medical Director of Non-Invasive Cardiology

Shelley Hall, MD
Chief of Transplant Cardiology, Mechanical Circulatory Support and Heart Failure

Baron Hamman, MD
Medical Director of Cardiac Surgery (Through July 1, 2014); Medical Advisor Quality Standardization for Baylor Health Care System (July 1, 2014 – Present)

Robert Hebeler, MD
Surgical Chair, Clinical Cardiovascular Research Center

Albert C. Henry, MD
Medical Director of Cardiovascular Surgical Quality

Stephen Hohmann, MD, FACS
Medical Director of Patient Safety

Edward Mays, MD
Medical Director of Laboratory

Gregory Pearl, MD, FACS
Medical Director of Vascular Surgery

Michael Ramsay, MD, FRCA
Medical Director of Anesthesia Services

Jeffrey Schussler, MD, FACC, FSCAI, FSCCT
Medical Director of Critical Care and Cardiac Rehab

Bertram Smith, MD, FACS
Medical Director of Non-Invasive Vascular

Robert Stoler, MD, FACC, FSCAI
Co-Medical Director of Cardiology, Medical Director of Catheterization Lab

Gonzalo V. Gonzalez-Stawinski, MD
Chief of Cardiovascular Surgery and Chief of Heart Transplantation and Mechanical Circulatory Support for BUMC and Surgical Director of the STI Heart Transplant Program

Paul Grayburn, MD, FACC
Medical Director of Non-Invasive Cardiology

Shelley Hall, MD
Chief of Transplant Cardiology, Mechanical Circulatory Support and Heart Failure

Baron Hamman, MD
Medical Director of Cardiac Surgery (Through July 1, 2014); Medical Advisor Quality Standardization for Baylor Health Care System (July 1, 2014 – Present)

Robert Hebeler, MD
Surgical Chair, Clinical Cardiovascular Research Center

Albert C. Henry, MD
Medical Director of Cardiovascular Surgical Quality

Stephen Hohmann, MD, FACS
Medical Director of Patient Safety

Edward Mays, MD
Medical Director of Laboratory

Gregory Pearl, MD, FACS
Medical Director of Vascular Surgery

Michael Ramsay, MD, FRCA
Medical Director of Anesthesia Services

Jeffrey Schussler, MD, FACC, FSCAI, FSCCT
Medical Director of Critical Care and Cardiac Rehab

Bertram Smith, MD, FACS
Medical Director of Non-Invasive Vascular

Robert Stoler, MD, FACC, FSCAI
Co-Medical Director of Cardiology, Medical Director of Catheterization Lab

Kevin Wheelan, MD
Chief-of-Staff, Co-Medical Director of Cardiology
Our “Circle of Care” encompasses our mission, vision, and priorities, and places our patients front and center. Our mission supports this patient-centered approach. We recognize that there are four key areas of excellence that must be in place to ensure that patients are our number one priority: people, quality, service and fiscal stewardship.

What does this mean? It means that Baylor Health Care System supports and cares for patients as individuals. We promote a healing environment in which the members of the health care team work together as one, for the benefit of the patient.

To do that, Baylor adopts best practices and industry standards that support and sustain a patient-centered culture. When these are put into place, we not only enhance patient safety and quality of care, we also increase our level of performance as a health care system.

During the strategic planning process, Baylor Heart and Vascular Services at Dallas leadership uses the Circle of Care as a framework to identify the principal factors that determine success relative to competitors and sustainability for its key stakeholders.
Our Vision
To be the national leader in providing safe, compassionate, patient-centered, quality cardiovascular care.

Our Mission
To operate an integrated heart and vascular health care delivery system, founded as a Christian Ministry of healing, that exists to serve people by offering a continuum of quality service committed to quality care and patient safety, medical education, research and community service.

Our Values
Baylor Hamilton Heart and Vascular Hospital values guide our actions as we remain faithful to our mission and work toward our vision.

Integrity: Conducting ourselves in an ethical and respectful manner.

Servanthood: Serving with an attitude of unselfish concern.

Quality: Meeting the needs and striving to exceed the expectations of those we serve through continuous improvement.

Innovation: Consistently exploring, studying and researching new concepts and opportunities.

Stewardship: Managing resources entrusted to us in a responsible manner.

Our founding principles define the qualities we look for in our team members. We believe that if we work to exceed people’s expectations, the results will be satisfaction, care excellence, and a trusting relationship.

Our goals are: clinical excellence (Quality), patient and family satisfaction (Service), health care team satisfaction (People), and fiscal responsibility (Finance). We review our model of care at our hospital team meetings and the metrics associated with the goals we have set.
ACCREDITATIONS

**ACE Accreditation for PCI**
Baylor Hamilton Heart and Vascular Hospital has been fully accredited for percutaneous coronary intervention by Accreditation for Cardiovascular Excellence, an organization dedicated to ensuring adherence to the highest quality standards for cardiovascular and endovascular care. ACE accreditation is a professional review of an organization's structure, internal processes, patient safety practices, and clinical outcomes to determine if it meets the standards established by experts in cardiac and endovascular care.

**American College of Radiology – Accreditation for Computed Tomography (CT)**
The American College of Radiology awarded Baylor Hamilton Heart and Vascular Hospital accreditation for the achievement of high practice standards after a peer-review evaluation of the practice.

**Intersocietal Commission for the Accreditation of Vascular Laboratories (ICAVL)**
The purpose of ICAVL is to provide a mechanism for accreditation of facilities which perform comprehensive testing for vascular disease with non-invasive testing modalities. ICAVL assesses every aspect of a lab's daily operation and its impact on the quality of health care provided to patients.

**Heart Failure Accreditation**
Baylor Hamilton Heart and Vascular Hospital and Baylor University Medical Center at Dallas have received Heart Failure Accreditation from the Society of Cardiovascular Patient Care, an international not-for-profit organization that focuses on transforming cardiovascular care by assisting facilities in their effort to create communities of excellence that bring together quality, cost and patient satisfaction.

**Intersocietal Commission for the Accreditation of Echo Laboratories (ICAEL)**
The ICAEL accreditation review process is a means by which echocardiography laboratories can evaluate and demonstrate the level of patient care they provide. After a laboratory submits the application to ICAEL, the application undergoes a confidential peer-review by ICAEL's trained reviewers, including both physicians and sonographers.

**AWARDS AND ACCOLADES**

**Modern Healthcare’s Best Places to work in 2014**
Baylor Hamilton Heart and Vascular Hospital has been named to the Modern Healthcare list of the Best Places to Work in Healthcare for the third year in a row. The list recognizes outstanding employers in the healthcare industry on a national level.
Becker’s Healthcare has awarded Baylor Hamilton Heart and Vascular Hospital as one of the top 150 places to work in healthcare. To develop the list, the Becker’s Healthcare team conducted research, considered nominations and evaluated organizations based on their benefits, workplace culture, professional development opportunities and previous recognition for workplace excellence. The resulting list is a compilation of healthcare organizations that go above and beyond for their employees and are great places to work.

**Texas Award for Performance Excellence (TAPE)**

Baylor Hamilton Heart and Vascular Hospital has also been named a recipient of the 2014 Texas Award for Performance Excellence (TAPE), the state’s highest honor for quality and organizational performance. The award represents the highest level of quality and Baylor Hamilton Heart and Vascular Hospital is a role model organization demonstrating exceptional performance in all areas of organization management – leadership, strategic planning, customer focus, measurement, analysis and knowledge management, workforce focus, operations focus and results.

**American Heart Association – Mission: Lifeline® Gold**

AHA recognizes Baylor Hamilton Heart and Vascular Hospital for achieving 85 percent or higher composite adherence to all Mission: Lifeline STEMI Receiving Center Performance Achievement indicators for consecutive 12-month intervals and 75 percent or higher compliance on all Mission: Lifeline STEMI Receiving Center quality measures to improve the quality of care for STEMI patients.

**Texas Hospital Quality Improvement Awards Program – Silver Award**

The Texas Hospital Quality Improvement Awards Program has awarded Baylor Hamilton Heart and Vascular Hospital the Silver Award for demonstrating excellence in health care quality through improved performance on national quality measures. Out of all of the eligible hospitals statewide, 33 earned the Texas Hospital Quality Improvement Gold Award. The Silver Award went to 45 hospitals, and 57 hospitals earned the Bronze Award.

**Quality Respiratory Care Recognition**

Baylor Hamilton Heart and Vascular Hospital has earned Quality Respiratory Care Recognition (QRCR) under a national program aimed at helping patients and families make informed decisions about the quality of the respiratory care services available in hospitals. About 700 hospitals or approximately 15% of hospitals in the United States have applied for and received this award. The QRCR program was started by the American Association for Respiratory Care (AARC) in 2003 to help consumers identify those facilities using qualified respiratory therapists to provide respiratory care. Hospitals earning the QRCR designation achieve patient safety by agreeing to adhere to a strict set of criteria governing their respiratory care services.

**2014 Get With the Guidelines® – Heart Failure GOLD PLUS**

The American Heart Association and American Stroke Association recognize Baylor Hamilton Heart and Vascular Hospital for achieving 85% or higher adherence to all Get With The Guidelines® Heart Failure Performance Achievement indicators for consecutive 12 month intervals and 75% or higher compliance on at least 4 of the Get With The Guidelines Heart Failure Quality Measures to improve quality of patient care and outcomes.
Admissions and Registrations

HOSPITAL ADMISSIONS AND REGISTRATIONS

Outpatient: 24,433

Inpatient: 2,151

Total Admissions & Registrations: 26,584

INPATIENT AVERAGE LENGTH OF STAY

*Intensive Care Unit (ICU) opened January 2010
<table>
<thead>
<tr>
<th>NON-INVASIVE PROCEDURES</th>
<th>FY13</th>
<th>FY14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transthoracic Echocardiogram</td>
<td>8277</td>
<td>9906</td>
</tr>
<tr>
<td>Stress Echocardiogram</td>
<td>287</td>
<td>980</td>
</tr>
<tr>
<td>Metabolic Stress Test</td>
<td>24</td>
<td>43</td>
</tr>
<tr>
<td>Transesophageal Echocardiogram</td>
<td>1132</td>
<td>1273</td>
</tr>
<tr>
<td>Cerebrovascular Studies</td>
<td>284</td>
<td>278</td>
</tr>
<tr>
<td>Arterial Studies</td>
<td>888</td>
<td>888</td>
</tr>
<tr>
<td>Venous Studies</td>
<td>798</td>
<td>858</td>
</tr>
<tr>
<td>Visceral Studies</td>
<td>59</td>
<td>67</td>
</tr>
<tr>
<td>Dialysis Access Scan</td>
<td>51</td>
<td>75</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>11,800</strong></td>
<td><strong>14,368</strong></td>
</tr>
</tbody>
</table>
Research Initiatives

Each year, clinicians and physicians on the medical staff at Baylor Hamilton Heart and Vascular Hospital participate in clinical trials and research projects addressing a range of cardiovascular conditions. While the areas of focus of each project or trial may differ, the goal is always to advance care for patients.

“We want to be sure our patients have access to technologies that can help them, and that’s part of our commitment at Baylor Hamilton Heart and Vascular Hospital,” says Cara East, MD, medical director of the Soltero Cardiovascular Research Center.

Stemming Heart Disease

For more than a decade, researchers all over the world have been exploring the possibilities of autologous adult stem cells to treat many different disease processes and conditions. At Baylor Hamilton Heart and Vascular Hospital, physicians are taking autologous adult stem cells out from under the microscope and using them to treat ischemic heart disease.

An investigational procedure at Baylor Hamilton Heart and Vascular Hospital is using these stem cells—harvested from a patient’s own bone marrow—to repair damage to their heart. Once harvested, the stem cells are cultivated in the lab before being delivered through a catheter to damaged heart tissue.

“Every organ has stem cells, including the heart, which means every organ can repair itself,” explains Dr. East. “However, the reason some people go on to get heart failure is because somehow the repair process is incomplete or inadequate after they have had a heart attack or cardiac issue.”

Once delivered to the damaged heart tissue, the stem cells send out signals that help eliminate dead cardiac cells, which is the first step in repairing tissue. Once all the dead cells are gone, the stem cells spur surrounding tissue to create new cells, leading to new healthy tissue and blood vessels. In essence, introducing these autologous stem cells allows the patient’s heart to repair itself.

“The stem cells essentially run the process of cleaning out the old and bringing in the new. Once their job is complete—usually in three to six months—the stem cells themselves die off so that they don’t overgrow,” says Dr. East.

Approximately 20 patients have undergone the procedure at Baylor Hamilton Heart and Vascular Hospital thus far, and the results have been promising. There are signs that the scarred areas of the heart are smaller, and the function of the heart has increased modestly.

Besides the simplicity, good results and minimally invasive nature of the procedure, the recovery process also makes this investigational procedure an exciting possibility for the future. Patients are only asked to limit serious physical exertion for one week.

Eventually, the hope is that when medications and ICDs are no longer preventing heart problems for patients with ischemic cardiac myopathy, stem cells can be an option before trying more invasive procedures like heart transplant or left ventricular assist device implantation.
“The geographic region where our patients are coming from is expanding,” says Robert Stoler, MD, FACC, FSCAI, medical director of the Baylor Hamilton Heart and Vascular Hospital cardiac catheterization lab and co-director of the Division of Cardiology. “We’re seeing patients from all over the country, and as the word gets out about the program, it will continue to expand.”

The Center for Valve Disorders—having first opened its doors in November 2012—has rapidly grown on a regional, and national scale. While most patients come from Texas and Oklahoma, the Center for Valve Disorders has hosted patients from as far away as Kansas City and New York.

Since the Center for Valve Disorders opened, Baylor Hamilton Heart and Vascular Hospital’s transcatheter aortic valve replacement (TAVR) program has seen significant growth, as has the hospital’s mitral valve repair and replacement program. The Center has been busy building on what has made it so popular in the first place: providing comprehensive evaluation, diagnosis and treatment planning for patients with any type of structural heart disease or defect, often in a single visit.

“We’re now doing pulmonary function testing on site,” says Dr. Stoler. This is in addition to CT scanning, echocardiograms, 3D transesophageal echo (if appropriate) and consultations with multiple specialists on the Baylor Hamilton Heart and Vascular Hospital medical staff, including an imaging specialist, at least one interventional cardiologist and at least two cardiothoracic surgeons. A heart transplant surgeon also is available for consult if needed.

“Essentially, every test and opinion we think is necessary to give a patient a same-day decision about what is best for him or her is available right there at our fingertips,” explains Dr. Stoler.

Moving forward, the Center is serving as a template for the reorganization of cardiovascular services across Baylor Scott & White Health. The premise behind the reorganization is that the treatment a patient with a complex heart disorder receives shouldn’t depend on which physician’s office he or she happens to walk into first, but should be determined in a more uniform, team fashion. The patient and a team of different cardiac subspecialists should all come together to determine the best option for each individual patient, which is precisely what the Center for Valve Disorders is doing.
One of the most exciting advances in the field of cardiovascular medicine over the past decade has been minimally invasive valve repair and replacement. Baylor Hamilton Heart and Vascular Hospital has been at the forefront of some of these advances, first as a major clinical trial site evaluating the efficacy of these technologies and techniques, and now—following FDA approval for certain patient populations—as a high volume procedure center.

**Aortic Valve Replacement**

Thanks to the introduction of transcatheter aortic valve replacement (TAVR), patients who are not candidates or who are high risk candidates for traditional open heart valve replacement surgery, have a treatment option. In fact, Baylor Hamilton Heart and Vascular Hospital offers two types of TAVR devices: CoreValve® and SAPIEN®. Depending on a patient’s valve size and other factors, surgeons on the Baylor Hamilton Heart and Vascular Hospital medical staff can select the most appropriate device.

“One is balloon expanding and the other is a self-expanding device,” explains Paul Grayburn, MD, FACC, medical director of Non-Invasive Cardiology at Baylor Hamilton Heart and Vascular Hospital. “They both result in dramatic improvement in aortic stenosis, and they both have valve areas and pressure gradients that are better than surgical valves.”

At Baylor Hamilton Heart and Vascular Hospital, more than 150 patients have received new aortic valves over the past several years, making it one of the busiest TAVR programs in the nation. It’s a program that is set to continue to grow.

Now trials at Baylor Hamilton Heart and Vascular Hospital are investigating the use of TAVR in intermediate risk surgical candidates. FDA approval is expected to come in the near future, and with good reason according to Dr. Grayburn, “Patients seem to have great results, and they feel better as soon as they wake up from anesthesia.”

**Mitral Valve Repair**

Mitral regurgitation is one of the most common types of heart valve diseases, and over time, can lead to serious complications, including congestive heart failure, an enlarged heart and atrial fibrillation. It is caused by an improper seal in the mitral valve of the heart, which allows blood to leak from the left ventricle into the left atrium.

Traditionally, repairing or replacing the mitral valve has involved open heart surgery. Due to the risk associated with any major surgery, elderly patients and those with other health challenges often are not candidates.

But a new implant called MitraClip® is currently in trial at Baylor Hamilton Heart and Vascular Hospital to give this special patient population an option for mitral valve repair. Baylor Hamilton Heart and Vascular Hospital is one of the only sites in North Texas involved in this advanced trial exploring the benefits of this promising, minimally invasive technology. MitraClip is delivered via a catheter threaded through the femoral artery to the mitral valve.

While MitraClip may not completely eliminate mitral regurgitation, it usually significantly reduces leakage, greatly improving a patient’s quality of life.
Cardiac arrhythmias affect millions of Americans. It’s a number that will continue to grow as the population ages. Since the establishment of the Center for Complex Arrhythmias (CCA), Baylor Hamilton Heart and Vascular Hospital has been at the forefront of many advances in the treatment of heart rhythm disorders, particularly atrial fibrillation (Afib) and ventricular tachycardia.

For instance, the CCA was a major clinical trial site for cryoballoon ablation, which uses extreme cold to alter heart tissue responsible for certain arrhythmias, namely atrial fibrillation. Over the last year, the CCA has built on the success of the now FDA-approved technology.

“We successfully implemented the second generation of the cryoballoon product, which has shown a higher degree of first-procedure success than the first generation balloon,” says Kevin Wheelan, MD, Chief of Staff and Co-Medical Director of Cardiology at Baylor Hamilton Heart and Vascular Hospital. “It’s advances like this that—over the long term—improve the care of patients with Afib.”

Another procedure designed to improve care for patients with Afib is left atrial appendage occlusion. The CCA completed trials of a new technology that prevents blood clots from forming in the left atrial appendage, breaking off and traveling to the brain triggering a stroke. It is estimated that 90 percent of strokes in patients with Afib are caused by blood clots, which initially form in this region of the heart.

This innovative technology offers an alternative to patients who are unable to take oral blood thinning medications. It is currently awaiting FDA approval.

In addition, the CCA is now offering a new injectable, long-term cardiovascular monitoring technology called Reveal LINQ™ that was recently approved by the FDA. The monitor can be implanted on an outpatient basis. “It has dramatically simplified the surgical approach to an injectable monitoring technology, and it lasts up to three years to assist in the diagnosis and management of different cardiovascular conditions,” explains Dr. Wheelan.
**Interventional Cardiology**

**Chronic Total Occlusions**

While blockages in certain coronary arteries can lead to a sudden heart attack—an imminent life-threatening condition—there are other coronary arteries in which blockages are more of a threat to long-term quality of life. **Chronic total occlusion (CTO)** is the complete blockage of a coronary artery for 30 or more days due to a heavy build-up of atherosclerotic plaque within the artery.

**A Different Approach**

“Stenting a CTO is a lot more challenging than stenting a partially blocked artery,” says Dr. Choi. “That’s why many interventional cardiologists won’t even attempt it.”

Baylor Hamilton Heart and Vascular Hospital also offers two innovative tools that can work in tandem to help cardiologists on the medical staff break through tough CTO blockages. One tool delivers a guide wire through the site of the blockage using a fast-spinning torque action, allowing the stent to be deployed. If the guide wire passes through the blockage in CTO, while not necessarily a life-threatening condition, can lead to ongoing symptoms such as chest pain, indigestion or a choking feeling, nausea, chronic fatigue, dizziness, light-headedness, and a number of other ailments that can diminish a patient’s wellbeing.

Typically, the options to treat CTO are medication therapy, bypass surgery or traditional stenting. However, Baylor Hamilton Heart and Vascular Hospital is one of only two facilities in Texas to offer additional options to patients who don’t want to—or can’t—undergo bypass surgery, or in whom traditional stenting techniques are not viable due to the thickness of the blockage.

Baylor Hamilton Heart and Vascular Hospital is one of only two hospitals in Dallas to offer the retrograde approach to stenting a CTO. In this approach, the wire catheter is threaded against the normal flow of blood in the artery to the site of the blockage, as opposed to with the flow of blood as is standard practice.

“Often the proximal cap of a blockage can’t be penetrated with wires,” explains Dr. Choi. “The distal cap, which can only be reached through a retrograde approach, is usually softer and is able to be penetrated more easily.”

“These arteries are 100 percent blocked, and the affected areas of the heart muscle are surviving off of collateral blood flow,” explains James Choi, MD, an interventional cardiologist on the Baylor Hamilton Heart and Vascular Hospital medical staff. “The analogy I use when talking to patients is that the grass is yellow, and we need to put in a sprinkler, so that hopefully the heart muscle will get stronger in that area.”

The experienced Cath Lab team at Baylor Hamilton Heart and Vascular Hospital has seen just about everything. “If you’re a patient or you’re a doctor and have a patient who has been told that nothing more can be done for CTO in terms of bypass or stenting, this is an option,” says Dr. Choi. “Just because someone else says it can’t be done, doesn’t mean it can’t be done.”
**Left Main Disease**

For decades, patients with a blockage in their left main coronary artery, which is responsible for delivering blood to the left side of the heart, had only one real treatment option: coronary artery bypass surgery. At many hospitals, invasive bypass surgery remains the go-to solution in all, or nearly all, cases.

However, at Baylor Hamilton Heart and Vascular Hospital, cardiovascular surgeons on the medical staff are increasingly treating patients who have left main disease with **minimally invasive percutaneous coronary interventions (PCI)**. PCI techniques utilize stents and balloons to reopen the blocked left main artery, and typically lead to a faster hospital discharge and return to daily activities.

“There is a lot of data out there showing that patients with only a left main blockage or a left main and only one of the other three main coronary arteries blocked, do at least as well with stenting as they do with open heart bypass surgery,” explains Robert Stoler, MD, FACC, FSCAI, medical director of the Baylor Hamilton Heart and Vascular Hospital cardiac catheterization lab and co-director of the Division of Cardiology.

Baylor Hamilton Heart and Vascular Hospital was involved in one of the first clinical trials using PCI techniques to treat left main disease rather than open heart bypass surgery. The hospital is currently enrolling patients in a similar trial exploring the difference in outcomes between PCI and bypass surgery in people with varying degrees of left main disease.

Baylor Hamilton Heart and Vascular Hospital has done well over 100 left main cases using PCI interventions as opposed to bypass. Eighty five of those cases have been submitted for publication.

“To my knowledge, we are the only program in town that is regularly offering left main PCI to patients as an option,” according to Dr. Stoler. “Bypass has been the gold standard, but we’re one of the programs that is helping show that PCI is a viable alternative. I’d say without a doubt we are the busiest left main PCI program in the Metroplex.”

For patients with left main disease who are not candidates for PCI, Baylor Hamilton Heart and Vascular Hospital remains a high volume procedure center for bypass surgery that continues to produce quality results. Low complication rates and high patient satisfaction scores have made the hospital the preferred destination for thousands of patients in need of bypass.
Heart Failure Program

Baylor Hamilton Heart and Vascular Hospital collaborates with the Baylor University Medical Center at Dallas Heart Failure Program to care for some of the most seriously ill cardiovascular patients in the region. These patients often face end stage heart disease and have few options. However, they are in capable hands with the Dallas campus Heart Failure Program. The two lynchpins of the program are heart transplantation and mechanical support.

Heart Transplantation

When the Dallas campus decided to expand its heart transplantation program near the end of 2012 by adding a new team of heart transplant surgeons to the medical staff, it was already one of the busiest in Texas. Now it’s not only the busiest in the state, but also the second busiest program in the nation by volume.

The highly skilled transplant team performed more than 80 transplants during fiscal year 2014. Even more impressive, the median wait time for a new heart through the Dallas campus transplant program is only seven days.

“For status 1A patients, which are the most critical cases, the wait time is even shorter,” explains Shelley Hall, MD, Chief of Transplant Cardiology, Mechanical Circulatory Support and Heart Failure. “Our quickest has been four hours.”

The short wait time is attributable to the proactive approach the transplant team takes in finding and accepting donor hearts. Because of the skill, strategy and advanced capabilities of the transplant team, more donor hearts are often available to the Dallas campus transplant program than many other programs nationally.

Number of heart transplants in FY2014: 80*

Average wait time: 7 days

However, high volumes and quick turnarounds are no substitute for quality. “We are constantly analyzing our outcomes, and we are consistently above the national average when it comes to outcomes. And our goal is to never drop below that,” says Dr. Hall.

The heart transplant team’s forward-thinking approach has been instrumental in delivering quality outcomes, as well as a great post-transplant experience. There is a multi-specialty transplant team that rounds on patients in the hours and days after transplant. The goal is to get patients out of the ICU as quickly as possible and then home. The average length of stay is only around a week.

Patients are followed very closely once back home to monitor potential complications and signs of rejection.

“We are novel, though, in that we try to minimize the amount of biopsies we do,” explains Dr. Hall. “The old school of transplant is biopsies every one to two weeks for months. We use advanced genomic testing to monitor the immune system after the first weeks following a transplant.”

*FY2014 data is July 1, 2013 – June 30, 2014
With short wait times, outcomes that exceed the national average, fewer days in the hospital and less invasive follow-up care, the Dallas campus heart transplant program is rapidly earning a national reputation.

“The message we want to get out there is that we have virtually no waiting list for transplant, which can greatly improve quality of life,” says Dr. Hall. “Often, the biggest barrier is waiting too late to be referred.”

**Mechanical Support**

The Dallas campus left ventricular assist device (LVAD) program was the first in the nation to receive The Joint Commission Gold Seal of Approval®. That was several years ago. Since then, the program has grown in size and capability. The program offers extracorporeal membrane oxygenation or ECMO, which can be used to stabilize a patient. Unlike LVADs, which support only the left ventricle, ECMO can support both heart ventricles, as well as pulmonary function.

“We’ve rapidly grown into one of the busiest ECMO programs in the United States. And our outcomes are either at or above what is reported in literature, so we’re doing extremely well,” explains Gonzalo Gonzalez-Stawinski, MD, Chief of Cardiovascular Surgery and Chief of Heart Transplantation and Mechanical Circulatory Support for BUMC and Surgical Director of the STI Heart Transplant Program.

Since ECMO is often needed on an emergency basis, the Dallas campus has established a rapid response team where patients with failing cardiovascular function in ICUs across the hospital, throughout North Texas and even in surrounding states can be transported to Dallas campus ECMO care unit.

“We have about 20 certified ECMO specialist nurses who care for ECMO patients on the Dallas campus,” says Dr. Gonzalez-Stawinski. “There’s almost no limit to our transportation capability, and we’ve been able to transport patients from as far away as Arkansas.”

In addition to ECMO, the Dallas campus is a high volume procedure site for other mechanical support devices, including LVADs such as *HeartMate II®* and *Impella®*. The HeartMate II can be used either as a bridge to transplant or a destination therapy, while the Impella is a miniaturized LVAD that can be used to maintain cardiac function during high risk procedures or as a short-term bridge to transplant.

**A Bright Future**

The success of the heart failure program is attracting patients from around the region, as well as important new trials and research studies. In fact, the Heart Failure Program has recruited a director of clinical research to oversee transplant and mechanical support research and clinical trials.

The Dallas campus Heart Failure Program is already participating in several high profile national and international trials for new devices and therapies, and is being considered as a location for several additional ones.

“We want to continue to grow the program in terms of volume, and hopefully gain national and international acclaim not only because of our volumes, but also because of what our research produces,” says Dr. Gonzalez-Stawinski.
The vascular surgery program at Baylor Hamilton Heart and Vascular Hospital is built on three components:

1. **Offering advanced procedures for a wide range of vascular conditions**
2. **Conducting clinical trials and research to better manage vascular disease**
3. **Training the nation’s next generation of vascular surgeons**

### Complex Procedures

Baylor Hamilton Heart and Vascular Hospital offers both invasive and non-invasive vascular procedures for a wide range of conditions. What distinguishes the Baylor Hamilton Heart and Vascular Hospital vascular surgery program from many other hospitals in Texas and around the nation are the procedures that are not widely available.

“We do complex aortic reconstructions for thoracic and abdominal aortic procedures,” explains Gregory Pearl, MD, Medical Director of Vascular Surgery. “We have many patients referred in from Oklahoma, Louisiana, Arkansas and West Texas.”

The level of experience and sub-specialization also are distinguishing facets of the Baylor Hamilton Heart and Vascular Hospital vascular surgery program. There are vascular surgeons on the medical staff who treat abdominal aortic problems, as well as vascular surgeons on the medical staff who specialize in thoracic aortic conditions. This level of expertise allows Baylor Hamilton Heart and Vascular Hospital to offer specialized treatments for patients who aren’t candidates for traditional endovascular abdominal aortic aneurysm surgery, as well as a variety of techniques to treat chronic aortic dissections.

“We also do advanced treatment of iliac artery aneurysms and internal iliac artery preservation through procedures that just aren’t offered at most places,” adds Dr. Pearl. “In fact, we probably have one of the most experienced programs for internal iliac artery preservation in the country.”

Other examples of procedures not widely available include advanced endovascular lower extremity reconstruction, limb salvage and a host of treatments for peripheral vascular disease.
The Next Generation of Treatment

“Our volumes and results allow us to be part of major trials that are investigating new technologies for the treatment of vascular disease,” says Dr. Shutze. At any given time, Baylor Hamilton Heart and Vascular Hospital is hosting five to 10 clinical trials from medical companies investigating vascular devices. Recent notable vascular clinical trials that Baylor Hamilton Heart and Vascular Hospital has been selected to be a part of include a device for treating thoracic aortic dissections and a device used to treat branch iliac artery aneurysms.

Additionally, Baylor Hamilton Heart and Vascular Hospital is home to an array of in-house research projects exploring vascular disease management. In early 2014, for example, vascular surgeons on the medical staff presented results from a study using lasers to treat varicose veins at a regional vascular meeting attended by some of the top vascular surgeons in the world. With 1,300 participants, it was the largest single study about this treatment option ever reported.

The Next Generation of Surgeons

“Baylor Hamilton Heart and Vascular Hospital has the second oldest vascular fellowship training program in the country,” says Dr. Shutze. The two-year fellowship program welcomes two new fellows each year. In addition, general surgery residents at Baylor University Medical Center at Dallas do a rotation in vascular surgery at Baylor Hamilton Heart and Vascular Hospital. Baylor Hamilton Heart and Vascular Hospital’s vascular surgery academic component is set to expand in the coming months. The program already collaborates with medical students from the Texas A&M Health Science Center - College of Medicine, and will soon welcome residents with the Texas Tech University Health Sciences Center in Amarillo. In addition, Baylor Hamilton Heart and Vascular Hospital has begun collaborating with Baylor Scott & White Health - Central Division to expand both research and educational opportunities.

“We give our vascular fellows an experience which offers a wide spectrum of techniques and philosophies in vascular surgery,” says William Shutze, MD, Program Director of the Vascular Surgery Fellowship. “The clinical volumes, the things we do for patients, the research aspect and our commitment to training the next generation of surgeons in vascular medicine make our program a huge draw,” says Dr. Shutze.
Cardiovascular Surgical Procedures

The Cardiovascular Surgery Program on the Baylor Dallas campus is renowned for the comprehensive care it provides, as well as its focus on highly specialized procedures for complex cases. From minimally invasive interventions to invasive cardiac procedures, the Baylor Dallas Cardiovascular Surgery Program is committed to offering patients a wide range of options and finding the solution that best fits their needs.

The most common cardiovascular surgery procedure in the United States is coronary artery bypass. “Our outcomes for open heart bypass surgery reflect the specialized care and focus on quality that have made us a leader in that procedure,” says Gonzalo Gonzalez-Stawinski, MD, Chief of Cardiovascular Surgery and Chief of Heart Transplantation and Mechanical Circulatory Support for BUMC and Surgical Director of the STI Heart Transplant Program.

Cardiovascular surgery at Baylor Dallas encompasses many different areas. This includes treating valve disease, congenital heart defects, coronary artery disease and more.

“Each surgeon on our medical staff is sub-specialized in a particular area of cardiovascular medicine, which helps improve quality of care,” explains Dr. Gonzalez-Stawinski.

One of the most rapidly growing fields at Baylor Dallas—and in cardiovascular medicine—is percutaneous valve therapy, which is a minimally invasive approach to repairing or replacing damaged heart valves. The Valve Clinic is one of the busiest programs of its kind, diagnosing and treating valve disorders in patients from throughout the region.

Similarly, the heart transplant and acute mechanical circulatory support programs for the treatment of heart failure are among the busiest in the nation. In fact, the heart transplant program is a top five program in the world in terms of patient volume, with outcomes that are constantly improving. Meanwhile, the acute mechanical circulatory support program is able to offer the full spectrum of FDA-approved ventricular assist devices to patients.

The cardiovascular surgeons on the Baylor Dallas medical staff also are involved in developing the next generation of treatment options as well, according to Dr. Gonzalez-Stawinski. “On the research front, we’re involved in percutaneous valve trials, stem cells trials, artificial heart technology and National Institutes of Health trials.”
### Cardiac Surgery Volume

<table>
<thead>
<tr>
<th>Procedure</th>
<th>FY14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cardiac Surgeries (Now includes TAVR done at Baylor Hamilton Heart and Vascular Hospital)</td>
<td>728</td>
</tr>
<tr>
<td>Valve Surgery (Does not include TAVR)</td>
<td>176</td>
</tr>
<tr>
<td>TAVR Surgery (TAVR only at Baylor Hamilton Heart and Vascular Hospital)</td>
<td>45</td>
</tr>
<tr>
<td>Coronary Artery Bypass Grafting (CABG – Isolated and Concomitant)</td>
<td>267</td>
</tr>
</tbody>
</table>

### Heart Port Surgery

- Total Heart Port Surgeries: 26
- Minimally Invasive Port Access AVR: 15

### Aortic Surgery Volumes

- Ascending and Arch Aneurysm: 34
- Thoracic and Descending Aneurysm: 3

### Isolated CABG Mortality: Primary vs Re-Operation

<table>
<thead>
<tr>
<th>Procedure</th>
<th>BUMC Risk Adjusted</th>
<th>STS Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Isolated ReOp</td>
<td>1.9%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Re-operation CABG ReOp</td>
<td>0.0%</td>
<td>3.6%</td>
</tr>
</tbody>
</table>

### Distribution of Surgeries

- CAB+Valve: 465
- Iso Valves: 845
- Iso CABG: 2248
- CAB other: 182

### Distribution of Mitral Valve Replacement (MVR) vs Mitral Valve Repair (MVRpr)

- MVRpr: 59.6% (2007–June 2013) vs 62.2% (FY13)
- MVR: 40.9% (2007–June 2013) vs 37.8% (FY13)
OBJECTIVE: To assist patients in developing a healthy lifestyle plan

Return to Work Lab

The main goal of cardiac rehabilitation is to assist patients in developing a healthy lifestyle plan. While that is an important objective, the Baylor Hamilton Heart and Vascular Hospital Return to Work Lab is focused on taking cardiac rehabilitation to the next level by returning patients who have had cardiovascular procedures to the same, or even greater, level of activity they enjoyed prior to their cardiac event.

“The Return to Work Lab is the only cardiac rehabilitation program of its kind that I’m aware of,” says Jenny Adams, PhD, senior research associate who oversees the Lab. “Most programs are very cookie cutter and take a very conservative approach. They aren’t necessarily designed to maximize each individual’s potential.”

With an order from their physician, patients at the Return to Work Lab participate in a customized, rigorous rehabilitation program. After describing their job or other activities they enjoy doing, the Return to Work Lab team sets up a training program that mimics the physical demands of the job or activity as closely as possible. For example, a landscaper can push a weighted mower or use a shovel to move rocks. Police officers can kick, strike and handcuff life-size training dummies. A firefighter can carry heavy hoses up flights of stairs.

The Return to Work Lab, which began in 2006, is the result of outside-the-box thinking and support and encouragement from Nancy Vish, RN, PhD, president of Baylor Hamilton Heart and Vascular Hospital, for a program that didn’t necessarily follow conventional wisdom or guidelines that in many cases, are decades old. Since then, the Lab has received rave reviews from patients. Over the past seven years, it has garnered a national profile and has even been featured in The Wall Street Journal.

“We’ve received a lot of calls from people from around the country, and even gotten a few visits from people from other cardiac rehab facilities,” says Adams. “They all want to know what we’re doing and how we’re doing it… It’s really very exciting!”
Cardiac Rehab

Our program draws on a multidisciplinary team that includes internal medicine physicians, registered nurses, exercise specialists and registered dietitians in a carefully designed program that is tailored to your specific needs.

Our program features monitored physical activity in which you gradually increase the efficiency of your heart and lungs, strengthening your body’s muscles while gaining the confidence you need to return to daily life.

<table>
<thead>
<tr>
<th></th>
<th>FY2013</th>
<th>FY2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I visits</td>
<td>1117</td>
<td>1916</td>
</tr>
<tr>
<td>Phase II visits</td>
<td>5475</td>
<td>7570</td>
</tr>
</tbody>
</table>

*Phase II is a supervised outpatient program of individually prescribed exercise with continuous or intermittent ECG monitoring.*
The first step in developing an effective treatment plan for any cardiovascular condition is getting a detailed picture of what exactly is going on in the area causing the issue. The CT and non-invasive imaging program at Baylor Hamilton Heart and Vascular Hospital has an array of advanced imaging capabilities that can play a critical role in diagnosing heart and vascular disease and determining the appropriate treatment approach.

“We see all kinds of disease processes on a daily basis,” says Mike Walsh, director of Non-invasive Imaging. “Our staff is very well versed in their discipline, and we’re constantly looking at new equipment and software to further expand our capabilities.”

The skill of the staff and technological capabilities of the Baylor Hamilton Heart and Vascular Hospital non-invasive imaging program has earned accreditation in echocardiography and vascular testing from the Intersocietal Accreditation Commission (IAC). The IAC grants accreditation only to facilities that provide quality patient care, in compliance with national standards through a comprehensive application process, including detailed case study review.

Besides echocardiography and vascular testing, Baylor Hamilton Heart and Vascular Hospital offers a robust computed tomography (CT) program that is accredited by the American College of Radiology. In fact, Baylor Hamilton Heart and Vascular Hospital was home to one of the first departments in North Texas with a dedicated cardiac CT and dedicated 64-slice CT scanner to capture vascular and cardiac images.

“Our CT scanner allows us to create a 3-D image of any vessel from head to toe, as well as the heart,” explains Andres Sisneros, director of Cardiology and Radiology at Baylor Hamilton Heart and Vascular Hospital. The technology also enables calcium scoring. Calcium scoring is an important screening tool for patients at risk for coronary artery disease. Qualified individuals can receive a CT calcium score without a physician order.

“The CT looks at calcium build-up around the coronary artery. Patients with high calcium scores can then be referred to a cardiologist for follow-up,” says Sisneros.
“Patients from across the nation are seeking out Baylor Hamilton Heart and Vascular Hospital for clinical trials and research studies,” says Peter McCullough, MD, Director of Cardiovascular Research for Baylor Scott & White Health north division. “The physicians on our medical staff are involved in some exciting and promising new developments in cardiovascular research.”

Recent research successes:

**Symplicity HTN-3**—Baylor Hamilton Heart and Vascular Hospital enrolled more patients than any other site in the US. Primary investigator: James Choi MD

**CoreValve transcatheter valve**—the Baylor team has now implanted 150 valves. Primary investigators: Robert Stoler MD, Rick Hebeler MD, Paul Grayburn MD

**Atrial fibrillation and arrhythmias:**

**Cabana**—NIH study comparing atrial fibrillation ablation vs medical therapy for atrial fibrillation. Primary investigator: Robert Kowal MD

**CTN Postop afib**—rate vs rhythm control. Primary investigator: Brian Lima MD

**Cryoablation**—association between balloon temperature and real-time pulmonary vein isolation. Primary investigator: Rob Kowal MD

**ICY-AVNRT**—Cryoablation for AVNRT. Primary investigator: Manish Assar MD

**Post-MI Remodeling Prevention Therapy Study**—Primary investigator: Jay Franklin MD

**Preval**—a study of a left atrial appendage occluder device in patients with atrial fibrillation versus warfarin therapy. Primary Investigator: Kevin Wheelan MD

**Reveal**—determining the incidence of afib in high risk patients via implantable cardiac monitoring. Primary investigator: Jay Franklin MD

**SureScan**—long term performance of the SureScan Pacing system in patients undergoing MRI. Primary investigator: Robert Kowal MD

**Vest**—the Vest Prevention of Early Sudden Death. Primary investigator: Jay Franklin MD

**Victory AF**—treatment of persistent AF with multi-electrode, phased RF ablation. Primary investigator: Robert Kowal MD

**Coronary artery disease:**

**Absorb 3 and 4**—Absorb BVS vs Everolimus stents in native CAD. Primary investigator: James Choi MD

**Cantos**—study of the anti-inflammatory biologic canakinumab in patients post MI and with a continued elevated hsCRP level. Primary investigator: Cara East MD

**Cobra**—stent system for early healing and thrombus inhibition, to avoid long-term dual anti-platelet therapy. Primary investigator: Robert Stoler MD
**Elixa**—study of lixisenatide, a once-a-day, GLP-1 receptor agonist in patients with diabetes and heart disease. Primary investigator: Cara East MD

**Evolve II**—Synergy everolimus-eluting stent system. Primary investigator: Robert Stoler MD

**Excel**—PCI vs CAGB for multivessel or left main CAD. Primary investigator: James Choi MD

**Ion**—post approval study of the Paclitaxel-eluting platinum stent system. Primary investigator: Robert Stoler MD

**Liberte DAPT**—a study of prasugrel (Effient®) plus ASA, comparing 12 months vs 30 months post PCI for a drug-releasing stent. Primary investigator: Robert Stoler MD

**Orbit III**—a study to measure how the DiamondBack Orbital Atherectomy system performs when used to treat blockage in coronary arteries. Primary investigator: Ravi Vallabhan MD

**Odyssey Outcomes**—study of alirocumab (new PCSK9 inhibitor) vs placebo in patients with recent ACS event. Primary investigator: Cara East MD

**Precision**—Long-term follow up of NSAID’s vs Cox-2 inhibitors in CAD. Primary investigator: Cara East MD

**US Pella**—registry to assess outcomes using a catheter-mounted, LVAD-like device for PCI. Primary investigator: Robert Stoler MD

**Unprotected Left Main**—Baylor Hamilton Heart and Vascular Hospital experience. Primary investigator: James Choi MD

**Congestive Heart failure:**

**Accurate**—study of billing diagnoses of CHF and support by chart documentation. Primary investigator: Sandra Carey PA

**Atmosphere**—comparison of Tekturna® vs ACE inhibitor vs combination. Primary investigator: Cara East MD

**Biomarkers in CHF**—a panel of 4 markers followed monthly to see if can guide therapy. Primary investigator: Peter McCullough MD

**HeartMate III**—implantation of HeartMate III LVAD, compared to HeartMate II LVAS, for refractory left heart failure. Primary investigator: Brian Lima MD

**HeartMate PHP**—study to evaluate the HeartMate PHP in subjects with cardiogenic shock. Primary investigator: Shelley Hall MD

**HOST-48**—a long-term follow up of patients who had received autologous stem cells via chest surgery. Primary investigator: Cara East MD

**INTERMACS**—national registry for mechanical circulatory support. Primary investigator: Shelley Hall MD

**ixCELL**—autologous stem cells, expanded over 2 weeks, delivered to the heart via a catheter-based system (NOGA) for CHF. Primary investigator: Cara East MD

**Relax**—serelaxin infusion (a mimic of endogenous relaxin) in acute, decompensated CHF. Primary investigator: Cara East MD

**Renew**—autologous stem cells delivered to the heart via a catheter-based system (NOGA) for angina. Primary investigator: Cara East MD

**Roadmap**—observational study of patients who received the HeartMate II LVAD. Primary investigator: Shelley Hall MD
Serca2a—gene therapy study, with genes implanted into the LV at the time of LVAD implantation. Primary investigator: Brian Lima MD

SSI—driveline silicone skin interface registry, to look at factors that may lead to driveline infections. Primary investigator: Shelley Hall MD

**Echo Core Lab:**

**Contracts to read echoes**—for 3 studies (Guided Delivery System, Valtech Inc, Tendyne). Primary investigator: Paul Grayburn MD

**Hypercholesterolemia:**

**Mipo-38**—study of 2 different dosing regimens of mipomersen for the treatment of familial hypercholesterolemia. Primary investigator: Cara East MD

**Odyssey LTS and OLE**—study of the PCSK9 inhibitor alirocumab for the treatment of familial hypercholesterolemia. Primary investigator: Cara East MD

**Preventive Cardiology Registry**—role of PCSK9 and other catabolic determinants in heterozygous familial hypercholesterolemia. Primary investigator: Peter McCullough MD

**Hypertension:**

**AME post RANA**—autonomic and metabolic evaluation post renal artery nerve ablation. Primary investigator: Erin Howden PhD, Cara East MD

Symplicity HTN-3—renal artery nerve ablation for patients with treatment-resistant hypertension. Baylor Hamilton Heart and Vascular Hospital enrolled more patients than any other site in the US. Primary investigator: James Choi MD

**Kidney Disease:**

**Acute kidney injury**—timing of coronary angiography and cardiac surgery. Peter McCullough MD

**Thrasos**—study of a small molecule which mimics an endogenous protein which reduces kidney inflammation, to prevent acute kidney injury. Primary investigator: Rick Hebeler MD

**Miscellaneous:**

**Carcinoid heart disease**—clues to the diagnosis. Primary investigator: CC Roberts, William C Roberts MD

**Cardiac sarcoidosis**—morphologic features in native heart post heart transplantation. Primary investigator: William C Roberts MD

**Congenital bicuspid aortic valve**—with an anomalous cord form the raphe to the aortic wall. Primary investigator: TJ Vowels, William C Roberts MD

**Diabetes reversal**—using ultrasound destruction of microbubbles for delivery of genes to the pancreas. Paul Grayburn MD

**Mitral valve prolapse**—Gross and histologic features of the posterior mitral valve leaflet post mitral valve repair. Primary investigator: William C Roberts MD

**Recipient heart in heart transplantation**—congruence between the clinical and morphologic diagnoses. Primary investigator: William C Roberts MD
Pacemakers and defibrillators:

- **Micra**—The first leadless pacemaker. Primary investigator: Rob Kowal MD
- **Post Surveillance Registry**—Long-term follow up and safety of Medtronic released products. Primary investigator: Andrew Masica MD
- **SonRtip**—Lead and AV-VV optimization algorithm. Primary investigator: Jay Franklin MD

Peripheral arterial disease:

- **Ax-Ax Grafts**—Axillary-axillary AV graft vs femoral AV graft. Primary investigator: Stephen Hohmann
- **Blunt Carotid**—use of a graded luminal narrowing model to improve carotid injuries. Primary investigator: William Shutze, MD
- **CLI (critical limb ischemia)**—autologous stem cell injections for impending amputation. Primary investigator: Greg Pearl MD
- **Crest**—utilization of carotid surgery and carotid endarterectomy in the Dallas Fort Worth area. Primary investigator: William Shutze, MD
- **Dissection Trial**—a study following deployment issues and long-term effects of a graft implanted for acute, complicated type B aortic dissections. Primary investigator: William T Brinkman MD
- **DVT’s**—deep vein thrombosis after laser thermoablation of the greater saphenous vein. Primary investigator: William Shutze, MD
- **Engage Registry**—5 year follow up of the Medtronic Endurant Stent Graft system for infrarenal abdominal aneurysms. Primary investigator: Bill Shutze MD
- **EVAR at BUMC**—experience with endovascular aortic repairs at BUMC. Primary investigator: William Shutze, MD
- **EVAR on Celiac**—EVAR on Celiac and SMA Velocities. Primary investigator: William Shutze, MD
- **Excluder**—evaluation of an extension stent for iliac aneurysms. Primary investigator: Bill Shutze MD
- **Great**—Registry for endovascular aortic stenting. Primary investigator: Dennis Gable, MD
- **HeRO®**—registry of the HeRO® graft for end stage renal disease patients. Primary investigator: Stephen Hohmann, MD
- **IVUS**—angiography vs angiography with IVUS for treatment of hemodialysis access failures. Primary investigator: William Shutze, MD
- **Laser Angio**—laser atherectomy to angioplasty with/without stenting for infrageniculate peripheral disease. Primary investigator: William Shutze, MD
- **On-Q pain pumps**—review of On-Q pain pumps in the vascular surgery patient. Primary investigator: William Shutze, MD
- **OPEN**—optiflow patency and maturation. Primary investigator: Stephen Hohmann, MD
- **Snorkel**—Iliac snorkel for internal iliac preservation. Primary investigator: William Shutze, MD
- **Thrive**—a study for long-term, follow-up (5 years) of endovascular repair of descending thoracic aortic aneurysms. Primary investigator: Dennis Gable MD
Tigris—treatment of superficial femoral and proximal popliteal arteries. Primary investigator: Dennis Gable, MD

TOS—anatomic anomalies in high performance athletes with thoracic outlet syndrome. Primary investigator: Gregory Pearl, MD

Zenith—registry for long-term follow up of thoracic aortic aneurysms. Primary investigator: Bill Shutze MD

Pulmonary hypertension:

PIPF13—a study to determine the efficacy of pirfenidine in interstitial lung disease (usual interstitial pneumonia). Primary investigator: Randy Rosenblatt MD

Macitentan Phase IV study—an outcomes study of this drug, approved last fall. Primary investigator: Jon Kuiper MD

Prospect—a registry for patients with primary pulmonary hypertension, who receive treatment with RTS epoprostenol. Primary investigator: Jon Kuiper MD

Symphony—a study of a questionnaire specific for pulmonary hypertension patients. Primary investigator: Jon Kuiper MD

Valve disease:

Aortic stenosis—improving the echo imaging of AS. Primary investigator: Paul Grayburn MD

ATS valves—study in younger patients and small body habitus. Primary investigator: Rick Hebeler MD

Coapt—mitralclip percutaneous therapy for functional mitral regurgitation. Primary investigator: Paul Grayburn MD

CoreValve transcatheter valve—the Baylor team has now implanted 150 valves for aortic stenosis in the Main and Continued Access studies. Primary investigators: Robert Stoler MD, Rick Hebeler MD, Paul Grayburn MD

CoreValve Expanded Use—the CoreValve now available for patients with comorbidities. Primary investigator: Robert Stoler MD

CT Pain—Marcaine vs placebo infused into chest tube post surgery, comparison of pain control. Primary investigator: Rick Hebeler MD

Embolic Protection Device—during aortic valve replacement. Primary investigator: Gonzolo Gonzalez-Stawinski MD

Evolut—Next generation CoreValve, for a wider patient population, including younger patients. Primary investigator: Robert Stoler MD

Levosimendan—left ventricular inotrope and calcium sensitizer for patients undergoing heart surgery with poor LV function. Primary investigator: Court Gunn MD

Proact/On-X valve—lower dose anticoagulation regimens for a carbon-based valve. Primary investigator: Baron Hamman MD

Realism—continued access for the clip device in patients with severe mitral regurgitation. Primary investigator: Paul Grayburn MD

Reprise3—the Lotus valve vs CoreValve for aortic stenosis. Primary investigator: Robert Stoler MD

Stitch—surgical treatment for ischemia heart disease. Primary investigator: Paul Grayburn MD

Surtavi—transcather aortic valve implantation vs aortic valve surgery. Primary investigator: Robert Stoler MD
Physician Publications


Graduate Medical Education

Baylor University Medical Center at Dallas has the largest cardiology fellowship program in the nation.

Baylor’s graduate medical education program promotes diversity, quality and a combination of real-world applications and academic excellence. The dedicated physician leaders on the medical staff work to prepare fellows and interns for the challenging and rewarding field of medicine.

Medical education has been a successful collaborative effort between Baylor University Medical Center at Dallas and Baylor Hamilton Heart and Vascular Hospital. All programs are accredited by the ACGME (Accreditation Council for Graduate Medical Education).

Clinical Cardiac Electrophysiology Fellowship

The Clinical Cardiac Electrophysiology Program (CCEP) at Baylor University Medical Center at Dallas is a two-year program (exceeding the one-year ACGME requirement) at a quaternary referral center for the Southwest US. Applicants may contact the program directly to obtain an application as well as the accompanying application requirements. Upon review, selected applicants will receive an invitation to come to Baylor for an interview. Applicants can apply yearly but only one Fellow is accepted every two years.

Baylor Hamilton Heart and Vascular Hospital has four busy EP labs and an OR room where over 1,200 cases per year are performed with advanced procedures ranging from cryoballoon ablation for atrial fibrillation, laser lead extraction of devices, ischemic VT ablations using CARTO and ESI mapping systems and the stereotaxis remote navigation system. The unique ability of our program is that EP Fellows have access to these facilities and cases and the four electrophysiologists for an incredibly immersing EP learning experience.

In the outpatient setting, the Fellow is exposed to clinical evaluation and indications for tests and procedures after history and physical exam skills are refined with attending supervision.

Key faculty of the electrophysiology program include:

- Manish Assar, MD (Program Director)
- Alan Donsky, MD
- Jay Franklin, MD
- Robert Kowal, MD
- Peter Wells, MD
- Kevin Wheelan, MD
Cardiovascular Disease Fellowship

The Cardiovascular Disease Fellowship Program at Baylor University Medical Center at Dallas is a fully accredited program through the Accreditation Council for Graduate Medical Education (ACGME) and participates in the National Residency Match Program (NRMP). Two positions are offered annually for a 3-year position in the fellowship program.

The facilities for training in Cardiovascular Diseases include cardiac care and surgical intensive care units, peripheral vascular and pulmonary function laboratories. Baylor Hamilton Heart and Vascular Hospital houses six cardiac catheterization laboratories, four electrophysiology laboratories and multiple operating rooms dedicated to cardiovascular care as well as laboratories for electrocardiography, holter monitoring, event monitoring, stress testing (exercise and pharmacologic), nuclear imaging, TEE, peripheral vascular imaging, ultrafast CT, pacemaker and ICD programming and doppler/echocardiography. Facilities and faculty for training in cardiovascular research are also present at Baylor Hamilton Heart and Vascular Hospital. A vibrant and busy emergency room at Baylor is active in the delivery of cardiovascular care in the acute setting. The Baylor Tom Landry Health and Wellness Center on the Baylor campus houses the cardiac rehabilitation clinic.

The educational program will provide training and experience in the evaluation and management of a wide variety of patients with acute and chronic cardiovascular conditions. Training will emphasize accurate ambulatory and bedside clinical diagnosis, appropriate use of diagnostic studies and integration of all data into a well-communicated consultation with sensitivity to the unique features of each individual patient. Active participation in research projects will provide the trainee with further experience in critical thinking and in evaluating the cardiology literature. Through didactic instruction and direct clinical experience, trainees will be able to acquire knowledge in cardiovascular anatomy, physiology, pharmacology and pathology as well as epidemiology and biostatistics, risk factors and their modification, lipid disorders, cardiac transplantation, magnetic resonance imaging, ultrafast and electron beam computed tomography.

Key faculty of the cardiovascular disease program include:

- Peter McCullough, MD (Program Director)
- Jeffrey Schussler, MD
- Paul Grayburn, MD
- James Choi, MD
- Manish Assar, MD
- Ravi Vallabhan, MD
- Michael Donsky, MD
- Shelley Hall, MD
- John Schumacher, MD
- William Roberts, MD

Vascular Surgery Fellowship

The Vascular Surgery Fellowship is fully accredited by the ACGME. The program annually offers two fellowship positions through the NRMP. The two-year fellowship is devoted exclusively to general vascular surgery.

In 1964, Baylor University Medical Center established the second vascular fellowship program in the United States under the direction of Jesse Thompson, MD. Approximately 105 vascular surgeons have received training in this program. 2014 marks the 50th Anniversary of this very important milestone, not only for Baylor but for the field of Vascular Surgery in the United States.

In 1964, Baylor University Medical Center established the second vascular fellowship program in the United States under the direction of Jesse Thompson, MD. Approximately 105 vascular surgeons have received training in this program. 2014 marks the 50th Anniversary of this very important milestone, not only for Baylor but for the field of Vascular Surgery in the United States.

Fellows will train in Baylor’s division of vascular surgery, which is within the department of general surgery. Ronald C. Jones, MD, is the Program Director of General Surgery. Gregory Pearl, MD, FACS, serves as Chief of the division. William P. Shutze, MD, FACS, serves as the Program Director of the Vascular Fellowship Program.
Vascular surgery cases are distributed among the vascular fellows and the senior general surgery residents rotating on the vascular teaching service. Each year, residents perform about 350 to 400 surgeries. The vascular surgery teaching service is composed of fifteen staff surgeons board certified in general vascular surgery, whose wide spectrum of techniques and philosophies give residents a strong foundation in surgery.

The caseload is varied and well balanced, including extracranial cerebrovascular reconstruction, aortic reconstructive procedures, renal and mesenteric reconstructive procedures, lower extremity revascularization, and endovascular procedures. In addition to reconstructive vascular procedures, the program provides generous exposure to hemodialysis access procedures, sympathectomy, thoracic outlet decompressive procedures and vena caval interruption. The primary emphasis of the teaching program is hands-on clinical training.

**Interventional Cardiology Fellowship**

The Baylor University Medical Center at Dallas Interventional Cardiology Program is a fully accredited program through ACGME and provides one fellow twelve months of clinical training in coronary interventional procedures, peripheral interventions, valvular heart interventions, and structural heart procedures, as well as a longitudinal ambulatory clinic. Applicants may apply through the Electronic Application Residency Service (ERAS) and if selected, receives an invitation from the program to interview at Baylor. One Fellow is accepted into the program annually.

The Baylor Hamilton Heart and Vascular Hospital Cardiac Catheterization Laboratory performs over 4,000 diagnostic cardiac procedures and greater than 1,500 coronary interventions annually. Baylor Hamilton Heart and Vascular Hospital employs all modalities of advanced percutaneous interventions including balloon angioplasty, coronary stenting, CTO interventions, intravascular ultrasound, rotational atherectomy, thrombectomy, distal protection devices, IVUS and pressure wire evaluation. In addition to carotid and peripheral interventions, Valvular heart interventions: TAVR, percutaneous mitral valve repair, mitral balloon valvuloplasty, and structural heart interventions: ASD, PFO, PDA and LAA closures are also performed.

**Key faculty of the interventional cardiology program include:**

- James W. Choi, MD (Program Director)
- Robert C. Stoler, MD
- Jeffrey M. Schussler, MD
- Ravi Vallabhan, MD

<table>
<thead>
<tr>
<th>FELLOWS (FY14)</th>
</tr>
</thead>
</table>
| **Cardiology Fellows:** | Syed Sarmast, MD  
Gautam Patankar, MD  
Aneley Hundae, MD  
Hyun Joon Shin, MD  
Timothy Ball, MD |
| **Interventional Fellows:** | Poorya Fazel, MD  
Adam Falcone, MD |
| **EP Fellow:** | Jonathan Brunson, MD |
| **Vascular Fellows:** | Marcus Barber, MD  
Joseph Liechty, MD  
Mark Lytle, MD  
Daniel Daneshfar, MD |
Baylor Hamilton Heart and Vascular Hospital has exceeded state and national benchmarks in every core measure.

**Centers for Medicare & Medicaid Services (CMS) – FY 2014**

The core measures that the hospital tracks include acute myocardial infarction (AMI), heart failure (HF), and surgical care infection prevention (SCIP). In each of these measures, the hospital has exceeded national averages. Concurrent data acquisition is in place with data elements reviewed daily. Variances are also managed daily with education and/or process design review and modification.

### HEART ATTACK (AMI)

<table>
<thead>
<tr>
<th>Quality Indicator</th>
<th>National</th>
<th>Texas</th>
<th>Baylor Hamilton Heart and Vascular Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMI bundle</td>
<td>100%</td>
<td>98%</td>
<td>100%</td>
</tr>
<tr>
<td>Aspirin on arrival</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Aspirin at discharge</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>ACE or ARB for LVSD</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Beta blocker at discharge</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

### HEART FAILURE

<table>
<thead>
<tr>
<th>Quality Indicator</th>
<th>National</th>
<th>Texas</th>
<th>Baylor Hamilton Heart and Vascular Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHF bundle</td>
<td>99%</td>
<td>98%</td>
<td>100%</td>
</tr>
<tr>
<td>All discharge instruction</td>
<td>100%</td>
<td>98%</td>
<td>100%</td>
</tr>
<tr>
<td>Evaluation of LVS function</td>
<td>100%</td>
<td>98.45%</td>
<td>100%</td>
</tr>
<tr>
<td>ACE or ARB for LVSD</td>
<td>100%</td>
<td>98.45%</td>
<td>100%</td>
</tr>
</tbody>
</table>

### SURGICAL INFECTION IMPROVEMENT PROJECT

<table>
<thead>
<tr>
<th>Quality Indicator</th>
<th>National</th>
<th>Texas</th>
<th>Baylor Hamilton Heart and Vascular Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCIP all or none</td>
<td>96.42%</td>
<td>98.45%</td>
<td>99.30%</td>
</tr>
<tr>
<td>Antibiotic received within 1 hour of incision</td>
<td>97%</td>
<td>98.45%</td>
<td>100%</td>
</tr>
<tr>
<td>Antibiotic selection</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Antibiotic discontinues within 24 hours</td>
<td>99.34%</td>
<td>99.54%</td>
<td>100%</td>
</tr>
<tr>
<td>Betablocker use pre-operatively</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Performance Report

Performance Report FY 2014

Baylor Hamilton Heart and Vascular Hospital monitors several other quality indicators in atrial fibrillation and percutaneous interventional cardiology. These diagnoses require several evidence-based measures to be in place to achieve quality of care. The hospital’s data is collected concurrently and reviewed daily. The hospital has exceeded national standards in these areas as well.

Baylor Hamilton Heart and Vascular Hospital also participates in preventive health measures through the American Heart Association. This program requires several indicators of preventive health to be monitored as part of secondary prevention of heart disease. The hospital has exceeded national averages in these areas. Metrics are incorporated into the pre-printed order sets that are utilized for patient care to hardwire these elements of care into our daily activities.

<table>
<thead>
<tr>
<th>ATRIAL FIBRILLATION</th>
<th>Coumadin at discharge 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Patient follow-up 100%</td>
</tr>
<tr>
<td></td>
<td>Teaching smoking cessation 100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PERCUTANEOUS CORONARY INTERVENTION</th>
<th>Lipid lowering medication at discharge 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plavix at discharge 100%</td>
</tr>
<tr>
<td></td>
<td>ASA at discharge 100%</td>
</tr>
<tr>
<td></td>
<td>Teaching smoking cessation at discharge 100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BETA BLOCKERS IN VASCULAR SURGERY</th>
<th>Prior to surgery 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Recovery Room 100%</td>
</tr>
<tr>
<td></td>
<td>Specialty care room 100%</td>
</tr>
<tr>
<td></td>
<td>At discharge 100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AHA GET WITH THE GUIDELINES</th>
<th>HgbA1c &gt; 7 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HbA1c&gt;7 Letter to PCP 100%</td>
</tr>
<tr>
<td></td>
<td>ADA diet orders for Diabetic patients 79%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VACCINATIONS</th>
<th>Pneumococcal 99.2%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Influenza 100%</td>
</tr>
</tbody>
</table>

Baylor Hamilton Heart and Vascular Hospital leadership, clinicians and staff also routinely participate in process improvement projects through Baylor Health Care System’s Achieving Best Care program and the STEEEP® Academy. STEEEP® focuses on process improvements through six main elements:

**STEEEP®:**

Safe – avoids injuries to patients from care that is intended to help them

Timely – reduces waits and delays for both those who receive care and those who give care

Effective – based on scientific knowledge, extended to all likely to benefit, while avoiding underuse and overuse

Equitable – provides consistent quality, without regard to personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status

Efficient – avoids waste, including waste of equipment, supplies, ideas, and energy

Patient centered – respects and responds to individual patient preferences, needs, and values, ensuring that patient values guide all clinical decisions.
### Readmissions

**READMISSIONS WITHIN SIX MONTHS FY 2014**

to Baylor Hamilton Heart and Vascular Hospital

<table>
<thead>
<tr>
<th>CAUSE/PROCEDURE</th>
<th>NO. OF CASES</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PACEMAKER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead Dislodgement</td>
<td>4</td>
<td>0.59%</td>
</tr>
<tr>
<td>Infection</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Another related procedure</td>
<td>14</td>
<td>0.21%</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>0.74%</td>
</tr>
<tr>
<td><strong>EP ABLATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-ablation</td>
<td>19</td>
<td>0.28%</td>
</tr>
<tr>
<td>Same site</td>
<td>12</td>
<td>0.18%</td>
</tr>
<tr>
<td>Different site</td>
<td>7</td>
<td>0.10%</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>0.18%</td>
</tr>
<tr>
<td><strong>ICD ONLY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead Dislodgement</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Infection</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Another ICD related procedure</td>
<td>7</td>
<td>0.10%</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>0.09%</td>
</tr>
<tr>
<td><strong>CORONARY INTERVENTIONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention on Same Vessel</td>
<td>31</td>
<td>2.15%</td>
</tr>
<tr>
<td>Intervention on Different Vessel</td>
<td>75</td>
<td>5.189%</td>
</tr>
<tr>
<td><strong>CORONARY ANGIOGRAM</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return for Intervention</td>
<td>1444</td>
<td>9.4%</td>
</tr>
</tbody>
</table>
Baylor Hamilton Heart and Vascular Hospital has selected multiple quality indicators, including nurse-sensitive indicators that are monitored and reported monthly on a performance report card. This report card is reviewed in multiple forums, including our shared governance councils and Medical Leadership meetings. This report is also reviewed in quarterly all-employee meetings. Actions are taken in areas identified as improvement opportunities.

### INFECTION REPORT FY 2014

<table>
<thead>
<tr>
<th>Procedure</th>
<th>FY2014 Procedures</th>
<th>National Benchmark*</th>
<th>Baylor Hamilton Heart and Vascular Hospital**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carotid Endarterectomy</td>
<td>131</td>
<td>0.33</td>
<td>0.00</td>
</tr>
<tr>
<td>Pacemaker Surgery</td>
<td>1125</td>
<td>0.44</td>
<td>0.18</td>
</tr>
<tr>
<td>Peripheral Vascular Bypass Surgery</td>
<td>115</td>
<td>2.93 – 6.98</td>
<td>6.09</td>
</tr>
<tr>
<td>Abdominal aortic aneurysm</td>
<td>9</td>
<td>2.12 – 6.46</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*CDC/NHSN 2009 pooled mean  **Rate per 100 procedures

National benchmarks were last published using a risk stratified rate in 2009 (included 2006-2008 reported data). Rates are calculated by a risk score of 0-4 with 4 being the patient with the highest risk factors. Some procedures are reported as a combined rate as there is very little variance, and others are reported by a range as there is more variance. In the future, surgical site infection rates will be compared to a national standardized infection ratio (SIR) for benchmarking. We have identified a clustering of infections in both the peripheral vascular bypass and pacemaker/ICD procedures for this fiscal year and have completed a multi-disciplinary epidemiological investigation.

We have investigated the following during the clusters:

- Sterile technique in the OR
- Sterile processing practices
- Comparison of current practices with Association of PeriOperative Registered Nurses (AORN) recommended practices
- Process for environmental disinfection
- American Institute of Architects (AIA) Ventilation standards
- Review of Healthcare Infection Control Practices Advisory Committee (HICPAC) Guidelines for Prevention of Surgical Site Infections

### CORE MEASURE IMMUNIZATION

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Texas Average</th>
<th>US Average</th>
<th>Baylor Hamilton Heart and Vascular Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMM1-a: Pneumococcal Immunization</td>
<td>89.39</td>
<td>88.7</td>
<td>99.68</td>
</tr>
</tbody>
</table>
Patient Falls

Statistical process control charts are utilized to analyze the variance in fall incidence. The data subset has consistently trended below the NDNQI National Comparative Information mean for bed size <100. The fall rate is consistently below the NDNQI benchmark. In addition, the injury rate for the Med-Surg group has remained below the NDNQI benchmark.

<table>
<thead>
<tr>
<th>Total Falls Per 1,000 Patient Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>2Q12</td>
</tr>
<tr>
<td>Baylor Hamilton Heart and Vascular Hospital</td>
</tr>
<tr>
<td>National Mean*</td>
</tr>
</tbody>
</table>

*National Comparative Information – Bed size <100. Data from NDNQI.

<table>
<thead>
<tr>
<th>Injury Falls Per 1,000 Patient Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>2Q12</td>
</tr>
<tr>
<td>Baylor Hamilton Heart and Vascular Hospital</td>
</tr>
<tr>
<td>National Mean*</td>
</tr>
</tbody>
</table>

*National Comparative Information – Bed size <100. Data from NDNQI.
Hospital-Acquired Conditions

PERCENT OF SURVEYED PATIENTS WITH PRESSURE ULCERS

<table>
<thead>
<tr>
<th></th>
<th>2Q12</th>
<th>3Q12</th>
<th>4Q12</th>
<th>1Q13</th>
<th>2Q13</th>
<th>3Q13</th>
<th>4Q13</th>
<th>1Q14</th>
<th>AVG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baylor Hamilton Heart and Vascular Hospital</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>4.35</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.54</td>
</tr>
<tr>
<td>NATIONAL MEAN*</td>
<td>4.78</td>
<td>5.42</td>
<td>9.05</td>
<td>11.26</td>
<td>6.04</td>
<td>9.08</td>
<td>6.77</td>
<td>10.95</td>
<td>7.92</td>
</tr>
</tbody>
</table>

*A National Comparative Information – Bed size <100. Data from NDNQI.

PERCENT OF SURVEYED PATIENTS WITH PRESSURE ULCERS STATE II AND ABOVE

<table>
<thead>
<tr>
<th></th>
<th>2Q12</th>
<th>3Q12</th>
<th>4Q12</th>
<th>1Q13</th>
<th>2Q13</th>
<th>3Q13</th>
<th>4Q13</th>
<th>1Q14</th>
<th>AVG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baylor Hamilton Heart and Vascular Hospital</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>NATIONAL MEAN*</td>
<td>0.12</td>
<td>0.48</td>
<td>2.18</td>
<td>2.31</td>
<td>1.07</td>
<td>0.42</td>
<td>1.49</td>
<td>5.91</td>
<td>1.75</td>
</tr>
</tbody>
</table>

*A National Comparative Information – Bed size <100. Data from NDNQI.
Patient Satisfaction

**Outpatient – Likelihood to Recommend**

- Baylor Hamilton Heart and Vascular Hospital
  - Mean: 97
  - 95.9 DFW Custom Mean
  - 94.9 All PG Mean
  - 94.8 AHA Region 7 Mean

**Ambulatory – Likelihood to Recommend**

- Baylor Hamilton Heart and Vascular Hospital
  - Mean: 95.9
  - 95.9 DFW Custom Mean
  - 95.0 All PG Mean
  - 94.9 AHA Region 7 Mean
Support Programs
Preventive health education groups are one of the best resources for people who have experienced heart and vascular disease. Share your experience and learn from others in one of Baylor’s ongoing groups.

Leap For Life®
Take the first leap toward a healthier lifestyle with Baylor Health Care System’s Leap (Lifestyle Education Awareness Program) for Life® program. Designed to meet the needs of patients and their families with heart disease, Leap for Life teaches what you can do now to manage your disease and possibly improve your health. It’s a wellness and disease prevention program available to heart patients, their family members and the community that empowers individuals with physical, dietary and stress education to achieve better health.

Wired For Life
Baylor Hamilton Heart and Vascular Hospital has teamed up with past implantable cardioverter defibrillator (ICD) recipients to provide future ICD recipients with support, comfort and answers to their questions. Volunteers meet with the future recipients and their families before and after the ICD procedure.

Caring Hearts®
Emotional support is an important part of recovery, and we think that it’s important for patients in cardiac rehabilitation to learn from the experiences of those who have already completed the program. In the Caring Hearts® program, people who are a year past their own cardiac event volunteer to visit a patient and their family before or after a procedure, offering empathy and support. Caring Hearts volunteers also support waiting room staff. Caring Hearts volunteers are cardiac patients or family members of cardiac patients.

LINK: Connecting Cardiovascular Health and Wellness Across Generations
LINK is a monthly meeting for heart and vascular patients and their family members to hear a staff member or physician on the medical staff at Baylor Hamilton Heart and Vascular Hospital speak on a variety of topics. Guests are encouraged to bring friends and family members to the meeting to gain knowledge that heart disease does spread across generations.
Community Involvement
Baylor Hamilton Heart and Vascular Hospital is committed to providing staff opportunities to be actively involved in the community. Community involvement suggestions have been received from our team members in our Advisory Council and Leadership Council.

Advanced Treatments for Atrial Fibrillation
The Advanced Treatments for Atrial Fibrillation class is held quarterly at Baylor Hamilton Heart and Vascular Hospital. An electrophysiologist on the medical staff at Baylor Hamilton Heart and Vascular Hospital discusses the advanced treatment options available for patients dealing with Afib.

Sponsorships
Baylor Hamilton Heart and Vascular Hospital sponsored many charitable organizations in FY14, including: The American Heart Association’s Go Red for Women Luncheon, Heart Walk and Cotes du Coeur, the Nancy Lieberman Foundation, StopAfib.org, Dallas International Film Festival and the Living for Zachary Foundation.

Continuing Education
Baylor Hamilton Heart and Vascular Hospital hosts and sponsors four all-day events throughout the calendar year. These programs are created and managed by our clinical team and are made available to the staff and community. Each year attendees travel from around Texas and other states to attend our seminars.

In addition to the seminars and symposiums, Baylor Hamilton Heart and Vascular Hospital offers preceptor and charge nurse classes in addition to other on site continuing education opportunities.

### CONTINUING EDUCATION ATTENDANCE

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular Symposium</td>
<td>431</td>
<td>344</td>
<td>387</td>
<td>375</td>
<td>300</td>
</tr>
<tr>
<td>Vascular Seminar</td>
<td>n/a</td>
<td>128</td>
<td>n/a</td>
<td>n/a</td>
<td>90</td>
</tr>
<tr>
<td>EP/Non Invasive Seminar</td>
<td>140</td>
<td>180</td>
<td>164</td>
<td>166</td>
<td>n/a</td>
</tr>
<tr>
<td>Cardiovascular Summit</td>
<td>84</td>
<td>76</td>
<td>80</td>
<td>78</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Employee Retention

Employee retention is a focus for our team. Retention metrics are also hardwired into the performance appraisals of the leadership team. Special classes are required for the leadership team on Retention.

MODIFIED VOLUNTARY RETENTION

<table>
<thead>
<tr>
<th></th>
<th>FY2014</th>
<th>BAYLOR HEALTH CARE SYSTEM</th>
<th>BAYLOR HAMILTON HEART AND VASCULAR HOSPITAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Employees</td>
<td>89.3%</td>
<td>96.6%</td>
<td></td>
</tr>
<tr>
<td>First Year Retention</td>
<td>87.3%</td>
<td>95.9%</td>
<td></td>
</tr>
<tr>
<td>Direct Patient Care RNs</td>
<td>87.4%</td>
<td>96.7%</td>
<td></td>
</tr>
<tr>
<td>Allied Health</td>
<td>92.0%</td>
<td>90.2%</td>
<td></td>
</tr>
<tr>
<td>Direct Patient Care UAPs</td>
<td>88.1%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

*Data through June 30, 2014

We measure a “modified” list of voluntary termination codes to be aligned with strategic healthcare industry benchmark standards.
Employee Awards & Accolades

CEA Award of Excellence
Jenny Adams
Senior Research Associate, Cardiac Rehab

Jenny is passionate about improving patient care and outcomes. Her tenacity to research the concept, develop into evidence based practice and NOW lead in a clinical outcomes practice change has now provided positive effects on patient care and patient satisfaction, in addition to a remarkable benefit on overall healthcare practices for the future. Her greatest satisfaction is in seeing patients reap the rewards of her efforts!

Iwiller Hendrix
Employee of the Year
Recognized by the Dallas-Fort Worth Hospital Council

Megan Linker, BSN
Nursing Excellence Award in the Cardiology Specialty by D Magazine

Scotty Keith
Volunteer of the Year
Recognized by the Dallas-Fort Worth Hospital Council

Nancy Vish, RN, PhD, NEA-BC, FACHE
Named among “130 Women Hospital Leaders to Know” by Becker’s Hospital Review

Shared Governance

Housewide Standards and Measures Committee
Chair: Scotty Pate, RTR
Co-Chair: Lisa Dodd, RN-BC

Patient Education Task Force
Chair: Sarah Lenth
Co-Chair: Jonathan Radcliffe
Facilitator: Annabelle Zakarian

Electronic Health Record Council
Chair: Amanda Thier
Co-Chair: Rebecca Morton

Housewide Professional Development Council
Chair: Jennifer Thomas, CCRN
Co-Chair: Jessica Mitchell

Health Care Improvement
Chair: Annabelle Zakarian

STARRS Committee
Chair: LeighAnn Ward / Laurie Barta
Co-Chair: Theresa Ware
NATIONALLY CERTIFIED RNs on staff at Baylor Hamilton Heart and Vascular Hospital

Abraham, Cetty, CCRN
Adkins, Jeanine, CNOR
Andrews, Rose, CCRN, RN-BC
Atkins, Maryanna, RN-BC
Ballesteros, Barbara, RN-BC
Barta, Laurie, CEPS, CCDS
Bass, Bethany, RN-BC
Bennett, Jasmery, ANP-BC
Carroll, Sharon, CEPS
Cartwright, Daniell, PCCN
Chandani, Niamat, RN-BC
Church, Millie, CCRN
Clemons, Vernel, RN-BC
Darst, Valerie, RN-BC, RCIS, CIRCC
Dodd, Lisa, RN-BC
Donor, Margaret, RN-BC
Durham, Melanie, ANP-BC, CEPS
Easo, Mini, RN-BC
Edelstein, Jacie, CCRN
Edwards, Amy, CNOR
Ellis, Meridith, RN-BC
Ezell, Bradley, TNCC
Ferguson, Charlsie, ANP-BC
Fletcher, Vicki, RN-BC
Flick, Charlene, CPHQ
Florez, Samuel, CCRN
Fuller, Nicole, RN-BC
Geddie, Jackie, RN-BC
George, Melissa, CNOR
Glasgow, Josh, RN-BC
Hojat, Aneesa, CCRN
Holloway, Daryn, RN-BC
Ivpe, Mini, RN-BC
Joco, Tiffany, RCIS
Jones, Jennifer, CCRN, AG-CNS
Joseph, Manju, RN-BC
Kirkpatrick, Sandra, CCRN, TNCC
Lawrence, Anne, RN-BC
Lege, Jennifer, RN-BC
Lenth, Sarah, RN-BC
Linker, Laurie, CNOR
Linker, Megan, RN-BC
Mach, Stuart, RN-BC
Manguigad, Kristine, RN-BC
Maninang, Jennifer, CNOR
Maninang, Ron, TNCC
Marenah, Mariama, RN-BC
McCord, LeAnn, CCRN
McCray, Stephanie, RN-BC
McDonald, Paz, CCRN, RN-BC
McLeroy-Dejong, Sandra, RN-BC
McMillon, Lacy, CCRN
McMillon, Lacy, CCRN
Meymand, Louise, RN-BC
Moore, Renita, CMSRN
Morton, Rebecca, RN-BC
Muldoon, Mary, RN-BC, CEPS
Murphy, Kate, RN-BC
Naffe, Aster, CCRN
Nettune, Rachal, RN-BC
Onda, Mika, CCRN
Ordner, Crystal, RN-BC
Parise, Annette, RN-BC
Peterson, Jennifer, RN-BC
Pinaga, Kelly, RN-BC
Renbarger, Tara, RN-BC
Resurreccion, Romeo, RN-BC
Rowan, Cheryl, TNCC, RN-BC
Rury, Angela, RN-BC
Salas, Erica, CNOR
Sanders, Mark, NEA-BC
Signo, Art, RN-BC
Simmons, Cynthia, RN-BC
Smart, Mindy, RN-BC
Smith, Lacie, CNOR
Solomon, Tonja, RN-BC
Solsbery, Laney, CCRN, CSC
Sta-Maria, Rodrigo, CCRN
Steffen, Jennifer, CCRN
Sullivan, Valerie, CNOR
Swaner, Gary, RN-BC
Their, Amanda, RN-BC
Thomas, Jennifer, CCRN
Valles, Joy, RN-BC
Varghese, Sheeba, CCRN
Viejo, Henry, RN-BC
Vish, Nancy, NEA-BC, FACHE
Walsh, Mike, RN-BC
Wilcox, Jeff, RN-BC
Williams, Chloe, CCRN
Williams, Robert, NEA-BC
Wu, Bo, CMSRN, CCRN
Yohannan, Stacy, RN-BC
York, Denise, PCCN,
Zakarian, Annabelle, CURN, NE-BC
Zhou, Shannon, CNOR, CCRN