ON AUGUST 25, THE ELECTROPHYSIOLOGY TEAM AT ST. JOHN HOSPITAL AND MEDICAL CENTER became the first in Southeast Michigan to implant the Nanostim, a wireless, non-surgical cardiac pacemaker placed directly in the right ventricle of the heart. The first patient to receive the device in Southeast Michigan was an 84-year-old man from Clinton Township.

St. John Providence is participating in the LEADLESS II trial, a prospective, non-randomized, multi-center, international clinical study designed to evaluate the safety and effectiveness of the Nanostim leadless pacemaker in patients indicated for the device in the US. The study is expected to enroll approximately 670 patients at 50 centers. The device has already received approval in Europe.

Nanostim was developed for patients with bradycardia, or a resting heart rate under 60 beats per minute (BPM). Bradycardia is seldom symptomatic until the rate drops below 50 BPM. It can cause fatigue, weakness, dizziness, and at very low rates, fainting. A waking heart rate below 40 BPM is considered absolute bradycardia.

During a procedure similar to an angioplasty, the device is placed directly in the right ventricle of the patient’s heart. Nanostim is fully retrievable and can be repositioned during the implant procedure and retrieved later, if necessary. The Nanostim responds to the electrical activity of the heart by sending small pulses of electricity when needed to prompt the heart to beat normally.

Unlike standard pacemakers, Nanostim does not require leads or a chest incision. Because the device is smaller than a AAA battery and less than 10 percent the size of a conventional pacemaker, patients do not

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The Nanostim pacemaker is placed directly in the heart with no surgical pocket or pacing leads.
Baby-Friendly designation recognizes optimal level of care for infant feeding

St. John Hospital and Medical Center has become the first hospital in Detroit to earn Baby-Friendly designation. The designation recognizes hospitals and birthing centers that offer an optimal level of care for infant feeding and mother/baby bonding.

The hospital is the second in Michigan and the only Ascension Health hospital in the Midwest to earn the Baby-Friendly designation. According to the accrediting organization, Baby-Friendly USA, Inc., there are just 190 hospitals and birthing centers in the United States that are Baby-Friendly. Hospitals and birthing centers that earn Baby-Friendly status must meet comprehensive guidelines and evaluation criteria, including implementing the Ten Steps to Successful Breastfeeding and the International Code of Marketing of Breast-milk Substitutes.

St. John Hospital and Medical Center breastfeeding services include day and night breastfeeding support for mothers six days a week, the St. John Outpatient Breastfeeding Clinic and the Mother Nurture Club, a support group for breastfeeding mothers. These programs, in addition to quality improvement initiatives on the Birthing Center, have led to a significant increase in breastfeeding among new mothers in Detroit and surrounding areas. The breastfeeding initiation rate among mothers who delivered at St. John Hospital and Medical Center has increased from 55 percent in 2011 to 75-80 percent today.

A successful Baby-Friendly accreditation can only occur continued on page 5

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Revision Spine Surgery an option for recurrent back pain after surgery

**SPINE SURGERIES SUCH AS FUSIONS AND LAMINECTOMIES NORMALLY OFFER PATIENTS LASTING RELIEF** from back pain when non-invasive therapies have failed. While the original surgery was successful, after a period of one to several years, some patients may experience a return of symptoms or new, debilitating back pain or neurologic symptoms. The first approach to resolving pain is to exhaust non-surgical solutions such as physical therapy and pain management.

In many cases, changes in spinal alignment or balance is the cause, including scoliosis, kyphosis, or both. Malalignment of the spine can lead to unfavorable spinal biomechanics, which can intensify neurological or spinal pain symptoms. Some patients may develop pelvic malalignment, scoliotic posture, or “flat back” syndrome after spinal fusion due to additional stress and further degeneration of the adjacent segments.

Using diagnostic imaging such as CT scan, CT myelogram, MRI, and scoliosis films, we can evaluate the post-operative spine patient’s overall spinal alignment. A combination of measurements based on these diagnostic imaging tools allows us to calculate the degree of malalignment and guides our surgical decisions for the appropriate type of surgery.

For surgical cases, we decide pre-operatively how much bone to remove, and through the old incision, remove part of the spine and realign it with a combination of rods, plates and screws. The goal of the surgery is to get solid bone healing between the vertebral bodies, which fuses the spine in the appropriate alignment. The objective is to restore balance and normal spine function with alignment. Screws and rods are placed to hold the spine in alignment until fusion occurs.

It is essential to pick the right individuals for this invasive approach in failed back patients. If revision surgery is necessary, it is essential to perform a thorough preoperative evaluation due to high morbidity for this type of surgery. Recovery can last several weeks to months in this patient population. Patients generally experience significant pain relief, return to activities and a happier, more productive lifestyle once they recover.

To refer a patient for evaluation, call (248) 569-7745. Patients can usually be scheduled for an appointment within 10 to 14 business days.

**Minimally invasive spine surgery**

Minimally invasive spine surgery is an option for patients requiring multilevel lumbar fusions, lumbar decompressions, laminectomy, disectomy, kyphoplasty, and in some cases, fracture repair and tumor removal. Patients with degenerative disease, lumbar stenosis and disc herniation are candidates for minimally invasive techniques.

Through one- to two-inch incisions, we can spare muscle, remove bone, and place rods without a large incision. Patients experience less blood loss, less post-operative pain, lower risk of infection and shorter hospital stays than with open surgery. I favor a minimally invasive treatment whenever I feel that goal of surgery can be safely achieved through these approaches.

We may use an anterior approach, a posterior approach, or a combination of the approaches. In some cases, minimally invasive procedures can replace open surgery in the right patient population. If a two-stage approach is warranted, both stages may be done on the same day, or over a few days to allow the patient to recover from the first approach prior to the second.
THREE TEAMS FROM THE DEPARTMENTS of Emergency Medicine, Cardiology and Laboratory at St. John Hospital and Medical Center recently completed three significant process improvement initiatives. The success of each project can be credited to a multidisciplinary collaborative team approach.

PROJECT 1: DECREASING RADIATION EXPOSURE IN PATIENTS UNDERGOING STRESS TESTING

This team aimed to decrease unnecessary radiation exposure to patients undergoing stress testing in the Clinical Decision Unit (CDU) for evaluation of chest pain. In the CDU we perform accelerated diagnostic protocols to exclude ACS, followed by a stress test to exclude cardiac ischemia. The type of stress test we choose depends on factors such as a patient’s ability to exercise, their resting ECG, and cardiac co-morbidities. Non-nuclear options have been shown to be as good as nuclear options in many of these patients with far lower radiation exposure.

In the fall of 2008, the team constructed an algorithm favoring non-nuclear stress tests. We reserved the nuclear stress option for patients with certain prior cardiac conditions where nuclear imaging is the test of choice. We educated ED physicians and residents on the use of the algorithm, gave lectures related to ED chest pain evaluation and stress testing, and the algorithm in physician workspaces.

RESULTS

Nuclear stress test use decreased by almost half from 2008 to 2009, and remained low throughout the following two periods after Quality Improvement (QI) implementation. (See graph above) Physicians ordered the appropriate stress test approximately 90 percent of the time during all three of the post-QI implementation periods. There was no difference in 30-day major adverse cardiac events (<1 percent) before and after using the algorithm. The algorithm is a safe, reliable and effective tool for choosing stress test options that decreases nuclear stress tests and radiation exposure.

PROJECT 2: HEART FAILURE READMISSION STUDY

In 2011, this team aimed to improve care for ED heart failure patients placed in the CDU and decrease 30-day all-cause readmission rate from the CDU. We implemented a collaborative process which included these tactics:

• Heart failure education for ED/CDU physicians and nurses that focused on risk stratification, early ED goal-directed therapy, and observation care of heart failure patients.
• A CDU heart failure-specific order set.
• CDU nurse-provided patient education.
• CDU case manager evaluation of all patients for home care follow-up.
• Health Connect phone calls to ensure follow-up appointments.
• Utilizing the ED pharmacy to provide medications to patients at discharge.

RESULTS

We compared historical data from November 2010 to October 2011 with data from November 2011 to October 2012, when the process improvement methods were in place. Results were a significant decrease in the all-cause 30-day readmission rate, from 38.5 to 13 percent.

PROJECT 3: DECREASING TIME OF DOOR-TO-TROPONIN RESULTS

We formed a multidisciplinary team to improve care for ED patients presenting with chest pain by decreasing the time from patient arrival to recognition of myocardial injury.

continued on page 5
with the full support of the physicians. Many physicians completed the required breastfeeding education and several were full participants in assessment interviews. The Baby-Friendly accreditation assures physicians of this hospital community that their mothers and babies are receiving optimal evidence-based care supported by the medical staff, the nurses, and the administration. The accreditation also allows St. John Birthing Center to continue to set the community standard for practice, leadership, and collaboration.

The four-year journey to achieve Baby-Friendly designation was made possible by support of the W.K. Kellogg Foundation and in collaboration with community partners, including the St. John Infant Mortality Program, Black Mothers Breastfeeding Association, Advantage Family Health Centers and Urban League Detroit/WIC.

Kellogg recently awarded St. John Providence another sizeable grant to expand the Mother Nurture Lactation College, a unique education model for minority women in the Detroit area to achieve International Board of Certified Lactation Consultant status.

Baby-Friendly designation supports St. John Providence’s Population Health Management efforts to improve the care of the communities we serve, as well as the national Healthy People 2020 goal of increasing the proportion of live births that occur in facilities that provide recommended care for breastfeeding mothers and their babies.

Multidisciplinary process improvement initiatives realize success

through troponin results. Prior to the process improvement initiative, our “door” to troponin result was almost two hours with a hemolysis rate of 15 percent requiring blood re-draw. The team divided the door-to-result process into four steps for improvement:

**Step 1: Door-to-order.** We empowered ED nurses to order troponin tests and stationed phlebotomy staff in triage.

**Step 2: Order-to-collect.** The team reconfigured the ED triage room for better flow. Once a triage nurse identified a patient with possible ACS, the tech could do an EKG while the phlebotomist drew the blood.

**Step 3: Collect-to-received.** The team introduced unique lab tubes for easy visual identification and faster processing by central lab staff.

**Step 4: Received-to-result.** The central lab space for ED specimens was renovated to a smaller footprint, moving the centrifuge and analyzers to just a few steps from the pneumatic tube station.

The lab also utilized faster analyzer times.

**RESULTS**

Door-to-troponin results dropped to less than 60 minutes. Our previous door-to-result time of 163 minutes decreased to 52 minutes, our rate of hemolysis/redraw decreased from 15 percent to three percent, (see graph below), and length of stays in the ED decreased by almost one hour.

To read the extended article, visit stjohnprovidence.org/updatesandinnovations.
Xiaflex offers breakthrough treatment for Dupuytren’s contracture

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DUPUYTREN’S CONTRACTURE INVOLVES A GRADUAL PROLIFERATION of abnormal collagen in the hands and sometimes other extremities. It causes the tissue beneath the surface of the hand to thicken and contract, forming knots and cords. Typically one or more nodules beneath the skin of the palm appear, usually near the base of the ring or pinkie finger. As the disease progresses, the nodules develop into hard cords or bands that extend into the fingers. The cords eventually contract, making it impossible to extend the fingers.

The condition is hereditary, usually male-sided, and typically appears in men over age 40. It is most often seen in people of northern European or Scandinavian descent, but affects all races and ethnicities. When women develop the condition, they tend to do so later in life, and have milder symptoms. Dupuytren’s has been associated with diabetes and seizure disorders such as epilepsy but the connection is not well understood.

The previous treatment for Dupuytren’s was fasciectomy, surgically stripping the abnormal tissue, which sometimes required grafting. While effective, a long healing time and subsequent therapy were needed.

In 2010, Xiaflex gained FDA approval for treatment of Dupuytren’s. A collagenase, the enzyme breaks down the collagen in the knots and cords and relieves the condition without surgery. The enzyme “digests” the tissues and usually allows fingers to fully extend within 24 hours. It has proven to have a major impact on treatment of Dupuytren’s disease.

During an in-office procedure, we inject Xiaflex into the tissue “knot.” Patients return home, limit their hand movement, elevate the hand, and return to the office the next day to have their hand manipulated under local anesthetic. Manipulation breaks up the cord and enables patients to extend their fingers. The injection takes just a few minutes and manipulation 30 minutes or less. Little therapy is required following treatment. Some patients wear a splint for a few weeks to retain maximum function. Occasionally patients require a repeat injection. Medicare and many other insurers cover the cost of Xiaflex treatment. To refer a patient, call (248) 485-8300 or (734) 943-3838.

Advent of 3-D printing in hand surgery

The medical field is rapidly discovering uses for 3-D printing, and in hand surgery, we expect to be able to use 3-D printers to construct customized prosthetics for the fingers and hand, as well as customized implants developed in concert with CT scans. For implants, the objective is to create a custom implant or plate to repair a fracture.

While we are at the beginning of understanding applications for 3-D printing, I expect we will discover more and more applications in the coming months and years. The technology is increasingly affordable and the software more user friendly, bringing it within grasp for physicians. I hope to be able to offer 3-D printing technology for prosthetics and implants locally as the technology is tested and proven.
Together Health Network update

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IN MAY, ASCENSION HEALTH AND THE TRINITY HEALTH, in concert with physician partners in Michigan, formed Together Health Network. The Network creates an organization that will strategically focus on population health management with the goal of providing care that is high quality, affordable, and a consistently good experience for patients and their family members.

While local networks are focused on these goals independently, the larger Together Health Network provides additional opportunities to further these objectives. The Network enables us to share best practices, provide access to resources for patient management, improve communication between sites of care, collect data, and provide new care models and care management programs that will better serve selected populations.

Payment reform and the changing health care market signaled that now is the time to position physicians and the health systems for continued and future success. The Network is physician led, with a 15-member board. Nine board members, including the president and CEO, are physicians. With 27 hospitals, 5,000 physicians and nine clinically integrated networks, the organization has a broad reach with significant population diversity.

Since June, we have seated the Board of Directors, are working to hire the leadership team, and are pursuing opportunities in the marketplace to develop new products and partnerships with payers to better manage populations.

Our governance committees have been confirmed and will oversee development of the organization and accelerate its commitment to improved quality, cost and experience of care.

We are formalizing the commitment of local clinically integrated networks to participate by executing a general participation agreement. Physicians who participate with one of the partnering organizations will become part of Together Health Network through this participation agreement.

Over the coming months, Network leadership will work to bring new business opportunities to local networks in the form of new patient populations and contracts. We are exploring opportunities that will enable us to partner with local payers and employers to better manage populations in 2015. In addition, we are actively preparing to launch a first product in January 2015.

Through continuous improvement, measuring performance and quality, and a focus on the Triple Aim (The Institute for Healthcare Improvement (IHI) philosophy that new designs must be developed to simultaneously pursue three dimensions: Improving the patient experience of care; Improving the health of populations; and reducing the per capita cost of health care.), Together Health Network will build upon success of the local networks in managing populations and continue to work to improve performance and establish new contracts. For details about the Triple Aim, log on to www.ihi.org.

Nanostim trial

have a permanent lump under the skin. The battery is expected to last nine to 13 years.

The unique features of the device, and implant without surgery or scarring, are the potential to transform how heart rhythm patients are treated. More than four million people worldwide have an implanted pacemaker or other cardiac rhythm management device, and an additional 700,000 patients receive the devices each year. Nanostim is the least invasive pacing technology available today.

Following implant, the small size of the device and lack of a surgical pocket, together with the exclusion of a lead, improves patient comfort and can reduce complications such as device pocket-related infection and lead failure.

Many patient activity restrictions post procedure are removed, which were often necessary to prevent dislodging or damaging a conventional lead. This will potentially improve the quality of life for patients with this technology by allowing most to continue living active, uninhibited lifestyles.

Enrollment in the trial is ongoing and we are actively seeking participants. To refer a patient for evaluation, call Linda Mannino, NP, (313) 343-3904.
All the health information you need is just one call away.

We know how busy life can be, which is why we’ve made it easy for people to get the answers and information they need about their health. With St. John Providence Health Connect, you can connect with over 3,000 primary care and specialty physicians; schedule appointments; and even sign up for health classes. Plus, you can now schedule diagnostic tests and physical therapy sessions and access information about Reverence Home Health & Hospice care.

St. John Providence Health Connect is available Monday through Friday from 8 a.m. to 6 p.m.

866-501-DOCS (3627)