

Summer 2016

# Better Medicine

Lehigh Valley Health Network

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# Technology Facilitates Self-Management for Patients With Chronic Disease

By Beth Careyva, MD

*About the author: Beth Careyva, MD, is a board-certified family medicine physician with LVPG Family Medicine—Easton Avenue.*

For patients with chronic conditions, including diabetes, heart failure and hypertension, being able to communicate easily and regularly with clinicians is vital for controlling their disease and catching troubling symptoms in their earliest stages. However, staying aware of and reporting daily status changes can be overwhelming for patients and their caregivers.

## Using MyLVHN.org

In 2015, Lehigh Valley Physician Group (LVPG) took a major step forward in making it easier for patients to communicate with their physician or advanced practice clinician with the launch of Epic, a powerful electronic medical record system featuring the MyLVHN.org patient portal. Patients can use MyLVHN to report daily readings of blood glucose levels, blood pressure, weight and other vital signs to their clinicians. They can also use it to review test results and request prescription refills. In my own practice, I've found that patients are more apt to sign up for a MyLVHN account if I encourage them to do so during an office visit. MyLVHN has been enormously useful in allowing me to address concerns and collect data that may otherwise be put off until the next appointment. If I have a newly diagnosed diabetes patient, for example, I'm now able to answer questions about medication side effects, obtain regular glucose readings and potentially improve disease-related goals due to more frequent communication and medication changes.



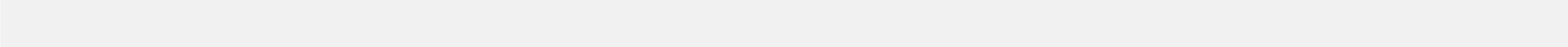
Beth A. Careyva, MD  
Family medicine

## Soon-to-be-published research

To understand how other practices are using technology to communicate with patients, I recently led a study, which will be published in the September issue of the Journal of the American Board of Family Medicine, that

surveyed 49 directors of practice-based research networks across the U.S. and Canada on their use of videoconferencing, patient portals, waiting room kiosks, texting, smartphone apps and other tools. This study was conducted with an aim of understanding what is needed to educate patients about our current tools and integrate them into daily care, in light of current challenges. We're discovering that developing technology is just a first step. We hope to do further research to determine how to best use it to serve and truly engage our patients.

To learn more about Epic and MyLVHN, call 610-402-CARE.



# DMTs Help to Align LVHN, MSK Standards of Care

## Teams provide ongoing development and review of oncology best practices

Through its disease management teams (DMTs), Lehigh Valley Health Network's (LVHN) Cancer Institute has developed a formal infrastructure for continually evaluating standards for many cancer disease sites.

DMTs ensure patients receive the latest evidence-based clinical pathways for diagnosing and treating their disease. LVHN specialists review these standards internally and validate them with experts from Memorial Sloan Kettering (MSK) Cancer Center – the world's oldest and largest private cancer center – through LVHN's membership in the MSK Cancer Alliance.

“Oncology is evolving at a very rapid pace, thanks to new discoveries in immunotherapy and gene mutations,” says LVHN hematologist oncologist Suresh Nair, MD, who leads the melanoma and soft tissue tumors team. “For our patients to have access to real-time innovation through the alliance is phenomenal. We're basically putting our program up against the best in the world every week.”

## Inside DMTs

To create the DMTs, LVHN first performed an extensive review process to ensure its care standards aligned with MSK's. “We performed a data review of a number of metrics across the cancer program – from diagnosis, therapeutics and survivorship – to gauge our alignment with one of the nation's top oncology programs,” says Dennis Sopka, MD, radiation oncologist with the lung and colon rectal DMTs. “This required hundreds of hours to assemble and review. We were pleased to find that, although there was some variability, most DMTs were already providing highly aligned care.”

Through the DMTs, LVHN specialists in each cancer type continue to review and develop standards with their MSK colleagues in a variety of joint DMT and Tumor Board Meetings as well as by individual case-specific discussions.

“We discuss how we approach management of patients at different stages and make sure we're on the same page,” says LVHN urologist Angelo Baccala Jr., MD, who leads LVHN's prostate cancer team. “When there are differences, we figure out why and determine the best practice for patients in these circumstances.”

“We ask specific questions,” says LVHN hematologist oncologist Eliot Friedman, MD. “How are pulmonologists getting pathology reports? Is there a better mechanism? Are pathologists getting enough information to make an appropriate diagnosis and avoid repeat biopsies?”

These efforts are coordinated by a Patient Care Manager and Oncology Quality and Evidence-Based Practice

Specialists. Megan Derr, MSN, RN; Mandy Hendricks, MSN, RN; Sandy Frey, MSN, RN; and Donna Colobroy, MSN, RN, coordinate all team meetings, summarize standards-of-care discussions, and measure and report on alignment with MSK standards.

## **Guidelines at a granular level**

Cancer care has always required collaboration among multidisciplinary specialists – medical oncologists, radiation oncologists, surgeons, geneticists, pathologists, radiologists and others. The DMTs strengthen this collaboration and expand this philosophy to developing consensus on treatment guidelines.

“It’s not new that cancer care is a team sport, but where multidisciplinary clinics focus on treating specific patients, the disease management teams are professional-to-professional,” says LVHN surgical oncologist Lori Alfonse, DO, who leads the breast cancer team. “All of the subspecialists get together to create the rule book for evaluating and treating cancers.”

“It can be difficult to keep up with nuances of state-of-the-art care across all subspecializations,” says LVHN hematologist oncologist Usman Shah, MD, who leads the gastrointestinal team. “The teams allow us to understand and operationalize those nuances in a systematic way. So when we treat patients, we can ask what the current national guidelines are and what the latest, evidence-based standard is at LVHN.”

“These guidelines are living documents,” says LVHN gynecologic oncologist Richard Boulay, MD, who leads the gynecologic oncology team. “I recently had a case where the algorithm said the patient should receive radiation, but I disagreed. We discussed the details, reviewed the literature and revised the guideline. We learn from each other, and as more data comes in, we continually update the standards.”

## **Five years ahead of standard care**

The DMTs can be especially useful when integrating new information and finding consensus in areas where the data shows no clear best practice.

“When new findings come out – especially controversial ones – we interpret the data together to determine what should change our practice and what shouldn’t,” Nair says. “This is especially useful for genomic medicine, where MSK is often five years ahead of standard community care. For example, MSK specialists check for NRAS mutation for stage 4 melanoma and act on it. That may not be the standard yet across the country, but it’s the standard at MSK, and now our patients get the same benefit.”

“We can move much faster implementing personalized medicine,” Shah says. “For example, when we’re using cetuximab to treat metastatic colon cancer, we know it won’t work for patients with certain KRAS mutations. Right now, the FDA label for the drug is limited to just a couple of mutations. But there is well-published data showing that there also are several other mutations we should consider.

“Through the DMT, we’ve implemented a standard to check across that panel for all mutations. So we can deliver true state-of-the-art care. And we can implement it in a systematic way, rather than piecemeal based on the individual provider a patient sees.”

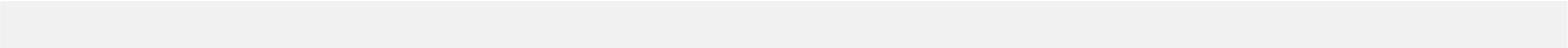
## **A higher standard**

LVHN’s DMT approach – formally reviewing and validating standards with independent experts – goes well

beyond the norm.

“Most programs have tumor boards, but the collaboration ends there,” Shah says. “In our program, everyone has made a commitment to spend a significant amount of their time developing and agreeing on consensus guidelines to which we all hold ourselves accountable. To do this in a systematic, prospective manner is incredibly rare. And I think it will pay significant dividends for our patients.”

To refer a patient for cancer care, call 888-402-LVHN.





# Harnessing Immunotherapy to Treat GBM

**LVHN offers phase 3 clinical trials that may impact long-term survival**

Each year, 40 to 60 Lehigh Valley Health Network (LVHN) patients are diagnosed with Glioblastoma multiforme (GBM), which arises from cells that comprise the supportive tissue of the brain. Although it's considered a rare cancer, GBM is one of the most common primary brain tumors in adults.

For the past 50 years, treatment advances have slowly impacted survival. For example, in October 2015, the FDA approved the NovoTFF medical device (shown at right) for both newly diagnosed and recurrent GBM patients. The device, worn on a cleanly shaven head, generates an electrical field that disrupts molecules to prevent cancer cells from dividing. In studies, NovoTFF increased GBM survival by an average of four months (30 percent). Still, few GBM patients survive 12 to 16 months past the diagnosis date.

However, LVHN is at the forefront of a promising new development that may impact longterm survival. "We're on the leading edge with respect to the way brain tumors are treated," says P. Mark Li, MD, PhD, LVHN's chief of neurological surgery.

## **New therapy frontier**

LVHN is one of the first U.S. medical centers to offer two phase 3 clinical trials for patients newly diagnosed with GBM to test the effectiveness of anti-PD-1 immunotherapy, which takes the brakes off the immune system so that the body can clear cancer cells.

“LVHN is enrolling patients in two trials involving the same drug,” says LVHN neurooncologist Tara Morrison, MD, the study’s co-principal investigator. In one trial, which is currently recruiting patients, those with a specific genetic marker (MGMT promoter methylation) will be randomized to receive standard chemotherapy (temozolomide), radiation and anti-PD-1 immunotherapy infusions versus temozolomide and radiation, but no immunotherapy. Those without MGMT promoter methylation will be randomized to receive radiation and immunotherapy versus radiation and temozolomide.

Already successful in treating lung and stage 4 melanoma, immunotherapy now has the potential to treat brain and other cancers. “Anti-PD-1 immunotherapy, in combination with radiation, is similar to self-vaccination,” says LVHN radiation oncologist Alyson McIntosh, MD. “We’ve seen with melanoma that, when anti-PD-1 therapy is combined with radiation, a distinguishing feature of the tumor – the antigen – is released into circulation. Anti-PD-1 therapy takes the brakes off of the immune system so that the body’s T cells know exactly what to target.”

## **Multidisciplinary infrastructure**

LVHN, a member of the MSK Cancer Alliance, is uniquely qualified to offer these elite immunotherapy clinical trials. “We’re a large-volume center with the multidisciplinary infrastructure – including specially trained physicians in all aspects of brain tumors – to care for these patients,” Li says. “That’s unusual to find outside of large academic medical centers.”

Through the Alliance, LVHN cancer patients have access to MSK’s network of leading-edge clinical trials, which will allow them to get the latest treatments before they’re available elsewhere.

To refer a patient to an LVHN clinical trial, call 610-402-CARE.



# Endovascular Aneurysm Repair Benefits High-Risk Patients

**New anchoring technology helps ensure endograft stability**

Vascular surgeons at Lehigh Valley Health Network (LVHN) are expanding minimally invasive treatment options for aortic aneurysm with the Heli-FXTM Endoanchor System, a mechanical fastening device that provides the control and potential long-term durability of an open surgical repair. James Guzzo, MD, LVHN chief of vascular and endovascular surgery, and his colleagues perform up to 60 aortic aneurysm repairs annually, and with Heli-FX they can now offer endovascular aneurysm repair (EVAR) to patients who otherwise may have



**James Guzzo, MD**  
Vascular and Endovascular Surgery

required an open procedure.

### **An endovascular approach**

EVAR is the preferred method for treating aortic aneurysm, a localized bulging or weakness of the aortic wall that can be attributed to atherosclerosis, tobacco abuse, high blood pressure, cholesterol and family history. It is an often asymptomatic but potentially fatal condition that is usually discovered during radiologic testing for unrelated reasons.

EVAR involves placing a custom-fitted, flexible stent graft, or endograft, within the aneurysm via the femoral artery, providing a permanent alternative conduit for blood flow. In most cases, the endograft forms a seal where it touches the normal artery wall, which prevents blood from flowing outside the graft and into the aneurysm.

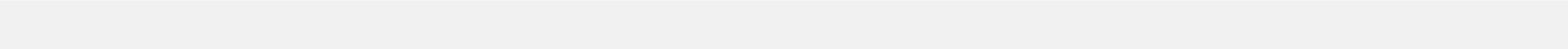
At LVHN, 70 percent of patients are eligible for EVAR. The procedures usually are elective, and patients generally spend no more than a day in the hospital. The remaining 30 percent of patients have complex vessel networks that make it difficult to position the endograft in a way that ensures an adequate seal, or they already have endografts that have shifted out of position. For these patients, Guzzo employs the Heli-FX system to attach the endograft to the native vessel wall.

### **Securing the endograft**

The Heli-FX system includes a catheterbased delivery device with a flexible tip and helical anchors. After placing the endograft, the surgeon threads the delivery device, which is loaded with the anchor, through the endograft to a site above the aneurysm where the endograft touches the vessel wall. After positioning the tip perpendicular to the delivery site, the surgeon deploys the anchors around the circumference of the endograft, firmly attaching it to the vessel.

“The Heli-FX system helps ensure a secure, durable endograft in patients who may be at risk for seal complications or graft migration,” Guzzo says. “It also allows us to offer EVAR to patients with difficult anatomies who would be too fragile for open abdominal surgery, which involves cross-clamping the aorta and is usually followed by a one- to two-week hospital stay. In the past, these patients may have been considered inoperable, but this technology is helping us change that.”

To refer a patient to vascular surgery, call 610-402-CARE.





# International Study for TAVR In Progress at LVHN

## **Trial will study low-risk patients**

Lehigh Valley Health Network (LVHN) has enrolled its first patient in an investigational study of transcatheter aortic valve replacement (TAVR) for aortic stenosis (AS) patients who are at low operative risk for standard aortic valve replacement. LVHN, a high-volume TAVR center, is one of only 80 sites expected to participate in the international study.

## **An evolving approach**

TAVR is currently limited by the FDA to AS patients who are considered inoperable or high-risk surgical

candidates (e.g., older adults and patients with severe comorbidities or a history of previous cardiac bypass surgery), but research suggests TAVR may benefit a wider range of patients.<sup>1</sup>

The 1:1 randomized study in which LVHN is participating aims to compare outcomes for severe AS patients receiving the Medtronic CoreValve Evolut R valve (the industry's only selfexpanding, recapturable device) with those undergoing surgical aortic valve replacement (SAVR). Eligible patients must be at low mortality risk for SAVR, with less than 3 percent risk for mortality as determined by the LVHN heart team. Primary outcome measures over a twoyear time frame will be all-cause mortality or disabling stroke.<sup>2</sup>

"TAVR has been transformational for high-risk patients who previously did not have treatment options, and this investigational device trial represents the next step in exploring benefits for greater numbers of patients," says Raymond Singer, MD, LVHN's chief, cardiothoracic surgery and LVHN's co-principal investigator for the TAVR trial.

### **Patient eligibility**

LVHN has an experienced, dedicated cardiovascular research team to work with patients who may be referred for the study from both in and out of the network. "Not all referred patients will benefit from participation in this study, but the expert heart team will be able to help patients along their pathway to the most suitable treatment for their heart valve condition," Singer says. A total of 1,200 patients will be enrolled across all sites participating in the trial.<sup>2</sup>

### **TAVR experience**



**Raymond Singer, MD**  
Cardiothoracic surgery



**David Cox, MD**  
Cardiothoracic surgery

LVHN was the first health system in the region to participate in the commercial introduction of TAVR more than four years ago as a minimally invasive alternative to traditional open valve replacement. Today, LVHN's cardiothoracic surgeons and interventional cardiologists complete more than 150 TAVR procedures annually.

“Our experience at LVHN with TAVR is a key reason why we were selected to participate in this trial,” says cardiologist David Cox, MD, LVHN's co-principal investigator for the TAVR trial. “TAVR is a less invasive approach than SAVR, but the procedure requires a great deal of expert collaboration by a highly experienced heart surgery team in order to achieve good outcomes.”

To refer a patient to the Heart and Vascular Center or the Low-Risk TAVR Study, call 610-402-CARE.

1. “A 3-center comparison of 1-year mortality outcomes between transcatheter aortic valve implantation and surgical aortic valve replacement on the basis of propensity score matching in intermediate-risk surgical patients: the Evolut-PRO trial.” *Circulation*. 2018;138:1011-1021. doi:10.1161/CIRCULATION.117.047818.  
2. “Efficacy and safety of transcatheter aortic valve replacement in low-risk patients.” *ClinicalTrials.gov* website. [clinicaltrials.gov/ct2/show/NCT02701283?term=Evolut+R&rank=8](https://clinicaltrials.gov/ct2/show/NCT02701283?term=Evolut+R&rank=8).



# Comprehensive Care for Total Knee Replacement

**Specialists guide patients from presurgical preparation through rehabilitation**

The success of a joint replacement procedure depends on the surgeon's skill, the rehabilitation staff's expertise, and the patient's motivation and commitment. Lehigh Valley Health Network's (LVHN) Center for Orthopedic Medicine takes all three of these factors into account, offering patients a complete continuum of care from their first consultation to their last rehabilitation session.

Physicians at LVHN have performed more than 20,000 joint replacement procedures, including

knee, hip and shoulder surgeries.

Joint replacements are offered at four LVHN locations: the Center for Orthopedic Medicine–Cedar Crest (inside LVH–Cedar Crest), the Center for Orthopedic Medicine–Muhlenberg (inside LVH–Muhlenberg), the Center for Orthopedic Medicine–Tilghman (inside LVHN–Tilghman) and LVH–Hazleton.

### **Starting with conservative approaches**

The decision to undergo joint replacement often begins with conservative treatments. This is especially true for patients with gradually worsening knee osteoarthritis. Fellowship-trained orthopedic surgeon Eric Leppy, MD, LVHN's chief of orthopedic surgery, notes that patients may be able to avoid surgery for years. "We offer many treatments that can relieve pain, including steroid injections, viscosupplementation and nutritional counseling, which help patients maintain their native joints for as long as possible," he says.

When knee replacement becomes the best option, surgeons take the lead in patient education, which may start up to three months before the procedure. "We spend a lot of time teaching patients what to expect before, during and after surgery," Leppy says.

Each surgeon has a clinical coordinator who acts as a patient navigator to provide extra guidance and answer questions. Patients also attend a joint replacement class that introduces them to the entire orthopedic care team and covers what they will need to do to recover fully and quickly, such as starting a presurgery regimen of non-



Eric Leppy, MD  
Orthopedic Surgery

[Watch a video to learn more about him.](#)



Prodromos A. Ververeli, MD  
Orthopedic surgery

[Watch a video to learn more about him.](#)

weight-bearing exercises to increase range of motion and strength.

## **Ensuring success in the OR**

Knee replacement surgical techniques continue to evolve. “Some of the most significant surgical advancements have involved incorporating more effective techniques to minimize pain and blood loss,” says fellowship-trained LVHN orthopedic surgeon Prodromos Ververeli, MD. “Implants also have become more durable and are available in a variety of sizes, allowing us to better tailor them to patients’ anatomy.”

More than 45 surgeons, including specialists in spine, hand and trauma, perform orthopedic procedures at LVHN. LVHN surgeons achieve excellent outcomes by judiciously adopting new technology while working with a consistent, dedicated operating room staff, anesthesia team and recovery nurses.

Effective pain management helps ensure that patients are able to get on their feet and start therapy in their hospital room within hours after surgery. Patients typically leave the hospital in one to three days. About 75 percent of patients are able to go home and can continue therapy at one of more than 25 LVHN outpatient rehabilitation locations.

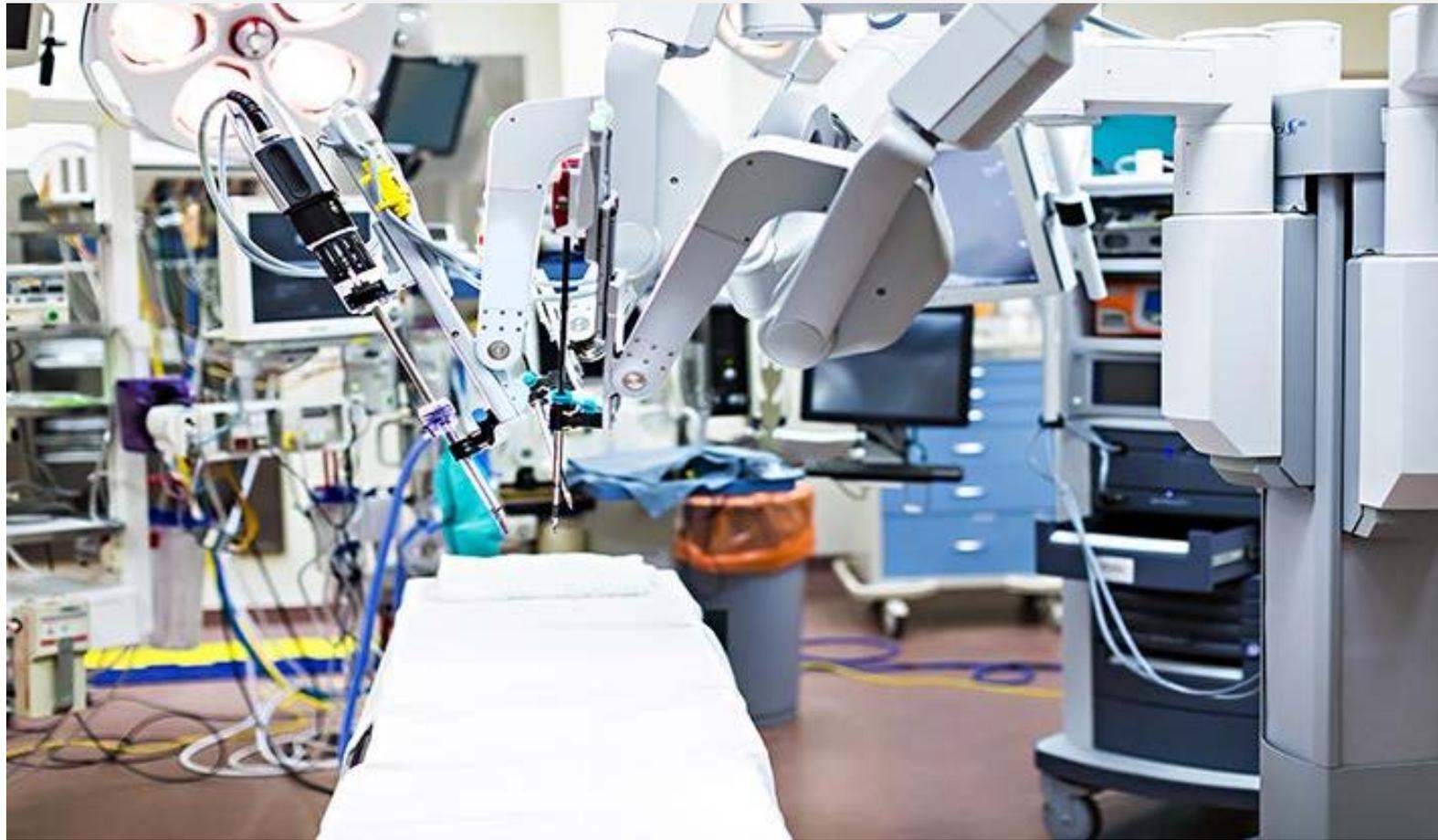
“We create individualized plans for each patient based on their goals. Patients work with a team of physical therapists (PT) and PT assistants that specialize in orthopedic care for the most effective treatment and outcomes,” says Michael Hosak, orthopedic PT and LVH rehabilitation manager. “We also encourage caregivers and family members to participate in therapy sessions. And patients do most of their therapy in large, open gyms, so they can encourage and motivate each other.”

Patients who need more recovery time before going home after surgery may continue receiving rehabilitation and nursing care for one to two weeks at the Center for Inpatient Rehabilitation–Cedar Crest, Gunderson Center for Inpatient Rehabilitation–Hazleton or the Transitional Skilled Unit at LVH–17th Street. These settings allow for multidisciplinary medical care and intensive therapy provided in a therapy gym using state-of-the-art equipment to prepare patients for their return home. LVHN plans to open an additional Center for Inpatient Rehabilitation at LVH–Muhlenberg in July 2017.

Rehabilitation is where patients finally see results. “After about a month of therapy, we see patients who were almost immobile go back to being able to walk Prodromos Ververeli, MD Orthopedic surgery Michael Hosak, PT Rehabilitation services Eric Lebbly, MD Orthopedic surgery without pain, return to work, play with grandchildren and enjoy their hobbies again,” Hosak says. “The most frequent comment I hear is, ‘I should have done this earlier.’”

Lebbly and Ververeli perform more than 1,200 hip and knee replacements annually and have operated on patients from ages 19 to 94. “It’s especially gratifying to see patients who were told that they were too old or fragile to have surgery who are now giving up their walkers and wheelchairs and enjoying life again,” Ververeli says.

To refer a patient for joint replacement surgery, call 610-402-CARE, or in northeastern Pennsylvania, call 570-501-4LVH.



# Robotic Surgery Advances Minimally Invasive Approaches

**LVHN surgeons perform robotic procedures across nine service lines**

Lehigh Valley Health Network (LVHN) surgeons are increasingly using robotics technology to reduce length of stay (LOS), blood loss and readmissions as compared to laparoscopic surgery.<sup>1</sup> As a high-volume robotic surgery institution and one of the largest robotic surgery programs statewide, LVHN and its surgeons have performed more than 6,500 robotic procedures since 2008.

**Next-generation laparoscopy**

LVHN's three da Vinci® Si HD Surgical Systems – two at Lehigh Valley Hospital (LVH)–Cedar Crest and one at LVH– Muhlenberg – provide greater visualization (3-D), enhanced dexterity, improved ergonomics and greater precision for surgeons over laparoscopy.



Martin Martino, MD  
Gynecologic oncology

“The robot is an example of a health network having the most advanced technology available for their community. It is best thought of as another tool for our surgeons to have in their toolbox,” says gynecologic oncologist Martin Martino, MD, medical director for LVHN’s minimally invasive robotic surgery program. “At LVHN, we are able to put together the most advanced surgical tools with our highly skilled surgeons – and that helps lead to the best outcomes for our patients.”



T. Daniel Harrison, DO  
Bariatric surgery

“Robotics and computer-assisted surgery are the future of surgery,” says LVHN bariatric surgeon T. Daniel Harrison, DO. “I believe that in 20 years, this will be the predominant way we perform minimally invasive surgery.”

Harrison, who sought advanced robotic surgery training in St. Louis, first began using the da Vinci robot at LVHN in 2015. Today, approximately 5 percent of bariatric procedures at LVHN are performed robotically, but that number is anticipated to increase as cases become more complex.

### **Patient outcomes**

Robotic surgery’s benefits as compared to open surgery may include shorter LOS, reduced pain and

discomfort, faster recovery time, smaller incisions that reduce risk for infection, reduced operative time, reduced blood loss and transfusions, and minimal scarring. “When surgeons become skilled with their 3-D, minimally invasive robot in the technique, there is clear evidence of improved outcomes,” Martino says.

At LVHN, Martino and colleagues compared 30-day readmissions for patients who had robotic and nonrobotic hysterectomy for benign disease. Readmission rates in the robotic cohort were significantly less than non-robotic cohorts: robotic (1 percent), laparoscopic (2.5 percent), open (3.5 percent) and vaginal (2.4 percent). Estimated blood loss, LOS and sum of readmission costs also were significantly less in the robotic cohort compared with patients in the other cohorts.<sup>1</sup>

“The data from just the benign gynecologic service line on the 601 patients who had the robotic surgery over a five-year period translates into saving more than 600 days in LOS, plus the added benefit of available inpatient beds,” says obstetrician/gynecologist Gregory Kainz, DO, with LVPG Obstetrics and Gynecology. “With our dedicated robotic surgery team, we offer patients a safe, reproducible environment that maximizes outcomes.”

### **Surgeon training**

Although the FDA requires only one to two days of surgeon training for robotic certification, LVHN’s rigorous credentialing pathway includes additional requirements such as annual simulation training. New surgeons also must work with experienced, expert surgeons on at least 10 cases. In addition, off-site training is encouraged.

Erik Sylvain, MD, who joined LVHN in 2016 as chief of thoracic surgery, worked for six months with robotic surgery pioneer Richard Lazzaro, MD, at Lenox Hill Hospital. “Without proper training, robotic surgery is not going to produce desired outcomes,” Sylvain says. “This is a sophisticated surgical tool that demands different skills than



**Gregory Kainz, DO**  
Obstetrics and Gynecology



**Erik Sylvain, MD**  
Thoracic Surgery

laparoscopic or traditional surgery.”

Sylvin uses the robotic approach for approximately 90 percent of lobectomies, but cautions that a complete medical history and thorough patient assessment are necessary to decide upon surgical technique. “Every patient is different, but the goal is always the same – complete the objective of the operation and keep the patient safe.”

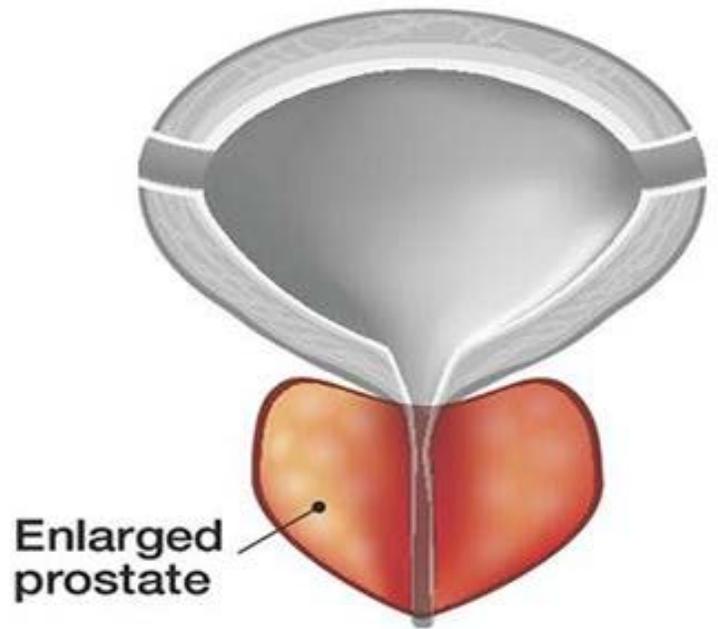
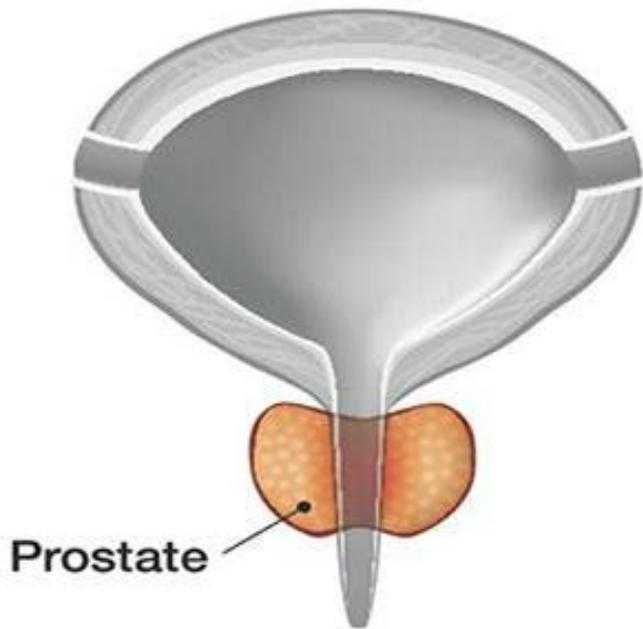
## National and international profile

LVHN was one of the founding organizations of the Robotic Training Network (RTN), which has grown from nine academic sites in 2010 to 55 institutions today. Recognizing the need for proficiency at the console in robotic surgery, Martino and surgeons from the other eight founding organizations developed a validated test of surgical skill for residents/fellows-in-training. The structured, comprehensive online training and simulation-based training program, known as Robotic-Objective Structured Assessment of Technical Skills (R-OSATS),<sup>2</sup> consists of two phases – bed assistance and training at the surgeon console.

LVHN’s commitment to surgical skills education, training and assessment continues to take new paths. The health network is one of 14 international sites selected to participate in the Fundamentals of Robotics Surgery (FRS) validation trial. Established with a Department of Defense grant, FRS is a proficiency-based training and education program for robotic surgery; the validation trial that LVHN is participating in is the final step in completing the curriculum for adoption. Martino serves on the five-member organizational committee for FRS.

To refer a patient for minimally invasive robotic surgery, call 610-402-CARE.

1. “A comparison of quality outcome measures in patients having a hysterectomy for benign disease: robotic vs non-robotic approaches.” M. Martino et al. *Obstet Gynecol.* 2014; 123(6): 1193-99.  
2. “Validation and reliability of the Robotic Objective Structured Assessment For Technical Skills.” M. Martino et al. *Obstet Gynecol.* 2014; 123(6): 1193-99.



## LVHN Offers Minimally Invasive Treatment for BPH

**Full range of best-practice therapies available for enlarged prostate**

Most men will get benign prostatic hyperplasia (BPH) as they age. Many simply live with the symptoms, which can include urination problems and incontinence. But they don't have to. LVPG Urology embraces a "center of excellence" model for BPH and men's health, offering a full range of BPH treatments based on nationally recognized best practices. "Technologies for treating BPH have changed, and our urologists have learned many of these newer, very nuanced therapies in residency," says Lehigh Valley Health Network (LVHN) urologist

Clifford Georges, MD.

### **UroLift treatment in the office**

BPH patients usually begin with alpha blockers as medical therapy, then advance to other treatments if medication isn't working. Among the newest minimally invasive options is UroLift®, which entails inserting small implants to hold the prostate lobes apart and allow urine to flow normally. The procedure involves no cutting or tissue removal, and LVHN urologists can perform it in the office. "We're the only center in the northeast U.S. offering UroLift in an office visit," says Angelo Baccala Jr., MD, LVHN's chief of urology. "We've built up an infrastructure and protocol to accommodate the procedure under a local anesthetic in a safe, comfortable environment."

### **Surgical options**

For patients with larger prostates or comorbidities, LVHN offers a full range of surgical treatments, including:

- **Transurethral resection of the prostate (TURP)** – TURP entails insertion of a resectoscope into the urethra to trim away excess prostate tissue and increase urine flow. LVHN urologists perform bipolar TURP, which cauterizes the surgical site more effectively than previous techniques, reducing complications and allowing most patients to return home the same day.
- **Photoselective vaporization of the prostate (PVP)** – In PVP, surgeons use a cystoscope and laser to burn away excess prostate tissue. Since PVP vaporizes tissue rather than cutting it, there is typically less blood loss, making it a good choice for men taking blood thinners.



Clifford Georges, MD  
Urology

[Watch a video to learn more about him.](#)



Angelo Baccala Jr., MD  
Urology

[Watch a video to learn more about him.](#)

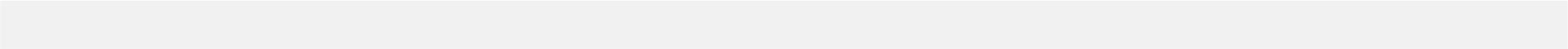
- **Holmium laser enucleation of the prostate (HoLEP)** – HoLEP is often used for patients with prostates too large for TURP or PVP. Surgeons enucleate prostate gland tissue with a laser, and then morcellate and remove tissue from the bladder.

For patients who are not candidates for these options, LVHN also offers robotic simple prostatectomy.

## **Getting help**

The best step for any BPH patient is to see a urologist early. “Patients will often stop taking their medications, unbeknownst to their physicians, either because of side effects or because they’re not producing results,” Georges says. “These men are just living and suffering with symptoms, when there are many other alternatives we can give them.”

To refer a patient for BPH treatment, call 610-402-CARE.





## Treatment for Gastroschisis

The Centers for Disease Control and Prevention estimates that more than 1,800 U.S. babies are born annually with gastroschisis, a birth defect of the abdominal wall next to the umbilicus thought to be caused by a disruption in the blood supply to the developing fetus. Gastroschisis results in the intestines – and occasionally other abdominal organs – protruding through a hole beside the navel.

Physicians affiliated with Lehigh Valley Children's Hospital see up to four gastroschisis cases annually, including an infant born at Lehigh Valley Hospital (LVH)–Cedar Crest in January 2016. This case illustrates the multidisciplinary effort involved in successfully managing the continuum of care in a

child with a serious birth defect.

### **Early detection**

The patient, Diana Fernandez Rodriguez of Hazleton, sought care from Lehigh Valley Health Network (LVHN) obstetrician/ gynecologist Vadim Loshakov, MD, through LVH–Hazleton’s Healthy Beginnings Plus, a state-funded prenatal program.

“Although gastroschisis is usually not detected until the second trimester, our sonographers first detected it at 13 weeks, and we immediately alerted maternal fetal medicine specialists at LVH–Cedar Crest,” Loshakov says.

Rodriguez then began seeing obstetrician/gynecologist Kara Coassolo, MD, with LVPG Maternal Fetal Medicine, who joined Loshakov in closely monitoring Rodriguez throughout her pregnancy.

“Although gastroschisis usually does not appear along with other abnormalities, there is an increased risk for restricted growth and stillbirth,” Coassolo says. Colleagues with LVPG Pediatric Surgical Specialties and colleagues in LVPG Neonatology met with the couple in early December to explain the surgery and post-op care. Because the family drove from Hazleton to Allentown (47 miles), the team coordinated appointments to help minimize travel time.



**Marybeth Browne, MD**  
Pediatric surgery



**Kara Coassolo, MD**  
Maternal fetal medicine

On Jan. 21, 2016, a routine checkup showed the infant's heart rate was higher than normal, possibly indicating a lack of oxygen. Coassolo and her colleagues elected to perform an emergency cesarean section at LVH–Cedar Crest. Because Rodriguez primarily speaks Spanish, trained medical interpreter Carina Sanchez guided and reassured her through the entire birth. The baby, Isabella, was born at 34 weeks. She was transferred to the NICU for definitive care.



Vadim Loshakov II, MD  
Obstetrics/gynecology

### **A textbook reduction procedure**

Isabella's entire small intestine and part of her large intestine and stomach were outside her abdominal wall. The condition of those organs concerned the pediatric surgery team. "There's always some degree of trauma that affects peristalsis and motility," says pediatric surgeon [Marybeth Browne, MD](#). "Fortunately, in this case, everything looked good."

To correct the defect, a transparent silo with a spring-loaded ring was placed over the viscera and under the fascial defect. The silo stretched the abdominal cavity while protecting the organs and holding them perpendicular to the abdominal wall, enabling gravity to slowly pull them downward.

Over the next 48 hours, the bowel reduced through the silo, allowing the abdomen to gradually acclimatize to the increasing contents and avoiding any sudden increase in intra-abdominal pressure that may have compromised the infant's breathing or caused other complications. Isabella tolerated the reduction procedure without incident, and the abdominal wall was closed less than two days after her birth.

### **A steady recovery**

Neonatologist Migdalia Resto, MD, monitored Isabella along with other neonatologists in the NICU for the next six weeks. "It took about three weeks before we saw any bowel function," Resto says. In the meantime, Isabella received IV nutrition via PICC line, and any gastric secretions were removed via suction. "At about four weeks, we were able to start feeding her by mouth, and after that she started tolerating the feedings fairly consistently."

Resto is fluent in Spanish and spoke frequently with Rodriguez and her partner throughout their daughter's NICU stay. "I believe it gave them a sense of comfort to know that they could ask me questions directly, particularly during that initial three-week period," she says. Sanchez, the Spanish-language interpreter, also continued to visit regularly.

Isabella went home on March 1, which was a short period, Resto notes, considering that infants with gastroschisis can spend up to 12 weeks in the NICU. She continues to do well.

“We’ll never forget what everyone at LVHN did for us,” Rodriguez says. “I think LVHN is the best there is.”

## **Prognosis is bright**

Browne notes that babies with gastroschisis may never have completely normal bowel motility and may be prone to issues such as irritable bowel syndrome, so she recommends following these children for three to five years. However Isabella’s prognosis is bright because of the teamwork involved in her care from the beginning.

“In Isabella’s case, the defect was detected early, the parents were prepared, and treatment proceeded without delay,” Browne says. “It’s a great example of the comprehensive, coordinated effort from the LVHN perinatal, maternal fetal medicine and pediatric teams.”

To refer a patient to maternal fetal medicine, call 610-402-CARE.

