Fetal surgeon Aimen Shaaban, MD, second from left, leads a multidisciplinary team at The Chicago Institute for Fetal Health that provides a complete spectrum of care for the fetus and the mother, including in utero fetal surgery. Pediatric surgeon Erin Rowell, MD (left), and maternal fetal medicine physicians Priya Rajan, MD, and William Grobman, MD, are some of the specialized team.
Expanded fetal health resources provide new hope for families

“Our goal is to make the most accurate diagnosis and develop individualized solutions for the care of each patient.”

– Aimen Shaaban, MD

A fter Tom and Kristi Smillie’s 20-week checkup to discover the gender of their unborn baby, they received news that would change their world. Their baby was diagnosed with diaphragmatic hernia, a rare congenital defect that causes an abnormal opening in the diaphragm and puts the baby’s life at risk.

Diaphragmatic hernia occurs while the baby is developing in the womb. Abdominal organs, such as the small intestine, liver and kidney, move up into the chest cavity through a hole in the diaphragm. To correct it, emergency surgery must be performed to put organs back in their proper place. It was devastating news for the family. After researching where to deliver her baby, Kristi decided on Lurie Children’s. She was referred by another patient-family who also had a high-risk pregnancy and was treated by the doctors at Lurie Children’s. Providing comprehensive care for a high-risk pregnancy with a complex fetal diagnosis, such as the Smillie’s, can be exceptionally challenging. The Chicago Institute for Fetal Health at the Ann & Robert H. Lurie Children’s Hospital of Chicago, the regional leader in fetal and pediatric care, is one of only a few comprehensive fetal care centers in the country able to address this. And with the addition of Aimen Shaaban, MD, a pediatric surgeon and leading expert in the area of fetal surgery, the conditions that The Chicago Institute can now treat has expanded significantly.

FETAL SURGERY NOW AN OPTION

In July, Dr. Shaaban joined Lurie Children’s to lead The Chicago Institute’s expansion, bringing with him more than 20 years’ experience in the area of fetal surgery. While the institute has always had a charge to empower families to understand their baby’s diagnosis, prepare for the birth, learn what to expect after birth and provide the specialized follow-up care needed for all babies, regardless of where they are born, now even more challenging cases can be treated.

This institute now has a multidisciplinary, multi-institutional mandate to provide a complete spectrum of care for the fetus and mother, ranging from prevention of disease to in utero fetal surgery.

“Through the use of cutting edge diagnostics and advanced fetal interventions when necessary, The Chicago Institute for Fetal Health is able to offer care for the full spectrum of fetal conditions,” said Dr. Shaaban, Director of the institute. “Our focus is on innovation and partnership.”

COLLABORATION IS KEY

Partnering across specialties and with referring providers is a critical component to delivering the best patient care possible. A diaphragmatic hernia, which the Smillie’s baby had, is one example of the many conditions that are best treated by a collaborative team of specialists. Another example is twin-twin transfusion syndrome (TTTS), which occurs when twins share a placenta and the blood flow between the two is uneven. Through fetal intervention, laser surgery can be done to separate the cross-circulation between the twins, correcting the problem. The institute’s clinical team members are passionate about pioneering advancements such as these, which can lead to improvements in the diagnosis, treatment and care of complex fetal conditions and anomalies.

These multidisciplinary teams also serve as an extension of an obstetrician’s or maternal fetal medicine’s practice.

“We recognize that our greatest team members are our referring providers who already have a strong relationship with their patients,” said Dr. Shaaban. “We encourage the referring providers to participate in the team whenever possible. To be able to provide the best possible care, continual collaboration is key.”

EVERYTHING IN ONE PLACE

Located on the fifth floor of the Ann & Robert H. Lurie Children’s Hospital of Chicago, The Chicago Institute for Fetal Health is available to provide easy, universal access to all necessary testing and care. Within the institute, patients are able to receive ultra-fast MRIs, fetal echo, high-resolution

In March 2015, Corah Smillie entered the world determined to beat the odds that were stacked against her.
ultrasound, patient education, multidisciplinary counseling, prenatal surgery if needed and follow-up. Everything is in one place.

With more than 40 years of experience, the institute’s multidisciplinary team draws on the extensive expertise of faculty from maternal-fetal-medicine, neonatology, fetal surgery and more than 20 other adult and pediatric medical and surgical subspecialties, including genetics, social work and advanced practice nursing, among others.

“Each patient has a unique situation, which may require attention just after birth or a prenatal intervention prior to delivery,” said Dr. Shaaban. “Our goal is to make the most accurate diagnosis and develop individualized solutions for the care of each patient.”

While it is always a journey, the Smillie’s little girl Corah is now more than two years old and thriving.

“We see so much joy and strength,” says Kristie, “and we are so grateful to see her live. She beams and grins all of the time. She is unbelievable.”

National leader in fetal surgery joins Lurie Children’s

Aimen Shaaban, MD, a pediatric surgeon and leading expert in the area of fetal surgery, has joined Ann & Robert H. Lurie Children’s Hospital of Chicago as Director of The Chicago Institute for Fetal Health and as Professor of Surgery at Northwestern University Feinberg School of Medicine.

This institute has a multidisciplinary, multi-institutional mandate to provide a complete spectrum of care for the fetus and mother, ranging from prevention of disease to in utero fetal surgery. This addition helps support Lurie Children’s mission to provide the best possible care for our patients and their families.

Most recently, Dr. Shaaban has been a fetal surgeon and the Director of the Center for Fetal Cellular and Molecular Therapy at Cincinnati Children’s Hospital Medical Center, and Professor of Surgery at the University of Cincinnati College of Medicine.

Prior to his work in Cincinnati, from 2008-2012 Dr. Shaaban served as an Associate Professor of Surgery and as Director of the Laboratory for Fetal Cellular Therapy at the University of Iowa Carver College of Medicine. Before that, from 2002-2008 he served as Assistant Professor of Surgery at the University of Wisconsin Medical School.

Dr. Shaaban has lectured nationally and internationally and is among the most well-respected fetal intervention surgeons in the world. His clinical research contributions surround the diagnosis and treatment of congenital diseases, such as spina bifida, congenital diaphragmatic hernia (CDH), sacrococcygeal teratoma (SCT), congenital pulmonary airway malformation (CPAM), gastroschisis, omphalocele, twin-twin transfusion syndrome (TTTS) and fetal bladder outlet obstruction (BOO). He has published extensively in these areas and receives support for his basic science research program from the National Institutes of Health.

Dr. Shaaban received his medical degree from the University of Illinois College of Medicine. He completed his general surgery residency at the University of Iowa Hospitals and Clinics and his pediatric surgical residency and post-doctoral fellowship in fetal surgery research at Children’s Hospital of Philadelphia.
3-D-printed ovaries produce healthy offspring, shows promise for fertility treatments

Monica Laronda, PhD, is working on cutting-edge research that has restored fertility and hormone production in a mouse, using 3-D ovaries. The latest study was published in May in the journal Nature Communications.

By removing a female mouse’s ovaries and replacing it with an implanted 3-D-printed bioprosthetic ovary, the mouse was able to ovulate, give birth to healthy pups and nurse them as well.

Dr. Laronda is the Director of Basic and Translational Research for the Fertility & Hormone Preservation & Restoration Program at Ann & Robert H. Lurie Children’s Hospital of Chicago, the only fertility program for pediatric and adolescents in Illinois, Wisconsin, Indiana, Michigan and Iowa. She is a reproductive endocrinologist who studies the mechanisms of fertility and hormone restoration.

Her ultimate objective is to help restore fertility and hormone production in those who survived childhood cancer and now have increased risks of infertility and hormone-based developmental issues.

Dr. Laronda is the Warren & Eloise Batts Research Scholar, Department of Surgery, Ann & Robert H Lurie Children’s Hospital of Chicago and Assistant Professor of Pediatrics, Division of Endocrinology, Feinberg School of Medicine.

Under a blue LED bulb and viewed through a yellow filter, the green fluorescent protein gene in the pup becomes visible (shown here with mom) confirming for the research team that the fertility treatment was successful.
When 11-year old Ethan and his mom were sitting in the emergency room that early September morning, they did not know what to expect. All they knew for sure was that Ethan was in pain.

After the doctor examined him, suspicions were high—there was a strong likelihood that Ethan could have appendicitis.

Acute appendicitis is the most common surgical emergency in children and adolescents. Overall, there are about 250,000 cases in the United States annually. The majority occur in children 6- to 10-years-old, and appendicitis affects boys slightly more often than girls.

"With the appropriate work-up we were able to move closer to confirming our suspicions," said Rashmi Kabre, MD, pediatric surgeon at Ann & Robert H. Lurie Children’s Hospital of Chicago and Assistant Professor of Surgery, Northwestern University Feinberg School of Medicine. “All indications were that it was most likely acute appendicitis.”

For patients suspected of having acute appendicitis, surgical removal of the appendix is still the most common treatment. Depending on several criteria, however, some patients may instead be candidates for a study involving intravenous antibiotic treatment only. In Ethan’s case, Dr. Kabre recommended surgery.

Laparoscopic surgery confirmed the appendicitis diagnosis, but also that his appendix was non-perforated, which was good news. If it had been perforated, his treatment plan would have been very different.

"If a patient, such as Ethan, has laparoscopic surgery, and it proves to be an uncomplicated case, that child may be a candidate to go home the same day,” said Dr. Kabre.

This, however, has not always been the case. For years the accepted practice has been to keep the patient in the hospital for several days. Now, though, published literature showcases the safety of allowing some patients to be discharged the same day and recover at home.

"Since we knew that same-day discharge had been shown to be safe for patients, and since we also recognized that other hospitals were doing it successfully, we began piloting this program slowly over the last year,” said Julia Grabowski, MD, pediatric surgeon and Assistant Professor of Surgery, Northwestern University Feinberg School of Medicine. “We have had great feedback from our patients and staff on this same-day discharge option.”

Patients who qualify for same-day discharge must meet certain post-operative criteria:

- Have an uncomplicated case of appendicitis
- Be able to tolerate clear liquids
- Be afebrile
- Have appropriate pain control with oral medications

“it is easier on the patient, as he is not disturbed every couple of hours in the hospital,” said Laurie Sands, APN, “and it is less upheaval and stress for the rest of the family too.”

"I just thought he would rest better at home,” said Suzanne Amaro, Ethan’s mother. “What I really loved is that there was no rush to make a decision to leave. The night nurse practitioner was so wonderful in letting us make the decision and not rushing us. Because Ethan got out of surgery after 5:00 p.m., which was so late in the day, there was no way we could have anticipated how he would do that night. I couldn’t have asked for a better experience and outcome.”

An appendix that is swollen and inflamed, such as this, can irritate the abdominal wall, causing localized pain.
The diagnosis alone stops time. For Emma Lamb’s family, though, the diagnosis of rhabdomyosarcoma (or RMS), a type of soft tissue sarcoma, was devastating. Emma was only 20 months.

Her treatment plan was multifaceted. The first phase, chemotherapy, was able to be done close to home in the western suburbs. As that progressed, her family and their oncology team at Central DuPage Hospital (CDH) had to decide on the next phase—how to treat the main tumor in her lower abdomen—radiation, surgery or both. Together, they opted to obtain a second opinion from the multidisciplinary Sarcoma Team at Ann & Robert H. Lurie Children’s Hospital of Chicago.

“Everything between Lurie Children’s and our primary care team of Dr. Sharad N. Salvi and Dr. Ammar Hayani was just so seamless,” said Amanda Lamb, Emma’s mother.

With guidance from the primary care team, Emma’s family contacted the advanced practice nurse (APN) who immediately coordinated a dual appointment with both an oncologist and pediatric surgical oncologist.

In the past, while this care was available, it was less streamlined. A patient would typically undergo an initial evaluation by an oncologist, followed by multiple additional referrals to specialists in fields such as orthopedic oncology, head and neck surgery, pediatric surgical oncology, radiation oncology and fertility preservation. These appointments were often arranged separately, requiring multiple visits to Lurie Children’s and excruciating delays in obtaining answers.

“Through this new comprehensive program, the team can now offer multidisciplinary care for children and adolescents diagnosed with a sarcoma in a timely and coordinated manner.”

Members of the Sarcoma Team collectively developed a customized multidisciplinary care plan for Emma. Joining Emma and her mother Amanda are some of the members of the team (from left) Barbara Lockart, APN; David Walterhouse, MD; Timothy Lautz, MD.

Sarcoma Team: coordinated care minimizes stress on family
way,” said Timothy Lautz, MD, pediatric surgical oncologist and Assistant Professor of Surgery, Northwestern University Feinberg School of Medicine. “Appointments are made through an oncology APN who then helps the families navigate the next steps. When families are told their child has cancer, they want treatment to start yesterday. This streamlined program helps accelerate the treatment plan.”

Another aspect of this program is richer collaboration. The Sarcoma Team members meet regularly to collectively review patient treatment plans. Care is coordinated between oncologists, surgeons, radiation oncologists, radiologists, nurses and the cancer genetics team. Nothing is done in a silo. There are also weekly multi-specialist clinics, like the one where Emma was first seen. Here, patients can be evaluated simultaneously by oncologists and surgeons, who then in turn discuss each case with other relevant specialists to reach an optimal recommendation in real time.

In addition to this highly coordinated care, there is also research collaboration, which will ultimately also enhance patient care.

Each child or adolescent’s situation is unique. To address this, “we collectively work with patients and their families to develop an individual customized treatment plan for each child,” said Jeff Rastatter, MD, otolaryngology—head and neck surgeon.

While patients often need chemotherapy, additional treatments vary depending on the individual case. For instance, some may need surgery, others radiation and still others may need both. Pediatric and adolescent sarcomas, cancers that begin in either the bone or the soft (connective) tissues, are rare in children, but do account for approximately 15 percent of cancer diagnosis in patients under 20 years of age. The most common types of pediatric and adolescent sarcoma include osteosarcoma, Ewing sarcoma and RMS among others.

“Although classified as a group, each type of sarcoma responds to different modes of therapy,” said David Walterhouse, MD, Section Head of Oncology, Attending Physician and the Richard A. Perritt, MD Professorship in Cancer and Blood Disorders. “That is a key reason it is essential that children receive care at high volume centers with experience and expertise managing all different types of pediatric sarcomas.”

“In Emma’s case, for instance, we determined that complete resection of the tumor was possible,” said Dr. Lautz. “This allowed us to significantly reduce the dose of radiation that she would require, which is extremely important since radiation, especially to the lower abdomen and pelvis, can have significant side effects in young children.”

For some families, travelling great distances to reach a high volume center, however, can be a burden. To better accommodate these families, children can have their complex operations at Lurie Children’s, and then continue care locally. “For those families, keeping their children closer to home for the majority of their care, such as in Emma’s case, is a great option,” said Dr. Lautz.

FERTILITY PRESERVATION OPTIONS
In addition to treating the cancer, the Sarcoma Team is able to offer their patients innovative new fertility preservation options.

Improved treatments for cancer give patients the hope of long-term survival. However, many of the treatments that increase survival may cause loss of fertility and hormone function. New technologies are providing possibilities for preserving both.

“Through the multidisciplinary coordinated care with the fertility experts in Lurie Children’s Fertility and Hormone Preservation and Restoration Program, the Sarcoma Team is now able to provide new hope for those undergoing cancer treatment and minimize the risk of infertility among adult survivors of childhood cancer,” said Barbara Lockart, DNP, APN. “The program offers a comprehensive range of services for pre- and post-pubertal patients.”

Lurie Children’s Fertility and Hormone Preservation and Restoration Program is the only program of its kind in Illinois. In fact, there are no programs like it in Wisconsin, Indiana, Michigan or Iowa either.

“We wanted to explore fertility preservation because both cyclophosphamide, which was part of Emma’s treatment, as well as radiation were going to hurt Emma’s ovaries,” said Amanda Lamb. “We felt very happy we could do it here, because there are only a few places in the country that offer this type of fertility preservation.”

Emma Lamb was able to undergo a procedure called ovarian tissue cryopreservation at the same time as her operation to remove the tumor. It is offered to female patients who are receiving chemotherapy, radiation or surgery, which have the potential to cause infertility. During this process, one ovary is removed and is then frozen. When the patient is ready to have children, tissue re-implantation is an option. While still in the experimental phase, this treatment has resulted in pregnancies in adult women, and the hope is that technology will also be applicable to pediatric patients. Fertility preservation options are also available for boys of all ages.

When a child is diagnosed with any cancer, it is a scary and vulnerable time for the entire family. The newly centralized Sarcoma program focuses care in a more streamlined way and supports the family through the entire process.

“When dealing with a cancer diagnosis, you are just paralyzed in fear,” said Amanda. “The team members at Lurie Children’s were the hands on our back. Whatever we needed to get done got done, and they guided us through the whole process.”

The histologic examination shows an infiltrative blue cell tumor (from Rhabdomyosarcoma) with surface erosion and hemorrhage.
Perhaps because they can have ice cream or popsicles afterwards. Or perhaps because children have had their tonsils removed for decades without much incident. Whatever the reason, for patients and families, having a tonsillectomy is sometimes approached casually. But none of these treats or historical notions should belie the fact that surgery is surgery. In fact, providing clear guidance from the get-go regarding what to expect post-operatively may be able to help families better cope with the recovery and better manage related pain.

This is what Kathleen Billings, MD, and Jennifer Lavin, MD, pediatric otolaryngologists at Ann & Robert H. Lurie Children’s Hospital of Chicago, and their research team have started to examine. They noticed a pattern of Emergency Department (ED) visits from children who had their tonsils removed, which posed some questions. Why are so many children presenting in the ED after being discharged from having had tonsillectomies and how can we reduce this?

“In many cases, tonsillectomies can be done in one day, with the patient going home afterward without a hospital stay,” said Dr. Lavin. “However, the healing still has to happen, which is tricky as tonsils are located in a highly used part of the body. We need to use the surgical site to swallow; it does not have a chance to rest. Children who visit the ED within days of having this surgery most commonly show signs of dehydration from not swallowing, as it has been too painful.”

Other research by Renee Manworren, PhD, APN, Posey and Fred Love Chair in Nursing Research, and team at Lurie Children’s discovered that this hospital was not alone in identifying this as an issue. In fact, according to administrative data from the Pediatric Health Information System (PHIS), 38 percent of the ED revisits for postoperative pain were due to tonsillectomies, despite the fact that they comprise only 19 percent of all surgeries.

The research team looked at this to see what could be done better to reduce these return visits. Specifically, they focused initially on postoperative pain regimens and pain discharge instructions. Pain regimens historically have included acetaminophen and perhaps the prescription opioid codeine. However, an FDA black box warning issued in August 2012 has curtailed codeine prescribing use, challenging medical professionals to identify other methods to manage severe pain experienced after tonsillectomies. Furthermore, safety concerns about codeine have led to uncertainty of whether any narcotics should be used as first line in tonsillectomy, leading to many philosophies on postoperative pain control. These vary within a practice and by provider, based on what has been most effective for their patients in the past. While this variation can sometimes work on a case-by-case basis, complications can arise.

For instance, with multiple different pain regimens there runs the risk that an inconsistent message can be conveyed about an individual patient’s postoperative pain plan. This can lead to parental confusion about how to manage their child’s postoperative pain. From a health-quality perspective, it became clear that a greater standardization in the designation and communication of pain regimen is needed when patients are discharged.

As a result, the Lurie Children’s team aligned on just three fixed options which are now available for use when developing the discharge papers. And when a pain regimen is selected, it is hard coded and automatically populated into the patient’s discharge instructions.

“This helps eliminate previous variability and uncertainty that in turn helps reduce possible human error. It is a step forward in increasing safety and enhancing patient care,” said Dr. Lavin.

**WHAT’S NEXT?**

Streamlining the postoperative pain regimen and pain discharge instructions are important starting points. In addition, the team is also looking at other possible interventions, such as additional preoperative counseling and postoperative patient/family support.

Part of this next phase will include looking at characteristics associated with the patients who had return ED visits to see if there are other trends that can be addressed.

“Sometimes parents call frustrated because day one after surgery everything was fine, but by day three their child is in intense pain,” said Dr. Lavin. “As physicians, we know that pain spikes at three-to-seven days post-surgery. Parent comments such as these, however, suggest that this knowledge may not be universally communicated in a way that is effective.”

Through focus groups, the team will be engaging parents and children who have had tonsillectomy experiences to see what their concerns are, what they wish they would have known and how we can best address those concerns to further enhance the patient experience.

“We may look at other communications vehicles, such as a video or an app, to ensure the families know what to expect and how they can best support their child through the recovery phase,” said Dr. Lavin. “We want to ensure that the at-home recovery is as smooth, and pain-free, as possible.”

“We want to ensure that the at-home recovery is as smooth, and pain-free, as possible.”

— Jennifer Lavin, MD
Pediatric surgeon Ann O’Connor, MD, at the helm of the Lurie Children’s pediatric weight-loss program, says obesity is a multifactorial disease that requires a cocktail of treatments ranging from diet and exercise to medication to surgery.

Same-day ear tube surgery program offers children quicker relief from chronic ear infections

They are one of the top reasons children go to the doctor. The pain can be excruciating, and when they are recurrent, whole new layers of issues are added. Ear infections can cause children to miss school, parents to miss work and also increase the use of antibiotics. “In addition to affecting their hearing, my children were also in constant pain and not sleeping,” said Jesse Sherr, father of two boys. “Both of my sons suffered from chronic ear infections from a very early age.”

Ear tubes, or tympanostomy tubes (TT), have long been known to help mitigate this pain. In fact, they have been shown to reduce the prevalence of middle ear effusion by 32 percent in the first year and improve average hearing levels by 5 to 12 decibels, which is significant. But getting that surgery can take multiple appointments, with more antibiotics in between—until now.

A team of physicians and staff at Lurie Children’s developed a streamlined approach to treat children with recurrent or chronic ear infections (otitis media). After reviewing processes to see how this treatment timeline could be tightened, a team of physician champions from the Division of Otolaryngology – Head & Neck Surgery, and the Department of Anesthesiology, as well as representatives from clinical informatics and patient services, among others, met to create the work flow for same-day surgery. In addition, the team also developed a series of established clinical criteria, where the children aged 9 months to 12 years are evaluated and, if they qualify, can be scheduled for surgery on the same day.

Over the last year the number of same-day ear tube surgeries has increased by more than 30 percent.

“While my wife and I were apprehensive about putting a one-year-old under general anesthesia, the staff at Lurie Children’s did an excellent job of walking us through all that was to occur and making sure we were comfortable with everything,” said Jesse. “Being able to get everything done within one day was great. We were out of the hospital before nap time.”

“Delay in treatment for children with ongoing fluid in their ears can have lasting effects, leading to lengthier periods of time with reduced hearing,” said Kathleen Billings, MD, pediatric otolaryngologist at Lurie Children’s. “Our same-day surgery addresses this.”

Based on the American Academy of Otolaryngology-Head and Neck Surgery Clinical Practice Guidelines, a child meets criteria for indication of Bilateral Myringotomy and Tympanostomy Tube Placement (BMT) after one of the following:

- More than four ear infections in 12 months
- Middle ear effusion lasting three months or longer

Once referred from a pediatrician and confirmed as a candidate for surgery, the child will be scheduled. During that appointment, the child will be evaluated by an ear, nose and throat (ENT) surgeon and possibly an audiologist. After the evaluations, and if surgery is deemed necessary, it will be done that same day. Most patients leave within one to two hours following the procedure.

“After the procedures, both boys slept much better,” said Jesse. “They had consistently better moods and, most important, were pain free.”

“This program helps improve both access and efficiency of care, shortening the wait time for qualifying patients from diagnosis to treatment,” said Dr. Billings. “This can help reduce the time a patient suffers with the illness and can lead to a better quality of life for the child, which is our ultimate goal.”

Tiny tympanostomy tubes can significantly improve hearing levels for children with chronic ear infections.
Ann O’Connor, MD, an authority in the surgical care and treatment of obesity and obesity-related disorders in teens, recently became the only pediatric surgeon in Illinois certified by the American Board of Obesity Medicine.

Dr. O’Connor leads Lurie Children’s bariatric surgery program, which is the only program in the State of Illinois with expertise specifically dedicated to the treatment of adolescents and their unique medical, behavioral, nutritional and psychological needs. Her interest in surgical weight management in teens was sparked by her observations early in her career that many of her patients had medical and surgical problems stemming from obesity.

When medical and behavioral weight loss programs have proved unsuccessful for severely obese teenagers, bariatric surgery can be an effective treatment, as it can resolve more than 80 percent of weight-related health issues.

Dr. O’Connor sees patients at Lurie Children’s at Northwestern Medicine Central DuPage Hospital Pediatric Outpatient Center.
Overweight and obese children at highest risk for some infections from surgery

Overweight and obese children are at the highest risk for the most common complications from surgery, an infection at the site of the surgical procedure. This according to a new study published in the May/June 2017 issue of the medical journal, Surgical Infections.

While obesity is a well-known risk factor for surgical site infections (SSI) among adult patients, this is the first research showing it is equally significant in pediatric populations. And since the incidence of childhood obesity in the US has nearly tripled since the 1970s, this indicates more and more children will possibly be at risk for these infections.

“Research on this topic among children and adolescents is scarce,” said Catherine Hunter, MD, pediatric surgeon at Ann & Robert H. Lurie Children’s Hospital of Chicago and an Assistant Professor of Surgery and Pediatrics, Northwestern University Feinberg School of Medicine. “The information from this first-of-its-kind study can now be used in assessing preoperative pediatric patients and their families.”

The study, titled “Overweight and Obese Pediatric Patients Have an Increased Risk of Developing a Surgical Site Infection,” included a search of the American College of Surgeons (ACS) National Surgical Quality Improvement Program-Pediatric (NSQIP-P) database, as well as a follow-up single center retrospective review. The latter review allowed for a more detailed analysis using specific outcomes variables that could not be analyzed using the NSQIP-P database, including looking at those overweight and obese pediatric patients who developed SSI despite having few other identifiable risk factors for infection.

Cases from a total of 1,380 patients, aged 2-18 (mean patient age 10.4 years), from the NSQIP-P database who had undergone major surgical procedures in 2012 and 2013 and who developed post-operative wound infections up to 30 days after surgery were reviewed. Patients were classified as underweight, normal/healthy weight, overweight, or obese, according to standard CDC pediatric growth charts, with a 95 percent confidence interval.

Forty-percent of these patients who had SSIs were overweight or obese and without differences in gender.

In the single site retrospective review, data from another 115 patients were considered. Of this population the average age was slightly younger at 9 years and 30 percent were overweight or obese.

“The information from this first-of-its-kind study can now be used in assessing preoperative pediatric patients.”

– Catherine Hunter, MD

When considering children, adolescents and adults, there are several theories as to why overweight or obese patients are at higher risk for infection,” said Dr. Hunter. “These include impaired wound healing due to the lower oxygen tension found in the excess fat tissue surrounding the wound, as well as impaired lymphocyte responsiveness. However, more studies need to look at this further.”
All research begins with a question. In medicine, the questions focus on finding better ways to care for patients. And what better way to begin to answer those questions than to ask the patients and their families themselves. This is the premise for two of the projects currently underway within the Department of Surgery: Listen to our families to improve the patient experience.

Through a $15,000 award, provided by the prestigious Patient-Centered Outcomes Research Institute’s (PCORI) “Pipeline to Proposal” program, a research team has created a Pediatric Surgical Experience Advisory Board, which brings together patients, parents and clinicians. These varied individuals with different perspectives are working toward one goal – to improve the pediatric patient surgical experience.

“My child was three months old when she had her first surgery” said mom and Advisory Board member Mary Zygmunt. “I remember there was always a large medical team that came to the room every day – it was intimidating. Some days were hard for her and when I saw that I immediately just wanted to shut the door and keep them all out. I didn’t of course. But it’s a reality every parent faces.”

It’s psychosocial stressors like these encountered during the surgical experience that the Advisory Board members are capturing. This identification is important so that ultimately appropriate support can be developed for the patients and their families.

The PCORI award was given to Katherine Barsness, MD, MS, pediatric surgeon at Ann & Robert H. Lurie Children’s Hospital of Chicago and Associate Professor of Surgery and Medical Education, Northwestern University Feinberg School of Medicine, who is leading this effort. “Current interventions focus on health-care provider initiated programs and unfortunately most have failed to properly engage the very stakeholders who stand to benefit most from them: pediatric patients and their families,” said Dr. Barsness. “Without patient input we cannot knowingly identify and meet the specific needs of our patients and their families.”

Another perspective that is important as we try to identify ways to improve the patient experience is that of the referring pediatrician. According to Advisory Board member and pediatrician Barry Altshuler, MD, looking at the communication between surgery team members and the primary care offices is critical. “We need to have a uniform message to our patients and their families about how to prepare for surgery and what to expect before, during and after the procedure.”

The Board has pinpointed and ranked the top three key family stressors: anxiety, communication, and managing expectations.

Identifying these stress points is the first step. In August the Board plans to use this ranked list of stressors to guide the development of intervention options to address them through comparative effectiveness research. This might include using Child Life Specialists to a greater degree or developing better communications vehicles, for instance.

Finally, in 2019 the Board will submit a competitive proposal to PCORI based on the development of a comparative effectiveness research question driven by the entire Board. The proposal will focus on two interventions to address the selected issue, such as anxiety or communication, to assess which intervention provides better results. “I am pleased that Lurie Children’s is including parents on the Advisory Board team, as parents are one of the hospitals’ customers,” said Heidi Albert,
whose son Reid had surgery at Lurie Children’s. “We end up being the quarterback of a child’s surgery and can provide that additional perspective.”

“It is also important to include actual patients, too, as patients and parents have different experiences,” said 12-year old Reid who is also on the Board.

In May 2016 a team of researchers from across the hospital came together as a group and collectively determined there was a need for better communication. They began working with former patients who are members of the Lurie Children’s Kids Advisory Board and teen-aged students at Walter Payton High School in Chicago to help fine-tune the best communication options for a pediatric and adolescent audience.

“We hypothesize that by ensuring a better understanding of research and why it is conducted before approaching a patient or family for consent, we can better address any patient fears, increase participant retention rate, and demystify research. In short, we are looking to explain complex research and health concepts in engaging ways for children and their families.”

— Ferdynand Hebal, MD

For instance, as a former patient, the hour or two before going to the hospital was nerve-wracking because no one had told me anything—we had not heard from the doctor and the surgery was so close.”

Established by the non-profit PCORI, the ‘Pipeline to Proposal’ program funds two tiers of awards that help individuals or groups build community partnerships, develop research capacity, and hone a comparative effectiveness research question that could become the basis of a research funding proposal to submit to PCORI or other health research funders.

Dr. Barsness’ study was one of only 46 Tier I projects funded this fall through the program. All approved projects, which were recognized with awards of up to $15,000 each, are intended to develop the capacity for patients, caregivers and other stakeholders to participate in patient-centered clinical comparative effectiveness research. In addition to this Tier I award, the team was recently also awarded the PCORI Pipeline to Proposal Tier II $25,000 award to continue to develop this program further.

“Videos like this already exist for an adult audience and are widely used in academic institutions across the country, however, resources like these for a pediatric population are few and far between,” said Dr. Hebal.

“This idea helps brand Lurie Children’s as a leader in the field of pediatric research, which can help position the hospital as a preferred site for investigator initiated and industry sponsored trials and the go-to place in the nation for clinical and translational research,” said Dr. Hebal.

This pre-consent video will begin to be used across the hospital starting this summer.

The hope is that after this video is completed, we will be able to begin to build a family focused educational video series on related topics such as randomization and clinical trials, to help clarify other aspects of research, as well.

In short, we are looking to explain complex research and health concepts in engaging ways for children and their families.

In short, we are looking to explain complex research and health concepts in engaging ways for children and their families. But it can be scary and confusing for parents and children when approached by a researcher or clinician to consider participating in a study. As an academic medical center, Lurie Children’s has many opportunities for participation and saw a chance to improve the informed consent process.

The team landed on the concept of a short animated video.

“Having a specific 2-3 minute animated video that can be shared prior to asking for any consent will help to standardize the consent process,” said Dr. Hebal. “And both the high school teens and members of the Kids Advisory Group felt strongly that animation was the way to go.”

By working with the youth teams it also became clear that when patients and families are approached about participating in a possible research study, they don’t even know the questions to ask. As a result, the video provides suggested questions including things like:

• What will happen in the study?
• How long will I be in the study?
• What are you trying to learn from this study?

While questions like these might seem obvious, when first approached about study participation often fear and confusion are the only things that come to mind. This will provide a firmer foundation and drive better discussion and engagement.

And the teens helped in other ways too. They have provided very useful input in refining the video storyboards. “For example, we had a researcher pictured in one of the scenes, buried in his books,” said Dr. Hebal. “However, the feedback from our youth teams was that he should be looking at a computer instead, which certainly made sense. This type of feedback is making the video more real for the intended audiences.” They also pointed out where we could address diversity in a more meaningful way.

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ANIMATED RESEARCH PRE-CONSENT VIDEO

Medical research helps find cures for disease. It can help evaluate treatments. It provides great benefits to patients and...
Lurie Children’s recognized as Level 1 pediatric surgery center by American College of Surgeons for second time

For the second year, Ann & Robert H. Lurie Children’s Hospital of Chicago has been named a Level I pediatric surgery center by the American College of Surgeons (ACS). In 2017, Lurie Children’s became the first children’s hospital in Illinois to earn this status and is currently one of five in the country.

The Level I verification is awarded by a multi-organizational task force led by the ACS, the body responsible for setting the nation’s standards for quality of surgical care, practice and training.

To be verified as a Level I surgery center, a children’s hospital must demonstrate it has the expertise, resources and capacity to deliver timely, safe, appropriate and multidisciplinary surgical care for even the most complex and rarest of cases, and do so around the clock. In addition to children’s surgeons, Level I centers must have 24/7 availability of specialists in children’s anesthesiology, radiology and emergency medicine, and must provide round-the-clock critical and intensive care for children and infants of all ages, including severely premature newborns. A Level I center must also provide education, training, leadership and research in the field of children’s surgery, and may offer residency and fellowship training for the next generation of children’s surgeons and surgical subspecialists.

“We are very proud and honored to earn this recognition for the second year in a row,” said Marieta Reynolds, MD, surgeon-in-chief at Lurie Children’s, the Lydia J. Fredrickson Professor of Pediatric Surgery and Professor of Surgery at Northwestern University Feinberg School of Medicine. “This verification program from the American College of Surgeons affirms that the appropriate resources match the needs of each child. As a hospital that treats cases from the most complex to the most common, we are humbled that Lurie Children’s is one of the few hospitals in the country to receive this Level 1 verification. Having this distinction affirms we are on the cutting edge surgically and a national leader in providing surgical treatment to children in the safest possible environment.”

“Specialized training and resources are absolutely critical to meet the needs of the smallest infants, who fit in the palm of our hands, to teenagers, who are almost adults but still have their special needs,” said Fizan Abdullah, MD, PhD, Vice Chair Dept. of Surgery at Lurie Children’s, Orvar Swenson Founders’ Board Chair in Pediatric Surgery, and Professor of Surgery at Northwestern University Feinberg School of Medicine. “This verification program from the American College of Surgeons affirms that the appropriate resources match the needs of each child. As a hospital that treats cases from the most complex to the most common, we are humbled that Lurie Children’s is one of the few hospitals in the country to receive this Level 1 verification. Having this distinction affirms we are on the cutting edge surgically and a national leader in providing surgical treatment to children in the safest possible environment.”

The ACS emphasizes that the different levels of verification are meant to capture the resources needed to deliver a certain level of surgical care, rather than to evaluate individual hospital performance. The verification is intended to differentiate between hospitals specializing in the surgical care of complex, rare and severe cases from those delivering high-quality but routine and less complex care.

Millions of infants and children undergo operations in the United States each year. Ensuring that children receive the right treatment at the right time at a hospital that matches the complexity of their condition is critical to improving patient safety and outcomes, reducing complications and optimizing the use of medical resources. The new classification system is designed to reduce the risk of under-triage — mistakenly sending a child with severe or complex surgical condition to a hospital that doesn’t have the capacity to treat that patient. It is also intended to minimize the chance for over-triage — unnecessarily sending more routine, simpler cases to higher-level surgical centers, a process that can strain and drain hospital resources, drive healthcare cost and increase travel burden for families.

The Department of Surgery at Lurie Children’s includes 10 pediatric surgical subspecialties, including neurosurgery, cardiac surgery, transplantation, plastic and reconstructive surgery, otoaryngology-head and neck surgery, general surgery, urology, orthopedic surgery and dentistry. Lurie Children’s performs more pediatric operations than any other hospital in Chicago, treating children across the age spectrum for conditions ranging from benign and common to complex, rare and life-threatening.

“Having this distinction affirms we are on the cutting edge surgically and a national leader in providing surgical treatment to children in the safest possible environment.”

— Fizan Abdullah, MD, PhD
Patients will soon have another Lurie Children’s suburban location for outpatient surgery. A new ambulatory surgical treatment center and additional outpatient services will be adjacent to Lurie Children’s Outpatient Center in Northbrook. The 26,000 square foot facility will include an MRI, four operating rooms, private rooms for pre- and postoperative care and physician offices.

“Thirty-one percent of outpatient surgeries performed at the downtown campus come from the Northbrook area,” said Michelle Stephenson, Executive Vice President and Chief Operating Officer of Ann & Robert H. Lurie Children’s Hospital of Chicago. “This new outpatient center will make it easier for families whose children need outpatient surgical services to get it closer to home. There is no reason for our patients to come to the main hospital in downtown Chicago if they can receive the same quality care in their own backyard.”

The ambulatory surgical treatment center compliments the Outpatient Center in Northbrook which opened in September, 2015. A number of services are offered there, including EEG, comprehensive dermatological services, neuropsychology, sports medicine, physical and occupational therapy. The Lurie Children’s ambulatory surgical treatment center is scheduled to open in Spring, 2018.

Lurie Children’s is one of the nation’s top children’s hospitals ranked by U.S. News & World Report and is the pediatric academic and research partner of Northwestern University Feinberg School of Medicine. Last year, the hospital served more than 170,000 children from 50 states and 48 countries.

Renowned pediatric cardiovascular surgeon joins Lurie Children’s

Internationally renowned neonatal heart surgeon, Joseph Forbes, MD, joined Lurie Children’s in July as the Associate Division Head of Pediatric Cardiovascular-Thoracic Surgery and Surgical Director of the Single Ventricle Reconstruction Program.

Dr. Forbes received his medical degree from Harvard Medical School and completed his residency and fellowship at Duke University Medical Center.

He began his career at Children’s Hospital Boston. Recently he was Professor of Surgery at the University of Texas Southwestern Medical Center and Director of Cardiothoracic Surgery at Children’s Medical Center in Dallas from 2004 to 2016.

Dr. Forbes has published over 100 peer-reviewed articles and book chapters, and has given nearly 60 invited presentations.

In addition to his surgical expertise in complex single and biventricular reconstruction in neonates, Dr. Forbes is a well-established scientist. His research interests include the development of bioresorbable (or naturally-dissolving) stents, coatings and nanoparticles for use in pediatric vascular and airway applications. He will continue this innovative work at the Stanley Manne Children’s Research Institute, where all research at Lurie Children’s is conducted.
PRECISION seeks to enhance partnerships and stimulate exchange of ideas between our surgical faculty and fellow surgeons and referring pediatricians both locally and nationally. We welcome comments, questions and suggestions about topics you want to see covered.

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