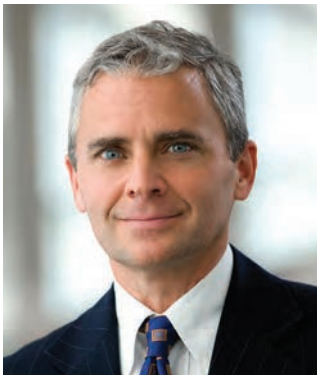
DEPARTMENT OF SURGERY SPOTLIGHT 2019

Texas Children's Hospital®

WELCOME



Dear colleagues, parents and friends,

I am so proud of the outstanding work Texas Children's Department of Surgery performs every day to give our patients the best chance at a bright and healthy future.

As the largest comprehensive team of pediatric surgeons in the United States, we complete more than 37,500 operating room cases and more than 253,100 clinic visits each year. Our range of services allows us to treat the full spectrum of ailments facing our pediatric patients – from the simplest to the most complex.

This past year, our efforts have focused on giving more patients access to our state-of-the-art surgical and clinical care by: growing our new flagship location in the Texas Medical Center, the Lester and Sue Smith Legacy Tower; adding new appointments and clinics after hours, early mornings and on Saturdays; and bringing surgical services closer to home than ever before, with Texas Children's Specialty Care locations across Houston and now in Austin.

We are also using technology in smart, innovative and resource-conscious ways, such as conducting routine post-surgical follow-up visits via telemedicine and deploying a virtual reality and digital entertainment system to help relieve stress during anesthesia procedures ahead of surgery.

I hope you enjoy reading about our outstanding team and their commitment to surgical excellence. I am honored to work with these dedicated surgeons and our passionate and talented colleagues.

With respect and gratitude,

Larry H. Hollier Jr., M.D., F.A.C.S.
Surgeon-in-Chief
Texas Children's Hospital

As the largest com
surgeons in
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each year.

Texas Children's Hospital is affiliated with Baylor College of Medicine® in the areas of pediatrics, pediatric surgery, anesthesiology, pathology, radiology and obstetrics and gynecology. Baylor is ranked by *U.S. News & World Report* as one of the nation's top 10 medical schools for pediatrics. Currently and throughout our partnership, Texas Children's Hospital serves as Baylor's primary pediatric training site. The collaboration between Texas Children's Hospital and Baylor is one of the top five such partnerships for pediatric research funding from the National Institutes of Health.

Physicians are employees of Baylor College of Medicine, not Texas Children's Hospital. Because they practice at Texas Children's Hospital, they may be referred to as "our team" or "Texas Children's physicians" throughout this report.

Texas Children's Hospital®

Affiliated with

Baylor College of Medicine®

TEXAS CHILDREN'S HOSPITAL AND BAYLOR COLLEGE OF MEDICINE

With a staff of more than 14,000 employees and 2,000 physicians, advanced practice providers, pediatric subspecialists, pediatric surgical subspecialists and dentists, Texas Children's offers more than 40 subspecialties, programs and services.

Texas Children's Hospital is one of the nation's largest and most comprehensive pediatric health organizations, with more than 4.7 million patient encounters in 2019.

We are proud to be consistently recognized as a leader in pediatric care, ranking third among the nearly 200 pediatric centers surveyed by *U.S. News & World Report* in their 2019-20 edition of Best Children's Hospitals.

Texas Children's is the highest ranked pediatric hospital in the south, and the only pediatric hospital in Texas on *U.S. News & World Report's* Honor Roll of top ranked overall children's hospitals. This year, Texas Children's Hospital ranked among the top three in six subspecialties, and in the top 10 in all 10 subspecialties:

- **#1 Cardiology and Heart Surgery**
- **#1 Pulmonology**
- **#2 Gastroenterology and GI Surgery**
- **#2 Nephrology**
- **#3 Cancer**
- **#3 Neurology and Neurosurgery**
- **#6 Urology**
- **#7 Neonatology (tie)**
- **#8 Diabetes and Endocrinology**
- **#10 Orthopedics**

Texas Children's Hospital is located near downtown Houston in the Texas Medical Center, the largest medical center in the world. This campus includes nearly 680 licensed inpatient beds; Mark A.Wallace Tower for outpatient visits; Feigin Tower for pediatric research; Texas Children's® Pavilion for Women, a comprehensive OB/GYN facility with a focus on high-risk births; and Texas Children's Hospital® Jan and Dan Duncan Neurological Research Institute®, a basic science research institute dedicated to solving childhood neurological diseases.

Our latest capital expansion project, Lester and Sue Smith Legacy Tower, added 19 floors to an existing, six-floor base in 2018 to greatly increase our capacity for critical and surgical care.

Additionally, two community hospitals, Texas Children's Hospital® West Campus and Texas Children's Hospital® The Woodlands, bring specialty pediatric care – including an additional 160 licensed acute and critical care beds, two 24/7 pediatric emergency centers, full-service surgical suites and more than 20 subspecialty clinics a piece – to communities in west and north Houston with a rapidly expanding population of children.

Texas Children's also operates Texas Children's® Specialty Care, offering subspecialty services in the community; Texas Children's® Urgent Care, expert pediatric care after hours and on weekends; Texas Children's® Health Plan, the nation's first health maintenance organization created just for children; and Texas Children's Pediatrics®, the nation's largest primary pediatric care network with nearly 60 practices located throughout Houston, Austin and College Station. Texas Children's Health Plan offers STAR Kids, a Medicaid-managed, best practice care plan for children under the age of 21 with disabilities and complex medical needs, throughout the Greater Houston area.

In recent years, we expanded our care to Austin and College Station to make it easier for families in these areas to access the high quality, affordable pediatric care and services they need.

In 2019, Texas Children's Heart Center® was named the best place in the country for both pediatric cardiology and heart surgery according to U.S. News & World Report.

DEPARTMENT OF SURGERY

The Department of Surgery at Texas Children's Hospital is comprised of pediatric surgeons across nine surgical divisions: Congenital Heart Surgery, Dental, Neurosurgery, Ophthalmology, Orthopedics, Otolaryngology, Pediatric Surgery, Plastic Surgery and Urology. In conjunction with our partners in Anesthesiology, Pediatric and Adolescent Gynecology and Transplant Services, we have more than 120 surgeons, 135 advanced practice providers and 950 employees dedicated to ensuring children get the surgical care they need.

Our team's robust activities are reflected in the more than 37,500 operating room cases and over 253,100 clinic visits completed in 2019, the substantial external research funding obtained by our faculty, and the many prestigious scholarly articles published and presentations given nationally and internationally by our team each year.

Operating room suites managed across the Texas Children's system include:

- 25 at Texas Children's Hospital in the Texas Medical Center
- 6 at Texas Children's Pavilion for Women
- 6 at Texas Children's Hospital West Campus
- 4 at Texas Children's Hospital The Woodlands

Most of the surgical suites are integrated with video, endoscopic, robotic or microscopic equipment. For specialized surgical interventions such as fetal, heart and transplant surgery, we offer highly customized equipment and operating rooms as well as specially trained support staff. When children are too sick to be moved to an operating or procedure room, a mobile team, which includes a fellowship-trained pediatric anesthesiologist, travels throughout the hospital to perform bedside procedures.

DEPARTMENT OF SURGERY
in 2019

Surgical Division	Clinic Visits	Operating Room Cases	Operating Room Hours
Congenital Heart Surgery	1,730	1,044	6,471
Dental	3,923	1,569	2,167
Neurosurgery	7,990	1,121	4,263
Ophthalmology	37,903	1,537	1,518
Orthopedics	68,724	3,633	8,724
Otolaryngology	67,589	15,149	10,616
Pediatric and Adolescent Gynecology*	12,526	341	629
Pediatric Surgery	14,976	8,556	15,276
Plastic Surgery	17,106	1,698	3,167
Urology	20,729	2,888	4,377
TOTAL	**253,196**	**37,536**	**57,028**

**Pediatric and Adolescent Gynecology is a division of Obstetrics and Gynecology.*

Operating room cases are defined as cases when operating room staff and supplies are used. Cases with multiple procedures count as one case and are attributed to the service line of the primary surgeon. Operating room case volumes include procedures performed by Texas Children's Hospital, Baylor College of Medicine and private practice physicians at Texas Children's Hospital locations in both Houston and Austin. Clinic visits include outpatient visits by Texas Children's Hospital and Baylor College of Medicine faculty only.

DEPARTMENT OF SURGERY
by year

Year	Clinic Visits	Operating Room Cases
2015	148,050	26,771
2016	166,124	27,646
2017	198,256	30,111
2018	228,476	33,131
2019	253,196	37,536

SURGICAL PROGRAMS BY DIVISION

The Department of Surgery at Texas Children's Hospital has a robust offering of surgical and clinical services and is able to address the full spectrum of pediatric health conditions from the simplest to the rarest and most complex. See below for a full list of programs, procedures and diagnoses across the department as well as the chiefs of service leading each division.

Surgical Division	Programs/Procedures		Chief of Service
Congenital Heart Surgery	• Aortic arch advancement • Aortic valve stenosis repair • Arterial switch operation • Atrial septal defect and ventricular septal defect closures • Atrioventricular canal defect repair • Blalock-Taussig shunt • Coarctation of the aorta repair • Double-switch procedure • Fontan procedure • Glenn procedure • Heart and lung transplants	• Norwood operation • Patent ductus arteriosus ligation • Rastelli procedure • Repair of Ebstein's anomaly • Repair of anomalous coronary artery • Ross procedure • Tetralogy of Fallot repair • Transposition of great arteries repair • Ventricular assist device implantation	Dr. Christopher Caldarone
Dental	• Comprehensive dental care for special needs and medically complex patients		Dr. Esther Yang
Neurosurgery	• Craniofacial surgery • Epilepsy surgery • Fetal surgery • Hydrocephalus and endoscopic surgery • Minimally invasive pediatric neurosurgery	• Movement disorder surgery • Neuro-oncology brain and spinal tumor surgery • Spinal surgery • Vascular neurosurgery	Dr. Howard Weiner
Ophthalmology	• Corneal diseases • Craniofacial abnormalities • Droopy eyelids (ptosis) • Glaucoma • Neurologic eye disorders • Ophthalmologic plastic surgery • Orbital problems • Pediatric cataracts	• Retinoblastoma • Retinal surgery • Retinopathy of prematurity • Strabismus (eye misalignment in children and adults) • Tear duct obstructions (blocked tear duct)	Dr. David Coats
Orthopedics	• Bone health • Brachial plexus • Cerebral palsy • Clubfoot • Fracture • Gait/motion analysis • Hand	• Hip preservation • Limb deformity and reconstruction • Orthopedic oncology • Skeletal dysplasia • Spina bifida • Spine deformity and scoliosis • Sports medicine	Dr. Brian Smith
Otolaryngology	• Aerodigestive • Audiology • Cochlear implants • Down syndrome • Ear and hearing center • Head and neck surgical oncology • Microtia and atresia	• Neurotology • Speech-language pathology • Swallow and dysphasia • Tracheostomy • Vascular anomalies • Voice clinic	Dr. Anna Messner

Surgical Division	Programs/Procedures		Chief of Service
Pediatric and Adolescent Gynecology*	• Colorectal and pelvic health • Gender medicine	• Oncofertility • Young women's bleeding disorders	Dr. Jennifer Dietrich
Pediatric Surgery	• Aerodigestive disease • Adolescent bariatric surgery • Colorectal and pelvic health • Congenital diaphragmatic hernia • Fetal surgery at Texas Children's Fetal Center® • Inflammatory bowel disease	• Pectus • Robotic surgery • Short gut • Surgical oncology • Thyroid surgery • Trauma • Vascular anomalies	Dr. Allen Milewicz
Plastic Surgery	• Brachial plexus • Breast • Cleft lip and palate • Craniofacial/craniosynostosis	• Craniofacial reconstruction • Facial reanimation • Hand • Vascular anomalies	Dr. Edward Buchanan
Urology	• Biofeedback/pelvic floor therapy • Circumcision • Colorectal and pelvic health • Gender medicine • Kidney stone • Oncofertility (male)	• Robotic surgery • Spina bifida • Urodynamics • Urologic oncology • Urology transition medicine • Voiding dysfunction	Dr. Paul Austin

** Pediatric and Adolescent Gynocology is a division of Obstetrics and Gynecology.*

The Facial Reanimation Clinic, one of the first of its kind for children in the United States, specializes in the comprehensive clinical and surgical care of children with facial weakness, paralysis and asymmetry.

SURGERY IN THE COMMUNITY

TEXAS CHILDREN'S SPECIALTY CARE

Orthopedics and Sports Medicine services expand in Sugar Land

To better meet the needs of young athletes in the Greater Houston area, Texas Children's Specialty Care Sugar Land launched the first phase of an Orthopedics and Sports Medicine expansion in October. The new space will include eight exam rooms dedicated solely to orthopedics, sports medicine and physical therapy as well as a new waiting room and check-in space located on the first floor. There will also be an additional X-ray room and casting room, doubling the capacity for the facility. The second phase, scheduled to open in spring 2020, will include a 2,500-square-foot sports physical therapy gym. There will also be a dedicated, full-time physician for the space.

TEXAS CHILDREN'S HOSPITAL WEST CAMPUS

Texas Children's Hospital West Campus was Houston's first community hospital designed, built and staffed to exclusively care for children. The facility incorporates best practices in pediatric treatment and serves the West Houston community as the premier resource for children's health.

Single-Visit Surgery Program continues to grow

The Single-Visit Surgery Program combines the preoperative clinic evaluation and surgical procedure into one convenient hospital visit. Patients with straightforward surgical problems can be assessed in clinic and have their surgery on the same day, with the same results as if the child had a preoperative visit.

Not only is single-visit surgery a benefit for our patients and families, but it also helps Texas Children's provide world-class care for even more patients.

The Single-Visit Surgery Program at Texas Children's West Campus includes:

- Hand Surgery (finger fractures, polydactaly, trigger thumb/finger)
- Pediatric Surgery (epigastric hernia, hydrocele, inguinal hernia and umbilical hernia)
- Ophthalmology (chalazion and nasolacrimal duct obstruction)
- Otolaryngology (ear tubes)
- Plastic Surgery (keloid removal/revision, mole/nevus removal, scar removal/revision and skin lesions or cysts)

To learn more about this program, please visit **texaschildrens.org/singlevisit**.

Dr. Sohail Shah named chief surgical officer

In June 2019, Texas Children's Hospital West Campus announced Dr. Sohail Shah as chief surgical officer.

Shah joined Texas Children's and Baylor College of Medicine in 2015. His clinical interests include treatment of pectus excavatum and carinatum, gastrointestinal surgery, neonatal surgery and the treatment of congenital anomalies. His practice specializes in minimally invasive thoracic and abdominal surgery for pediatric patients of all ages.

"I am very excited to lead the team of surgeons at Texas Children's Hospital West Campus," said Shah. "Bringing a high level of surgical care closer to where our patient families live is crucial, and it's a service we are honored to provide."

Texas Children's Specialty Care Sugar Land expanded its capacity for Orthopedics and Sports Medicine to better meet the needs of athletes in the community.

Shah earned his medical degree from Texas A&M College of Medicine. He completed his general surgery residency at University of Pittsburgh Medical Center and a pediatric surgery fellowship at Children's Mercy Hospital in Kansas City. He also holds a Masters of Science Healthcare Administration from Houston Baptist University.

Dr. Sohail Shah is the chief surgical officer at Texas Children's Hospital West Campus. For more information, please visit **texaschildrens.org/westcampus**.

TEXAS CHILDREN'S HOSPITAL WEST CAMPUS

in 2019

Surgical Division	Clinic Visits	Operating Room Cases	Operating Room Hours
Dental	N/A	692	991
Neurosurgery	310	N/A	N/A
Ophthalmology	5,719	189	143
Orthopedics	15,028	1,211	2,481
Otolaryngology	12,317	3,678	2,095
Pediatric and Adolescent Gynecology	3,512	30	69
Pediatric Surgery	2,733	1,374	1,301
Plastic Surgery	3,540	319	385
Urology	3,480	320	379
TOTAL	**46,639**	**7,813**	**7,844**

Operating room case volumes include procedures performed by Texas Children's Hospital, Baylor College of Medicine and private practice physicians at Texas Children's Hospital West Campus. Clinic visits include outpatient visits by Texas Children's Hospital and Baylor College of Medicine faculty only.

TEXAS CHILDREN'S HOSPITAL THE WOODLANDS

Texas Children's Hospital The Woodlands, open since April 2017, is a 548,000-square-foot, state-of-the-art facility. It is the area's first freestanding pediatric hospital, and the second community hospital location for Texas Children's. As the only dedicated pediatric hospital north of Houston, Texas Children's Hospital The Woodlands serves children and families in the fast-growing communities of The Woodlands, Kingwood, Conroe, Spring, Magnolia, Humble and surrounding areas.

The hospital features 25 emergency center rooms, 12 radiology rooms, four operating rooms and 74 inpatient care beds including pediatric and neonatal intensive care. There is also a neurophysiology sleep lab, EEG and infusion center.

First bariatric surgery performed in The Woodlands in February

Texas Children's Hospital reached a significant milestone when 18-year-old Aazyerein Reed became the first patient to receive bariatric surgery at Texas Children's Hospital The Woodlands.

Previously, access to bariatric surgery was available only at our Texas Medical Center campus. However, a review of comparative patient data and geographic analysis revealed a large portion of our adolescent bariatric surgery patients coming from The Woodlands and other communities outside Houston. Following the analysis, a multidisciplinary team at Texas Children's Hospital The Woodlands began laying the groundwork to expand the program.

The pre-surgery assessment period for bariatric surgery candidates is lengthy – usually six to eight months. In addition to meeting physical criteria, candidates must also undergo diagnostic testing, attend regular clinic visits, and receive lifestyle and diet education.

The expansion of Texas Children's bariatric surgery services in The Woodlands helps the hospital meet a major need in the community. Obesity-related health problems doctors once saw only in middle-aged people are now being seen in teenagers. These conditions include high blood pressure, type 2 diabetes, polycystic ovarian syndrome, obstructive sleep apnea, severe bone and joint issues, and hepatosteatosis (fatty liver), as well as increased risk of heart attack and cancer. Because each patient is different, Texas Children's experts put special emphasis on building a program of care around each unique patients' needs, tailoring diet and exercise regimens based on their lifestyle and interests.

Since expanding to The Woodlands, clinic volume has grown 34%, while OR cases doubled in quantity, allowing more patients in need of bariatric surgery and other weight loss options access to care.

Motion and Gait Analysis Lab garners accreditation

This past year, Texas Children's Motion Analysis and Human Performance Laboratory, located at Texas Children's Hospital The Woodlands, was awarded a prestigious accreditation from the Commission for Motion Laboratory Accreditation (CMLA) – an independent body established to enhance and standardize the clinical care of people with movement disorders. The lab is now one of only 14 accredited labs in the nation and one of only three in Texas.

CMLA accreditation is a rigorous, often lengthy process that requires extensive documentation and quality analysis. This includes evaluation of personnel, administrative structure, clinical and technical data collection methods, quality assurance procedures and institutional policies. This data is then reviewed by a panel of CMLA experts in orthopedic surgery, physical medicine and rehabilitation, physical therapy, biomechanics and other related disciplines.

The Motion Analysis and Human Performance Laboratory at Texas Children's Hospital The Woodlands is ideal for clinical gait analysis, running analysis and concussion evaluation.

The Motion Analysis and Human Performance Laboratory provides the platform for an integrated approach to patient care. The foundational service for the lab is for neuromuscular or clinical gait patients with some form of neuromuscular disorder, such as cerebral palsy or spina bifida. However, lab capabilities are already being expanded to include a comprehensive sports medicine component. Two programs in early phases of implementation are running analysis – to determine any deficits in strength and mobility or to identify mechanical issues that could lead to chronic injuries – and concussion management – which helps children avoid returning to play too early, experiencing another brain injury and possible musculoskeletal injuries that could result from concussion-related changes to postural control.

Clinical gait patients come to the lab as part of pre-surgical or pre-treatment planning to help multidisciplinary care teams determine the best path forward. The evaluation process is extensive and begins with a physical exam with a physical therapist (PT). In this approximately one-hour session, the PT assesses muscle tone, strength, range of motion and other functional measures to get a clear picture of the patient's condition. A series of 2-D videos and photos is taken to document standing posture and foot alignment. Patients are then "markered up" head to toe with 70 reflective spheres adhered at specific points on the body. This allows the team in the lab – typically a PT, PT tech and a biomechanist (human motion expert) – to capture a full biomechanical picture of the patient. These experts then work with colleagues in surgery and physical medicine and rehabilitation to analyze the data and develop a treatment plan that fits the needs of each individual patient.

Dr. Jeffrey Shilt is the chief of community surgery, leading all surgical efforts across Texas Children's Hospital The Woodlands, Texas Children's Hospital West Campus and Texas Children's Specialty Care Austin. For more information, please visit **texaschildrens.org/woodlands**.

TEXAS CHILDREN'S HOSPITAL THE WOODLANDS
in 2019

Surgical Division	Clinic Visits	Operating Room Cases	Operating Room Hours
Congenital Heart Surgery	N/A	1	4
Neurosurgery	57	N/A	N/A
Ophthalmology	4,775	143	117
Orthopedics	15,246	775	1,374
Otolaryngology	14,746	4,342	1,811
Pediatric and Adolescent Gynecology	2,980	53	83
Pediatric Surgery	3,622	3,151	6,036
Plastic Surgery	1,888	245	299
Urology	4,706	798	819
TOTAL	**48,020**	**9,508**	**10,543**

Operating room case volumes include procedures performed by Texas Children's Hospital, Baylor College of Medicine and private practice physicians at Texas Children's Hospital The Woodlands. Clinic visits include outpatient visits by Texas Children's Hospital and Baylor College of Medicine faculty only.

ACCESS IMPROVEMENTS

Texas Children's Hospital has been working to improve access and increase appointment availability for our patients and referring providers.

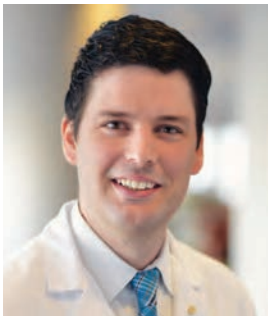
As a part of this system-wide improvement, the Department of Surgery is expanding clinic availability through various initiatives including:

- Saturday clinics at Texas Children's Specialty Care Upper Kirby, Texas Children's Hospital West Campus and Texas Children's Hospital The Woodlands.
- 7 a.m. clinics at Texas Children's Hospital in the Texas Medical Center's Mark A. Wallace Tower.
- Evening clinics at Texas Children's Hospital West Campus and in the Texas Medical Center's Mark A. Wallace Tower.

PROGRAM EXPANSIONS

Adult Congenital Heart Disease Program continues to thrive

Texas Children's Hospital is proud to announce two new leaders of the Adult Congenital Heart Disease (ACHD) Program at Texas Children's Heart Center®. Dr. Peter Ermis serves as medical director of the ACHD Program and Dr. Edward Hickey serves as surgical director of the ACHD Program. Together, the esteemed cardiologist and cardiovascular surgeon will lead the largest ACHD program in the state.



Dr. Peter Ermis

Dr. Edward Hickey

Advances in detection and treatment have greatly improved the survivability and longevity of children born with congenital heart disease, with generations of patients living long into adulthood with congenital heart diseases that only pediatric providers have experience in treating. Texas Children's ACHD Program bridges pediatric and adult cardiac care, allowing patients with congenital heart disease to receive the seamless continuity of care from birth throughout adulthood that their conditions require. Our multidisciplinary team of experienced congenital heart disease specialists provides a full spectrum of services, procedures and testing and advises patients on health and lifestyle choices for their adult needs, including physical challenges, exercise options and family planning. We also offer comprehensive medical and surgical care in collaboration with colleagues at Texas Children's Pavilion for Women® and Texas Children's Fetal Center® to meet the unique needs of pregnant patients with congenital heart disease. The ACHD Program is accredited by the Adult Congenital Heart Association (ACHA) and is one of only three programs accredited in Texas.

To learn more about Texas Children's ACHD Program, visit **texaschildrens.org/achd**.

Surgical program expansions into Austin

Throughout 2019, surgical care continued to expand west with services at Texas Children's Specialty Care Austin.

Department of Surgery specialties now available in Austin include:

- Colorectal and Pelvic Health Program (Pediatric Surgery)
- Ophthalmology
- Pectus Program (Pediatric Surgery)
- Plastic Surgery
- Voiding Improvement Program (Urology)

Following clinical evaluations in Austin, patients come to Houston for surgery.

Learn more at **texaschildrens.org/austin**.

TEXAS CHILDREN'S SPECIALTY CARE AUSTIN

in 2019

Surgical Division	Clinic Visits
Ophthalmology	2,282
Pediatric Surgery	156
Plastic Surgery	361
Urology	4
TOTAL	**2,803**

OFFICIAL DEDICATION OF LESTER AND SUE SMITH LEGACY TOWER

On May 31, 2019, nearly 100 guests – including Texas Children's executive and physician leadership, members of the Board of Trustees, and the family of Lester and Sue Smith – gathered in the Russell and Glenda Gordy lobby for the official dedication and blessing of Lester and Sue Smith Legacy Tower.

Among late Houston philanthropist Lester Smith's greatest joys was his dedication to the service of others. Most recently, Lester and his wife, Sue, announced a $50 million gift and helped raise a total of $83 million for Texas Children's following the hospital's Legacy of Motown Gala in Sept. 2018.

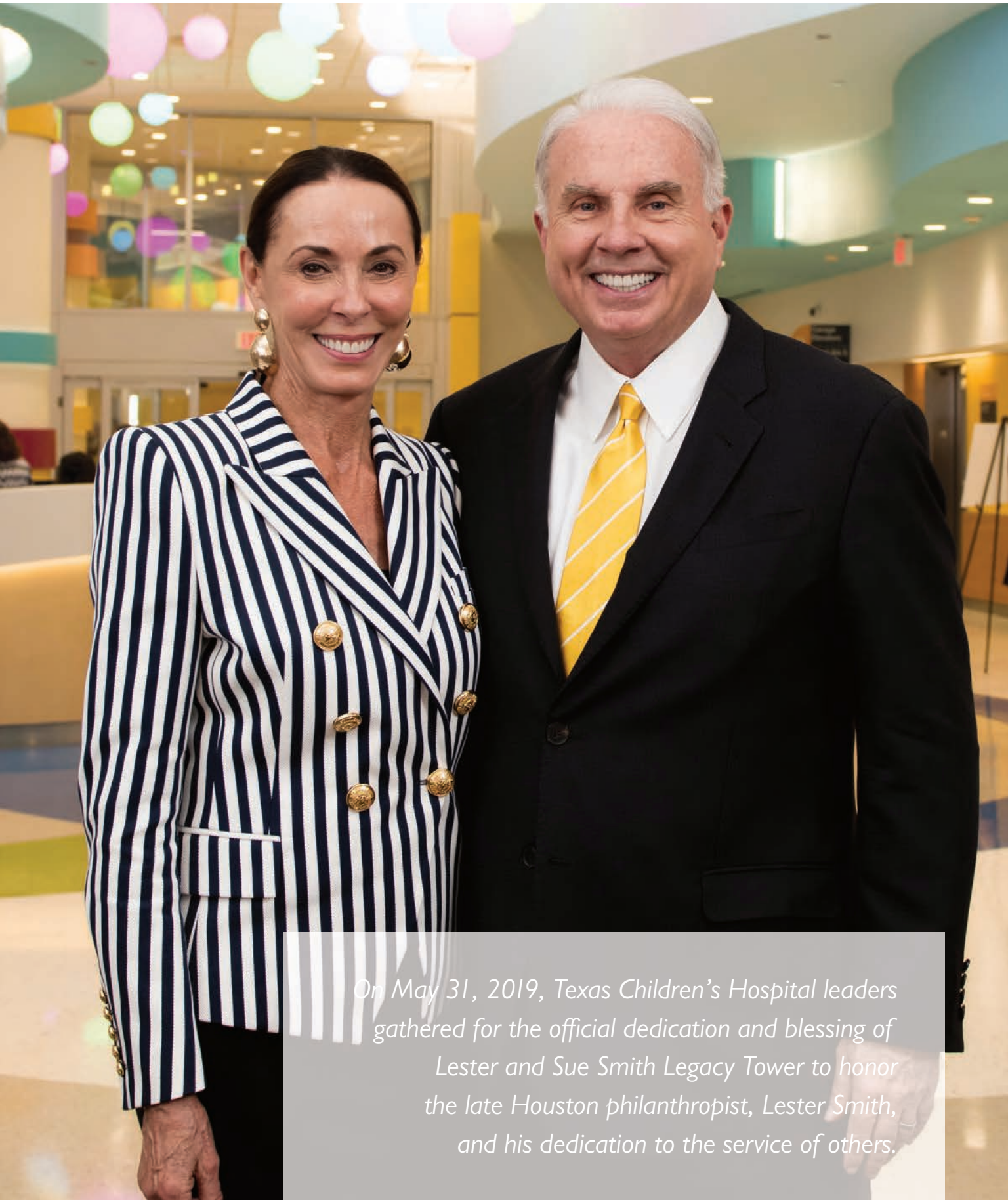
The Lester and Sue Smith Legacy Tower is the new home of heart, intensive care and surgery. The cutting-edge, 640,000-square-foot facility allows Texas Children's to continue providing the highest-quality care possible for the most critically ill children who come to us for help.

"When this tower was still under construction, we named it Legacy Tower," said Mark A. Wallace, Texas Children's president and CEO. "We knew this would be a place that would not only hold Texas Children's legacy, but also the legacy of so many others, including our resilient patients and the dedicated team of caregivers who work hard each and every day to create healthier futures for children everywhere."

Of Smith's legacy, Wallace said, "Lester left so many legacies – his conviction and courage, his generosity, his triumphant spirit and his passion for life. Each of these legacies will be lived out every day in this building through the patients and families we serve."

Prior to the official dedication, Lester's daughter, Shelly, and her husband, Brian, along with his son Stuart and his wife, Limor, were surprised with the unveiling of two patient floors in the tower which were named in their honor by their late father.

"Lester brought so much joy to those he loved and cared for, and he often said that the most important thing we can do is care for the most vulnerable in our community – our children," Sue Smith said. "We believe that the best place to heal sick children is right here at Texas Children's, where all children are treated with the utmost compassion and expertise available, regardless of their family's circumstances. That truly resonates with us and is what guides our giving."



On May 31, 2019, Texas Children's Hospital leaders gathered for the official dedication and blessing of Lester and Sue Smith Legacy Tower to honor the late Houston philanthropist, Lester Smith, and his dedication to the service of others.

In less than 10 years, the number of physician assistants within the Department of Surgery has grown from five to over 140.

ADVANCED PRACTICE PROVIDERS CONTINUE TO SHINE

Over the past half century, health care delivery has changed dramatically, with emphasis no longer solely placed on the expertise of a doctor, but rather on a team of caregivers. And because of the rising demand for health care, combined with the ongoing shortage of physicians in the United States, advanced practice providers (APPs) – Physician Assistants (PAs) and Nurse Practitioners – have become major, even indispensable, players on that team.

APPs work in most areas of medicine, from primary care to the emergency room to surgical subspecialties. While they do not replace a physician, they work collaboratively on the care team and perform many of the duties a doctor might, including performing minor procedures, providing routine diagnoses, delivering health care education, assisting in the operating room and writing prescriptions.

It's then perhaps unsurprising that there has been a proliferation of APPs across the Texas Children's system over the past few years. "When I arrived at Texas Children's in 2011, we had fewer than five APPs," said Ryan Krasnosky, director of APPs at Texas Children's. "The Department of Surgery alone now has more than 140 APPs."

In fact, surgical APPs currently outnumber surgeons at Texas Children's, an intentional part of the department's strategy for growth. The Department of Surgery, moreover, is an excellent example of how APPs have added immense value that has led to improved patient access and the development of several key initiatives.

"There is no way that the Department Surgery can hire enough surgeons to keep up with the clinical demand of our rapidly growing city," said Texas Children's Surgeon-in-Chief Dr. Larry Hollier.

"No one comes close to our surgical volume. We rely on our APP partners to provide access at all of our locations throughout Greater Houston, so that patients and their families can be seen wherever and whenever they need help."

APPs have also proven to be key administrative leaders for the Department of Surgery, driving several critical initiatives around safety and quality, and have also been at the forefront of efforts to expand access to care in Houston, in Texas and across the southeastern United States.

Training the next generation of leaders

As advanced practice has evolved, so has the way Texas Children's trains providers. One example is the Surgery Physician Assistant Fellowship, created in 2013 as the first of its kind in the country.

"Pediatric surgery is not covered in most PA schools," said Hollier. "We thought it would be a wonderful opportunity to take PA graduates and expose them to the broad diversity of pediatric surgery that exists here."

The program, which is recently expanding to include a dedicated fellow in the community, also includes research time and workshops in suture, cadaver and simulation. Training is provided in clinics, on the surgical floors and in the operating room, and involves pre-, intra- and post-operative care. Fellows can also participate in and help lead several community service initiatives.

Since its inception, the fellowship has grown to include eight providers, and is a valuable pipeline for talent and a unique training opportunity for providers who want to join the Department of Surgery team at Texas Children's.

LEVERAGING SPECIAL TECHNOLOGIES

New program aims to reduce pre-surgery anxiety

The time spent waiting before a child goes back to the operating room for surgery can be filled with anxiety for the patient and their family as well. In an effort to help ease some of the stressors that exist in the pre-op setting, Texas Children's recently became the second hospital in the U.S. to implement the CHARIOT Program – Childhood Anxiety Reduction through Innovation and Technology.

Developed and first deployed by Stanford Children's Health, CHARIOT uses portable projectors, an interactive entertainment and relaxation system called BERT, and virtual reality headsets to capture patients' imaginations and draw attention away from otherwise stressful pre-op situations, such as the administration of anesthesia.

Younger patients see a red, fire-breathing dragon dancing across the screen, and they can choose cake, pizza or other food items for the dragon to "cook." Older patients can access a virtual reality

The Childhoo[illegible] rough Innovati[illegible] rogram allow[illegible] for distr[illegible]

headset that allows them to choose their own universe to explore while conveniently distracting them from what is happening at the hospital.

Led by pediatric anesthesiologist, Dr. Kathleen Chen, the program offers a multidisciplinary approach to care as members of teams from Child Life, Anesthesiology, Surgery and Nursing work together to engage patients who undergo awake IV placements or anesthesia induction and improve the overall patient/family experience during wait times. One of the main goals of the program is to minimize the use of anti-anxiety medications in the pre-op setting.

The virtual reality headsets, which can be used by children older than 10-years-old, were generously donated to Texas Children's by The Starlight Foundation. BERT can be used for children over the age of 3.

Leveraging telemedicine for post-operative visits

To provide convenient options and enhanced access for patient families, Texas Children's Department of Surgery is now providing some routine post-operative follow-up appointments via telemedicine (phone, computer or technology of choice).

Staffed by our team of advanced practice providers, this telemedicine service allows us to check in on our patients following surgery without them having to leave the comfort of home.

These appointments are available for Orthopedics, Otolaryngology, Pediatric Surgery, Plastic Surgery and Urology.

EASE app keeps families of surgical patients better informed

At Texas Children's Hospital we understand it's hard to be a patient and sometimes even harder to be a loved one of a patient undergoing surgery.

To help alleviate the anxiety of those sitting in the waiting room while their family member is on one of our operating tables, Texas Children's is providing a resource that gives parents and/or guardians real-time status reports from the operating team.

Those updates come in the form of a HIPAA compliant text via an app called EASE or Electronic Access to Surgical Events. EASE allows doctors and nurses to securely communicate with families about their loved one from the surgery suite. Messages disappear within 45 seconds and nothing is saved on any device to ensure private information stays that way.

"This application allows our families to leave the waiting room while their child is in surgery but still feel connected to their child's doctors and nurses, and secure in the knowledge that a member of the OR team can contact them any time it's necessary," said Dr. Larry Hollier, surgeon-in-chief.

The response from our patients since the app was introduced at Texas Children's Hospital has been overwhelmingly positive, with families noting that the feedback they received from the team during surgery helped greatly relieve their anxieties.

DISNEY TEAM OF HEROES PILOT LAUNCHES AT TEXAS CHILDREN'S

Disney magic has officially arrived at Texas Children's Hospital

In April 2019, invited guests from The Walt Disney Company, media outlets and health care organizations across the country joined Texas Children's clinical and executive leadership to celebrate the launch of the Disney Team of Heroes pilot. Texas Children's is the first hospital to work with Disney on this comprehensive new initiative that will enhance the patient and family experience at children's hospitals across the globe through a unique combination of reimagined spaces, personalized moments and engaging content, featuring beloved characters and scenes.

"Disney's commitment to bringing comfort and inspiration to children doesn't stop at the gates of Disneyland or Walt Disney World, and we are so grateful Disney is bringing those values to us in this way," said Texas Children's Surgeon-in-Chief Dr. Larry Hollier. "Now, some of the magic and joy you experience at a Disney theme park or movie is available at our hospital, and I am looking forward to seeing how this special partnership enhances the patient and family experience."

Texas Children's relationship with The Walt Disney Company dates back to 1952 – two years before the hospital opened – when Walt Disney himself gifted the hospital with an illustration depicting his vision for the hospital's campus at the time. The partnership was further solidified in 2018 when Texas Children's was chosen as the pilot hospital for this transformative, five-year commitment to the patient experience from The Walt Disney Company.

The Disney Team of Heroes launch was the culmination of a year of hard work and collaboration between a group of more than 80 Disney team members, including Disney's famed Imagineers, and a dedicated team of Texas Children's employees and caregivers.

The stunning mural is just one of the Disney Team of Heroes experiences for patients and families in Lester and Sue Smith Legacy Tower.

PROMOTIONS AND AWARDS

New chief of Pediatric Surgery

Texas Children's Hospital recently announced that Dr. Allen Milewicz would step into the role of chief of Pediatric Surgery.

Milewicz joined Texas Children's and Baylor College of Medicine in 1991. Throughout his tenure, he has served in numerous leadership roles such as the associate chief of Clinical Affairs and chief of Community Surgery.

"I am both thrilled and humbled to lead our team of incredibly talented pediatric general surgeons," said Milewicz. "We are committed to enhancing and further developing our broad array of clinical programs so that we can continue to provide premier care and the best surgical outcomes. We touch hundreds of families' lives every day and strive to bring our core values of excellence, integrity and service to every interaction."

Milewicz earned his medical degree from New York University Medical Center and completed his residency in general surgery at the University of Texas Southwestern Medical School in Dallas. He also completed a fellowship in pediatric general surgery at the University of Oklahoma.

Dr. Bip Nandi hired as first global surgeon in Malawi

Texas Children's Global Health partners with more than 18 governments to share its expertise and best practices around the world. The goal of the program is to maximize the resources at hand and use those resources to the optimum advantage of the children in those communities.

As part of Texas Children's global surgery efforts and thanks to a generous gift from philanthropist John Knox, Texas Children's recently hired its first global surgeon, Dr. Biplab Nandi, based in Malawi.

In his new position, Dr. Nandi is the only pediatric surgeon in Central and Northern Malawi, an area that is home to an estimated 2.5 million children. In Houston, there is one pediatric general surgeon per every 50,000 children, meaning each pediatric general surgeon in Houston is responsible for just 2% of the volume Nandi serves.

Texas Children's goal is to hire a second surgeon soon in order to launch a fellowship program in Malawi to train local pediatric surgeons and build a sustainable infrastructure in the region.

Multiple grants awarded across the Department of Surgery

In 2019, surgeons received multiple prestigious grants, awards and honors, including:

- Dr. Scott Manson (Urology): On July 1, Dr. Manson was awarded a $30,000 Junior Faculty seed grant
- Dr. Duong Tu (Urology): On September 1, Dr. Tu was awarded $102,5000 for the study of spina bifida
- Dr. Chester Koh (Urology): On September 13, Dr. Koh was given a sub-award from the Small Business Innovation Research program and Fannin Innovation Studio for just over $24,000
- Dr. Julie Hakim (Pediatric and Adolescent Gynecology): Received a career development award (K08) from the National Institute of General Medical Sciences (NIGMS) totaling $898,000 for three years to develop her independent research portfolio in vaginal wound healing. Her invention of a novel vaginal stent device, which she has developed in collaboration with BioTex, a local product development accelerator for new medical technology, was awarded Phase II funding under the SBIR program from the NIH. This award of $672,000 will support development and commercialization of this desperately needed medical device over the next year.

The goals of these projects and studies are to improve the clinical and surgical management of specific types of patients through the creation of implementation of new protocols to improve long-term patient outcomes and quality of life.

Dr. Brian Smith honored by the Scoliosis Research Society

During the 54th Annual Meeting of the Scoliosis Research Society, Dr. Brian Smith, chief of Orthopedics at Texas Children's Hospital, was part of the team that won the prestigious Russell A. Hibbs Best Clinical Research Paper Award.

Named after a pioneer in scoliosis surgery, the award honored Smith and his associates for their publication "Using Humerus Ossification and Cobb Angle to Predict Progression to Surgery in Scoliosis Patients."

RESOURCES AND OUTREACH

Texas Children's hosts prestigious wound care conference

In November, Texas Children's Hospital hosted the 7th Annual Meeting of the International Society of Pediatric Wound Care, one of the premier societies in the world devoted to education, collaboration and the most advanced pediatric wound care.

The two-day conference was held in a new auditorium located in the Jan and Dan Duncan Neurological Research Institute at Texas Children's Hospital, and featured experts in basic science, surgery and nursing discussing the latest developments in the care, prevention and research of pediatric wounds.

Speakers from Texas Children's included:

- Dr. Edward Buchanan, chief of Plastic Surgery
- Dr. Sundeep Keswani, pediatric surgeon, surgical director of Basic Science Research, immediate past president of the International Society of Pediatric Wound Care and local event chair
- MaryAnne Lewis, wound ostomy nurse
- Ryan Krasnosky, director of Surgical Advanced Practice Providers
- Shannon McCord, director of Advanced Practice Providers and Nursing Clinical Support Services

Information and fellowship for patient families

As one of the largest pediatric surgery programs in the nation, Texas Children's Hospital not only offers patients access to the best available treatments, but frequently we can offer patient families access to much-needed information and fellowship with other families as well. Intimate group events, such as the 7th Annual REACH (Research, Education and Awareness for Children with Hirschsprung Disease) Symposium, Microtia Awareness Day, Hearing Symposium and more, feature educational talks, Q&A sessions with experts, and opportunities to connect with other families going through the same or similar diagnosis. Typically, there is a full slate of games and activities for children to ensure their involvement and to help them make friends with others like them.

For patients and families alike, the events are an opportunity to meet with members of their child's multidisciplinary care team, learn about new and upcoming research, and feel like they aren't the only ones facing a unique and difficult diagnosis.

Video series launches aimed at arming families with more information

Texas Children's Hospital and its academic partner Baylor College of Medicine represent over 1,400 full-time faculty physicians and more than six decades of experience caring for some of the rarest and most complex cases in pediatrics.

In 2019, Texas Children's launched Medically Speaking, a series of videos and expert talks providing unique insight on topics such as wound care, facial fractures, occular trauma, noisy breathing, constipation, cleft lip/palate and more. Now clinical and non-clinical audiences alike can have access to the latest information and research on a topic without having to be at the presentation in person.

Learn more at **texaschildrens.org/medicallyspeaking**.

LEVEL I PEDIATRIC TRAUMA CENTER RE-ACCREDITATION

Texas Children's Hospital provides around-the-clock coverage to evaluate and treat the most severely injured pediatric patients. Averaging over 1,000 trauma admissions per year at our Texas Medical Center campus, teamwork is a crucial component in the rapid and decisive actions needed to treat traumatic injuries.

In 2019, the Texas Children's Hospital system saw a total of 18,276 trauma patients across the emergency centers, 1,902 trauma patient admissions, and 329 trauma cases taken directly from the emergency center to the operating room.

Many of these trauma cases came from within the Metro Houston catchment area, which consists of nine counties covering more than 9,500 square miles. It is estimated, based on numbers reported to the Texas EMS Trauma Registry, that the Texas Children's Hospital system sees approximately 50% of the injured children within our catchment area.

In 2019, Texas Children's was re-verified as a Level I Pediatric Trauma Center by the American College of Surgeons (ACS). During the visit, ACS found zero deficiencies, citing the hospital's seamless patient transport operations, Mission Control and coordination of care with community hospitals as particular strengths.

As a Level I pediatric trauma center, Texas Children's provides around-the-clock coverage to evaluate and treat the most severely injured pediatric patients.

MOST PEDIATRIC TRANSPLANTS IN THE NATION

Transplant teams at Texas Children's Hospital performed 106 solid organ transplants in 2019, the highest total at a pediatric institution in the U.S. Totals for each organ were:

- 29 heart transplants
- 27 kidney transplants
- 14 lung transplants
- 36 liver transplants

Since its inception, Texas Children's Transplant Services has grown at a steady pace and is now one of the largest pediatric transplant programs in the nation, with a total of over 1,800 solid organ transplants performed.

In 2019, in partnership with Donate Life Texas, Lester and Sue Smith Legacy Tower was lit green and white every time a patient/family made the decision to donate their organs. The goal for the initiative is to honor the legacy of the patient and the commitment of the family to sharing the gift of life, and to serve as a reminder for everyone in our community of the importance and value of organ donation.

ANESTHESIOLOGY SUPPORT

Texas Children's Department of Anesthesiology, Perioperative and Pain Medicine has 88 fellowship trained pediatric anesthesiologists, making it one of the largest departments of its kind in the United States. The team also includes 40 pediatric certified registered nurse anesthetists, 27 advanced practice providers (including two physician assistants and 25 nurse practitioners), two sedationists and a Ph.D. pain psychologist. In 2019, the pediatric team provided over 52,000 anesthetics, ranging from simple outpatient procedures to complicated surgeries.

The team is responsible for covering over 65 different operating rooms, radiologic locations and clinics across the Texas Children's system. The department also operates one of the leading fellowship programs in the United States, providing advanced training in general pediatric anesthesia and pediatric cardiovascular anesthesia, pediatric anesthesia education and research, and pediatric anesthesia quality and outcomes.

The divisions within Anesthesiology include:

- Anesthesia Research
- Cardiovascular Anesthesiology
- Community Hospital Anesthesiology
- Critical Care Medicine
- General Anesthesiology
- Non-OR Anesthesiology
- Pain Medicine

Anesthesia for children, babies and fetuses requires specially designed equipment. We use the latest technology, including advanced monitors and near infrared spectroscopy to measure brain oxygen levels. Our goal is for each child to have a safe experience, whether in the operating room or when having procedures and tests elsewhere in the hospital, including bedside sedation in patient rooms.

Dr. Dean Andropoulos is the anesthesiologist in-chief at Texas Children's Hospital. For more information about the department and our leadership, please visit **texaschildrens.org/anesthesia**.

REFERRALS

Texas Children's Department of Surgery provides care for children in the Greater Houston area and Austin and for children from all 50 states and over 60 countries around the globe.

To help meet the needs of our patients, we offer same-day surgical consultation appointments for each of the following surgical divisions: Congenital Heart Surgery, Neurosurgery, Ophthalmology, Orthopedics, Otolaryngology, Pediatric and Adolescent Gynecology, Pediatric Surgery, Plastic Surgery and Urology.

To make an appointment, call **832-TCH-APPT (832-824-2778)**.

Visit **texaschildrens.org/refer** for more information about referring a patient.

To learn more about the Department of Surgery, visit **texaschildrens.org/surgery**.

For additional appointment information or to speak with a division administrator, please call:

Division	Phone Number
Congenital Heart Surgery	832-826-2030
Dental	832-822-3200
Neurosurgery	832-822-3950
Ophthalmology	832-822-3230
Orthopedics	832-822-3100
Otolaryngology	832-822-3250
Pediatric and Adolescent Gynecology	832-822-3640
Pediatric Surgery	832-822-3135
Plastic Surgery	832-822-3180
Urology	832-822-3160

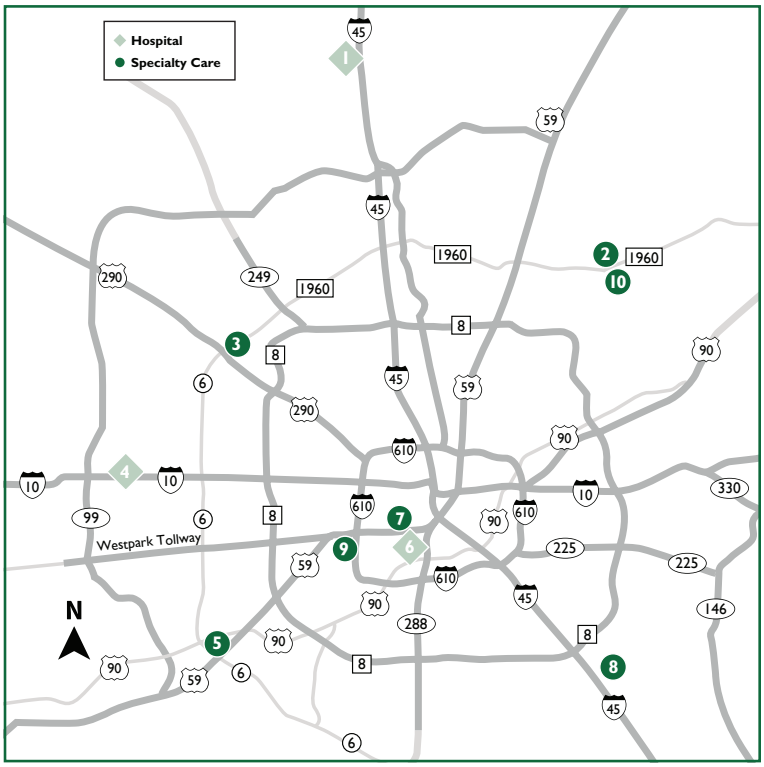
** Pediatric and Adolescent Gynocology is a division of Obstetrics and Gynecology.*

Surgical care for a few select divisions is also provided at Texas Children's Specialty Care Austin. Learn more at **texaschildrens.org/austin**.

Texas Children's Specialty Care Austin
8611 N. MoPac Expressway, Suite 300
Austin, TX 78759
737-220-8200

Surgical services continued to expand in 2019 at Texas Children's Specialty Care Austin including the addition of the Colorectal and Pelvic Health Program, Voiding Improvement Program, Wound Care Program, Pectus Program and more.

DEPARTMENT OF SURGERY LOCATIONS



1 Texas Children's Hospital The Woodlands
17580 Interstate 45 South
The Woodlands, TX 77384
936-267-5000

2 Specialty Care Kingwood Glen
19298 W. Lake Houston Pkwy.
Humble, TX 77346

- Specialty Care, Ste. 110
  281-812-0280
- Outpatient Therapy, Ste. 220
  832-828-4900
- Sports Therapy, Ste. 240
  832-828-4990

3 Specialty Care Cy-Fair
11777 FM 1960 Rd. West
Houston, TX 77065
281-469-4688

4 Texas Children's Hospital West Campus
18200 Katy Freeway
Houston, TX 77094
832-227-1000

5 Specialty Care Sugar Land
15400 Southwest Freeway, Ste. 200
Sugar Land, TX 77478
281-494-7010

6 Texas Children's Hospital
6701 Fannin St.
Houston, TX 77030
832-824-1000

7 Specialty Care Upper Kirby
3023 Kirby Dr., Ste. 201
Houston, TX 77098
713-533-9016

8 Specialty Care Clear Lake
940 Clear Lake City Blvd., Ste. 200
Webster, TX 77598
281-282-1900

9 Specialty Care Bellaire
6330 West Loop South, Ste. 300
Bellaire, TX 77401
713-839-0164

10 Specialty Care Eagle Springs
5514 Atascocita Rd. Ste. 190
Humble, TX 77346
281-666-5006

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