For more information, visit texaschildrens.org/surgery.
To make an appointment, call 832-824-2778.
Welcome
Letter from the Surgeon-in-Chief .......................... 2
Texas Children’s Hospital® and Baylor College of Medicine ..................... 3

Department of Surgery .............................. 4

Surgical Divisions
Congenital Heart Surgery ................................. 9
Dental .......................................................... 16
Neurosurgery .................................................. 19
Ophthalmology ............................................. 23
Orthopedics .................................................. 27
Otolaryngology ............................................. 33
Pediatric and Adolescent Gynecology ...................... 38
Pediatric Surgery .......................................... 43
Plastic Surgery ............................................. 47
Transplant Services ....................................... 52
Urology ...................................................... 58

Department of Surgery Services
Inpatient Services ........................................ 62
Operating Rooms and Perioperative Services ........ 65
Trauma Services and the Center for Childhood Injury Prevention ........... 67

Department of Anesthesiology,
Perioperative and Pain Medicine ........................ 74

Locations
Texas Children’s® Pavilion for Women ............... 79
Texas Children’s Hospital® West Campus ............. 83
Texas Children’s Hospital® The Woodlands .......... 86

Medical Staff Directory ................................. 89

Referrals ..................................................... 94

Department of Surgery Locations ..................... 95

For access to the Texas Children’s Hospital 2016 Department of Surgery Annual Report, visit texaschildrens.org/surgery-report.
Dear colleagues, parents and friends,

I am pleased to submit for your review our 2016 Texas Children’s Department of Surgery Annual Report. With more than 27,600 surgical operations and over 166,000 clinic visits, our surgical team has been very busy serving our patients and families. The report covers some highlights of our year, including moving patient stories and important programmatic developments.

The number of children in need of the highest level of medical care continues to rapidly increase. The Department of Surgery continues to develop new ways to meet the growing demand, including expanding clinic hours and services, streamlining appointment structures, growing our current infrastructure and continuing to add to our surgical team in all divisions.

In 2016, Texas Children’s Hospital was verified as a Level I Children’s Surgical Center by the American College of Surgeons, one of the first in the U.S. This designation followed an extensive pilot site visit with the goal of improving the safety and quality of pediatric surgery at institutions across the country. We are proud of this achievement, and I am grateful to everyone on our team who helped make this possible. Being one of the first hospitals to achieve this designation is a testament to the team we have at Texas Children’s Hospital and the integrated support of our surgical program.

This year, we added two new chiefs of service in the Department of Surgery: Dr. Jeffrey Shilt, chief surgical officer of Texas Children’s Hospital The Woodlands, and Dr. Howard Weiner, chief of Neurosurgery. Our entire team welcomes their arrival and looks forward to their leadership. I would also like to personally acknowledge the incredible legacy and service of Dr. Thomas G. Luerssen, who was not only our chief of Neurosurgery but our first chief quality officer in Surgery.

The team of academic surgeons at Texas Children’s continues to break new ground in research and advancements in the field of childhood surgery. For example, pediatric cardiac surgeon Dr. Iki Adachi is working on developing a new-generation miniaturized implantable ventricular assist device specifically designed for small children with heart failure. Dr. Sundeep Keswani, our director of basic science, has initiated a core laboratory for the study of wound healing and tissue inflammation. Dr. Sanjeev Vasudevan has made important discoveries and advanced his clinical focus in surgical oncology for children with hepatoblastoma, hepatocellular carcinoma and undifferentiated embryonal sarcoma. And Dr. Sandi Lam in pediatric neurosurgery is now a recognized leader in outcomes research for children requiring neurosurgery.

Finally, we are very excited about our newest campus, Texas Children’s Hospital The Woodlands, and our new Legacy Tower, currently under construction in the Texas Medical Center. These state-of-the-art facilities will offer us even better opportunities to serve our patients.

I hope you enjoy reading about our outstanding team and their activities this past year. I am privileged to work with these dedicated surgeons and our passionate, committed and talented colleagues.

With respect and gratitude,

Charles D. Fraser, Jr., M.D.
Surgeon-in-Chief
Texas Children’s Hospital and Baylor College of Medicine

Texas Children’s Hospital is one of the nation’s largest and most comprehensive specialty pediatric hospitals, with more than 3.5 million patient encounters in 2016. Texas Children’s mission is to create a healthier future for children and women throughout our global community by leading in patient care, education and research. Renowned worldwide for its expertise and breakthrough developments in clinical care and research, Texas Children’s Hospital is ranked #4 nationally by U.S. News & World Report.

Texas Children’s Hospital is located near downtown Houston in the Texas Medical Center, the largest medical center in the world. The medical center campus includes more than 600 licensed beds; the Clinical Care Tower for outpatient visits; the Feigin Tower for pediatric research; and Texas Children’s Pavilion for Women for comprehensive OB/GYN care. Located nearby is the Texas Children’s Hospital Jan and Dan Duncan Neurological Research Institute®, a basic research institute dedicated to solving childhood neurological diseases. In 2018, a new pediatric tower will be completed to increase capacity for critical and surgical care.

Texas Children’s Hospital West Campus and Texas Children’s Hospital The Woodlands bring specialty pediatric care, including acute care and critical care beds, 24/7 pediatric emergency centers, surgical suites and more than 20 subspecialty clinics, to a rapidly expanding population of children west and north of Houston. Texas Children’s also operates Texas Children’s Health Plan™, the nation’s first HMO for children, and Texas Children’s Pediatrics™, the largest pediatric network in the nation. Texas Children’s Health Centers®, Specialty Care and Urgent Care locations provide enhanced access to care throughout the Greater Houston community.

In 2016, Texas Children’s Health Plan partnered with the State of Texas to form STAR Kids, a Medicaid-managed care plan for children with disabilities and complex medical needs offering streamlined management and coordination of care.

Texas Children’s Hospital is affiliated with Baylor College of Medicine in the areas of pediatrics, surgery 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 62-year 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.

With a staff of more than 11,000 employees and more than 2,000 board-certified physicians, pediatric subspecialists, pediatric surgical subspecialists and dentists, Texas Children’s offers more than 40 subspecialties, programs and services. 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.
The Department of Surgery at Texas Children’s Hospital represents a dedicated team of pediatric-focused 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 100 surgeons who are Baylor College of Medicine faculty and more than 700 Texas Children’s Hospital and Baylor College of Medicine employees focused on ensuring children get the surgical care they need.

Our team’s tireless efforts are evident in our more than 27,600 operating room cases and over 166,100 outpatient visits completed in 2016, our substantial research and the many scholarly articles published and presentations given nationally and internationally by our team each year.

We are dedicated to meeting our mission and vision with multiple community health centers and three Texas Children’s Hospital locations throughout the Greater Houston area. We take great pride in caring for children from all around the globe.
### DEPARTMENT OF SURGERY OVERVIEW

<table>
<thead>
<tr>
<th>SURGICAL DIVISION</th>
<th>OPERATING ROOM CASES</th>
<th>CLINIC VISITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congenital Heart Surgery</td>
<td>1,001</td>
<td>1,891</td>
</tr>
<tr>
<td>Dental</td>
<td>1,305</td>
<td>3,537</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>888</td>
<td>8,518</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>1,495</td>
<td>26,740</td>
</tr>
<tr>
<td>Orthopedics</td>
<td>2,669</td>
<td>38,994</td>
</tr>
<tr>
<td>Otolaryngology</td>
<td>10,361</td>
<td>37,407</td>
</tr>
<tr>
<td>Pediatric and Adolescent Gynecology</td>
<td>263</td>
<td>8,519</td>
</tr>
<tr>
<td>Pediatric Surgery</td>
<td>5,789</td>
<td>12,001</td>
</tr>
<tr>
<td>Plastic Surgery</td>
<td>1,523</td>
<td>11,760</td>
</tr>
<tr>
<td>Urology</td>
<td>2,351</td>
<td>16,757</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>27,645</strong></td>
<td><strong>166,124</strong></td>
</tr>
</tbody>
</table>

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

### OPERATING ROOM CASES AND CLINIC VISITS

*by year*

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. Clinic visits include outpatient visits by Texas Children’s Hospital and Baylor College of Medicine faculty only.
Verified as a Level 1 Children's Surgery Center

Texas Children's Hospital is proud to announce the American College of Surgeons (ACS) has verified the hospital as a Level 1 Children's Surgery Center. The verification was awarded in 2016 following an extensive pilot site visit. During the visit, Texas Children's assisted in the review and refinement of guidelines set forth by ACS with the goal of improving the safety and quality of pediatric surgery performed at centers across the country. Texas Children's was one of the first two children's hospitals in the U.S. to receive the Level 1 Children's Surgery Center verification, and the only children's hospital in Texas and the southwest region to earn this distinction.

A Level 1 verification requires Texas Children's to provide surgery and anesthesia for all major pediatric specialties for children of all ages – from premature infants to adolescents. Additionally, the hospital must have the highest level neonatal intensive care unit, pediatric emergency medicine physicians and pediatric radiologists available all day, every day, and the most robust data collection, outcomes assessment and quality improvement efforts.

Outpatient pharmacy provides enhanced services for surgical patients

While monitoring overall patient care and outcomes, Texas Children's noted a disconcerting issue regarding medication after patients leave the hospital and return home. Community pharmacies often lack specialty pediatric medication expertise, which may result in dosing and dispensing errors. The Institute for Safe Medication Practices cites pediatric dosing error rates of between 15 and 35 percent. Also, community pharmacies may not routinely stock medications that pediatric patients need, particularly with compounded suspensions, which can create delays in starting prescribed regimens.

To address this problem, Texas Children's Hospital created a new “Meds to Beds” program, using its outpatient pharmacy to provide discharge prescriptions and medication counseling at the bedside for ambulatory surgery patients. Because of this service, patients and their families faced significantly fewer challenges in filling prescriptions during their transition home. The goal is to ensure that patients and families have all their medications – and have been counseled and instructed on their use – before they leave the hospital. This eliminates the added burden on families to immediately locate a pharmacy in their community with the appropriate medication and expertise, and helps improve both continuity of care and the patient experience.

After expanding outpatient pharmacy services to patients with commercial insurance and instituting the “Meds to Beds” program, our outpatient pharmacy filled 64 percent of ambulatory surgery patients’ prescriptions prior to their discharge, compared to less than 1 percent before the program. The pharmacy dispensed 2,119 prescriptions for a total of 1,008 patients in the three months after go-live, compared with 25 prescriptions for 15 patients in the three months prior to go-live. After three months of implementation, the same-day surgery prescription volume made up 24 percent of the outpatient pharmacy’s average workload per month. Most of the prescriptions were analgesics, anti-emetics, postoperative antibiotics and steroids.
Texas Children’s plans to expand use of our outpatient pharmacy to other areas of the hospital, particularly services that use more expensive specialty medications, and extend the “Meds to Beds” program to our inpatients at discharge.

New leadership roles unveiled within the Department of Surgery

Texas Children’s Department of Surgery announced three new positions within the Department of Surgery at Texas Children’s in 2016.

Dr. David Wesson now serves as associate surgeon-in-chief for Academic Affairs. In his new role, he focuses on growing and improving the department’s academic programs, including the processes for faculty development and promotion, as well as our educational programs. In addition to his new role, Wesson serves as the interim surgeon-in-chief at Children’s Hospital of San Antonio.

Dr. Larry Hollier now serves as associate surgeon-in-chief for Clinical Affairs. In this new role, Hollier leads the development of all aspects of clinical care delivery, both inside and outside of the operating rooms. He focuses on coordinating and improving all aspects of care in our increasingly complex system, including patient experience, staffing, efficiency and value. Additionally, he is the chief of Plastic Surgery, medical director of Advanced Practice Providers and surgical director of Operating Rooms and Patient Experience.

Dr. Sundeep Keswani now serves as surgical director of Basic Science Research. In this new role, Keswani guides research efforts beyond his own exploration of regenerative wound healing and matrix biology, and shares his expertise with the greater surgical enterprise.
DEPARTMENT OF SURGERY

Department of Surgery team gives boy a second chance at life

When Mohammad Usman was in utero, his mother was told by three different Houston-area physicians to terminate her pregnancy due to a severe congenital heart defect. Scared yet determined, the Usmans decided they wanted to move forward with the pregnancy and give their unborn son a fighting chance. Their community physician referred them to Texas Children’s Fetal Center™ because of the team’s vast expertise in managing complex pregnancies.

Fetal cardiologists, including Dr. Carrie Altman, monitored mother and child closely throughout the pregnancy, performing echocardiograms to determine the severity of his heart issues. Mohammad’s heart grew rapidly as he continued to develop in the womb. Physicians prepared the Usmans for surgery immediately after he was born, but following his delivery at full-term, his heart began to shrink back to a normal size. Mohammad spent a few weeks in Texas Children’s Neonatal Intensive Care Unit, but heart surgery was postponed.

During the next few years, Mohammad continued to be closely monitored by Texas Children’s cardiologists. As he neared his fourth birthday, the cardiologists found Mohammad had atrial septal defects (ASD) and a diaphragmatic hernia that needed to be fixed. On March 31, 2016, congenital heart surgeon Dr. Carlos Mery and pediatric surgeon Dr. Ruben Rodriguez collaborated to repair his ASDs and diaphragmatic hernia.

Thanks to the multidisciplinary effort by Texas Children’s physicians and surgeons before his birth and throughout his life, Mohammad is now a thriving and healthy 4-year-old. The Usmans are very grateful for the care their family has received at Texas Children’s and can’t imagine their lives without their playful and happy son.
Congenital Heart Surgery

The Congenital Heart Surgery Division provides individualized and comprehensive surgical care for all aspects of pediatric and adult congenital heart disease. We are experienced in the rarest of cases such as ectopia cordis and other infrequently seen conditions. Texas Children’s Heart Center® performs over 1,000 surgical procedures annually with outcomes among the best in the nation. In 2016, Texas Children’s was ranked #2 in the nation for pediatric cardiology and heart surgery by U.S. News & World Report.

We treat children of all ages, including preterm and low-birth-weight newborns, and we personalize treatments and procedures that best suit the situation of each child and family. This tailored approach includes cardiopulmonary bypass and neuroprotection strategies focused on the patient’s condition and needs, helping to achieve optimal functional outcomes. The center’s Heart, Lung, and Heart-Lung Transplant Programs, among the nation’s largest and most successful, are also part of the Congenital Heart Surgery Division.
CONGENITAL HEART SURGERY PROGRAM EARNS TOP RATING FROM THE SOCIETY OF THORACIC SURGEONS

Texas Children’s Hospital’s congenital heart surgery program earned a three-star rating from The Society of Thoracic Surgeons (STS) – the highest possible distinction. Star ratings are calculated based on overall risk-adjusted operative mortality for all patients undergoing pediatric and/or congenital heart surgery performed by an STS Congenital Heart Surgery Database (CHSD) participant. The latest analysis of data covers a four year period, from January 2012 to December 2015, and includes 117 participants in the U.S. and Canada. Texas Children’s is among only eight CHSD participant hospitals in the U.S. and Canada to earn a three-star rating. For more information about STS Congenital Heart Surgery Public Reporting, visit sts.org.

ADACHI WORKING ON MINI IMPLANTABLE VENTRICULAR ASSIST DEVICE

Texas Children’s Hospital is working on the development of a new-generation miniaturized implantable ventricular assist device (VAD) specifically designed for small children. Called the Infant Jarvik VAD, it is named for Dr. Robert Jarvik, inventor of the first successful total artificial heart. With the support of the federal government through the National Heart, Lung and Blood Institute, this AA-battery-size device is undergoing preclinical testing with the anticipation of FDA approval for a human trial. This will further expand the use of implantable VADs in small children, including babies. Currently, Texas Children’s implants about 20 to 30 VADs every year.

Texas Children’s Hospital is ranked #2 nationally in cardiology and heart surgery by U.S. News & World Report.
HEART TRANSPLANT PATIENT BONDS WITH HOUSTON TEXANS STAR

Born with multiple heart defects, Jeston underwent his first heart surgery at just 6 months old. In January 2016, the 8 year old and his mom Danielle moved to Houston to wait for a heart transplant and receive care at Texas Children’s Heart Center.

While at the hospital, Jeston caught the eye of a special visitor, Houston Texans super star, J.J. Watt. Jeston and the three-time NFL Defensive Player of the Year shared multiple special visits at the hospital and the Houston Texans Training Camp, developing a unique bond. As Jeston describes it, “Big brother, little brother, something like that.”

In August 2016, a donor heart finally became available for Jeston, and a team of surgeons at Texas Children’s Hospital performed a 14-hour, lifesaving transplant. Today, Jeston’s infectious smile is wider than ever following the successful surgery. He is healthy and happy, and looks forward to the day he can step out onto the football field, just like Watt.
Total operating room volumes include heart and lung transplantations. Operating room case volumes and clinic visits include procedures and outpatient visits completed by physicians at Texas Children’s Hospital surgical locations.

In 2016, the Texas Children’s team performed its 10,000th heart procedure with the heart lung bypass machine.
MORTALITIES BY STAT CLASSIFICATION IN 2016

<table>
<thead>
<tr>
<th>Primary procedure</th>
<th>Number of procedures</th>
<th>Discharge mortalities</th>
<th>Percent mortality</th>
<th>STS national benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 1</td>
<td>214</td>
<td>0</td>
<td>0.0%</td>
<td>0.5%</td>
</tr>
<tr>
<td>STAT 2</td>
<td>219</td>
<td>3</td>
<td>1.4%</td>
<td>1.7%</td>
</tr>
<tr>
<td>STAT 3</td>
<td>63</td>
<td>0</td>
<td>0.0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>STAT 4</td>
<td>207</td>
<td>11</td>
<td>5.3%</td>
<td>6.8%</td>
</tr>
<tr>
<td>STAT 5</td>
<td>25</td>
<td>2</td>
<td>8.0%</td>
<td>17.3%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>728</td>
<td>16</td>
<td>2.2%</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

STAT Classification (The Society of Thoracic Surgeons - European Association for Cardio-Thoracic Surgery Congenital Heart Surgery Mortality Categories - (STS Mortality Categories)) is the risk stratification model applied to outcomes in congenital heart surgery. The most common surgeries are stratified into 5 categories. Surgeries with higher risk are in higher categories with STAT Category 5 representing congenital heart surgeries associated with the greatest risk.

For questions or more information about our outcome data or processes, please contact Kathy Carberry, R.N., M.P.H., director of the Outcomes & Impact Service at kecarber@texaschildrens.org.

MORTALITIES BY AGE AND OPERATION TYPE

<table>
<thead>
<tr>
<th>Age</th>
<th>CPB cases</th>
<th>Non-CPB cases</th>
<th>CPB discharge mortalities</th>
<th>Non-CPB discharge mortalities</th>
<th>Discharge mortalities</th>
<th>Percent mortality</th>
<th>STS national benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonate (0d - 30d)</td>
<td>81</td>
<td>35</td>
<td>5</td>
<td>2</td>
<td>7/116</td>
<td>6.0%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Infant (31d - 1y)</td>
<td>206</td>
<td>24</td>
<td>1</td>
<td>1</td>
<td>2/230</td>
<td>0.9%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Child (&gt;1y - &lt;18y)</td>
<td>301</td>
<td>30</td>
<td>4</td>
<td>2</td>
<td>6/331</td>
<td>1.8%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Adult (18y+)</td>
<td>44</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>1/51</td>
<td>2.0%</td>
<td>1.7%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>632</td>
<td>96</td>
<td>11</td>
<td>5</td>
<td>16/728</td>
<td>2.2%</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

1Source for STS National Benchmark is Table 1 of the Society of Thoracic Surgeons Data Harvest Report Jan. 2015 to Dec. 2015.
2Source for STS National Benchmark is Table 7 of the Society of Thoracic Surgeons Data Harvest Report Jan. 2015 to Dec. 2015.
3The source for the overall hospital data is STAT Index Surg CHD Volume; Data pulled 4/14/2017.
Overall risk-adjusted hospital mortality rate for our program in 2016 was 2.2%. Data collected by the Society of Thoracic Surgeons (STS) shows the national hospital discharge mortality rate at 3.1%.

<table>
<thead>
<tr>
<th></th>
<th>Texas Children’s Hospital</th>
<th>STS National Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall risk-adjusted mortality rate</td>
<td>2.2%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Atrial septal defect repair</td>
<td>0.0%</td>
<td>&lt;1.0%</td>
</tr>
<tr>
<td>Ventricular septal defect repair</td>
<td>0.0%</td>
<td>&lt;1.0%</td>
</tr>
<tr>
<td>Atrioventricular canal repairs</td>
<td>1.7%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Tetralogy of Fallot repairs</td>
<td>0.9%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Arterial switch operations</td>
<td>0.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Norwood operations</td>
<td>12.5%</td>
<td>14.8%</td>
</tr>
</tbody>
</table>

3 Hospital mortality is calculated over the last four years from 2013-2016. Data pulled 4/14/2017.
4 Source for STS national benchmark is the Society of Thoracic Surgeons Data Harvest Report January 2012 to December 2015.
CHARLES D. FRASER, JR., M.D., is surgeon-in-chief of Texas Children's Hospital, co-director of Texas Children’s Heart Center and chief of the Congenital Heart Surgery Division at Texas Children's Hospital. His academic appointments include professor of Surgery in the Michael E. DeBakey Department of Surgery (tenured) at Baylor College of Medicine, professor of Pediatrics at Baylor College of Medicine and adjunct professor of Bioengineering at Rice University. Dr. Fraser holds the Clayton Chair in Surgery and the Donovan Chair in Congenital Heart Surgery at Texas Children’s Hospital.

Dr. Fraser’s education began as an undergraduate at The University of Texas at Austin, where he graduated with honors in mathematics. He received his medical degree with honors from The University of Texas Medical Branch at Galveston. His residency and fellowship training took place at The Johns Hopkins Hospital. He completed additional fellowship training in congenital heart surgery at the Royal Children’s Hospital in Melbourne, Australia. After joining the faculty at Cleveland Clinic, Dr. Fraser was recruited to Texas Children’s Hospital in July 1995 to establish a dedicated pediatric congenital heart surgery program.

To view more Congenital Heart Surgery Division biographies, visit texaschildrens.org/heart.
The Dental Division at Texas Children’s Hospital sees more than 3,500 patient visits each year to ensure children with special needs or complex medical diagnoses receive the dental care they need. In collaboration with Texas Children’s Nephrology Service, Neuroscience Center, Heart Center, Cancer Center and other referrals, we treat dental patients as outpatients, inpatients or in the operating room. With expertise in a full range of procedures, our team coordinates each patient’s care with his or her pediatric subspecialists. All dentists in the Dental Clinic are board-certified pediatric dentists.

Sometimes dental treatment such as the removal of teeth or the replacement of fillings is needed before surgery or anesthesia can take place or other health care needs can be addressed. In addition, we ensure that the annual dental needs, such as prophylaxis or fillings, of children with special needs are met.
DENTAL OPERATING ROOM CASES AND CLINIC VISITS

by year

Operating room case volumes include procedures performed by Texas Children’s Hospital, Baylor College of Medicine and private practice dentists at Texas Children’s Hospital surgical locations. Clinic visits include outpatient visits by Texas Children’s Hospital and Baylor College of Medicine faculty only.
A. BRUCE CARTER, D.D.S., is chief of the Dental Division and Dental Clinic at Texas Children’s Hospital. He received his doctorate of dental surgery at The University of Texas Health Science Center at Houston, where he also received his pedodontic certificate. After a solo practice and teaching at his alma mater, Dr. Carter joined Texas Children’s Hospital as chief of the Dental Clinic in 1984. He is a member of the American Board of Pediatric Dentistry Diplomates, the Greater Houston Dental Society, the Texas Dental Association, the American Dental Association and the American Academy of Pediatric Dentistry. In conjunction with a grant from the National Institutes of Health, Dr. Carter studied and published several articles on the oral manifestations and health of pediatric HIV patients through the Oral Health Among Participants (the Adolescent Master Protocol also known as AMP).

To view more Dental Division biographies, visit texaschildrens.org/dental.
The Neurosurgery Division at Texas Children’s Hospital, part of the hospital’s Neuroscience Center, is one of the most dynamic and experienced pediatric neurosurgery programs in the nation. Ranked #2 in neurology and neurosurgery by U.S. News & World Report, we complete nearly 900 surgical cases each year to address a broad range of neurological disorders in infants, children and young adults.

Six board-certified pediatric neurosurgeons provide surgical treatment of neurological diseases and conditions, including epilepsy, hydrocephalus, and tumors or malformations in the brain, spine and peripheral nervous system. We are committed to discovering groundbreaking diagnoses and treatment approaches and to training the next generation of neurosurgeons.

A team of nurse practitioners, physician assistants, registered nurses, administrative and research staff works together to support the Neurosurgery Division and to ensure that patients with complex conditions receive the care and attention they deserve.
DR. HOWARD L. WEINER JOINS AS NEW CHIEF OF NEUROSURGERY
In May 2016, Texas Children’s Hospital welcomed Dr. Howard L. Weiner as the new chief of Neurosurgery. Dr. Weiner’s clinical interests include medically refractory epilepsy and tuberous sclerosis complex. He also treats children with brain and spinal tumors, congenital malformations, tethered cords, chiari malformations, craniosynostosis, hydrocephalus, spina bifida and spasticity. His research interests have included the biology of tuberous sclerosis complex, the role of the sonic hedgehog signaling pathway in medulloblastoma, and therapeutic strategies for germ cell tumors of the central nervous system.

Over the last 20 years, Dr. Weiner has become one of the country’s leading pediatric epilepsy surgeons, attracting patients from across the United States and abroad because of his innovative approach. He is a recognized national and international leader in the surgical treatment of childhood epilepsy, and has been a pioneer in advancing the care of children with tuberous sclerosis complex, for which he is considered one of the world’s leading experts.

His plans include further growth and development of the division, its programs, its reputation and its multidisciplinary collaborations, while continuing to provide innovative, high quality patient care. “Neurosurgery at Texas Children’s has really taken off over the past decade, and we are now poised to achieve something truly special,” said Dr. Weiner. “I am so impressed by the overall vision, direction and momentum here – this was an opportunity I could not pass up.”

LUERSSEN PRESENTED LIFETIME ACHIEVEMENT AWARD
Dr. Thomas Luerssen was awarded the Franc D. Ingraham Award for Distinguished Service and Achievement at the American Association of Neurological Surgeons Annual Meeting in December 2016 in honor and celebration of his vast achievements and contributions to pediatric neurosurgery. Congratulations to Dr. Luerssen, the former chief of Neurosurgery at Texas Children’s and current chief surgical quality and safety officer for the hospital.

FIRST PEDIATRIC PATIENT IN TEXAS USES NEW DEVICE AGAINST SEIZURES
Since Brandi Pipes’ battle with seizures began eight years ago, she has had four surgeries performed by Texas Children’s neurosurgeon Dr. Daniel Curry. Recently, Brandi became the first pediatric patient in Texas to receive a revolutionary new Neuropace RNS device. Similar to a pacemaker in the brain, this device is trained to recognize seizures and bring them to a halt before Brandi knows they’re happening.

Texas Children’s Hospital is ranked #2 nationally in neurology and neurosurgery by U.S. News & World Report.
“This new technology allows us to place a stimulation system directly inside the brain, so that when the abnormal rhythms are detected, they can be stimulated and reduced to normal rhythms prior to triggering a seizure,” Dr. Curry said.

During the procedure, Dr. Curry placed four electrodes in Brandi’s head to record her brain activity in real-time. The recordings show Dr. Curry where the seizures are coming from so he can program the device to detect and eliminate her seizures.

Brandi has an unusual form of epilepsy that causes her to see things that are not there, including people and spots. According to Dr. Curry, her seizures manifested into this form after many surgeries, but thanks to the new treatment, her age and the location of her seizures, he is confident that she should remain seizure-free.

WEINER HONORED BY AMERICAN FRIENDS OF BEIT ISSIE SHAPIRO GALA
On November 16, 2016, Dr. Howard L. Weiner was honored at the Beit Issie Shapiro Gala at the Museum of Jewish Heritage in New York City for technological innovation in his field. As a premier pediatric neurosurgeon in New York, where he practiced for almost two decades prior to coming to Texas Children’s, he played a pivotal role in developing therapies for patients at Beit Issie, a leading center of care for children with developmental and physical disabilities, located in Israel.

NEUROSURGERY OPERATING ROOM CASES AND CLINIC VISITS
by year

Operating room cases and clinic visits include procedures and outpatient visits completed by Texas Children’s Hospital physicians at Texas Children’s Hospital surgical locations.
CONTINUED QUALITY IMPROVEMENT FOCUS

Quality improvement tracking and methods have been brought to the forefront of care to ensure continued surgical excellence and enhanced safety for our patients. Improved surgical outcomes for Neurosurgery at Texas Children’s Hospital are outlined below.

<table>
<thead>
<tr>
<th></th>
<th>2016 Goal</th>
<th>2016 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurosurgical shunt infection rate</td>
<td>&lt; 5%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Craniotomy(^5) complications(^5)</td>
<td>&lt; 5%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Postoperative cerebral-spinal fluid leak(^7)</td>
<td>&lt; 5%</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

\(^1\)Craniotomy for tumor, vascular, trauma, ICH and craniofacial reconstruction.
\(^2\)Arterial injury, change in neuromonitoring that persists through procedure, unplanned transfusion of blood products, intraoperative CPR or death.
\(^3\)Laminectomy, spinal instrumentation, repair of congenital malformation.

HOWARD L. WEINER, M.D., is chief of Neurosurgery at Texas Children’s Hospital, professor of Neurosurgery and vice chairman of the Department of Neurosurgery at Baylor College of Medicine. Weiner received his undergraduate degree from the University of Pennsylvania and his medical degree from Cornell University Medical College. During residency, he was a research fellow for 18 months in a Howard Hughes Medical Institute laboratory in the Department of Biochemistry at New York University. Following residency, Weiner was awarded the Van Wagenen Fellowship by the American Association of Neurological Surgeons to study brain development in Paris. He also completed a fellowship in pediatric neurosurgery at New York University Langone Medical Center, where he practiced for 27 years.

Weiner is a member of the American Association of Neurological Surgeons, Congress of Neurological Surgeons, American Society of Pediatric Neurosurgeons and the American Epilepsy Society.

To view more Neurosurgery Division biographies, visit texaschildrens.org/neurosurgery.
Texas Children’s Hospital Ophthalmology Division provides the highest quality of coordinated medical and surgical care for the full range of surgical and medical conditions involving the eyes. Our team of 17 ophthalmologists, two optometrists, 13 certified ophthalmologic technicians, a certified ophthalmic photographer, and skilled staff members work in unison to provide the best possible eye care for children and also adults with ocular misalignment at locations across the Houston area.

We specialize in the treatment of surgical and medical management of eye diseases such as strabismus (misaligned eyes), eyelid and facial anomalies, inherited retinal disorders, retinoblastoma, retinopathy of prematurity, corneal and external diseases, refractive surgery, cataracts and neuro-ophthalmological disorders.

Though most commonly thought of as a childhood disorder, strabismus (misaligned eyes) also commonly affects adult patients, and our team of dedicated ocular alignment specialists is available to care for adult patients with strabismus and double vision.

The Ophthalmology Division continues to evolve with the purchase and deployment of the latest technologies and techniques available to best serve our patients. Our state-of-the-art diagnostics laboratory offers a large complement of imaging and analysis modalities, and we offer electrophysiology services to patients in the office and in the operating rooms.
ELECTROPHYSIOLOGY AND DIAGNOSTIC TESTING LAB
In our adult/pediatric electrophysiology laboratory, Dr. Veeral Shah evaluates patients with retinal or optic nerve diseases through comprehensive ophthalmological examination with electroretinography testing and visual evoked potential testing. Electroretinograms are performed to assess disorders of the photoreceptors in the retina, particularly inherited retinal degenerations and acquired retinal disorders. The resulting examination aids the physician in making a diagnosis and in understanding the prognosis of visual outcomes and possible treatment options.

COLLABORATIVE FUNCTIONAL VISION TRAINING
Leaders in ophthalmology, including Dr. Jane Edmond at Texas Children's, have been instrumental in implementing additional training opportunities for occupational therapists working with visually impaired children in and around the Houston community. The courses provided have included:

• Vision, Visual Perceptual and Visual Motor Skills: Assessment and Intervention for Children
• Vestibular and Balance Rehabilitation in Post-Concussion Syndrome
• Concussion Diagnosis and Treatment: Understanding VISION in the Cognition, Vestibular and Vision Best Practices Triad
• Treating Visual Deficits in the Pediatric Patient: A Collaborative Approach Across Disciplines

“We all want to offer the best possible service to our patients, and this represents a great leap forward for a largely forgotten patient population with functional vision needs,” said Dr. David Coats, chief of Ophthalmology. The division looks forward to providing more of these courses and services moving into 2017 to continue sharing its expertise.

NEW ARRIVALS
Dr. Charlene Crockett, pediatric ophthalmologist, joined Texas Children’s in March 2016 to develop and manage the new Urgent Care Eye Clinic, available for patient care Monday through Friday. Texas Children’s Urgent Care Eye Clinic is available for patients with any eye condition for same-day or next business day appointments.

Dr. Irene Tung joined Texas Children’s in late 2016 as a full-time ophthalmologist serving inpatient and outpatient populations at the new Texas Children’s Hospital The Woodlands.

SATURDAY CLINIC HOURS
Texas Children’s Hospital West Campus now provides Ophthalmology Clinics on select Saturdays to help meet the needs of patients and families who prefer this option. This pilot program has become popular with patients and families, and plans are currently underway to make the Saturday clinic hours permanent.

Dr. Jane Edmond was part of an American Academy of Ophthalmology initiative to provide ophthalmologic training in developing countries around the world at no cost to the participants. She lectured to over 2,000 learners in 2016.
Dr. Evelyn Paysse is serving as the primary investigator for the NIH-funded study on Excimer laser surgery for anisometropic amblyopia, in collaboration with the Pediatric Eye Disease Investigator Group.

### Ophthalmology Operating Room Cases

by year

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases (Texas Children's Hospital)</th>
<th>Cases (Texas Children's Hospital West Campus)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1,317</td>
<td>1244</td>
</tr>
<tr>
<td>2013</td>
<td>1,399</td>
<td>1,462</td>
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<tr>
<td>2014</td>
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<td>1,267</td>
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<tr>
<td>2015</td>
<td>1,515</td>
<td>1,271</td>
</tr>
<tr>
<td>2016</td>
<td>1,495</td>
<td>1,243</td>
</tr>
</tbody>
</table>

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 surgical locations.
Clinic visits include outpatient visits by Texas Children’s Hospital and Baylor College of Medicine faculty only.

**DAVID K. COATS, M.D.,** is chief of Ophthalmology at Texas Children’s Hospital and professor of Ophthalmology and Pediatrics at Baylor College of Medicine. He received his medical degree from Texas Tech University School of Medicine, followed by an internship in South Carolina and residency at the Storm Eye Institute at the Medical University of South Carolina. He completed a fellowship in Pediatric Ophthalmology and Adult Strabismus at Indiana University in Indianapolis and joined the staff at Baylor College of Medicine in 1996.

To view more Ophthalmology Division biographies, visit [texaschildrens.org/ophthalmology](http://texaschildrens.org/ophthalmology).
The Orthopedics Division at Texas Children’s Hospital has extensive expertise in the treatment of all types of bone, neuromuscular and spine disorders and a variety of orthopedic injuries, from minor fractures to complex problems. With seven specialty clinics and more than 30 physicians and advanced practice providers, Texas Children’s Orthopedics Division treats children in Houston, across the nation and internationally, providing individualized care for patients from newborns to young adults.

We specialize in trauma, sports medicine, hip and spine disorders, musculoskeletal tumors and skeletal dysplasia and contribute to more than 14 multidisciplinary specialty programs and clinics, including those for concussions, pediatric deformity correction and limb reconstruction, neuromuscular disorders, spina bifida and teen patients transitioning to adult care.
ENHANCED EASE OF ACCESS
In 2016, our focus remained on enhancing, improving and streamlining access to specialized orthopedics and sports medicine care for patient families and referring physicians. The expansion of providers across Greater Houston in two community hospitals and six specialty care locations allowed for additional appointment availability, added convenience for patient families and increased ease for referring physicians.

A new fracture initiative – stating our standard of care is that new fracture patients will be seen by a provider within 24 to 48 hours – was also implemented in 2016 to ensure continued quality, safety and convenience for our patients.

COMMUNITY EXPERTISE
Texas Children’s Hospital West Campus is home to a state-of-the-art, 28,500-square-foot sports medicine facility with a 3,000-square-foot gym allowing for the full spectrum of pediatric orthopedic and sports medicine care. The gym is primarily for physical therapy, including video monitoring equipment for motion analysis. Texas Children’s sports medicine physicians’ goals are to not only treat patients’ injuries but to make them even stronger and healthier than they were before.

The Outpatient Building at the new Texas Children’s Hospital The Woodlands opened in fall 2016, with surgical efforts led by chief surgical officer, Dr. Jeffrey Shilt, a member of the Orthopedics Division. In 2017, the Human Performance Center for motion and gait analysis at Texas Children’s Hospital The Woodlands will open, providing a unique venue for studying movement of the human body.

ORTHOPEDICS CONTINUES TO EXPAND TEAM OF SURGEONS
With the continued demand for orthopedic care, Texas Children’s has matched the demand with growth in our care team.

New providers secured in 2016:
- Dr. Jeffrey Shilt, February
- Dr. Indranil Kushare, August
- Dr. Aharon Gladstein, September
- Dr. Katherine Schroeder, September
- Dr. John Heydemann, September

Additional providers to arrive in 2017:
- Dr. Benny Dahl, expected in March
- Dr. Bryce Bell, expected in March
- Dr. Jenifer Powers, expected in August
- Dr. Nicole Montgomery, expected in August

SPINE PROGRAM
The Spine Program at Texas Children’s Hospital provides comprehensive care to more than 2,000 patients per year who have a range of issues and conditions that affect the spine, including spinal injuries and spinal deformities. The multidisciplinary team includes Orthopedic Surgery, Neurosurgery, Anesthesiology, Nutrition, Pulmonary Medicine, Nursing and a unique Quality and Outcomes team.

MUSCULOSKELETAL TUMOR PROGRAM
Texas Children’s Musculoskeletal Tumor Program cares for children with malignant and benign tumors in the bone and soft tissue. A multidisciplinary team of specialists from Orthopedic Surgery, Oncology, Pathology, Radiology, Nursing, Plastic Surgery and Physical Therapy provides comprehensive care for patients from diagnosis to final treatment and follow-up care.
Clinic visits include outpatient visits by Texas Children’s Hospital and Baylor College of Medicine faculty only.
ORTHOPEDICS OPERATING ROOM CASES

by year

ORTHOPEDICS OPERATING ROOM CASES


TEXAS CHILDREN’S HOSPITAL

2012 1,840 2013 1,954 2014 1,979 2015 1,755 2016 1,682

TEXAS CHILDREN’S HOSPITAL WEST CAMPUS

2012 382 2013 594 2014 682 2015 787

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 surgical locations.

ORTHOPEDICS OPERATING ROOM HOURS

TEXAS CHILDREN’S HOSPITAL

2012 4,796

TEXAS CHILDREN’S HOSPITAL WEST CAMPUS

2012 1,541

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 surgical locations.
JOHN P. DORMANS, M.D., is chief of Orthopedics at Texas Children’s Hospital and tenured professor of Orthopedic Surgery and Pediatrics at Baylor College of Medicine. He also holds the L. E. Simmons Chair in Orthopedics, provided by the Houston Endowment. Prior to Texas Children’s, Dr. Dormans practiced at Children’s Hospital of Philadelphia, where he was chief of Orthopedic Surgery from 1996 to 2014.

Dr. Dormans has served as president of multiple international, national, regional and local organizations including the Pediatric Orthopedic Society of North America, Scoliosis Research Society, the U.S. division of the International Society of Orthopedic Surgery and Traumatology, and Orthopedics Overseas. Dr. Dormans helped lead Children’s Hospital of Philadelphia as the president of the Medical Staff and chair of the Board of Directors Surgical Group.

Dr. Dormans graduated from Indiana University and received his medical degree from the Indiana University School of Medicine in Indianapolis. He completed his residency in orthopedic surgery at Grand Rapids Michigan State University, followed by a clinical pediatric orthopedic fellowship at The Hospital for Sick Children in Toronto, Ontario. His postgraduate training includes programs at Harvard’s School of Public Health and Children’s Hospital of Philadelphia.

To view more Orthopedic Division biographies, visit texaschildrens.org/orthopedics.
Otolaryngology

Texas Children's Otolaryngology Division is the largest pediatric otolaryngology program in the nation, providing advanced surgical and medical care for the entire spectrum of ear, nose, throat, head and neck diseases and disorders. We are distinguished by a wide range of clinical expertise across specialty areas, including complex airway surgery, otology and neurotology, head and neck surgery, laryngology, vascular anomalies, rhinology, cleft lip and palate and sleep medicine.

Our 22 physicians have all completed fellowships in pediatric otolaryngology, laryngology or neurotology. In addition to caring for patients with complex conditions, the pediatric fellowship-trained physicians in the division also provide care for children in the community with common pediatric otolaryngology conditions such as middle-ear disease and tonsil and adenoid disease. State-of-the-art audiology, along with diagnostic and therapeutic speech services, are also provided. Our clinical services are provided at all three hospitals and multiple health centers located in the community.
DIVISION OF OTOLARYNGOLOGY EXPERIENCES TREMENDOUS GROWTH

Since his arrival in 2014, Dr. Ellis Arjmand has grown Texas Children’s Division of Otolaryngology into the largest pediatric ear, nose and throat program in the country, with specialists stationed throughout Greater Houston, including The Woodlands, Cy-Fair, Sugar Land, Clear Lake and West Houston. Having a more robust staff strategically positioned throughout Houston has been beneficial, as Otolaryngology’s patient volume increased more than 40 percent in 2016.

TRACH REMOVAL AND RECONSTRUCTION

Two-year-old Harlow Harper was born at just 24 weeks and spent more than five months in intensive care. She underwent a tracheostomy at 36 weeks gestational age because she was struggling to breath on the nasal cannula. A scope revealed she had suffered vocal cord paralysis and needed a G-tube. Her mom, Christina, was determined to have Harlow’s trach removed as soon as it was medically possible. The consensus among her medical team was that trach removal surgery should not be performed on a child under 5 years old, so Christina went online to search for other options. She joined a trach babies group on Facebook where members advised her to get in contact with Dr. Deepak Mehta, an otolaryngologist at Texas Children’s Hospital.

As soon as they met the Otolaryngology team at Texas Children’s, the Harpers knew they were in the right place. According to Christina, the care Harlow received was seamless, and it was the “most wonderful experience.” The family found out Harlow had additional issues, which Dr. Mehta also repaired. On March 1, 2016, he performed the trach removal and airway reconstruction surgery. Harlow did very well and was discharged home to California soon after the surgery.

Christina’s dream was for Harlow to be trach-free on her 3rd birthday. She wanted her daughter to be able to go to school with the least amount of medically involved accessories as possible. Thanks to Dr. Mehta and his team, Christina’s dream for her daughter is now a reality.
More than 85 pediatric primary care providers attended the Otolaryngology Update, a continuing medical education conference presented by the Texas Children’s Otolaryngology Division in May 2016. The event featured presentations on ear, nose and throat conditions commonly seen in pediatric offices. Topics ranged from draining ears and dizziness to treating neck masses and oropharyngeal trauma.

**STRIDES MADE ON RECURRENT LARYNGEAL NERVE REINNERVATION**

In January 2016, Dr. Julina Ongkasuwan published a study on vocal fold paralysis, citing the limited treatment options available for young children. She noted this condition in children led to aspiration as well as a weak breathy voice. The procedure for recurrent laryngeal nerve reinnervation has shown promise in restoring vocal fold closure for these children to restore tone, bulk and position of the vocal fold, but it does not restore vocal fold movement.

**RAYNOR DEVELOPS NEW STANDARD OF CARE FOR TRACHEOSTOMY**

Texas Children’s quality improvement program for the care of tracheostomy patients began with weekly interdisciplinary inpatient rounds lead by Dr. Tiffany Raynor in 2014. During tracheostomy rounds, challenges in caring for tracheostomy patients were identified as well as opportunities for standardization and improvements in care. The Otolaryngology Division developed a standardized surgical procedure and plan for immediate postoperative care, resulting in decreased wound healing issues and less need for postoperative paralytics.

Texas Children’s Hospital has joined the Global Tracheostomy Collaborative, an international quality improvement collaborative aimed at improving the care, safety and quality of life for tracheostomy patients. We have established a formal care process team with support from Texas Children’s Evidence Based Outcomes Center to expand the scope of our improvement activity.

Current goals include: improvements in preoperative family education, provision of structure and support for shared decision-making for parents of medically complex patients, assurance of consistent post-discharge surgical follow up, and reduction of readmission rates to the hospital. Dr. Joshua Bedwell also joined the tracheostomy quality improvement team in 2016.

**MEHTA NAMED TO TOP POSITIONS OF PROFESSIONAL ORGANIZATIONS**

In December 2016, Dr. Deepak Mehta was elected president of the Society for Ear, Nose and Throat Advances in Children (SENTAC). The December 2018 meeting of SENTAC will be in Houston, giving Texas Children’s otolaryngologists the chance to introduce our city and hospital to more than 200 colleagues and members of the growing professional society.

Mehta also was named program chair for the 2017 American Society of Pediatric Otolaryngology meeting. One of the primary missions of the professional society is to share and disseminate advances and innovations in patient care through the annual meeting and other venues.
**OTOLARYNGOLOGY OPERATING ROOM CASES**

*by year*

<table>
<thead>
<tr>
<th>Year</th>
<th>2016</th>
<th>2015</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
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<td>Cases</td>
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<td>8,754</td>
<td>9,403</td>
<td>7,600</td>
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<tr>
<td>Cases</td>
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<td>7,360</td>
<td>6,847</td>
<td>1,423</td>
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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 surgical locations.

**OTOLARYNGOLOGY CLINIC VISITS**

*by year*

<table>
<thead>
<tr>
<th>Year</th>
<th>2016</th>
<th>2015</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
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<tr>
<td>Visits</td>
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<td>30,814</td>
<td>24,917</td>
<td>18,659</td>
<td>11,135</td>
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<th>2015</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visits</td>
<td>15,342</td>
<td>13,344</td>
<td>6,084</td>
<td>9,532</td>
<td>1,186</td>
</tr>
</tbody>
</table>

Clinic visits include outpatient visits by Texas Children’s Hospital and Baylor College of Medicine faculty only.
ELLIS M. ARJMAND, M.D., M.M.M., PH.D., is the chief of Otolaryngology at Texas Children’s Hospital and the Bobby Alford Endowed Chair in Pediatric Otolaryngology at Baylor College of Medicine. Dr. Arjmand joined the faculty as professor and chief of the Pediatric Otolaryngology Division in 2014 following academic appointments at Cincinnati Children’s Hospital and the Children’s Hospital of Pittsburgh. He obtained his medical degree and Ph.D. at Northwestern University in Chicago and a master’s degree in medical management from Carnegie Mellon University in Pittsburgh. He completed his residency and fellowship training at Washington University in St. Louis.

Dr. Arjmand’s clinical interests include pediatric ear disease, congenital and acquired hearing loss, airway disorders and sinus disease. He is nationally known for his research on pediatric hearing loss and for his expertise in the areas of health economics and health care quality improvement.

To view more Otolaryngology Division biographies, visit texaschildrens.org/otolaryngology.
Pediatric and Adolescent Gynecology

As one of only a few established programs for surgical treatment of pediatric and adolescent gynecologic disorders in the United States, and the largest program in Texas, we are committed to providing the highest level of clinical care, research and education. Part of the Department of Obstetrics and Gynecology at Baylor College of Medicine and Texas Children’s Hospital, the surgeons offer personalized treatment for common and rare gynecological problems in patients ranging from newborns to 21 year olds. Specialties include vaginal trauma, congenital anomalies and adnexal cysts or masses. Additionally, we operate one of the few fellowship programs in the U.S. and Canada for pediatric and adolescent gynecology.

As an international referral center, the Pediatric and Adolescent Gynecology Division treats a large population of young women with congenital anomalies of the Müllerian ducts, which result in malformation of the uterus and/or vagina. Depending on the disorder, surgical and nonsurgical treatments as well as counseling are offered to help patients and their families cope with the diagnosis and possible future fertility issues.
NEW PHYSICIAN: DR. JULIE HAKIM

Dr. Julie Hakim is an assistant professor in the Department of Obstetrics and Gynecology at Baylor College of Medicine and Pediatric Gynecology at Texas Children's Hospital. She is currently completing her master’s degree in Translational Research in the Clinical Scientist Training Program at Baylor College of Medicine. During her fellowship, Dr. Hakim developed a passion for pediatric device development and was awarded a grant by the National Capital Consortium for her development of customizable vaginal stents and dilators for congenital anomalies of the female genital tract. She holds a U.S. and international patent for these devices and a provisional patent for a 3-D printed remote controlled mechanical leech to enhance healing in vaginal reconstructive surgeries. Dr. Hakim is interested in combining emerging technologies such as 3-D printing, tissue engineering and bio printing to create bio-engineered vaginal graft tissue with improved healing potential and to build 3-D gynecologic disease models. Eventually, she hopes to be able to bio print a vaginal organ for transplant.

Dr. Julie Hakim was recently accepted into the Clinical Scientist Training Program at Baylor College of Medicine. This program is committed to educating and training highly motivated individuals to become successful, independent clinical investigators and future leaders in academic medicine and biomedical research.

KURKOWSKI HONORED BY NURSE PRACTITIONERS IN WOMEN’S HEALTH

On September 29, 2016, the 19th Annual Inspiration in Women’s Health Awards honored Jennifer Kurkowski, W.H.N.P., for her significant contribution in the areas of clinical impact on young females, specifically those with bleeding disorders or lupus. Once a month, she runs a combined clinic with a hematologist where she sees patients with heavy menstrual bleeding and other diagnosed bleeding disorders, such as von Willebrand's Disease. This clinic is critical in providing the best care possible for these patients as their conditions can be difficult to manage. Kurkowski provides education to patients on topics such as periods and sexual health. She also attends a camp once a year for young girls with bleeding disorders, and she is involved in a lupus clinic where she sees girls and young women with new diagnoses of lupus to discuss contraceptive options and to provide counseling about teratogenic medications and future pregnancy risks. In both study groups examined, adnexal pathology was the most common abnormal intraoperative finding. Of the adnexal pathology, adnexal cysts with concurrent adnexal torsion was the most common finding across both groups. In the pre-menarcheal group, the most common secondary condition was adnexal torsion without cysts. In the menarcheal group, adnexal cyst(s) with concurrent torsion was the second most common finding.

RECENT AWARDS

Dr. Jennifer Dietrich recently received two Fulbright & Jaworski, LLP Faculty Excellence Awards from Baylor College of Medicine for educational leadership and enduring educational materials.

Jane Geyer, W.H.N.P., received the Women’s Health Young Nurse Practitioner Research Award from the World Federation of Hemophilia, which provides support for international clinical investigation relating to inherited bleeding disorders.
**Types of Surgery**

in 2016

- ANY MINIMALLY INVASIVE SURGERY: 349
- ADENEXAL SURGERY: 129
- ANY TUMOR SURGERY: 98

**Types of Procedures**

in 2016

- TRADITIONAL AND LAPAROSCOPIC PROCEDURES: 339
- RECONSTRUCTIVE PROCEDURES: 276
- TRAUMA PROCEDURES: 37

**Pediatric and Adolescent Gynecology Operating Room Cases**

by year

- 2012: 226
- 2013: 210
- 2014: 237
- 2015: 243
- 2016: 263

Operating room case volume includes procedures performed by Texas Children’s Hospital, Baylor College of Medicine and private practice physicians at Texas Children’s Hospital surgical locations.
Clinic visits include outpatient visits by Texas Children’s Hospital and Baylor College of Medicine faculty only.
JENNIFER E. DIETRICH, M.D., M.S.C., is chief of Pediatric and Adolescent Gynecology at Texas Children’s Hospital and an associate professor in Obstetrics and Gynecology and Pediatrics at Baylor College of Medicine. She is also director of the Pediatric and Adolescent Gynecology Division, the fellowship director for Pediatric and Adolescent Gynecology, and the CME director for the Department of Obstetrics and Gynecology at Baylor.

Dr. Dietrich obtained her medical degree from the Medical College of Wisconsin in Milwaukee and completed her residency in obstetrics and gynecology at Baylor. She went on to complete fellowship training in pediatric and adolescent gynecology at the University of Louisville in Kentucky. During her fellowship, she also obtained a master’s degree in public health and clinical investigation. Dr. Dietrich is currently on the editorial board of the Journal of Pediatric and Adolescent Gynecology and has served on the board of the North American Society for Pediatric and Adolescent Gynecology. She currently serves as president of the North American Society for Pediatric and Adolescent Gynecology.

To view more Pediatric and Adolescent Gynecology Division biographies, visit texaschildrens.org/pediatric-and-adolescent-gynecology.
The Pediatric Surgery Division at Texas Children’s Hospital strives to provide optimal care across the surgical spectrum, from the most routine cases to the most rare and complex.

The range of surgical procedures performed by the division include fetal surgery; abdominal and thoracic surgery; minimally invasive surgery including laparoscopic and thorascoscopic diagnosis and treatment; thyroid, endocrine and biliary surgery; and adolescent bariatric surgery. The divisional research programs are supported by the National Institutes of Health, private foundations, Texas Children’s Hospital and Baylor College of Medicine.
**PEDIATRIC SURGERY RESEARCH SURGES UNDER DR. SUNDEEP KESWANI**

With the development of the core laboratory to serve as the center for research for the Pediatric Surgery Division, a home for the study of histology, advanced microscopy, basic molecular biology and cell and ex-vivo organ culture was born, under the leadership of Dr. Sundeep Keswani and team. Highlights from 2016 include:

- Publications in two high impact factor journals (*Annals of Surgery* and *The FASEB Journal*).
- Presentations at 18 invited lectures on basic and clinical sciences at national and international meetings.
- Organized the inaugural Texas Children’s Hospital Symposium on Wound Repair, Regeneration and Fibrosis.
- Awarded a $500,000 gift from Lew and Laura Moorman to continue research efforts.

**SURGICAL ONCOLOGY CONTINUES ITS GROWTH**

The Surgical Oncology program brings together the finest talents in general and thoracic surgical oncology, orthopedic oncology, neurosurgery, head and neck surgery, urology, gynecology, cardiovascular surgery, oncologic transplantation, ophthalmology and plastics/reconstructive surgery to diagnose, plan and execute surgery for even the most complex of cases.

**Dr. Jed G. Nuchtern** is a world expert in caring for children with neuroblastoma both clinically and in research. Dr. Nuchtern is one of the surgical leaders of the Children’s Oncology Group which plans and executes the treatment protocols for neuroblastoma and other pediatric solid tumors.

**Dr. Sanjeev A. Vasudevan** specializes in caring for children with liver cancer such as hepatoblastoma, hepatocellular carcinoma and undifferentiated embryonal sarcoma. Under the mentorship of Dr. John Goss, medical director of Transplant Services and world-renowned liver transplant specialist, Dr. Vasudevan has nearly doubled the number of liver resections performed at Texas Children’s Hospital over the last five years.

**Dr. Bindi Naik-Mathuria** specializes in solid tumors, pediatric surgical oncology as well as surgical critical care. She also has a special interest in surgical outcomes research and is currently completing a master of public health program to further this work.

As an integral part of Texas Children’s Cancer Center®, which is ranked #2 in pediatric cancer according to *U.S. News & World Report*, the Surgical Oncology team at the Texas Children’s Hospital strives to provide the highest expertise in the surgical treatment of solid tumors in children.

**NEW ARRIVALS**

**Dr. Sohail R. Shah** joined the Pediatric Surgery Division with advanced minimally invasive thoracic and abdominal surgery training in all aspects of neonatal and pediatric surgery. He has special interest and training in gastrointestinal surgery, neonatal surgery, congenital anomalies and chest wall deformities (pectus).
**Dr. Adam M. Vogel** brings expertise in all aspects of neonatal and pediatric general and thoracic surgery with a focus on complex gastrointestinal disease, endocrine disease, vascular anomalies and pediatric trauma. He has a particular focus on the care of critically ill patients including those receiving extracorporeal life support and those suffering from complex multisystem trauma.

**PROVIDING CARE ACROSS TEXAS**

Texas Children’s Pediatric Surgery Division is expanding its reach and partnering with the Children’s Hospital of San Antonio and Covenant Children’s in Lubbock to share providers and expertise in order to help improve patient outcomes and quality of care for children across the state of Texas.

**SHARED SAVINGS PROGRAM LAUNCHED FOR APPENDECTOMY PATIENTS**

Pediatric Surgery developed Texas Children’s first value-based payment model, in collaboration with Texas Children’s Emergency Center and Texas Children’s Health Plan, in order to link reimbursement to improved patient outcomes and reduced cost for one of our highest volume surgical procedures. Using specific quality measures such as prompt evaluation and triage as well as same-day discharge, the team worked towards several improvements such as a 17 percent reduction in total hours from admission to discharge and a 5 percent reduction in OR hours billed.

**PEDIATRIC SURGERY OPERATING ROOM CASES**

*by year*

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 surgical locations.
Clinic visits include outpatient visits by Texas Children’s Hospital and Baylor College of Medicine faculty only.

**Pediatric Surgery Clinic Visits**

By year

<table>
<thead>
<tr>
<th>Year</th>
<th>Texas Children’s Hospital</th>
<th>Texas Children’s Hospital West Campus</th>
<th>Texas Children’s Hospital The Woodlands</th>
<th>Texas Children’s Health Centers</th>
<th>Texas Children’s Specialty Care (Pearland/Kirby/Atascocita locations)</th>
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JED G. NUCHTERN, M.D., is chief of Pediatric Surgery at Texas Children’s Hospital and professor of Surgery and Pediatrics at Baylor College of Medicine. A graduate of Princeton University, Dr. Nuchtern received his medical degree from Harvard Medical School. He completed his general surgery training at the University of Washington and a research fellowship at the National Institutes of Health. He received advanced training in pediatric surgery at Baylor College of Medicine. In addition to a clinical focus on surgical oncology and general pediatric surgery, Dr. Nuchtern conducts a basic research program that focuses on molecular target discovery in neuroblastoma, a pediatric cancer of the nervous system.

Dr. Nuchtern is a fellow of the American Academy of Pediatrics and the American College of Surgeons (ACS). He is a member of the ACS Commission on Cancer and the Children’s Oncology Group, a national consortia of pediatric oncology clinicians and research professionals.

To view more Pediatric Surgery Division biographies, visit texaschildrens.org/pediatric-surgery.
In 2016, the Plastic Surgery Division at Texas Children’s Hospital grew to seven full-time plastic surgeons, seven physician assistants and one nurse practitioner, making it the largest group of full-time pediatric plastic surgeons and providers at a children’s hospital in the United States. The division specializes in the surgical treatment of injuries or disorders that prevent children from functioning fully or looking and feeling their best.

We provide comprehensive care to pediatric patients with complex surgical needs. The team includes a full-time fellowship-trained orthodontist who collaborates on surgical treatment and orthodontia for children with congenital craniofacial anomalies and/or cleft palate. Our innovative surgical techniques and treatment of cleft lip and cleft palate draws patients from across the nation with deformities ranging from mild to extremely complex.

The Plastic Surgery team now serves all three hospital locations and multiple community locations of Texas Children’s Hospital.
HOLLIER HONORED AS PRESS GANEY PHYSICIAN OF THE YEAR
On November 2, Press Ganey presented Dr. Larry H. Hollier, Jr. with the 2016 Physician of the Year award at its annual National Client Conference in Orlando. Members of the Texas Children’s Ambulatory Surgery Patient Experience Workgroup and leaders throughout the hospital nominated him for the distinguished award.

Dr. Hollier has led many patient experience innovations within Texas Children’s Department of Surgery including the “Meds to Beds” program, which delivers post-surgery medications to a patient’s bedside before discharge; same-day surgery consultation appointments; standardized pre-surgery materials; and a physician communication course, among others. He has also been instrumental in advancing the hospital’s expertise in caring for patients with a range of complex conditions while simultaneously becoming a leader in outcomes measurement and patient experience.

HAND CLINIC ESTABLISHED WITH ARRIVAL OF DR. CHRIS PEDERSON
In January 2016, Dr. William “Chris” Pederson came to Texas Children’s Hospital to lead the Hand Clinic, a partnership between Plastic Surgery, Physical Medicine and Rehabilitation and Orthopedic Surgery. Dr. Pederson specializes in hand reconstruction, hand trauma, brachial plexus repair and lower limb reconstruction. He is a member of several boards and is the president and 2016 scientific program chair for the American Association for Hand Surgery. He is also a director of the American Board of Plastic Surgery. He serves on the International Editorial Board of the Journal of Reconstructive Microsurgery and on the Scientific Editorial Board of the Journal of Hand Surgery (American).

BREAST CLINIC HELPS TEENAGE GIRLS REGAIN QUALITY OF LIFE
Texas Children’s Breast Clinic, led by Drs. Laura Monson and Renata Maricevich, sees teenage girls who suffer from gynecomastia or very enlarged breasts. The multidisciplinary team includes physicians, physician assistants, nurses and social workers who work with the patients in a shared medical appointment setting. The unique, streamlined appointment structure allows for more efficient and structured patient visits, including an educational component in a group setting and individual interaction between the physician and patient. The results from the clinic have shown considerable gains in the area of patient satisfaction post-procedure.

CAMP KEEP SMILING CELEBRATES ITS THIRD YEAR
In 2014, Texas Children’s launched an annual camp for patients with cleft lip and palate called Camp Keep Smiling. This year, 60 adolescents participated in this unique camp which gives patients an opportunity to gain fellowship and friendship with others with the same or a similar diagnosis – forging incredible connections.

HOLLIER LEADS COURSE TO HELP STRENGTHEN COMMUNICATION
To continue delivering on our goal of improving the experience for patients and families at Texas Children’s, Dr. Larry Hollier, associate surgeon-in-chief, and Dr. Joan Shook, chief safety officer, developed a provider-focused workshop called Breakthrough Communication. This 5.5-hour role-playing seminar gives doctors and advanced practice providers multiple tools to help communicate more effectively with patients and their families. Drs. Hollier and Shook are teaching providers how to break through the traditional communication barriers that exist not only between providers and patients, but also between other members of a patient’s care team. Texas Children’s is the first pediatric institution in the nation to implement and customize this innovative course.
NEW ARRIVALS

Dr. Tuan Truong completed his plastic surgery residency at Mayo Clinic Arizona in Phoenix. He then completed his fellowship in craniofacial and pediatric plastic surgery at Dell Children’s Medical Center in Austin, where he received comprehensive training in the treatment of a wide variety of pediatric and craniofacial anomalies. His special interests are cranial vault remodeling, facial fractures, midfacial and mandibular distraction, orthognathic surgery and virtual surgical planning.

Dr. Shola Olorunnipa completed his general surgery residency at New York Presbyterian Hospital – Columbia Medical Center in New York. He did his residency in plastic surgery at New York Presbyterian Hospital – Weill Cornell Medical Center in New York and completed his fellowship at Baylor College of Medicine in craniofacial and plastic surgery in 2016.

Dr. Renata Maricevich earned her medical degree from Universidade Federal de Pernambuco in Recife, Brazil. She did a general surgery residency and a plastic surgery residency at the Mayo Clinic in Rochester, Minnesota. She completed her pediatric and craniofacial fellowship at Children’s Hospital of Pittsburgh.
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 surgical locations.

Clinic visits include outpatient visits by Texas Children’s Hospital and Baylor College of Medicine faculty only.
LARRY H. HOLLIER, JR., M.D., F.A.C.S., is chief of Plastic Surgery at Texas Children’s Hospital and professor and chief of the Plastic and Reconstructive Surgery Division at Baylor College of Medicine. Additionally, he serves as associate surgeon-in-chief for Clinical Affairs and medical director of Advanced Practice Providers. He earned his medical degree from Tulane University and completed his plastic surgery residency at the University of Texas Southwestern Medical Center in Dallas, where he remained for fellowships in hand and microvascular surgery. He also completed a fellowship in craniofacial surgery at New York University Medical Center.

Dr. Hollier specializes in cleft lip and palate repair, pediatric craniofacial surgery, hand surgery, facial fractures, cranial vault remodeling, and midfacial and mandibular distraction. He has authored more than 200 articles in scholarly and professional publications as well as 37 book chapters, and made dozens of presentations to professional audiences worldwide on a range of topics related to plastic and reconstructive surgery. He has traveled extensively in Asia, Central America and Africa, performing surgeries on children in underserved populations.

Dr. Hollier is the chairman of the medical advisory board of Smile Train, the largest charity in the world devoted to cleft care. Dr. Hollier serves on the board of the Duke Global Health Institute (DGHI) whose efforts are focused on reducing health disparities in the local community and worldwide. In 2014, he was named surgical director of the Operating Rooms and surgical director of Patient Experience at Texas Children’s Hospital. Dr. Hollier is a Fellow of the American College of Surgeons (F.A.C.S.). His professional memberships also include the American Society of Plastic Surgeons, American Cleft Palate Association, American Society of Maxillofacial Surgery, AO North America – Craniomaxillofacial Section, Houston Society of Plastic Surgeons and the International Society of Craniofacial Surgery.

Dr. Hollier is on the editorial boards of numerous scientific journals, including the Journal of Craniofacial Surgery, the Journal of Trauma, Plastic and Reconstructive Surgery and Selected Readings in Plastic Surgery. He serves as co-editor of the Journal of Craniomaxillofacial Trauma and Reconstruction and is the editor-in-chief of Seminars in Plastic Surgery.

To view more Plastic Surgery Division biographies, visit texaschildrens.org/plasticsurgery.
Transplant Services

One of the most active pediatric transplant programs in the nation, Transplant Services at Texas Children’s Hospital provides complex, multifaceted medical and surgical care for newborns to young adults in need of heart, kidney, liver and lung transplants.

Our staff provides a comprehensive, interdisciplinary team approach through all aspects of the transplant process, from initial referral to hospitalization and outpatient management. Our pediatric transplant team works closely with patients, families and referring physicians to help make the evaluation process as convenient and efficient as possible.
The pediatric transplant landscape is complex and highly regulated. The Solid Organ Transplant Program at Texas Children’s Hospital is a member of the United Network for Organ Sharing (UNOS) and is fully accredited by the Centers for Medicare and Medicaid Services (CMS). To meet the CMS Quality Assessment and Performance Improvement requirements and ensure our patients receive the best possible care, Texas Children’s employs a medical director of Transplant Quality, Dr. Ryan Himes, two quality specialists, a clinical educator, a compliance specialist and a clinical data specialist.

**RECORD-SETTING DAY FOR KIDNEY TRANSPLANTS**

March 11, 2016 was a record-setting day for the renal transplant service at Texas Children’s Hospital. The team completed four kidney transplants in the span of 18 hours. The patients ranged in age from 4 to 28 years old and included three females and one male. The 28-year-old patient had been on dialysis for 13 years waiting for a kidney.

It took an astounding team effort to complete the admission of these four transplant patients and complete four surgeries in less than 24 hours. Renal surgeons and pediatric nephrologists, anesthesia, pharmacy, the PACU and PICU, perioperative nurses and technicians, renal transplant coordinators, the blood bank, inpatient nurses and staff, the dialysis unit, social workers, child life specialists and dietitians were all involved in making this day possible.

**MILOH NAMED DIRECTOR OF PEDIATRIC HEPATOLOGY AND LIVER TRANSPLANT**

In March 2016, Dr. Tamir Miloh joined Texas Children’s Hospital as director of Pediatric Hepatology and Liver Transplant Medicine. Dr. Miloh’s research interests include the investigation of liver transplantation and various pediatric liver diseases, including primary sclerosing cholangitis, autoimmune hepatitis, Wilson’s disease, metabolic diseases, biliary atresia, nonalcoholic fatty liver disease and acute liver failure. In addition to his clinical role, he is deeply committed to educating future pediatric hepatologists and has established an ACGME accredited advanced transplant hepatology program at Texas Children’s.

**WILSON’S DISEASE ASSOCIATION CENTER OF EXCELLENCE AWARDED**

The Wilson’s Disease Association Board of Directors has approved Texas Children’s Hospital and Baylor College of Medicine as a designated Center of Excellence, one of only eight in the world. The mission of the Wilson’s Disease Association is to fund research and facilitate the identification, education, treatment and support of patients and other individuals affected by Wilson’s disease. The Centers of Excellence designation is aimed at helping families find the best care for this complex disease, which can gravely affect liver function and ultimately lead to transplant.
Medical Director of Renal Transplantation, Dr. Eileen Brewer, received an achievement award for her work on the United Network for Organ Sharing (UNOS) Pediatric Transplantation Committee. Brewer has been a member of the committee since 2009 and was chair of the committee in December 2015 when, after decades of hard work, the UNOS Board passed pediatric bylaws that established specialized guidelines for surgeon and physician leadership for all hospitals with pediatric transplant programs.

Brewer is an internationally known expert in pediatric renal diseases, dialysis, transplantation and hypertension. She is past president of the American Society of Pediatric Nephrology, former Council Member of the International Pediatric Nephrology Association and organizer of International Workshops on Hypertension in Children and Adolescents in 2001, 2004 and 2007. She has been an active clinician and clinical researcher throughout her career, with more than 90 journal articles and 30 book chapters published. She is frequently invited to speak at scientific meetings and workshops nationally and internationally.

Shelby Standridge, 17, came down with common colds early in her childhood, but nothing out of the ordinary. A severe nose bleed at age 9, however, landed her in the hospital and revealed a cystic fibrosis diagnosis, a genetic disorder that affects mostly the lungs, but also the pancreas, liver, kidneys and intestines.

At the time doctors tested Shelby for the disease, they determined her liver was already fully involved, almost to the point of end-stage liver failure, but she wasn’t yet a candidate for transplant. She continued battling the disease over the next five years, until her lung function began to decline so much that she was referred to Texas Children’s.

In October 2016, Shelby and her mom and older sister moved to Houston to be placed on the list for a double lung and liver transplant. They expected and were prepared for a grueling six to eight month wait, but a mere week later, on November 8, Shelby received her transplant. A multidisciplinary team of surgeons successfully performed the 14-hour lung-liver procedure, which is so rare that Shelby was only the sixth person in Texas Children’s history to receive one.

Post-transplant, Shelby says she’s feeling ten times better and is enjoying everyday life so much more. Her father says he hasn’t seen her grin so wide in years.
Operating room case volumes include procedures performed by Texas Children’s Hospital and Baylor College of Medicine physicians at Texas Children’s Hospital surgical locations. Of the 27 kidney transplantations completed in 2016, nine were living donors and 18 were deceased donors.


As of Dec. 31, 2016.
WEB EXCERPT

TRANSPLANT SERVICES

ONE-YEAR PEDIATRIC TRANSPLANT PATIENT SURVIVAL RATES

Based on transplants performed 07/01/2013-12/31/2015. Pediatric age < 18.

91.30% 93.62% 92.77% 97.37% 99.50% 92.08% 94.24% 95.52% 88.82% 85.98%

HEART (N=47) KIDNEY (N=29) LIVER (N=87) LUNG (N=34)

TEXAS CHILDREN’S HOSPITAL SRTR EXPECTED NATIONAL

*Scientific Registry of Transplant Recipients (SRTR). Program Specific Reports. Table 11 - www.srtr.org.

*Per SRTR, there are too few events to calculate statistically powerful expected patient survival values for pediatric kidney and lung recipients.
JOHN A. GOSS, M.D., is the medical director of Transplant Services at Texas Children’s Hospital and surgical director of Liver Transplantation at Texas Children’s Hospital, St. Luke’s Episcopal Hospital and the Michael E. DeBakey Veterans Affairs Medical Center. He is also professor of Surgery and chief of the Abdominal Transplantation Division at Baylor College of Medicine. He received his medical degree from Creighton University in Omaha and completed his residency in general surgery at the Barnes Hospital at the Washington University School of Medicine Surgical Program. Subsequently, Dr. Goss completed a two-year multi-organ transplant fellowship in the Division of Liver and Pancreas Transplantation at the University of California School of Medicine in Los Angeles, where he was appointed assistant professor. He has been awarded the American Surgical Career Development Award, an American Liver Foundation Award and a Juvenile Diabetes Foundation Award for his efforts and leadership in transplantation. Throughout his career, Dr. Goss has performed more than 1,000 transplantation procedures.

To view more Transplant Services biographies, visit texaschildrens.org/transplant.

THREE-YEAR PEDIATRIC TRANSPLANT PATIENT SURVIVAL RATES\textsuperscript{10, 11}  
Based on transplants performed 01/01/2011-06/30/2013. Pediatric age < 18.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{transplant_survival_rates.png}
\caption{Three-year pediatric transplant patient survival rates.}
\end{figure}

\textsuperscript{10}Scientific Registry of Transplant Recipients (SRTR). Program Specific Reports. Table II – www.srtr.org.

\textsuperscript{11}Per the SRTR, there are too few events to calculate statistically powerful expected patient survival values for pediatric kidney recipients.
Urology

As one of the largest groups of fellowship-trained pediatric urologists in the United States, Texas Children’s Urology Division provides comprehensive evaluation, diagnosis, treatment and follow-up care for infants, children, adolescents and young adults with congenital and acquired disorders of the genitourinary tract. We provide surgical services for all genitourinary conditions and have a specialized focus on minimally invasive, robotic and laparoscopic surgical techniques, including extremely delicate procedures in newborns and infants, anorectal malformations, urological conditions caused by neurological problems such as spina bifida and management of stone disease.
The Urology Division also provides care for complex disorders requiring extensive surgical reconstruction, including disorders of sex development (intersex), bladder exstrophy, genital reconstruction and complete urinary reconstruction. As part of the Minimally Invasive Surgery Program, we have state-of-the-art treatment modalities for endoscopy, laparoscopic surgery and robotic surgery.

In 2016, we added a seventh provider, securing our place as the largest pediatric urology program in the country.

KOH AND JANZEN PARTNER WITH UNIVERSITY ENGINEERING PROGRAMS
Drs. Chester Koh and Nicolette Janzen worked with engineering students at both Rice University and Texas A&M University to help develop solutions to tough surgical problems.

At Rice, Dr. Koh guided students in the Rice Oshman Engineering Design Kitchen towards the creation of a new stent to reduce invasiveness and complications associated with pyeloplasty stent removal procedures. The stent project won awards at both Rice University’s Engineering Design Showcase and the Design of Medical Devices Conference in Minneapolis.

In College Station, Dr. Janzen is working with Texas A&M students to develop an evacuator device to remove fragments of small kidney stones left behind after a stone breaks apart in order to prevent these residual stone fragments from forming into new stones.

EXPANSION OF THE KIDNEY STONE CLINIC
Texas Children’s Kidney Stone Clinic was the first program of its kind in Texas to provide comprehensive care for children and adolescents with kidney stones. A multidisciplinary team evaluates, diagnoses and treats children who have previously had kidney stones, as well as patients who are at risk for developing them. Patients are evaluated by a pediatric urologist, a pediatric nephrologist and a registered renal dietitian in one convenient visit. The Stone Clinic currently operates at Texas Children’s medical center campus and is expanding to West Campus in 2017.

Texas Children’s cared for a record 230 unique kidney stone patients in 2016.

SPINA BIFIDA PROGRAM
Each week, a team of approximately 10 physicians, social workers, nutritionists and nurses work together in Texas Children’s Spina Bifida Clinic to provide the best care for patients with the congenital disorder. Drs. Duong Tu and Angela Mittal assess these patients’ urologic function and often perform complex procedures to improve bladder function. Critical to this care is the Urology nursing team as registered nurses perform diagnostic urodynamic procedures on patients to help determine what, if any, intervention is indicated.
DATA SHOWS BENEFITS OF ROBOTIC-ASSISTED LAPAROSCOPIC PYELOPLASTY

In a recent, internally-conducted study, a Texas Children’s Urology team noted the many medical and financial benefits of robotic surgery. For patients receiving robotics surgery, the hospital length of stay was shortened from an average of 2.8 to 1.6 days. The average savings on the hospital stay for the patient family was over $600.

UROLOGY CLINIC VISITS

by year

Clinic visits include outpatient visits by Texas Children’s Hospital and Baylor College of Medicine faculty only.
DAVID ROTH, M.D., is chief of Urology at Texas Children’s Hospital and chief of Pediatric Urology at Baylor College of Medicine, where he is also professor of Urology and Pediatrics and serves as the Edmond T. Gonzales Jr., M.D., Endowed Chair in Pediatric Urology. Certified by the American Board of Urology, Dr. Roth earned his medical degree from the University of Southern California in Los Angeles. After completing his surgical and urologic residency programs at Baylor, he went on to pursue advanced specialized training in urology. He completed a fellowship in pediatric urology surgery at Children’s Hospital of Michigan in Detroit. As a prominent leader in the field of pediatric urology for over 30 years, Dr. Roth has distinguished himself in a variety of research, clinical and academic roles. His clinical interests include urinary tract infection, reflux, congenital abnormalities of the genitalia and urinary tract obstruction of the newborn. His primary research is directed at improving surgical outcomes in children with urologic disease. He has authored more than 75 book chapters and publications in various academic and medical journals and is the recipient of numerous honors and awards, including his recognition and inclusion on the list of Best Doctors in America each year since 1996.

To view more Urology Division biographies, visit texaschildrens.org/urology.
Inpatient Services

Inpatient Services at Texas Children’s Hospital provides treatment and care for children who need specialized, pediatric-focused patient care. Inpatient Services offers the following five specialized units for patients experiencing trauma, heart disease and life-threatening problems and who require special care nursing and monitoring:

• Acute Care Surgical Unit
• Cardiovascular Intensive Care Unit
• Heart Failure Intensive Care Unit
• Pediatric Intensive Care Unit
• Progressive Care Unit
ACUTE CARE SURGICAL UNIT
The acute care floor is a 36-bed surgical care unit that admits patients of all ages from infancy to adolescence. The unit receives a wide variety of postoperative surgical patients from Orthopedics, Otolaryngology, Pediatric Surgery, Plastic Surgery and Urology. We have four beds dedicated to trauma patients and a team of nurses who focus solely on our trauma patient population.

CARDIOVASCULAR INTENSIVE CARE UNIT/HEART FAILURE INTENSIVE CARE UNIT
Texas Children’s Heart Center now has two Cardiovascular Intensive Care Units (CVICU) with 33 beds. The CVICU on the 18th floor is a 21-bed unit for newborns, infants, children and young adults with heart disease, many of whom are recovering from recent heart surgery. The CVICU on the 15th floor is a 12-bed Heart Failure Intensive Care Unit, the first of its kind in the country, which was opened in July 2015. The cardiac ICUs care for children undergoing surgery for congenital heart disease; infants, children and adolescents with end-stage heart failure before and after heart transplantation; and children with other acute or chronic cardiac conditions that warrant intensive intervention or monitoring. We have one of the busiest ventricular assist device (VAD) support programs in the country. VADs provide cardiac support for children with end stage heart failure while they are waiting for a heart transplant. Our multidisciplinary team includes cardiovascular intensivists trained in pediatric cardiology, cardiovascular anesthesiology and pediatric critical care. They work alongside cardiac surgeons, highly specialized nurses, respiratory therapists, nurse practitioners and physician assistants to provide the best care for our patients.

PEDIATRIC INTENSIVE CARE UNIT
The 35-bed Pediatric Intensive Care Unit (PICU) cares for infants and children with life-threatening conditions that require expert care and high level monitoring. The most common reasons for admission are severe infections, seizures or other brain disorders, serious injuries, or recovery after complex surgery. For the most extreme disease processes, we have the ability to help patients with technological support including mechanical ventilation, continuous or intermittent dialysis, artificial liver support and extracorporeal membrane oxygenation (ECMO). In July 2015, we opened the Surgical Recovery Unit which specifically cares for children recovering from high-risk, noncardiac surgery. The PICU is staffed with critical care physicians, advanced practice providers and residents and fellows training in pediatric critical care. The medical team works seamlessly with a highly skilled multidisciplinary team of PICU nurses, respiratory therapists, pharmacists, social workers and child life specialists to care for each patient.

PROGRESSIVE CARE UNIT
The Progressive Care Unit (PCU) is a 36-bed unit that admits patients ranging in age from infancy to adulthood who require special care nursing and monitoring. Many patients are admitted after a prolonged stay in our PICU to help coordinate the care needed for recovery and transitioning back home. Other patients have acute exacerbations of their complex chronic medical conditions and depend on technological support (such as tracheostomies) that are best supported by our team in the PCU. Special emphasis is given to respiratory, neurological and surgical disorders, as we are experts in these areas. Our multidisciplinary team of critical care physicians, pediatric residents, advanced practice providers, nurses and respiratory and physical therapists care for both acute and chronic conditions. The PCU’s family-centered approach encourages parents to stay with and learn to care for their child in preparation for their return home.
**WEST CAMPUS PEDIATRIC INTENSIVE CARE UNIT**

This suburban hospital has recently increased the size of its Pediatric Intensive Care Unit (PICU) to 16 beds. The unit is a mixed medical, surgical and intermediate level ICU. Patients typically have new onset severe disease processes (such as infections) or postoperative recovery needs that require expert care and high level monitoring. The PICU is staffed by a multidisciplinary team of critical care physicians, advanced practice providers, specialized nurses, respiratory therapists, pharmacists, social workers and child life specialists.

**INPATIENT DAYS**

(by unit)

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**LARA S. SHEKERDEMIAN, M.D., F.R.A.C.P., F.J.F.I.C.M., M.H.A.,** is chief of Critical Care. She also serves as the vice chair of Clinical Affairs for the Department of Pediatrics and professor of Pediatrics at Baylor College of Medicine. She graduated from Birmingham University Medical School in 1990. She was awarded her postgraduate doctoral degree for her thesis “Cardiopulmonary Interactions in Congenital Heart Disease” from the University of Birmingham in 1997. Dr. Shekerdemian trained in pediatrics and pediatric cardiology and undertook postgraduate research in London. She trained in critical care in London and Toronto. She was previously on faculty at the Great Ormond Street Hospital in London and, prior to coming to Baylor/Texas Children’s in 2010, was the chief of Critical Care at The Royal Children’s Hospital in Melbourne. Her research and clinical interests include extracorporeal life support, brain injury in infants and children with heart disease, and outcomes in children after admission to the intensive care unit.

For more information about the Pediatric Intensive Care Unit, visit [texaschildrens.org/departments/critical-care](http://texaschildrens.org/departments/critical-care).
Operating Rooms and Perioperative Services

Designed for women and children, the Operating Rooms and Perioperative Services at Texas Children’s Hospital provide comprehensive and specialized capabilities for surgeries ranging from routine to extremely complex. Perioperative Services manages 37 operating room suites across Texas Children’s Hospital, with 22 at the Texas Medical Center campus, six at the Pavilion for Women, and nine at West Campus and The Woodlands. More than 30,000 surgical cases were completed in operating rooms across the Texas Children’s Hospital system in 2016. From admission to recovery, our support team of more than 700 strives to ensure an optimum experience for patients and physicians.

Most of the surgical suites are fully equipped and integrated with video, endoscopic, robotic or microscopic equipment. For specialized surgical interventions such as fetal, heart and transplant surgery, we offer customized equipment and 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.
PATIENT EXPERIENCE WORK GROUPS
The Department of Surgery leads four work groups dedicated to improving the experiences of our patients and families. These groups focus on:

- **Information received prior to surgery** – including informational packets, way-finding details, standardized scripting and communication
- **Pain control** – including educational materials and nursing staff training
- **Education and awareness** – including resources, engagement of frontline staff and customer service initiatives such as the “Caught You Caring” program
- **Information about delays** – including a new patient liaison role to provide enhanced communication, training and scripting for both nurses and surgeons

RECENTLY LAUNCHED APP AIDS IN PATIENT COMMUNICATION
To help alleviate the anxiety of those sitting in the waiting room while their loved one is in surgery, Texas Children’s Hospital is now utilizing a resource that gives families real-time status reports from the operating team. The Electronic Access to Surgical Events (EASE) app sends updates in the form of HIPAA-compliant text messages.

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 that private information stays secure. Patients and families have responded positively to the new technology, stating that it improved their overall experience and enhanced transparency and communication between doctor and patient. It also decreased anxiety, which helps improve the situation for everyone involved.

LOWER CANCELLATION RATES
With the implementation of new scheduling guidelines and scripting across all surgical divisions in 2016, the cancellation and/or no-show rate dropped from 4 percent to 3 percent. This rate was much lower than the hospital’s 6 percent cancellation rate from 2015 and the average 5.51 percent cancellation rate among all reporting Children’s Hospital Association institutions.

PRE-SURGERY HUDDLE IMPLEMENTED
As part of our continued focus on safety and outcomes, all surgical disciplines engage in a perioperative huddle process. These huddles are led by anesthesia, surgery and nursing leaders from all surgical locations three times per day. The huddles include all key stakeholders and take place either in person or on the phone. Huddle discussions include unusual procedures, needed equipment or supplies, radiology support concerns and staffing.

QUALITY COUNCIL FORMED
As Texas Children’s Hospital continues to grow and expand into the community, we remain focused on delivering the same high quality patient care across all locations. The Perioperative Coordinating Council (PCC) was formed this past year with a goal of creating and maintaining a culture of quality at Texas Children’s where clinicians and leaders accept personal responsibility for ensuring adherence to regulatory guidelines in order to deliver high quality patient care. PCC members include representatives from Surgery, Anesthesia and Perioperative Services, operational leadership and stakeholders across the entire organization.
As a Level I pediatric trauma center, Texas Children’s Hospital provides around-the-clock coverage to evaluate and treat the most severely injured pediatric patients.

Teamwork is crucial in the rapid and decisive actions needed to treat traumatic injuries. This group of pediatric surgeons and surgical subspecialists; emergency medicine physicians; critical care physicians; anesthesiologists; nurses; child life specialists; social workers; rehabilitation specialists; physical, occupational and respiratory therapists; and other support staff work together effectively and efficiently when seconds matter.
Dedicated space for trauma cases is available in the Emergency Center, our main operating room suite and inpatient units. Approximately 70 percent of all trauma cases come from within the Metro Houston catchment area, which consists of nine counties covering more than 9,500 square miles. Over 50 percent of the trauma patients cared for at Texas Children’s Hospital are transferred from other hospitals. The average time to accept a transfer is 15 minutes, well below the 30 minute threshold that is allowed by federal regulation.

**AMERICAN COLLEGE OF SURGEONS SITE VISIT**
Texas Children’s Hospital was re-verified as a level I Pediatric Trauma Center this year. The level of verification was requested by the hospital and the on-site review of the hospital was conducted by a team of reviewers experienced in the field of trauma. Using the current Resources for Optimal Care of the Injured Patient manual as a guideline, this team determined if the criteria for the requested level have been met.

Established by the American College of Surgeons in 1987, the Consultation/Verification Program for Hospitals promotes the development of trauma centers in which participants provide not only the hospital resources necessary for trauma care, but also the entire spectrum of care to address the needs of all injured patients. This spectrum encompasses the prehospital phase through the rehabilitation process. Verified trauma centers must meet the essential criteria that ensure trauma care capability and institutional performance.

**MULTIPLE PROJECTS FOCUS ON QUALITY IMPROVEMENT**
Throughout 2016, the Trauma Services team engaged in multiple projects aimed at enhancing patient care and quality outcomes.

**Combatting compartment syndrome**
This included additional education for physicians and advanced practice providers, identification of high-risk patients, and the launch of standardized nursing assessments.

**Implementing CRAFFT screening**
This acronym helps staff recall the six crucial screening questions to ask patients 12 years of age and older surrounding inappropriate or excessive drug and alcohol usage.

**Education for parents on the Period of PURPLE Crying**
In order to reduce infant head traumas as a result of abuse, our team provided classes for over 650 caregivers within the Neonatal Intensive Care Unit and the Texas Children’s Health Plan Center for Women and Children.

Other projects included simplification of the paging process, examination of blunt spleen and liver injury management, an update of the trauma patient registry, and analysis of trauma triage and assessments. These projects are part of our commitment to provide exceptional care for children, families and caregivers in our community.
TRAUMA ADMISSIONS
by year

<table>
<thead>
<tr>
<th>Year</th>
<th>Trauma Admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1,247</td>
</tr>
<tr>
<td>2013</td>
<td>1,142</td>
</tr>
<tr>
<td>2014</td>
<td>1,201</td>
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<tr>
<td>2015</td>
<td>1,080</td>
</tr>
<tr>
<td>2016</td>
<td>1,001</td>
</tr>
</tbody>
</table>

Trauma admissions at Texas Children’s Hospital in the Texas Medical Center.

TRAUMA ADMISSIONS
by injury location

<table>
<thead>
<tr>
<th>Location</th>
<th>Admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdomen</td>
<td>163</td>
</tr>
<tr>
<td>External</td>
<td>334</td>
</tr>
<tr>
<td>Face</td>
<td>844</td>
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<tr>
<td>Head</td>
<td>899</td>
</tr>
<tr>
<td>Lower Extremity</td>
<td>476</td>
</tr>
<tr>
<td>Neck</td>
<td>22</td>
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<tr>
<td>Spine</td>
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</tr>
<tr>
<td>Thorax</td>
<td>167</td>
</tr>
<tr>
<td>Upper Extremity</td>
<td>819</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3,849</strong></td>
</tr>
</tbody>
</table>

12Data from January 2016 to August 2016. Patients may have injuries in multiple locations.
13External encompasses skin injuries including cuts, bruises and abrasions.
Other includes: Congenital Heart Surgery, Ophthalmology, Otolaryngology, Pediatric and Adolescent Gynecology, Plastic Surgery and Urology. Additional patients are treated outside of the Department of Surgery.

TRAUMA ADMISSIONS by severity

Injury Severity Scores (ISS)
Physical Medicine and Rehabilitation Services are provided to children with traumatic injuries as part of the standard of care at Texas Children’s Hospital. These services received a dramatic bolster in 2012 with the opening of our Pediatric Acute Inpatient Rehabilitation Program, one of the only programs of its kind in the region. In addition to providing rehabilitation services for inpatients of the hospital, the unit has eight dedicated beds for acute inpatient rehabilitation for patients whose current primary medical need is physical rehabilitation, including those recovering from a traumatic injury. In 2014, the Pediatric Acute Inpatient Rehabilitation Program received the distinction of a three-year Commission on Accreditation of Rehabilitation Facilities (CARF) accreditation. This honor is held by only 29 centers in the United States, and Texas Children’s Hospital is the only CARF-accredited program in Texas.

Texas Children’s Trauma Services aims to continuously evaluate and improve the quality of care given to trauma patients from the perspective of our patients, parents, providers and system. Our trauma process improvement program monitors and evaluates patient care and system performance, while ensuring implementation of a culture of safety. The team participates in the American College of Surgeons’ Trauma Quality Improvement Program and attends the annual scientific meeting and training.

The Center for Childhood Injury Prevention

Pediatric injury is the leading cause of death of children in the United States. The Center for Childhood Injury Prevention serves as the lead for the Safe Kids Greater Houston Coalition. Texas Children’s Hospital staff and community partners educate thousands of parents and children each year on a variety of child safety topics, such as child passenger safety, safe sleep, home safety and bike and pedestrian safety. Our injury prevention programs are supported by over $350,000 per year in grants provided by the Texas Department of Transportation (TxDOT), Houston-Galveston Area Council and other local sponsors.

Texas Children’s Hospital and our 30+ community partners inspect more than 3,000 car seats every year and distribute more than 1,200 car seats to underserved families. Texas Children’s Hospital maintains one of the largest inspection station networks in the United States. Additionally, we distributed more than 1,000 portable cribs to qualifying families so they can provide a safe sleep environment for their infant. Texas Children’s partners with local schools, childcare centers, and other nonprofit organizations to provide bike and pedestrian safety education via assemblies and classroom education. Each year through relationships with TxDOT and Changing Young Children’s Lives through Education, Texas Children’s Hospital provides helmets to over 5,000 local children and educates many more on the importance of bicycle safety and wearing a helmet.

Injury prevention health education specialists now provide bedside injury prevention education to trauma patients and their families based on mechanism of injury and other pertinent development stage topics. Families are connected with community resources for additional services, such as assistance installing car seats.

Currently there is one hospital-funded position for program manager and two hospital-funded positions for health educators. In addition, there are five additional grant-funded health educator positions.
The Center for Childhood Injury Prevention educates thousands of parents and children each year on child passenger safety, safe sleep, home safety and bicycle safety.

CAR SEAT INSPECTIONS
by year

TOP FIVE MECHANISMS OF INJURY
in 2016
BINDI NAIK-MATHURIA, M.D., is medical director of Trauma Services at Texas Children’s Hospital. Dr. Naik-Mathuria is a native Houstonian and a graduate of the General Surgery Program at Baylor College of Medicine. She completed her pediatric surgery fellowship at the Children’s Hospital of Los Angeles. Dr. Naik-Mathuria returned to Texas Children’s in 2011 to serve as the associate medical director of Trauma under Dr. David Wesson, and she completed a second fellowship in surgical critical care at Baylor. She became medical director of Trauma in 2014. She has a strong interest in improving processes and quality of care for trauma patients at Texas Children’s Hospital, and she is currently running a multi-institutional study to determine the best management of pediatric pancreatic trauma.

CHRISTI REEVES, B.S.N., R.N., C.E.N., is director of Trauma Services and the Center for Childhood Injury Prevention. She started at Texas Children’s Hospital in 2015. She completed her bachelor’s degree in nursing from the University of Texas Arlington and is currently working on her master’s degree in nursing administration. Reeves has 16 years of emergency and trauma clinical experience. Reeves is a member of the Pediatric Trauma Society, Emergency Nurses Association, and the Trauma Systems Committee for the Governor’s EMS and Trauma Advisory Council. She is education co-chair for the Texas Trauma Coordinator’s Forum and a course director for the Trauma Nursing Core Course and Emergency Nurses Pediatric Course.

To view more Trauma Services Division biographies, visit texaschildrens.org/trauma.
Texas Children’s Department of Anesthesiology, Perioperative and Pain Medicine has 78 fellowship-trained pediatric anesthesiologists, making it one of the largest departments of its kind in the United States. The anesthesiology team also includes 31 pediatric certified registered nurse anesthetists (C.R.N.A.) and 10 pediatric nurse practitioners. Last year, the pediatric team completed more than 42,600 cases, from simple outpatient procedures to complicated surgeries of 12 hours or more.

Anesthesia for children, babies and fetuses requires specifically designed equipment, and we utilize 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, such as bedside sedation in patient rooms.

The department 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.
In 2016, we changed our name from the Department of Pediatric Anesthesiology to the Department of Anesthesiology, Perioperative and Pain Medicine to reflect our larger role in perioperative medicine, including an expanded Pre-Anesthesia Surgical Services (PASS) Clinic and the Perioperative Surgical Home, and our leadership in the delivery of care throughout the entire perioperative system and in surgical and cardiovascular critical care.

GROWTH AND IMPROVEMENT FOCUS
We recently underwent a $20 million renovation to the perioperative space resulting in a larger 22-bed PACU and three additional anesthetizing locations. With the addition of new faculty, service lines such as Dental, Gastroenterology and Interventional Radiology are now available seven days a week.

CHRONIC PAIN TEAM HELPS REDUCE SUFFERING
Pain is, in many ways, the unifying thread in the experience of hospitalized patients, and we are dedicated to preventing suffering as much as possible by delivering comprehensive treatment and management of pain. Throughout 2016, our concentrated recruitment efforts have yielded unprecedented growth including the addition of Drs. Laura Torres and Elisha Peterson. Our newly formed chronic pain team engages hospital partners daily and has sparked essential pain-related collaborations throughout Texas Children’s.

EASLEY NAMED ASSOCIATE ANESTHESIOLOGIST-IN-CHIEF
In 2016, Dr. Ronald B. Easley was named associate anesthesiologist-in-chief for Research. In this newly created role, Dr. Easley will be primarily focused on the team’s efforts in pushing the field of pediatric anesthesiology forward through innovative research. His personal area of interest is improving the care and outcomes of patients with cardiac disease.

CARDIOVASCULAR ANESTHESIA PARTNERSHIP DEVELOPED WITH CHILDREN’S HOSPITAL OF SAN ANTONIO
In October 2016, a unique partnership was launched between Texas Children’s Heart Center and the Heart Center at the Children’s Hospital of San Antonio. Each week, an anesthesiologist and a C.R.N.A. from Texas Children’s travel to San Antonio to anesthetize patients for cardiovascular surgery, interventional cardiology procedures, electrophysiology procedures, cardiac imaging and selected noncardiac procedures on patients with congenital heart disease. Anesthesia approaches and protocols will be standardized to provide excellent care and outcomes for the children of San Antonio.

In 2016, Anesthesiology recruited a total of 32 new faculty, bringing the team total to 78 M.D.s, 40 C.R.N.A.s, two sedationists and one Ph.D. pain psychologist.
LENDING RESOURCES ACROSS THE GLOBE
Anesthesiology, in partnership with several other service lines at Texas Children’s, has engaged in global health education and clinical care efforts in Kamuzu Central Hospital, a tertiary care hospital in Lilongwe, Malawi. Led by Dr. Olutoyin Olutoye, Texas Children’s anesthesiologists visited Malawi to provide anesthesia training programs for mid-level providers, including hands on instruction in the operating room and didactic lectures in pediatric anesthesia. The teaching involved the perioperative anesthetic management of moderate to complex pediatric surgical cases. The students and physicians at Kamuzu Central Hospital greatly appreciated the engagement and are looking forward to return visits.

VU RECEIVES $150,000 RESEARCH AWARD
Dr. Eric Vu has been named as the first recipient of a two-year, $150,000 research award co-sponsored by the International Anesthesia Research Society and the Society of Academic Anesthesiology Associations. Dr. Vu spent the past year studying novel three-dimensional electrocardiogram (ECG) analytics to improve the diagnostic value of ECGs for critically ill patients. This algorithm has been incorporated into a predictive analytic for cardiopulmonary arrest in single ventricle patients, an application for cardiac transplant patients. Coronary allograft vasculopathy, also known as transplant coronary artery disease, is the leading cause of transplant failure and death in children after cardiac transplant and is difficult to recognize because the transplanted heart may not cause chest pain in the same way as a native heart.

In 2016, Anesthesiology performed a total of 42,680 anesthetic procedures, an increase of 3% over the previous year.

Anesthesia case volumes include anesthesia administered by Texas Children’s Hospital physicians at Texas Children’s Hospital locations.
DEPARTMENT OF ANESTHESIOLOGY CASES

by location

67.62% OPERATING ROOM PROCEDURES

32.38% NON-OPERATING ROOM PROCEDURES

ANESTHESIA PROCEDURES IN TEXAS CHILDREN’S HOSPITAL OPERATING ROOMS

- West Tower: 10,704
- Clinical Care Tower: 10,301
- Congenital Heart Surgery: 1,084
- West Campus: 6,773

SEDATION AND ANESTHESIA PROCEDURES IN OTHER TEXAS CHILDREN’S HOSPITAL AREAS

- Fetal Anesthesia: 86
  (Texas Children’s Hospital and Texas Children’s Pavilion for Women)
- Radiology: 8,415
- Cancer Center: 1,620
  (Pediatric Acute Care Unit)
- Cardiac Catheterization Labs: 1,197
- Gastrointestinal Procedures Suite: 1,707
- Mobile Sedation: 793
DEAN B. ANDROPOULOS, M.D., M.H.C.M., is anesthesiologist-in-chief at Texas Children’s Hospital, and professor of Anesthesiology and Pediatrics and vice chair for Clinical Affairs in the Department of Anesthesiology at Baylor College of Medicine. He received his M.D. from the University of California San Diego, and completed pediatric and anesthesiology residencies at the University of California San Francisco. He also earned a master’s degree in health care management from the Harvard School of Public Health. Dr. Andropoulos leads a department of more than 75 pediatric anesthesiologists, 35 certified registered nurse anesthetists, 20 fellows and residents, and 20 pediatric nurse practitioners who perform more than 42,000 anesthetics annually ranging from simple outpatient surgeries to complex cardiac and neurosurgical cases.

Dr. Andropoulos is editor-in-chief of Anesthesia for Congenital Heart Disease, 3rd Edition, published in 2015, and co-editor of Gregory’s Pediatric Anesthesia, 5th Edition, published in 2012. Dr. Andropoulos has authored more than 85 peer-reviewed articles and 35 textbook chapters. His research interests include neurological outcomes and brain protection for infant cardiac surgery, and clinical studies of anesthetic neurotoxicity. He has research funding from the National Institutes of Health and is a co-principal investigator for the Texas Children’s Hospital/Baylor NHLBI Pediatric Heart Network Core Clinical Center. Dr. Andropoulos is also the principal investigator for the dexmedetomidine study of the Pediatric Heart Network, investigating a new anesthetic technique for infant cardiac surgery.

He serves on the Board of Directors of the Society for Pediatric Anesthesia, and is the president and CEO of the Pediatric Anesthesia Leadership Council. He also serves on the Scientific Advisory Boards of the SmartTots organization, a public private partnership of the U.S. Food and Drug Administration and the International Anesthesia Research Society. He is the co-chair of the Second Year Advanced Fellowship Task Force of the Pediatric Anesthesia Leadership Council.

To view more Department of Anesthesiology, Perioperative and Pain Medicine biographies, visit texaschildrens.org/anesthesia.
Texas Children’s Pavilion for Women

As a leader in the fields of obstetrics, gynecology, fetal and neonatal medicine, Texas Children’s Pavilion for Women strives to offer the most advanced technologies and treatments available.

Pavilion for Women services include:

- Fetal intervention and perinatal surgery
- Gynecologic oncology
- Gynecology
- Maternal-fetal medicine
- Maternal intensive care
- Menopause care
- Minimally invasive surgery
- Obstetric and gynecologic imaging
- Obstetrics
- Physical therapy
- Reproductive endocrinology and infertility
- Reproductive genetics and prenatal diagnosis
- Pelvic health and wellness
- Women’s reproductive mental health

With a targeted high-risk obstetrics program, the Pavilion for Women responds to the escalating need for innovation in obstetrical research, education and treatment.
TEXAS CHILDREN’S FETAL CENTER
Texas Children’s Fetal Center is one of only a few centers in the United States to offer the full spectrum of fetal therapies. We provide comprehensive care to meet the needs of pregnant women and their babies, including advanced diagnostic procedures and consultation to help families understand complex diagnoses and plan for the most appropriate care.

When indicated, we provide fetal therapies that few other centers in the world can provide, including fetal surgery and fetal intervention. For infants in need of specialized care, Texas Children’s provides access to our level IV Neonatal Intensive Care Unit (NICU) and expert pediatric subspecialists.

Families have access to more than 40 pediatric medical and surgical subspecialists and a level IV NICU.

The core staff of Texas Children’s Fetal Center includes maternal-fetal medicine specialists and specialized coordinators, fetal and pediatric surgeons, and cardiology imaging, all openly communicating about the care of the fetal patient. Depending on the case, the Fetal Center team can request support from other divisions at Texas Children’s Hospital, including anesthesiologists, fetal radiologists, fetal cardiologists, neonatologists, urologists, neurologists, pediatric surgeons, cardiovascular surgeons, neurosurgeons and genetic specialists with expertise in fetal conditions.

PROCEDURES INCLUDE:
• Amniotic band resection
• Ex-utero intrapartum treatment (EXIT)
• EXIT-to-airway for congenital high airway obstruction syndrome
• EXIT-to-airway for fetal neck masses
• EXIT-to-resection for fetal lung masses
• Fetal endoscopic tracheal occlusion for congenital diaphragmatic hernia
• Fetal shunt placement
• Fetal cardiac intervention
• Fetoscopic laryngoscopy and bronchoscopy for fetal airway concerns
• Fetoscopic laser photocoagulation for twin-twin transfusion syndrome
• Intrauterine transfusion
• Open fetal surgery for lung masses/congenital cystic adenomatoid malformation
• Open fetal surgery for sacrococcygeal teratoma and vascular tumors
• Open fetal surgery for spina bifida
• Radio frequency ablation or umbilical coagulation for complicated monochorionic pregnancies
• Open fetoscopic surgery for myelomeningocele (spina bifida)

TWO NEW OPERATING ROOMS OPENED
In order to facilitate more gynecologic surgery cases and outpatient procedures, two new operating rooms were opened in 2016. More than 400 cases were expected during the year thanks to the new space provided. Perioperative services have also been extended to care for all surgical patients across the Pavilion for Women in order to increase the level of care provided.
BELFORT WINS AWARD FOR EXCELLENCE IN WOMEN’S HEALTH
The Kathryn S. Stream, Ph.D., Award for Excellence in Women’s Health is the signature project of the Greater Houston Women’s Chamber of Commerce Women’s Health Network. The annual award was established in 2008 to recognize a Houston-area researcher, educator, practitioner or community leader who has attained a record of achievement in advancing women’s health through collaborations in education, research and advocacy. In 2016, the award was given to Dr. Michael Belfort, OB/GYN-in-chief of Texas Children’s Pavilion for Women.

RESEARCH PAPER WINS AWARD AT SOCIETY FOR MATERNAL-FETAL MEDICINE ANNUAL MEETING
The Texas Children’s Fetal Center team won the Best Presentation in Fetal Therapy Award for their piece “The exteriorized, CO2-filled human uterus: A new surgical space for fetal surgery.” This paper highlights the fact that innovation in endoscopic human fetal surgery has been slow due to safety concerning use of CO2, lack of purpose built and suitable instrumentation and historically poor maternal/neonatal outcomes in published series. Because of that fact, the Fetal Center team investigated intra and postoperative fetal and maternal outcomes of a new fetoscopic technique using the exteriorized, CO2 filled, human uterus versus the standard OPEN technique.

The Pavilion for Women reduced the rate of surgical site infections by 47% in 2016. This is also a 57% reduction since its peak in 2014.
MICHAEL A. BELFORT, M.B.B.C.H., M.D., PH.D., is OB/GYN-in-chief of Texas Children’s Pavilion for Women and the Ernst W. Bertner Chairman and Professor in the Department of Obstetrics and Gynecology at Baylor College of Medicine. A nationally and internationally renowned specialist in maternal-fetal medicine and fetal intervention, Dr. Belfort is board certified in obstetrics and gynecology and maternal-fetal medicine by the American Board of Obstetrics and Gynecology.

A native of South Africa, Dr. Belfort received his medical degree (M.B.B.C.H.) from the University of the Witwatersrand in Johannesburg, South Africa. He received his M.D. from the University of Cape Town, South Africa, and a Ph.D. from the Karolinska Institute in Stockholm, Sweden. Dr. Belfort is the author/editor of several textbooks notably, Hypertension in Pregnancy, Obstetric Clinical Algorithms: Management and Evidence, Preeclampsia: Etiology & Clinical Practice and Critical Care Obstetrics, and has over 219 peer reviewed papers.

For more information, please visit women.texaschildrens.org.
Texas Children’s Hospital West Campus

Texas Children’s Hospital West Campus is Houston’s first community hospital designed, built and staffed to exclusively care for children. This state-of-the-art 514,000-square-foot facility incorporates best practices in pediatric treatment and serves the West Houston community as the premier resource for children’s health.

West Campus had more than 300,000 patient encounters last year in outpatient care, inpatient care, surgery and the Emergency Center. The number of annual patient encounters has tripled since West Campus opened its doors in April 2011, totalling more than 750,000 for the past five years.
Since 2011, Texas Children’s Hospital West Campus has met the surgical needs of more than 20,000 children.

WEST CAMPUS EXPANDS PERIOPERATIVE SUITE
A celebration held in September 2016 unveiled four new operating rooms, a new procedure room, three new call rooms as well as a new doctor’s work area, kitchen and break area. The expansion brings the total number of operating rooms at West Campus to eight and doubles the total number of procedure rooms for minor outpatient procedures. This expansion will allow us to do longer, more complex surgeries as well as increase the scope of services we offer including Orthopedics, Trauma and Dental. The expansion of the Perioperative Suite is part of a $50 million capital improvement effort that will help expand West Campus’ capacity and capability.

SINGLE-VISIT SURGERY LAUNCHED AT TEXAS CHILDREN’S HOSPITAL WEST CAMPUS
Patients with pediatric specialty surgical procedures can now be seen in clinic by pediatric surgeons and have surgery on the same day at Texas Children’s Hospital West Campus. The hospital’s new Single-Visit Surgery program provides a convenient option for busy patient families and consists of a clinic appointment in the morning and, if necessary, an outpatient surgical procedure that same day. Patients who qualify for the program are children without a complicated medical history and who have the following conditions:
• Umbilical hernia (3 years and older)
• Inguinal hernia (12 months and older)
• Hydrocele (12 months and older)
• Epigastric hernia (any age)

NEW INTERVENTIONAL RADIOLOGY SUITE
Equipped with a customizable interventional X-ray imaging system from Toshiba America Medical Systems, Inc., the West Campus’ new Radiology Suite enables physicians to provide a wider range of image-guided procedures to patients and families in the West Houston area without having to send them across town to Texas Children’s in the Texas Medical Center. The state-of-the-art suite is equipped with Toshiba’s Infinix-i’s C-arm design, which offers conformity to any patient, allowing for optimal angulations, streamlined positioning and customizable configuration. In addition, the Infinix-i’s ergonomic enhancement improves clinician speed and precision while reducing the potential for strain and injury. Another important feature is the dose tracking system that provides real-time data on the delivery of radiation in the form of an easy-to-read color-coded human map.

In 2017, West Campus will add a 22-bed space to complete the inpatient expansion project. Once complete, the hospital will have 84 inpatient beds, up from 48 when the hospital first opened more than five years ago.
### OPERATING ROOM CASES AND CLINIC VISITS COMPLETED
at Texas Children’s Hospital West Campus

<table>
<thead>
<tr>
<th>SURGICAL DIVISION</th>
<th>CLINIC VISITS</th>
<th>OPERATING ROOM CASES</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>Ophthalmology</td>
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<td>Otolaryngology</td>
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<td>Pediatric Surgery</td>
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<tr>
<td>Urology</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>35,160</strong></td>
<td><strong>6,480</strong></td>
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</tbody>
</table>

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.

Allen Milewicz, M.D., M.B.A., is chief surgical officer at West Campus, chief of Community Surgery at Texas Children’s Hospital and associate professor of Surgery and Pediatrics at Baylor College of Medicine. He is responsible for organizing the role of surgery within the community, focusing on Texas Children’s Health Centers and Texas Children’s Hospital West Campus. He received his medical degree from New York University Medical Center and completed both his internship and residency at The University of Texas Southwestern Medical Center in Dallas.

Subsequently, Dr. Milewicz completed his fellowship at the University of Oklahoma and Oklahoma City College of Pediatric Surgery. His primary focus is on the clinical practice of pediatric surgery in an educational setting. Additionally, Dr. Milewicz has extensive research experience in cardiac surgery, liver transplantation and hepatobiliary disorders. Dr. Milewicz has advanced training and extensive experience in skeletal malformations of the chest. He is board certified by the American Board of Surgery in pediatric surgery.

For more information, please visit [westcampus.texaschildrens.org](http://westcampus.texaschildrens.org).
Texas Children’s Hospital is pleased to announce the completion of our new pediatric community hospital in The Woodlands, which celebrated its grand opening in April 2017. The 560,000-square-foot facility 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 Woodlands, Kingwood, Conroe, Spring, Magnolia, Humble and communities in surrounding areas.

The hospital features 25 emergency center rooms, 12 radiology rooms, four operating rooms and 32 inpatient acute care beds at opening, with plans to include additional inpatient beds at a later date. There is also a Neurophysiology sleep lab, EEG, state-of-the-art infusion center, family library, dining area, chapel and playrooms on every floor.
There are approximately 380,000 children and adolescents in The Woodlands community and surrounding areas. This new facility is aimed at providing them the best level of pediatric health care possible.

**OUTPATIENT BUILDING OPENS**

On October 4, 2016, Texas Children’s unveiled the first phase of the hospital’s opening, Texas Children’s Hospital The Woodlands Outpatient Building, a six-floor, 210,000-square-foot facility.

Texas Children’s Hospital The Woodlands provides more than 20 areas of specialty care, including Allergy and Immunology, Audiology, Cancer and Hematology, Cardiology, Diabetes and Endocrine, Genetics, Neurology, Ophthalmology, Otolaryngology, Radiology, Physical Medicine and Rehabilitation, Psychiatry and Psychology, Pulmonary, Rheumatology and Urology.

The Outpatient Building is connected to the hospital on floors one and two and offers a nature-inspired design and friendly environment for families seeking the best pediatric care for their children. Check-in and check-out stations resembling a child’s club house are at the entrance of each clinic, and spacious exam rooms and provider work stations line many of the building’s halls.

The Outpatient Building includes:

- **Level 1** - two radiology rooms, 10 exam rooms, sports physical therapy gym, Human Performance Center for motion and gait analysis
- **Level 2** - six speech therapy rooms, four feeding therapy rooms, swing gym, spasticity clinic, tricycle track, developmental therapy gym
- **Level 3** - six eye exam areas, 18 exam rooms, two audiology sound booths
- **Level 5** - six infusion rooms plus open living area, 28 exam rooms
- **Level 6** - two pulmonary function testing rooms, 12 exam rooms, three ECHO rooms, one fetal ECHO, one EKG/holter room, and a cardiology stress test lab

The dedicated Human Performance Center for motion and gait analysis, which opened May 2017, has 12 cameras that measure motion and accrue millions of data points of kinetic and range of motion data. This data then helps guide therapy and assist with decision-making for both simple and complex procedures.
JEFFREY SHILT, M.D., is chief surgical officer of Texas Children’s Hospital The Woodlands. Dr. Shilt came to Texas Children’s from St. Luke’s Children’s Hospital in Boise, Idaho, where he was an active pediatric orthopedic surgeon and director of the hospital’s Spasticity Clinic and motion analysis lab for children and adults. Prior to his time in Idaho, Shilt held positions as associate professor and residency program director at Wake Forest University Baptist Medical Center in North Carolina. When Wake Forest established the Brenner Children’s Hospital, Shilt served as the director of pediatric orthopedics, where he assisted in the further development of pediatric specialty care. His research interests include management of spasticity in cerebral palsy, sports performance and the treatment of endurance sports injuries. While he served as the program director of the Wake Forest University orthopedic surgery residency, he participated in pioneering work in the treatment of children with spastic cerebral palsy, as well as sports medicine applications of tissue engineering. Additionally, he served as the team physician for the USA triathlon team at two world championships, as a team physician for a professional cycling team for two years, and as a medical consultant for many top athletes including Olympians, professionals and elite endurance athletes.

For more information, please visit texaschildrens.org/woodlands.
Department of Surgery at Texas Children’s Hospital

**DEPARTMENT OF SURGERY LEADERSHIP**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles D. Fraser, Jr., M.D.</td>
<td>Surgeon-in-Chief</td>
</tr>
<tr>
<td>Larry H. Hollier, Jr., M.D., F.A.C.S.</td>
<td>Associate Surgeon-in-Chief for Clinical Affairs, Surgical Director of Patient Experience and Operating Rooms</td>
</tr>
<tr>
<td>David E. Wesson, M.D., F.A.C.S., F.A.A.P.</td>
<td>Associate Surgeon-in-Chief for Academic Affairs</td>
</tr>
<tr>
<td>Thomas G. Luerssen, M.D., F.A.C.S., F.A.A.P.</td>
<td>Chief Quality Officer of Surgery</td>
</tr>
<tr>
<td>Allen L. Milewicz, M.D., M.B.A.</td>
<td>Chief Surgical Officer, Texas Children’s Hospital West Campus</td>
</tr>
<tr>
<td>Jeffrey Shilt, M.D.</td>
<td>Chief Surgical Officer, Texas Children’s Hospital The Woodlands</td>
</tr>
<tr>
<td>Ellis M. Arjmand, M.D., Ph.D., M.M.M.</td>
<td>Surgical Director of Practice Standards and Faculty Development</td>
</tr>
<tr>
<td>Mark Mullarkey</td>
<td>Executive Vice President</td>
</tr>
<tr>
<td>H. Mallory Caldwell</td>
<td>Senior Vice President</td>
</tr>
<tr>
<td>Matthew T. Girotto</td>
<td>Vice President</td>
</tr>
<tr>
<td>Binta Baudy</td>
<td>Director of Ambulatory Services, Surgery</td>
</tr>
<tr>
<td>Kathy Carberry, R.N., M.P.H.</td>
<td>Director of Outcomes &amp; Impact Service</td>
</tr>
<tr>
<td>Laura Laux Higgins</td>
<td>Director of Strategic Projects</td>
</tr>
<tr>
<td>Lisa Thomas</td>
<td>Assistant Director of Faculty Affairs</td>
</tr>
<tr>
<td>Ryan K. Krasnosky, M.P.A.S., P.A.-C.</td>
<td>Director of Surgical Advanced Practice Providers</td>
</tr>
<tr>
<td>Christi Reeves, B.S.N., R.N., C.E.N.</td>
<td>Director of Trauma and Childhood Injury Prevention</td>
</tr>
<tr>
<td>Janet Winebar, R.N., B.S.N., M.S.N., C.N.M.L.</td>
<td>Director of Perioperative Services</td>
</tr>
</tbody>
</table>

**CONGENITAL HEART SURGERY**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Charles D. Fraser, Jr., M.D.</td>
<td>Chief</td>
</tr>
<tr>
<td>Jeffrey S. Heinle, M.D.</td>
<td>Associate Chief</td>
</tr>
<tr>
<td>S. Blake Gentile, M.B.A.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Iki Adachi, M.D.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Meghan Anderson, R.N., D.N.P., C.P.N.P.-P.C.</td>
<td>Assistant Chief</td>
</tr>
<tr>
<td>Ziv Beckerman, M.D.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Nancy Benson, M.S.N., C.P.N.P.-P.C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Ziyad Binsalamah, M.D.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Amy G. Hemingway, R.N., M.S.N., C.N.S., C.P.N.P.-A.C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Lauren Kane, M.D.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Kim Kaukalis, R.N., M.S.N., N.P.-C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Jill LeBlanc, R.N., M.S.N., C.P.N.P.-A.C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Carlos M. Mery, M.D., M.P.H.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Tammy Pyron, R.N., C.P.N.P.-P.C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Kelly Simkins, R.N., M.S.N., C.P.N.P.-A.C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Will Tanner, P.A.-C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Mary Tran, P.A.-C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Catherine Vu, P.A.-C.</td>
<td>Practice Administrator</td>
</tr>
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</table>

**DENTAL**

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<tr>
<th>Name</th>
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<tr>
<td>Bruce Carter, D.D.S.</td>
<td>Chief</td>
</tr>
<tr>
<td>Mary D. Kana, M.B.A.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Amy H. Tran, D.D.S.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Esther Yang, D.D.S.</td>
<td>Practice Administrator</td>
</tr>
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</table>

**NEUROSURGERY**

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<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Howard L. Weiner, M.D., F.A.C.S., F.A.A.P.</td>
<td>Chief</td>
</tr>
<tr>
<td>Lorraine M. Cogan, M.S.W.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Brandy Berger, M.S.N., R.N., C.P.N.P.-P.C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Natalie Cormier, M.S.N., R.N., F.N.P.-B.C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Daniel J. Curry, M.D.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Heidi Kerns, M.S.N., R.N., F.N.P.-B.C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Sandi K. Lam, M.D., M.B.A.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Thomas G. Luerssen, M.D., F.A.C.S., F.A.A.P.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Ameer Moreno, M.S.N., R.N., C.P.N.P.-P.C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Jessica Outten, M.S.N., R.N., F.N.P.-B.C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>I-Wen Pan, Ph.D.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Brenda Perry, C.P.N.P.-P.C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Lucia Ruggieri, P.A.-C.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>William E. Whitehead, M.D., M.P.H.</td>
<td>Practice Administrator</td>
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**OPHTHALMOLOGY**

<table>
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<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>David K. Coats, M.D.</td>
<td>Chief</td>
</tr>
<tr>
<td>Valdemar Z. Garza, M.B.A.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Zaina Al-Mohtaseb, M.D.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Amit R. Bhatt, M.D., F.A.A.P.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Peter T. Chang, M.D.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Charlene Crockett, M.D.</td>
<td>Practice Administrator</td>
</tr>
<tr>
<td>Jane C. Edmond, M.D.</td>
<td>Practice Administrator</td>
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</tbody>
</table>

**DEPARTMENT OF SURGERY HOSPITALISTS**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serene Ansari, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Matthew Borges, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Kimberly Ceyanes, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Ira Davenport, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Emily Dodson, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Caitlin Hoover, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Caitlin Justus, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Courtney Kato, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Sarah Koelewyn, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Helen Kulseth, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Rincymol Mathai, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Mitch Nelson, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Cristina Nicoletta, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Thomas Sew, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Anna Shafer, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Karli Sibley, P.A.-C.</td>
<td>Hospitalist</td>
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<tr>
<td>Jessica Varghese, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Tiffany Webb, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Stacey Webster, P.A.-C.</td>
<td>Hospitalist</td>
</tr>
</tbody>
</table>
MEDICAL STAFF DIRECTORY

Dan S. Gombos, M.D.
Honey H. Herce, M.D.
Mohamed A. Hussein, M.D.
Mary Kelinske, O.D.
Ella Leung, M.D.
Doug Marx, M.D.
Kelsie Morrison, O.D.
Veeral S. Shah, M.D., Ph.D.
J. Timothy Stout, M.D., Ph.D., M.B.A.
Irene T. Tung, M.D.
Kimberly G. Yen, M.D.

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Kolby S. Buckner, P.A.-C.
Victoria Carr, P.A.-C.
Danielle Comeaux, P.A.-C.
Tanisha George Daugherty, P.A.-C.
Howard R. Epps, M.D.
Susannah Ferguson, P.A.-C.
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Aharon Gladstein, M.D.
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Darrell Hanson, M.D.
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John Heydemann, M.D.
Jaclyn F. Hill, M.D.
Megan Huber, P.A.-C.
Thomas R. Hunt, III, M.D., D.Sc.
Indranil Kushare, M.D.
Bensley Mathew, P.A.-C.
Megan M. May, M.D.
Scott D. McKay, M.D.
Layne Opersteny, P.A.-C.
Valerie Parrish, P.A.
William A. Phillips, M.D.
Scott B. Rosenfeld, M.D.
Katherine Schroeder, M.D.
Vinitha R. Shenava, M.D.
Jeffrey Shilt, M.D.
Amanda L. Smith, P.A.-C.
Andrew Swenson, P.A.-C.
Opal J. Willmon, P.A.-C.

OTOLARYNGOLOGY
Ellis M. Arjmand, M.D., Ph.D., M.M.M., Chief
Michael Dyer, M.H.A., Practice Administrator
James P. Carter, M.A., C.C.C.-S.L.P., Manager, Speech Language and Learning
Elton Ashe-Lambert, M.D.
Amy Bartholomew, P.A.-C.
Joshua Bedwell, M.D.
Linda Brock, P.N.P.
Jennifer Brown, P.A.-C.
Karina T. Cañadas, M.D.
Binoi M. Chandy, M.D.
Daniel C. Chelius, M.D.
Ellen M. Friedman, M.D.
Carla M. Giannoni, M.D.
C. Anthony Hughes, M.D., M.B.A., M.P.H.
John K. Jones, M.D.
Deidre R. Larrier, M.D.
Yi-Chun Carol Liu, M.D.
Jessie Marce-Gonzalez, P.N.P.
Deepak Mehta, M.D.
Shraddha S. Mukerji, M.D.
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Henna Narsi-Prasla, P.N.P.
Julina Ongkasuwan, M.D.
Tien Pham, N.P.
Tiffany Raynor, M.D.
Erin Roper, P.A.-C.
Tara L. Rosenberg, M.D.
Kathy Shelly, P.A.-C.
Matthew Sitton, M.D.
Marcelle Sulek, M.D.
Alex Sweeney, M.D.
Holly Phan Tran, N.P.
Ronald Vilela, M.D.

PEDIATRIC AND ADOLESCENT GYNECOLOGY
Jennifer E. Dietrich, M.D., M.Sc., Chief
Michele Birssinger, M.B.A., Practice Administrator
Oluemisi Adeyemi-Fowode, M.D.
Jennifer L. Bercaw-Pratt, M.D.
Janie Geyer, W.H.N.P.
Julie Hakim, M.D., F.R.C.S. (C)
Jennifer Parker Kurkowski, W.H.N.P.

PEDIATRIC SURGERY
Jed G. Nuchtern, M.D., Chief
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Timothy C. Lee, M.D., ECMO Surgical Director
Bindi Naik-Mathuria, M.D., Trauma Program Director
Jag M. Grooms, M.P.A., Practice Administrator
Sundeep G. Keswani, M.D., Surgical Director of Basic Science Research
Swathi Balaji, Ph.D.
Mary L. Brandt, M.D.
Jessica M. Craig, P.A.-C.
Christina D. Elder, P.A.-C.
Auchaia N. Farley, P.A.-C.
Celia D. Flores, P.A.-C.
Elizabeth S. French, P.A.-C.
Vincy D. George, P.A.-C.
Courtney L. Kassow, P.A.-C.
Monica E. Lopez, M.D.
Mark V. Mazzioti, M.D.
Allen L. Milewicz, M.D., M.B.A.
Paul K. Minifie, M.D.
Jamie J. Ouseph, P.A.-C.
Priya D. Patel, P.A.-C.
Ruben Rodriguez, M.D., M.M.Sc.
Sohail R. Shah, M.D., M.S.H.A.
Sanjeev A. Vasudevan, M.D.
Veronica A. Victorian, P.A.-C.
Adam M. Vogel, M.D.
David E. Wesson, M.D.

PLASTIC SURGERY
Larry H. Hollier, Jr., M.D., F.A.C.S., Chief
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Lesley Davies, P.A.-C.
Athena Kransnosky, C.-P.N.P., A.P.R.N.
Laura Monson, M.D.
Ellen Moore, C.C.C.-S.L.P.
Reggie Nunez, P.A.-C.
William (Chris) Pederson, M.D.
John Wirthlin, D.D.S., M.S.D.
Diana Guillen, P.A.-C.
Olushola Olorunnipa, M.D.
Renata Maricveich, M.D.
Truong, M.D.
Kris Marsack, M.S., P.A.-C.
Michelle Roy, P.A.-C.
Jerome Sequitin, P.A.-C.
Lindsey White, P.A.-C.
Kris Wilson, Ph.D., C.C.C.-S.L.P.

TRANSPLANT SERVICES
John A. Goss, M.D., Medical Director
Ryan W. Himes, M.D., Medical Director
for Transplant Quality
Diesa R. Samp, Director of Transplant Services

Heart Transplant Program
Jeffrey S. Heinle, M.D., Surgical Director
William J. Dreyer, M.D., Medical Director
Iki Adachi, M.D.

Kidney Transplant Program
Christine O'Mahony, M.D., Surgical Director
Eileen D. Brewer, M.D., Medical Director
Alisa Acosta, M.D.
Joseph Angelo, M.D.
Ayse Arikan, M.D.
Michael Braun, M.D.
Ronald Cotton, M.D.
Ewa Elenberg, M.D.
Rossana Malatesta, M.D.
Mini Michael, M.D.
Alvaro Orjuela, M.D.
Abbas Rana, M.D.
Adnan Safdar, M.D.
Shweta Shah, M.D.
Poyyapakkam Srivaths, M.D.
Sarah J. Swartz, M.D.
Scott E. Wenderfer, M.D.

Liver Transplant Program
John A. Goss, M.D., Surgical Director
Tamir Miloh, M.D., Medical Director
Beth A. Carter, M.D.
Ronald Cotton, M.D.
Douglas S. Fishman, M.D.
Donna Garner, C.P.N.P.
Sanjiv (Sonny) Harpavat, M.D.
Paula M. Hertel, M.D.
Ryan W. Himes, M.D.
Daniel H. Leung, M.D.
Kenneth Ng, D.O.
Christine A. O'Mahony, M.D.
Abbas Rana, M.D.

Lung Transplant Program
Jeffrey S. Heinle, M.D., Surgical Director
George B. Mallory, M.D., Medical Director
Iki Adachi, M.D.
Shailendra Das, D.O.
Maria C. Gazzaneo, M.D.
Lauren Kane, M.D.
Ernestina Melicoff-Portillo, M.D.
Carlos Mery, M.D., M.P.H.
**UROLOGY**

David R. Roth, M.D., Chief
Sarah Ringold, M.B.A., Practice Administrator
Edmond T. Gonzales, M.D.
Jacqueline Guarino P.A.-C.
Nicolette Janzen, M.D.
Chester Koh, M.D.
Angela Mittal, M.D.
Jessica Schuh, P.A.-C.
Abhishek Seth, M.D.
Jinae Spear, P.A.-C.
Duong Tu, M.D.

**INPATIENT SERVICES**

**Critical Care**
Gail Parazynski, R.N., M.S.N., N.E.A.-B.C., Assistant Vice President, Nursing

**Acute Care Surgical Unit**
Christina Mauk, R.N., M.S.N., Assistant Director, Nursing
Emily Weber, Director, Nursing

**Cardiovascular Intensive Care Unit**
Paul A. Checchia, M.D., F.C.C.M., F.A.C.C., Medical Director
Amanda Wollam, R.N., Assistant Director, Nursing

**Pediatric Intensive Care Unit**
Matthew Musick, M.D., Medical Director
Shannon Holland, R.N., M.S.N., N.E.-B.C., Director, Nursing

**Progressive Care Unit**
Kevin Roy, M.D., Medical Director
Tarra Kerr, R.N., M.S.N., Assistant Clinical Director

**OPERATING ROOM AND PERIOPERATIVE SERVICES**

**Main Campus**
Janet Winebar, R.N., M.S.M., Director, Perioperative Services
Lynn A. Huffman, R.N., M.B.A., Assistant Director, Operating Rooms
Ronald Loosle, R.N., M.B.A., Assistant Director, PACU/Anesthesia
Ron Shelton, C.C.P., L.P., F.P.P., Assistant Director, Perfusion Services
Rachel Warfield, M.H.A., Assistant Director, Business Operations

**West Campus**
Jennifer Sanders, R.N., M.S.N., N.E.A.-B.C., Director, Nursing West Campus

**The Woodlands**
Katreece White, R.N., M.H.A., R.N., N.E.-B.C., Director, Nursing Woodlands Campus
Ramon Enad, R.N., M.B.A., Assistant Director, Perioperative Services

**Pavilion for Women**
Nakeisha Archer, R.N., M.B.A., Director, Perioperative Services

**TRAUMA SERVICES**
Bindi J. Naik-Mathuria, M.D., Medical Director
Christi Reeves, M.S.N., R.N., T.C.R.N., C.E.N., C.P.N., Director, Trauma and Center for Childhood Injury Prevention
Danny Rubalcava, M.D., M.S.P.H., Associate Trauma Medical Director, Emergency Medicine
Kristen Beckworth, M.P.H., Manager, Center for Childhood Injury Prevention
Ruben Rodriguez, M.D.
Brian Whitaker, P.A.-C.

**DEPARTMENT OF ANESTHESIOLOGY, PERIOPERATIVE AND PAIN MEDICINE**
Dean B. Andropoulos, M.D., M.H.C.M., Anesthesiologist-in-Chief
R. Blaine Easley, M.D., Associate Anesthesiologist-in-Chief of Academic Affairs
Stephen A. Stayer, M.D., Associate Anesthesiologist-in-Chief of Clinical Affairs
Kelly M. Crumley, Practice Administrator
Adam C. Adler, M.D.
Titilopemi A.O. Aina, M.D.
Melanie J. Alo, M.D.
Rahul G. Baijal, M.D.
Tamra Baker, C.R.N.A., D.N.P.
Beth M. Barraza, R.N., M.S., C.P.N.P.
Sandra L. Benavides, R.N., M.S.N., C.P.N.P.
Monique Bernsten, R.N., M.S.N., C.P.N.P.
Sudha A. Bidani, M.D.
Kenneth M. Brady, M.D.
Katrin A. Campbell, M.D.
Carlos J. Campos, M.D.
Lisa A. Caplan, M.D.
Nicholas P. Carling, M.D.
Arvind Chandrakantan, M.D.
Julia H. Chen, M.D.
Kathleen Chen, M.D.
Hilary Cloyd, R.N.
Camille M. Colomb, M.D.
Michelle R. Dalton, M.D.
Meredith Davenport, C.R.N.A., M.S.N.
Christopher Deegear, R.N.
Barbie DeMoss, M.S.N., R.N., C.P.N.P.
Erin R. Depew, C.R.N.A., M.S.
Melissa Dominick, C.R.N.A., D.N.P.
Molly Durel, C.R.N.A., M.S.N.
Jacob Edet, P.A.-C.
Amy Eiss, M.S.N., R.N., C.P.N.P.
Jessica H. Emerald, R.N., M.S.N., C.P.N.P.
Jennifer Esplana, C.R.N.A., M.S.N.
Christopher R. Estrada, M.D.
Mary A. Felberg, M.D.
Josef Gajdusek, C.R.N.A.
Priscilla J. Garcia, M.D.
Nancy L. Glass, M.D.
Chris D. Glover, M.D.
Cheryl A. Gore, M.D.
Erin A. Gottlieb, M.D.
Kalyani Govindan, M.D.
Stuart R. Hall, M.D.
Oluwakemi Hamed, P.A.-C.
Ali Hassanpour, M.D.
Ryann Hattori, C.R.N.A., M.S.N.
Shannon R. Head, C.R.N.A.
Lisa D. Heyden, M.D.
Helena Karlberg Hippard, M.D.
Julie Hoang, C.R.N.A., M.S.
Paul W. Hopkins, M.D.
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Kimberly Hunter, C.R.N.A.
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Karla E. Wyatt, M.D.
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Ammar N. Yamani, M.D.
Jennifer G. Ybarra, R.N., M.S., P.N.P.
David A. Young, M.D.
Michael Zelisko, M.D.
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Texas Children’s Hospital cares for patients from all 50 states and 59 countries. To help meet the needs of our patients, the Department of Surgery offers 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.

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

<table>
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<tr>
<th>Division</th>
<th>Phone Number</th>
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<tbody>
<tr>
<td>Congenital Heart Surgery</td>
<td>832-826-2030</td>
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<tr>
<td>Dental*</td>
<td>832-822-3200</td>
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<tr>
<td>Neurosurgery</td>
<td>832-822-3950</td>
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<td>Ophthalmology</td>
<td>832-822-3230</td>
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<td>Orthopedics</td>
<td>832-822-3100</td>
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<td>Otolaryngology</td>
<td>832-822-3250</td>
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<td>Pediatric and Adolescent Gynecology</td>
<td>832-822-3640</td>
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<td>Plastic Surgery</td>
<td>832-822-3180</td>
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<td>Urology</td>
<td>832-822-3160</td>
</tr>
</tbody>
</table>

*Same-day appointments not available at this time

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