Texas Children's Heart Center

VOLUMES AND OUTCOMES

Texas Children's Hospital®

Contents

About Us

Providing life-changing care for today and tomorrow

Texas Children's Hospital®

With immense pride and joy, we reflect on an extraordinary year at Texas Children's Heart Center. For nearly 70 years, Texas Children's Heart Center has cared for patients with the most complex heart conditions, seeing more than 34,000 patients, performing 1,100 surgeries, completing over 1,350 interventional cases, and fulfilling over 38,000 echo studies each year, with outcomes among the best in the nation. Consistently ranked as one of the top in the nation, Texas Children's Hospital is the largest children's hospital with over 5 million patient encounters system-wide in 2023.

Our unwavering commitment to excellence and innovation in health care has yielded remarkable outcomes for our patients and their families. By integrating groundbreaking research with unparalleled experience and expertise, our team has not only enhanced quality of life for our patients, but also set new standards in medical achievement. As a team, and as a hospital system, we believe that tracking and sharing outcomes is a critical component in offering outstanding clinical programs and continually evolving best practices in care delivery.

Our continued work stands as a testament to the dedication of our health care professionals, the resilience of our patients and the support of our community, all contributing to a brighter, healthier future for our patients.

Sincerely,

Daniel Penny, MD, PhD, MHA

Caner Salih, MD, MBCHB, FRCS

Jeffrey Heinle, MD

Jeffrey Kim, MD

Emad Mossad, MD, MBBCh

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HEART CENTER DIVISION CHIEFS

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Heart Center Overview

Texas Children's Heart Center headquarters is housed in the Lester and Sue Smith Legacy Tower, located in the Texas Medical Center in Houston. This state-of-the-art center spans 9 adjoining floors exclusively dedicated to cardiac care, comprising 54 private cardiac intensive care unit rooms, 48 acute care cardiology beds, 16 universal care adult congenital heart beds and 33 outpatient exam rooms. Our flagship center also houses four cardiovascular operating rooms and four cardiac catheterization labs to ensure adequate capacity for our volumes. The Heart Center features a specialized and advanced Cath room paired with local MRI to assist with diagnostic information, allowing interventionalists to guide procedures, decrease the use of radiation, and eventually perform MRI-guided cardiac catheterizations.

Our dedicated team of over 100 board-certified experts delivers top-tier cardiac care. Our commitment to excellence is reflected in our comprehensive support system for patients, families and referring providers, which includes a referral team, consulting cardiologists, a second opinion team, psychologists and heart-related gyms and therapies. As the No. 1 pediatric heart center for 7 consecutive years, as recognized by U.S. News & World Report, patients benefit from the full spectrum of nationally ranked specialties at Texas Children's Hospital, ensuring seamless, comprehensive care. The Heart Center team performs over 1,100 surgeries, completes over 1,600 cardiac catheterizations, and fulfills over 38,000 echo studies every year. Additionally, our heart surgeons perform an average of 29 heart transplants each year as a part of our robust heart failure and transplant services.

As part of the largest women's and pediatric healthcare system, our expertise reaches beyond the Texas Medical Center. Our hospital has two additional campuses in Houston, one in Austin, as well as specialty care clinics around the Houston and Central Texas area.

Created to optimize patient care

Located in the Lester and Sue Smith Legacy Tower, our clinics, operating rooms, critical care areas, cardiac catheterization and diagnostic labs, inpatient gym and administrative offices are co-located on nine adjoining floors. All of our patient rooms are private and each patient floor includes dedicated space for families.

This stacked-floor design enables team members to respond quickly to patient and family needs or emergencies and promotes collaboration among our multidisciplinary team. We are only seconds away from our patients who need care.

Level 16

Heart Failure Intensive Care Unit (12 rooms)
Heart Center Conference Facilities

Level 17

Cardiac Intensive Care Unit (24 rooms)

Level 18

Neonatal Cardiac Intensive Care Unit (12 rooms)
Heart Center Operating Rooms (4)

Level 19

Heart Center Administrative Offices

Level 20

Cardiac Catheterization Labs (4) including an integrated MRI scanner

Level 21

Heart Center Clinics & Diagnostic Services including a Stress Lab, Exercise Lab, ECHO and EKG testing

Level 22

Cardiac Patient Care Unit (12 rooms)

Level 23

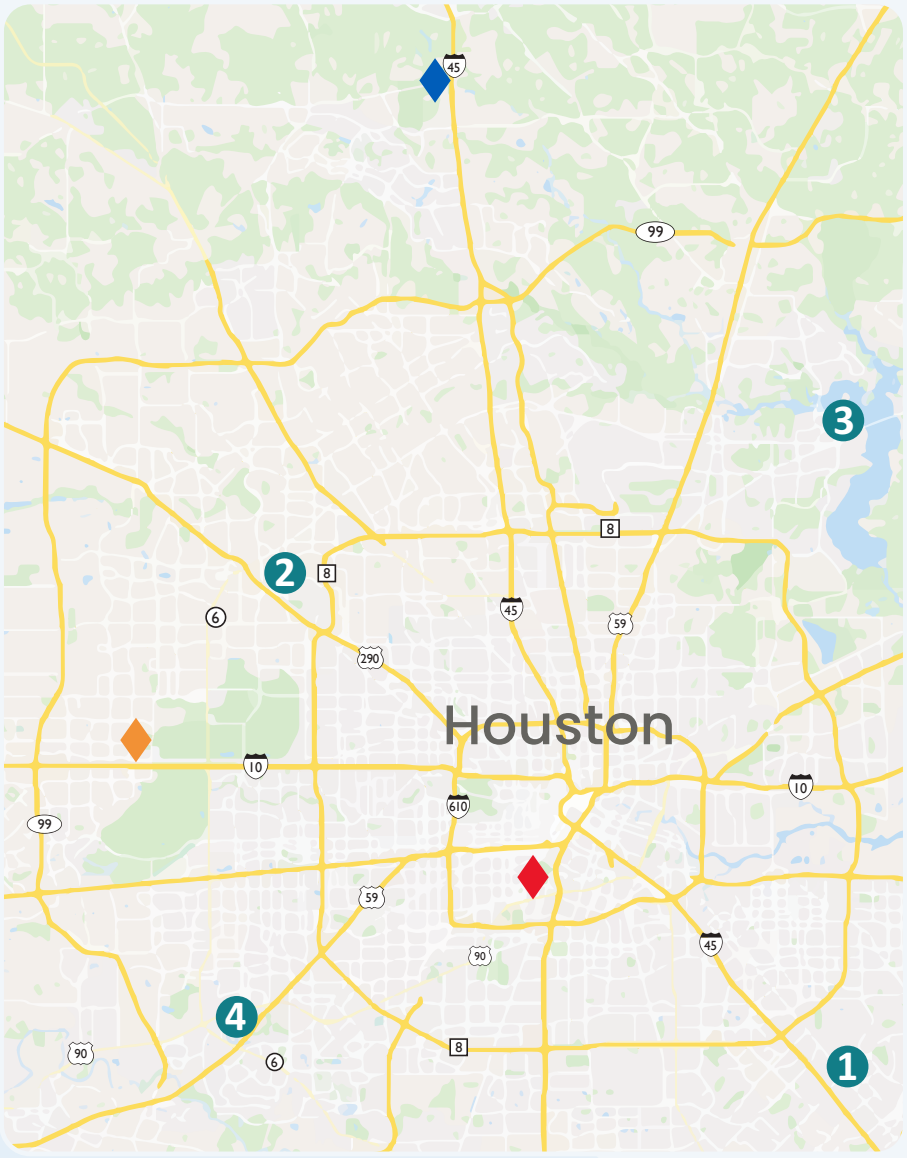
Cardiac Patient Care Unit (30 rooms)
Inpatient Physical and Occupational Therapy Gym

Level 24

Adult Congenital Heart Program A clinic and diagnostic lab for adult patients with congenital heart conditions, 16 universal care beds equipped for all levels of treatment and an adult-focused cardiac rehabilitation gym.

Our Locations

Our range of services, programs, and expertise are offered at our clinics and hospital campuses around the Houston and Austin areas with the ability to see patients within the next day.



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

Texas Children's Hospital The Woodlands
17600 Interstate 45 South
The Woodlands, TX 77384
936-267-5000

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

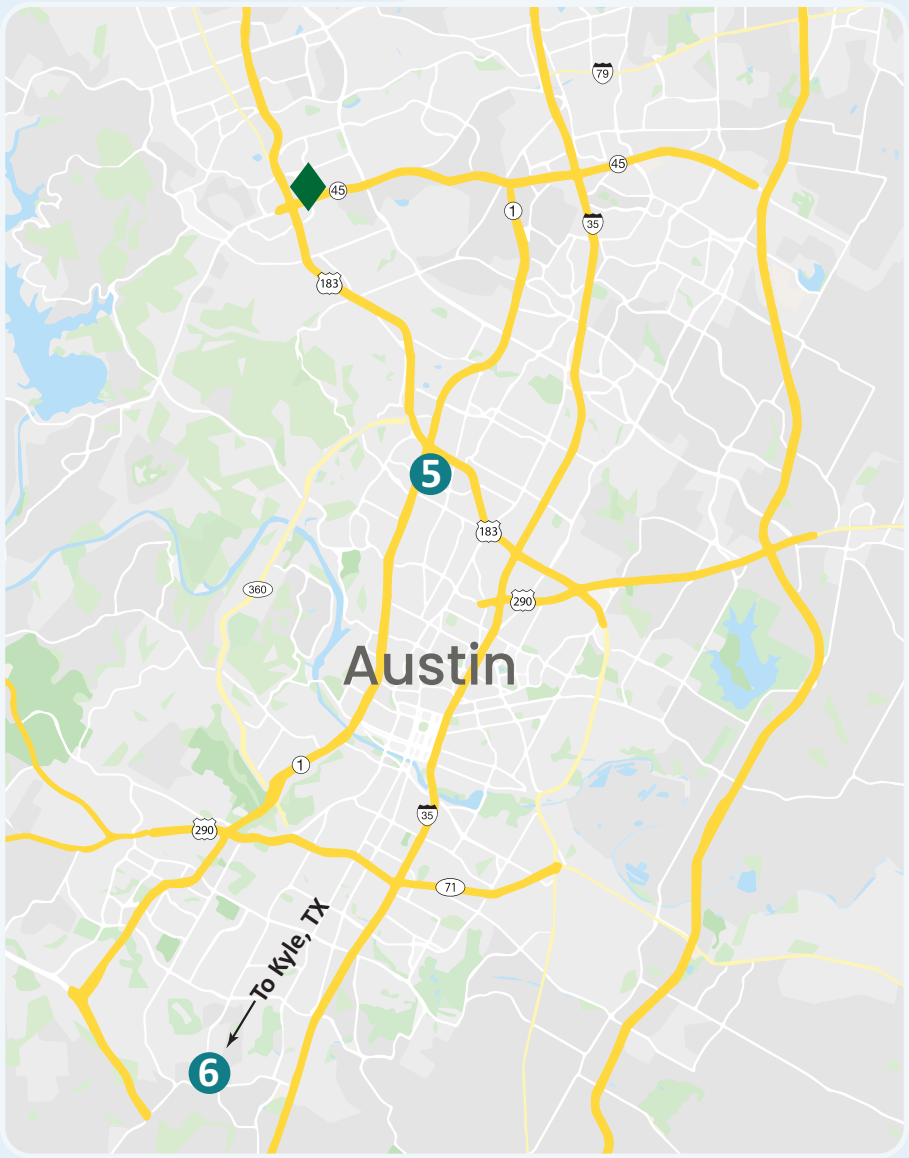
1. **Specialty Care Clear Lake**
940 Clear Lake City Blvd., Ste. 200
Webster, TX 77598
281-282-1900

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

3. **Specialty Care Kingwood Glen**
19298 W. Lake Houston Pkwy., Ste. 110
Humble, TX 77346
281-812-0280

4. **Specialty Care Sugar Land**
15400 Southwest Freeway,
Sugar Land, TX 77478
281-494-7010

Now serving Austin



Texas Children's North Austin Campus
9835 N Lake Creek Pkwy
Austin, Texas 78717
737-229-2000

5 Specialty Care Austin
8611 N Mopac Expy #300
Austin, TX 78759
737-220-8200

6 Specialty Care at Texas Children's Pediatrics Kyle Crossing
5120 S. FM 1626 Ste. 100
Kyle, TX 78640
737-229-9970

Heart Center Programs of Distinction

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Heart Failure, Transplant and Mechanical Support Programs

We offer comprehensive treatment options for patients ranging from complex medical management to heart transplantation. While many patients are successfully managed with medication, a small percentage will require a heart transplant or mechanical circulatory support with a ventricular assist device (VAD) as a bridge to transplantation. Our program allows for all possible care options to match the needs of each patient. The Heart Transplant team's unique expertise continues to lead the way in positive outcomes.

Adult Congenital Heart Disease Program

Children diagnosed with congenital heart disease (CHD) are living longer, healthier lives. Today, there are more adults living with CHD than children, and they need the same level of specialized care that they received during childhood. It's why we've designed a program and dedicated space just for adults, backed by the nation's #1 pediatric heart center. Trained in both pediatric and adult CHD, we have the most advanced expertise and resources available.

Coronary Artery Anomalies Program

Our Coronary Artery Anomalies Program is staffed by a multidisciplinary team of cardiologists, congenital heart surgeons, advanced practice providers, nurses, radiologists, researchers and others. These experts work together to provide a holistic approach to patients and families affected by coronary artery anomalies, including evidence-based evaluation and management strategies, outcomes analysis, psychological support and education for the community about this condition.

Cardiovascular Genetics

Heart disease can potentially be related to underlying genetic disorders. Our Cardiovascular Genetics team evaluates, provides genetic counseling, and offers treatment to patients and families with hereditary heart conditions. An understanding of genetic etiology has the potential to help our physicians identify associated anomalies or risks, influence management and improve recurrence risk counseling.

Preventive Cardiology Program

The Preventive Cardiology Program at Texas Children's Heart Center is focused on medically managing the risk factors of acquired heart disease in children with a strong family history of cardiac disease, elevated cholesterol, high blood pressure or the diagnosis of Kawasaki disease. The team aims to prevent future cardiac disease and events such as heart attack and stroke through early detection and intervention and by educating children and their families to better care for themselves.

Cardiovascular Anesthesia

Patients who undergo surgical or interventional heart procedures are supported by a CV anesthesiology team specialized in CHD. Their primary role is to administer anesthetics, and with specific expertise in anesthetic effects on patients with CHD, monitor more than 20 different functions of the patient during and after their procedure to ensure optimal patient safety during and after their procedure.

Fetal Cardiology

We have a long history and have treated thousands of patients over the years, which gives us a rare level of expertise and experience in fetal cardiology. This includes catheter and laser-based interventions for borderline left heart and hypoplastic left heart syndrome (HLHS). A focus of our program is fetal atrial septal stent placement for HLHS and related disorders with a severely restrictive or intact atrial septum. Our team includes 20 fetal cardiology providers highly trained in fetal cardiac imaging, one of the most important aspects of fetal medicine. Our extensive experience in caring for patients from conception through adulthood gives us unique insight and the ability to make highly accurate diagnoses and prognoses.

Single Ventricle Program

The Single Ventricle Program is focused on the care of infants with single ventricle congenital heart defects, which include hypoplastic left heart syndrome (HLHS) and variants, unbalanced atrioventricular septal defects, complex single ventricle and heterotaxy syndrome, and others. Our multidisciplinary team will prepare patients and their families for life in the hospital and at home, including a comprehensive home monitoring program to help families transition successfully between surgeries.

Pulmonary Vein Stenosis Program

The Pulmonary Vein Stenosis Program has a long legacy of leading the way in pediatric pulmonary vein stenosis (PVS) treatment. PVS is not only rare, but also presents unique challenges due to its aggressive nature and high recurrence rate. Our multidisciplinary team treats patients with combinations of cardiac catheterization-based procedures, cardiac surgery and drug therapy. Increased awareness as well as advances in imaging technology have allowed for earlier and more accurate diagnoses, bringing an increasing number of PVS patients to specialized centers such as Texas Children's, which has been pioneering PVS treatment for years.

Programs

Adult Congenital Heart Disease (ACHD)

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Texas Children's Heart Center is committed to providing lifetime care for patients with congenital heart conditions, and in November 2020 opened the first and only of its kind, 27,000-square-foot facility dedicated to and designed by adults with congenital heart disease (CHD). Located on the 24th floor of the Lester and Sue Smith Legacy Tower, the ACHD Program treats adult survivors of pediatric heart disease, adults with congenital heart disease and adults with cardiac concerns during pregnancy. The program is supported by leading-edge research and state-of-the-art technology. It is the largest accredited ACHD Program in Texas and one of the most prominent in the nation.

NATIONAL ACHD BY THE NUMBERS

2 million
Adults diagnosed with congenital heart disease in the U.S.

6 per 10,000
ED visits are decompensated ACHD patients

60%
Reduction of mortality rate for patients who are referred to an ACHD center of excellence

66%
ACHD patients visiting an ED will require hospitalization (mortality >3%)

ACHD Services

Our multidisciplinary team of specialists is trained in both pediatric and adult CHD and is uniquely qualified to tailor treatment plans for each patient to help them enjoy the healthiest life possible. We address the wide spectrum of challenges patients face throughout their lives — from medication management and other medical issues to health insurance, exercise options and family planning.

Patients have access to a full range of ACHD services and specialties, including noninvasive imaging, arrhythmia services, diagnostic and interventional cardiac catheterization, surgery, mental/behavioral health services and an innovative comprehensive wellness program. Additionally, our team of board-certified physicians collaborates with physicians at Texas Children's Fetal Center and Texas Children's Pavilion for Women to provide care that meets the unique needs of pregnant patients with congenital heart disease, while also helping them minimize risks that may come as part of their condition.

OUR OUTCOMES

1.9% Procedural mortality versus 5% expected mortality using validated ACHD surgical models

1.5% Overall inpatient mortality between April 2022 and April 2024 (out of 1,269 admissions)

WHY CHOOSE TEXAS CHILDREN'S ACHD PROGRAM?

- 16-bed adult inpatient unit and dedicated adult clinic
- Individualized ACHD care for patients from adolescents through senior adults
- Collaborative, team-based approach
- Many of the world's leading experts in congenital heart care
- Full complement of specialists from Baylor College of Medicine
- Integrated inpatient/outpatient space
- Cardiac rehabilitation gym
- Diagnostics lab

Cardiology Transition Medicine

We are committed to helping our patients with congenital heart disease (CHD) who are approaching adulthood make a smooth transition from pediatric to adult health care. We have developed a unique transition program that serves adolescents with CHD by performing individualized evaluations that reveal individual patient needs surrounding CHD knowledge and disease management skills.

Our program works with cardiologists to teach adolescents to better understand their specific CHD and practice the skills needed to manage their CHD in an adult setting in order to facilitate transfer to adult care by 21 years of age. Our program also helps patients meet an adult congenital cardiologist, facilitates communication about patients between the pediatric and adult cardiologists and creates concise medical summaries for these adult providers so they may understand the unique needs of our patients.

Our Goal

Our goal is to address the medical, educational and psychosocial needs of young adults with congenital heart disease (CHD) to prepare them for the eventual, informed, timely and uninterrupted transition to adult congenital heart disease care.

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	What patients can expect	What parents can expect
14 years old	Meet the cardiology transition team and learn about the process and opportunities	Meet the team, discuss individual learning plan and transition expectations
15-16 years old	Complete transition readiness assessments, individualized CHD education and health care skills training	Serial educational visits, targeted resources encourage shared decision making
17 years old	Take ownership of your health care and identify lifelong care plan	Transition to a supportive role and prepare for child's health care changes at 18 years old
18-21 years old	Mastery of disease knowlege, heath care skills and transfer to adult care	Adult planning visit and prepare for transfer of care to adult specialist

For Patients

In this program, patients will learn about:

- Their specific congenital heart disease type
- Their surgical and/or cardiac catheterization history
- Exercise and diet considerations
- Medications
- Lifestyle, travel and career considerations
- Their future and living with CHD
- Emergency medical situations

They also have the opportunity to:

- Meet and learn from other teens with CHD
- Help create programs for individuals with CHD
- Serve as a mentor to others with CHD

For Parents

Our program focuses on training adolescents with CHD to be responsible adults with CHD.

A trained nurse and social worker will conduct a needs assessment and create an individualized learning plan specific to the adolescent's needs and knowledge gaps. Serial educational sessions and assessments will be conducted to ensure appropriate knowledge and skill base prior to transferring to adult care.

How to Get Involved

- Patient eligibility is determined by their pediatric cardiologist and the transition team staff
- To become more involved in research or advocacy, please email our team at **cardiologytransition@texaschildrens.org**

For more information visit our website at **texaschildrens.org/CTMP**

Cardiovascular Anesthesia

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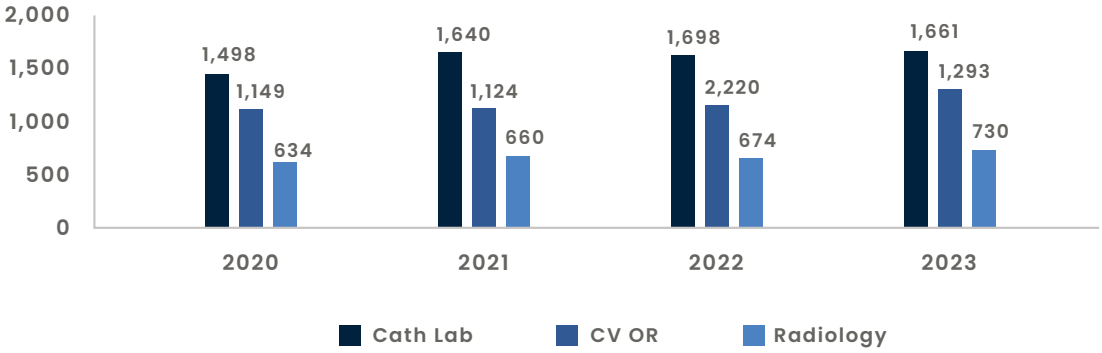
Our specialized team of anesthesia providers is devoted to ensuring the safety and comfort of patients during cardiac procedures.

Understanding the intricacies of cardiac anesthesia, our team undergoes rigorous training and stays updated with the latest advancements in pediatric cardiac anesthesia techniques.

The Cardiovascular Anesthesia team supports all procedures within the cardiovascular operating rooms, cardiac catheterization labs and many additional locations such as the radiology suites and general ORs when caring for cardiac patients.
We collaborate closely with the entire cardiac care team to deliver comprehensive and coordinated care. This collaborative approach ensures seamless communication and a unified focus on the well-being of our patients.

CARDIOVASCULAR ANESTHESIOLOGY CASES PER CALENDAR YEAR



Radiology cases defined as anesthetics in any Radiology location in which (1) both the 'cardiac patient' and 'CV anes' flags were indicated in the pre-anesthesia evaluation note OR (2) a CV anesthesiologist was the responsible anesthesiologist on the case.

Cath Lab and CV OR cases reflect full anesthetic volumes in those locations.

CV OR NERVE BLOCK BY TYPE

	2020	2021	2022	2023
TTMP (TRANSVERSUS THORACIC MUSCLE PLANE)	6	45	113	89
ERECTOR SPINAE	7	5	12	47
OTHER	3	15	11	23

Our CV OR nerve block volumes show the introduction of facial plane blocks used to improve pain management for our patients.

DEFINITIONS

Cardiovascular operating room block type
All regional nerve blocks performed during an anesthetic occurring in the CV OR.

Congenital Heart Surgery

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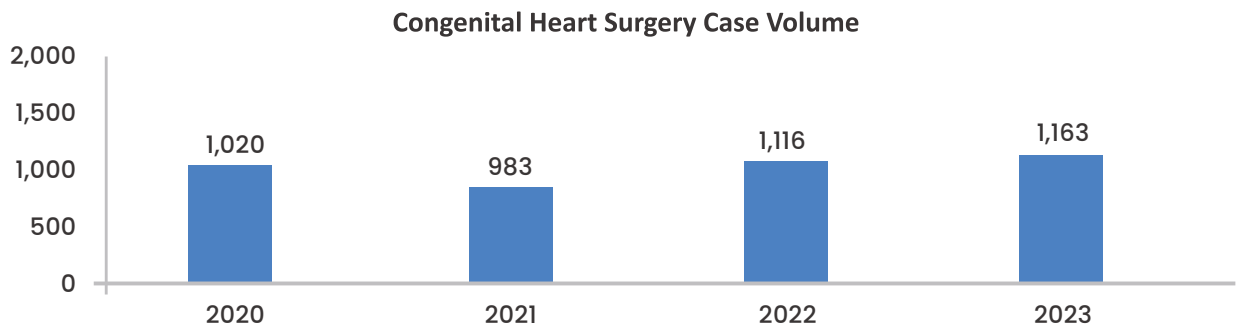
The Congenital Heart Surgery Program at Texas Children's represents a legacy of pioneering excellence, offering a comprehensive surgical program that includes every procedure available for the treatment of heart disease and defects. Our state-of-the-art cardiovascular operating rooms (CVORs) are equipped to handle the most complex congenital cardiac repairs, transplants (heart, lung and heart-lung), tracheal reconstruction, minimally invasive procedures, placement of cardiac assist devices and extracorporeal membrane oxygenation (ECMO). Our CVORs boast the most sophisticated equipment designed for severe cardiac anomalies, ensuring ergonomic efficiency and heightened safety.

Our patient population spans from preterm, low-birth-weight newborns to adults with congenital heart defects. Each surgery is individualized with cardiopulmonary bypass and neuroprotection strategies tailored to each patient's unique condition and needs to achieve optimal outcomes. Our Congenital Heart Surgery services include nine full-time cardiac surgeons with five dedicated cardiovascular operating rooms. The Heart Transplant Program is one of the largest in the nation, featuring one of the largest and comprehensive ventricular assist device (VAD) programs in the world.

Patient Care Volumes, 2020-2023



Data source: Texas Children's internal data

249 ECMO runs

96 VADs placed

118 Heart Transplants

30 Lung Transplants

Surgical Outcomes, January 2020 - December 2023

Operative and Adjusted Operative Mortality (January 2020-December 2023)

Population	#/Eligible	Observed	Expected	O/E Ratio (95% CI)	AMR (95% CI)
Overall	50/2427	2.06%	2.87%	0.72 (0.53, 0.92)	1.90 (1.42, 2.44)
STAT Mortality Category 1	4/1172	0.34%	0.61%	0.56 (0.15, 1.43)	0.34 (0.09, 0.86)
STAT Mortality Category 2	9/481	1.87%	1.93%	0.97 (0.45, 1.83)	1.94 (0.89, 3.64)
STAT Mortality Category 3	7/360	1.94%	3.49%	0.56 (0.22, 1.14)	1.89 (0.76, 3.85)
STAT Mortality Category 4	18/305	5.90%	7.85%	0.75 (0.45, 1.17)	5.78 (3.46, 8.98)
STAT Mortality Category 5	12/109	11.01%	15.41%	0.71 (0.38, 1.20)	10.73 (5.67, 17.98)

Data in this table is for the four year analytic window of 01/01/2020 to 12/31/2023, inclusive.

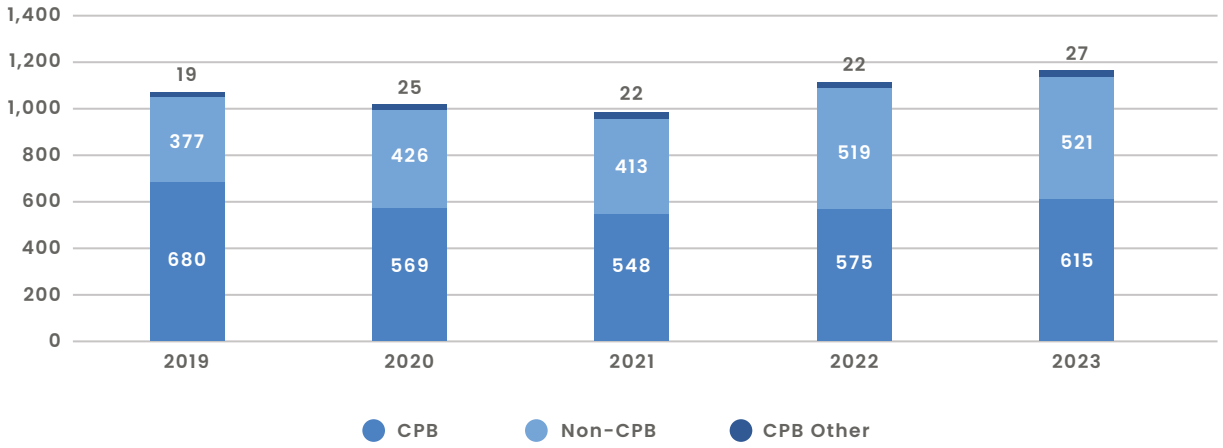
Benchmark Operations: Overall Aggregate and Participant-Specific Mortality and Post-Operative Length of Stay (LOS), Last 4 Years

Procedure	# Eligible	TCH Observed Mortality (Rate)	STS Aggregate Mortality Rate	TCH Median LOS	STS Median LOS*
VSD	209	0 (0.00%)	0.31%	4.00	10.31
Fontan	123	1 (0.81%)	1.00%	10.00	12.87
TOF	109	0 (0.00%)	0.81%	7.00	12.72
Glenn/HemiFontan	104	1 (0.96%)	1.44%	7.00	14.18
Off Bypass Coarctation Repair	77	0 (0.00%)	0.92%	10.00	14.08
Norwood	60	1 (1.67%)	11.78%	46.50	55.73
AVC	55	1 (1.82%)	2.12%	8.00	17.21
Arterial Switch	32	1 (3.13%)	1.64%	15.00	17.92
Arterial Switch + VSD	24	0 (0.00%)	4.57%	17.50	21.58
Truncus	21	0 (0.00%)	7.26%	18.00	35.40

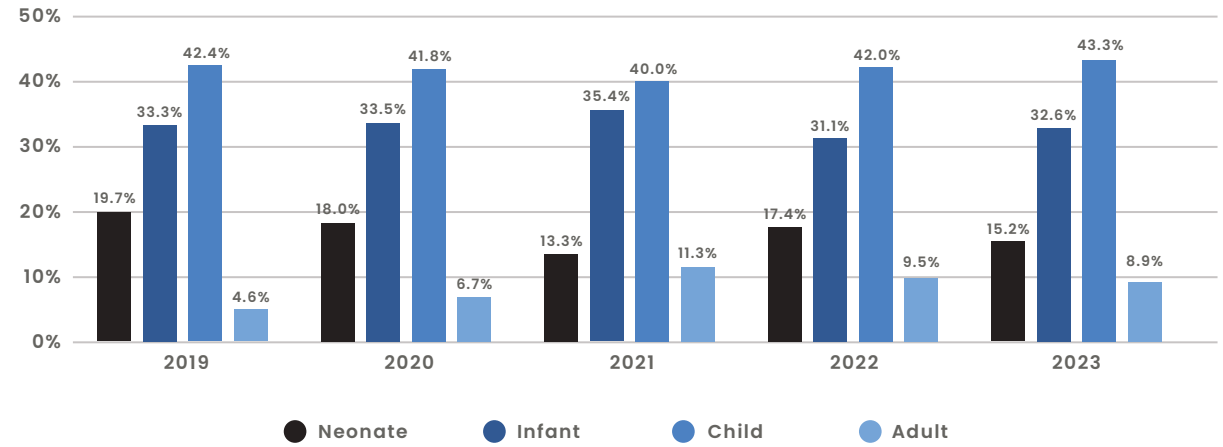
Data in this table is for the four year analytic window of 01/01/2020 to 12/31/2023, inclusive.
**Post Operative Length of Stay calculation includes operative mortalities*

As the specialty's leader in quality improvement, the STS National Database™ provides a true national benchmark for cardiothoracic surgery. It is one of the largest and most comprehensive clinical registries. STS Aggregate Mortality Rate is based on all participating centers.

CARDIOPULMONARY BYPASS (CPB) SURGERY CASE VOLUME



CARDIOVASCULAR AND THORACIC SURGERY CASE VOLUME BY AGE



Age categories are as follows: Neonates are age 30 days or less from date of surgery, infants are 31 days to 1 year in age from date of surgery, children are > 1 year to < 18 years in age from date of surgery, and adults are 18 years or more in age from date of surgery.

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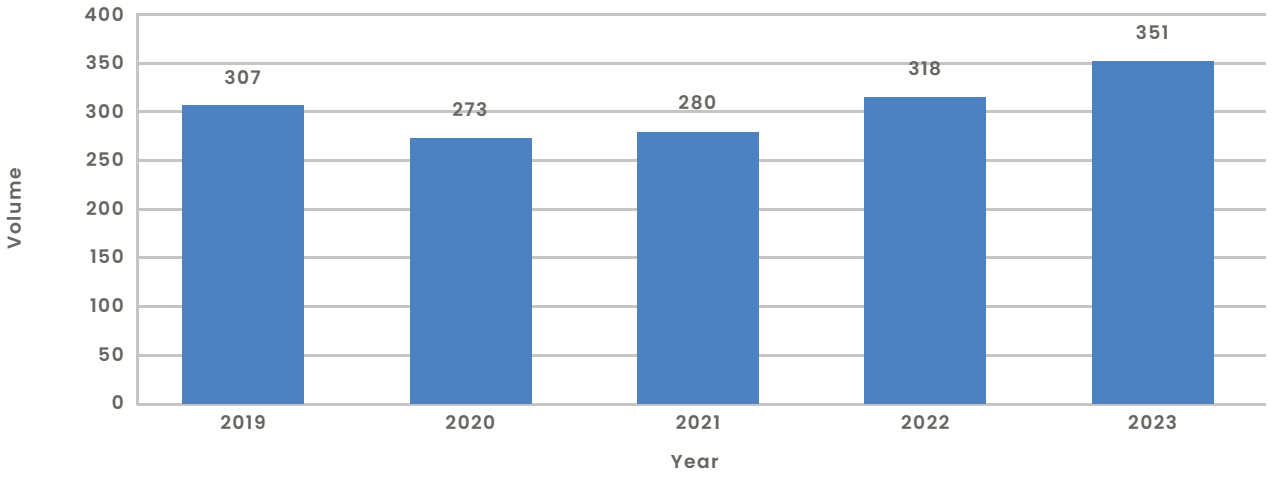
Electrophysiology

The Electrophysiology Program at Texas Children's is a leader in pediatric electrophysiology, offering comprehensive diagnostic and treatment services for heart rhythm abnormalities in children and adults with congenital heart disease. It's one of the largest programs in the U.S., specializing in catheter-based studies, pacemaker/defibrillator implantation and advanced therapies for conditions such as cardiomyopathies, genetic disorders and more. The team consists of 7 physicians, advanced practitioners, genetic counselors and nurse coordinators, conducting high volumes of procedures and research.

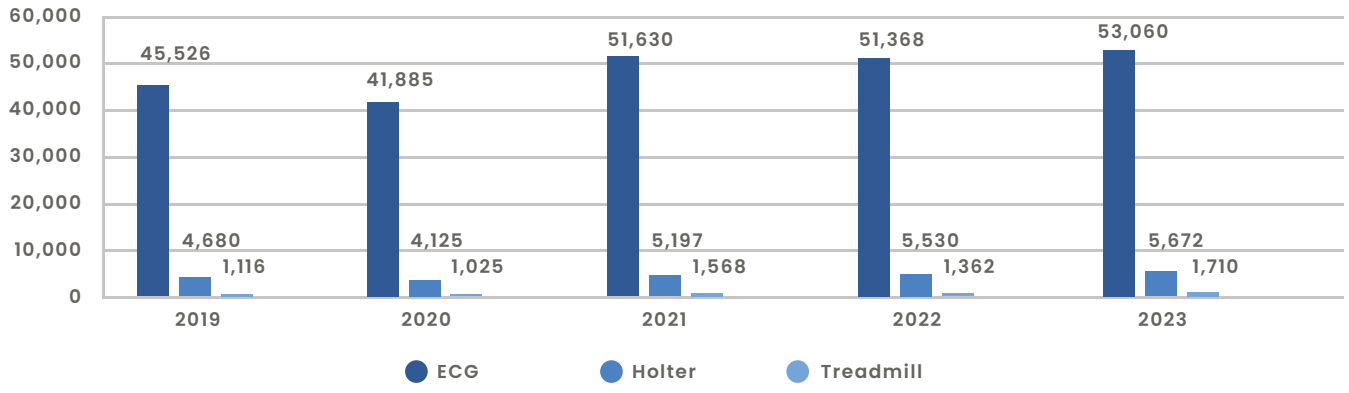
Our service interprets an average of 50,000 ECGs and 5,000 Holter readings each year. Other noninvasive diagnostic services include event monitors, exercise treadmills, tilt table evaluations and genetic testing. We are pioneers in reducing treatment risks, such as limiting radiation exposure, and offer cutting-edge procedures like cryoablation and robotic magnetic navigation.

The program also focuses on education and global outreach through partnerships like Project ADAM® and the Latin American branch of the Heart Rhythm Society. With a strong commitment to research, innovation and patient outcomes, Texas Children's Electrophysiology Program offers the best of modern cardiology to patients with arrhythmias.

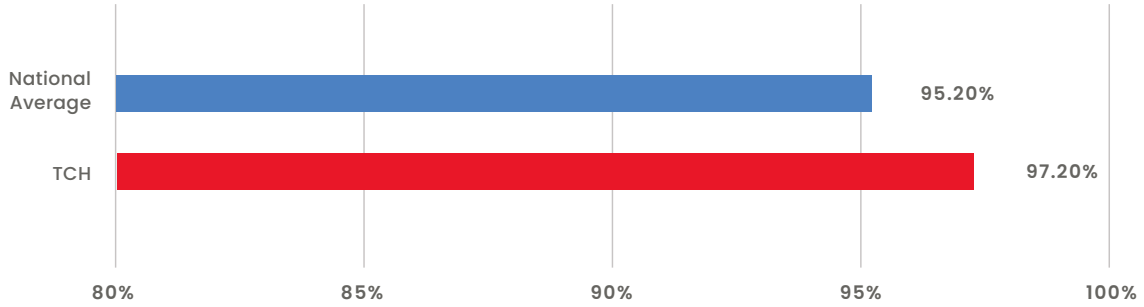
ELECTROPHYSIOLOGY CASE VOLUME PER CALENDAR YEAR



CASE DISTRIBUTION PER CALENDAR YEAR



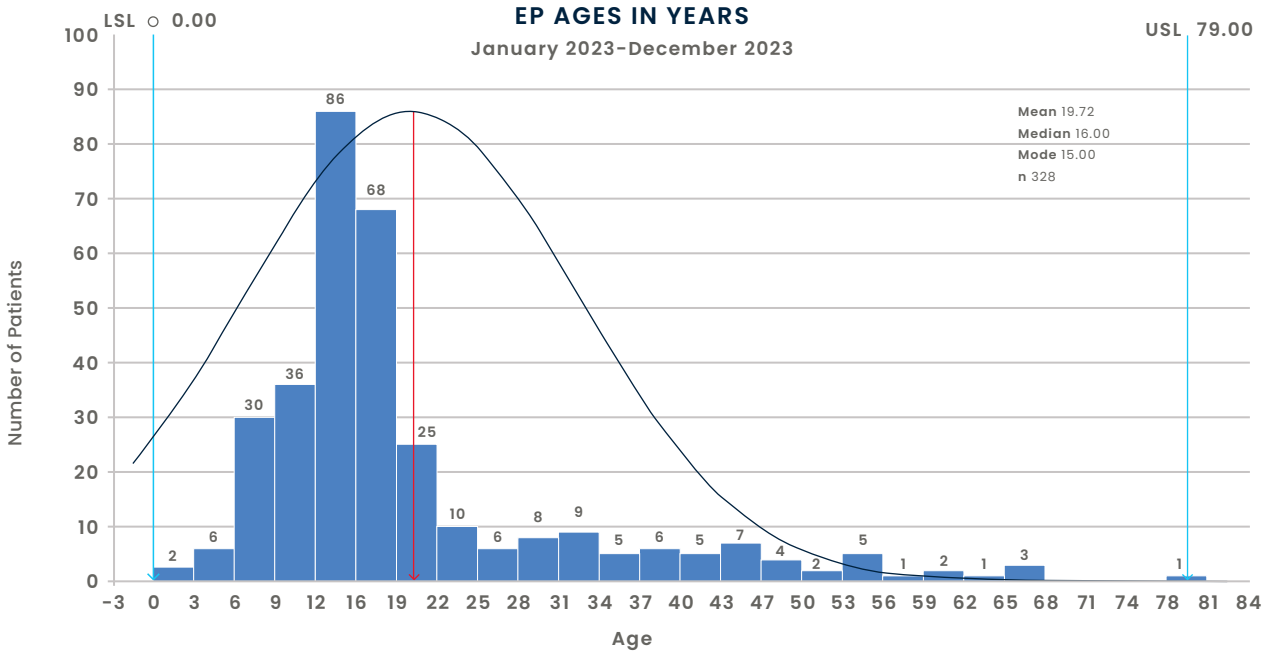
SVT ABLATION OUTCOMES ACUTE SUCCESS RATE



Source: Pediatric Radiofrequency Catheter Ablation Registry

EP AGES IN YEARS

January 2023-December 2023



In 2023, the Electrophysiology team performed procedures on patients ranging in age from 1 day to 79 years old.

Source: Texas Children's internal data

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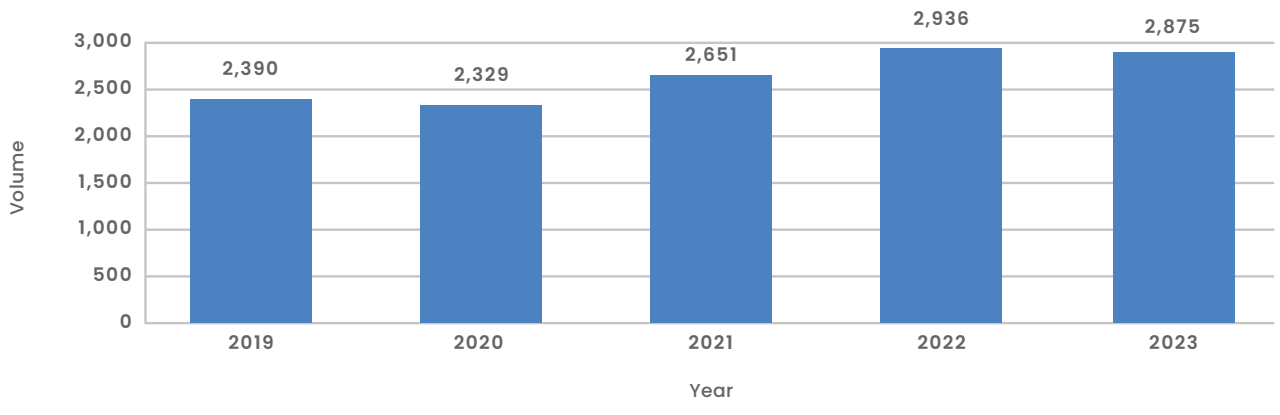
Fetal Cardiology

Our long-standing program has treated thousands of patients over the years, which gives us a rare level of expertise and experience in fetal cardiology. This includes catheter- and laser-based interventions for borderline left heart and hypoplastic left heart syndrome (HLHS). A focus of our program is fetal atrial septal stent placement for HLHS and related disorders with a severely restrictive or intact atrial septum.

Our team includes 20 fetal cardiology providers highly trained in fetal cardiac imaging, one of the most important aspects of fetal medicine. Our extensive experience in caring for patients from conception through adulthood gives us unique insight and the ability to make highly accurate diagnoses and prognoses. Additionally, we are one of only three centers in the nation for fetal cardiac intervention.

Through expert care, advanced technology and a focus on family, Texas Children's continues to lead in neonatal cardiac care, giving our youngest patients the best possible start.

VOLUME OF FETAL ECHOS PER CALENDAR YEAR



Heart Center Inpatient Care

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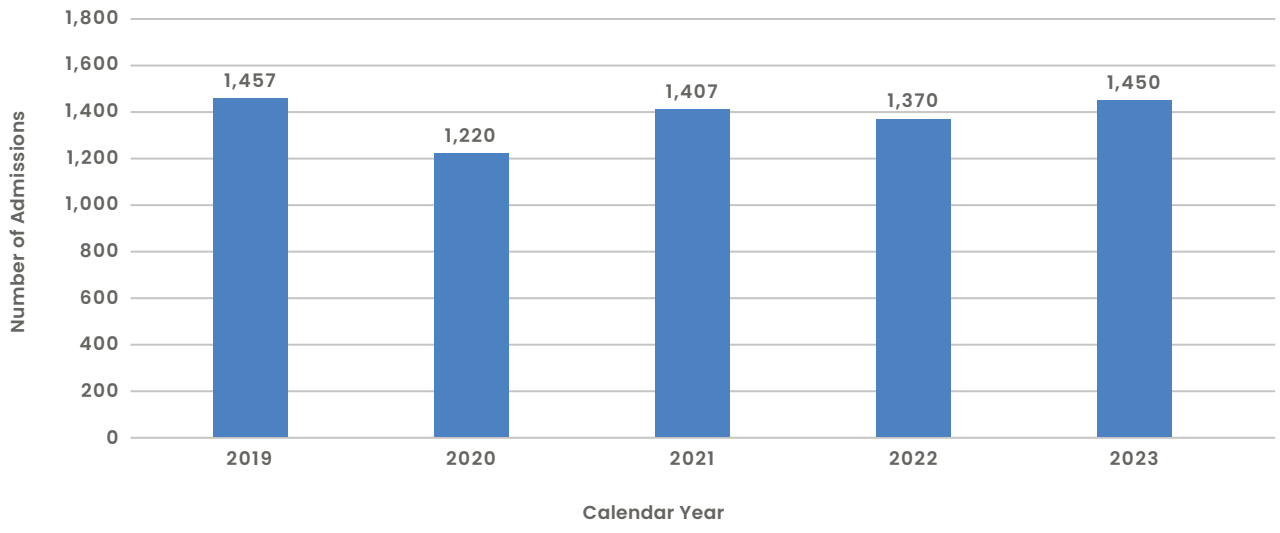
What sets cardiac inpatient care at Texas Children's apart is our collaborative approach. We don't work in silos; instead, we collaborate closely with other specialties within the hospital to provide seamless transitions between different levels of care.

Cardiac Intensive Care and Cardiac Patient Care Units Overview

The Cardiac Intensive Care Unit (CICU) and the Cardiac Patient Care Unit (CPCU) strive for continued excellence in the care of infants, children, and adults with complex cardiac disease. The patient- and family-focused multidisciplinary care delivery model is supported by some of the best specialists and care providers in the nation, ensuring the highest level of clinical support for some of the sickest children in our region and beyond. The CICU houses 54 state-of-the-art rooms, all with dedicated family space, spanning three floors, in proximity with the cardiovascular operating rooms, catheterization laboratories, MRI scanners, interventional radiology suites, and all other support services. Our CPCU is one of the largest acute and intermediate care cardiology units in the country, spanning two floors and is situated above the CICU and outpatient clinic floors. This 48-bed unit has single occupancy rooms, with attached bathrooms and sleeper sofas, and all of our rooms are telemetry capable and ready to support our patients' needs. The CPCU handles a variety of cardiovascular issues ranging from congenital heart defects to post-operative care for children who have undergone heart surgery. Children are often admitted to the CPCU for recovery and monitoring before they are discharged home.

CICU PATIENT ADMISSIONS VOLUME PER CALENDAR YEAR



Definition: The data shows the number of admissions to the CICU per calendar year

Source: Pediatric Cardiac Critical Care Consortium (PC4) Registry

The Inpatient Teams

The CICU and CPCU are staffed by a highly experienced, multidisciplinary team of physicians, advanced practice providers, nurses, respiratory therapists, pharmacists, a nutrition team, physical therapists, and occupational therapists. All members of the team and the patient's family are included in multidisciplinary rounding with shared decision-making. We are actively involved in numerous collaborative clinical, quality and research initiatives. Our growing group of dedicated advanced practice providers, together with more than 40 ACGME fellows in cardiology and critical care medicine, provide patient care under the supervision of more than 30 cardiac intensivists and 25 cardiologists. In addition to our general cardiology teams, specialized complex care teams monitor patient progress, develop plans for interventions, and optimize supportive therapies to achieve the best outcomes in some of the most complex patient populations. A dedicated Heart Center Rapid Response Team ensures timely escalation of care and transport of patients to a higher level of care as needed.

Subspecialty Cardiac Intensive Care

Within our CICU we house a 12-bed dedicated Heart Failure ICU, the first of its kind in the nation, which focuses on the treatment of children with heart failure and those requiring intensive care before and after heart transplant, including both durable and temporary mechanical circulatory support devices such as extracorporeal membrane oxygenation (ECMO), Berlin Heart EXCOR®, Abbott HeartMate 3™ and Abiomed Impella®.

Neonatal Cardiac Care

The Texas Children's Neonatal Cardiac Intensive Care Unit (CICU) provides exceptional care for newborns with congenital heart disease. The unit offers specialized treatment for infants before and after cardiac surgery, focusing on their unique developmental needs. We prioritize a family-centered approach, recognizing the importance of the mother–baby bond during this critical time.

Our neonatal cardiac care supports families every step of the way, offering prenatal tours of the CICU and classes that prepare parents for the journey ahead. Once mothers are discharged after giving birth, they can opt to stay in the CICU with their baby, where they can also access postpartum services, lactation consultants and a support group for postpartum depression.

The approach is both comprehensive and collaborative. Over 80% of neonatal cardiac patients at Texas Children's are diagnosed prenatally, enabling the team to plan their care in advance. Upon birth, each infant undergoes detailed assessments, including X-rays and EKGs, to ensure the most accurate data available. The results are reviewed by experts from the Heart Center, who then create a tailored care plan.

Cardiology Patient Care Unit (CPCU)

Our CPCU provides intermediate care for patients with acquired or congenital heart disease, ensuring continuous monitoring from a dedicated team of health care professionals.

The team plays a crucial role in providing continuous monitoring and critical care for children with severe heart conditions, particularly following major cardiac surgery. The team ensures around-the-clock observation, focusing on patient stabilization, pain management and optimization of heart function during recovery. Additionally, the team coordinates complex care, addressing a child's multiple medical needs by working with specialists from various disciplines.

Adult Congenital Heart Disease (ACHD) Inpatient Unit

Our 16 variable acuity bed ACHD Inpatient Unit is designed to adapt to the diverse needs of people with ACHD. The specially trained nursing and physicians are available 24/7 to offer adolescents and adults all levels of care, including ECMO, ICU, intensive monitoring unit (IMU), stepdown and observational care.

The unique design of Texas Children's ACHD Inpatient Unit allows for adults with congenital heart disease (CHD) to receive age-appropriate care from providers who have a deep understanding of pediatric disease processes. Advanced cardiac therapies are seamlessly integrated into our processes. Those who require advanced cardiopulmonary support have access to our ECMO team, in addition to specialty devices. Acknowledging that congenital heart disease has affected every moment of our patients' lives, we emphasize holistic care, including mental health care through our dedicated psychiatrist.

Extracorporeal Membrane Oxygenation (ECMO) and Extracorporeal Cardiopulmonary Resuscitation (ECPR)

Texas Children's large volume ECMO center is one of the world's most successful pediatric ECMO programs, providing lifesaving support for patients with severe cardiac and respiratory failure. Our center remains at the forefront of research, education and innovation with ECMO technology, and has been named a Platinum ECMO center by the Extracorporeal Life Support Organization (ELSO). In the Heart Center, we perform between 70-74 ECMO runs a year, representing between 15 and 20,000 hours of ECMO care. Our survival to discharge is 67.8% compared to the international average of 44-55% (International ELSO data base).

We have a strong multidisciplinary ECMO team dedicated to achieving not only the best clinical results, but also high quality and safety standards. Our ECMO transport system is known internationally for its dedication to safety and patient care. Texas Children's Cardiac Intensive Care Unit has an expert mechanical circulatory support team available 24 hours a day.

We are proud to leverage our knowledge and resources for the benefit of other healthcare providers through highly sought-after local and international education programs. We offer strong Extracorporeal Life Support (ECLS) provider training programs and multidisciplinary SIM-based ECMO training that can incorporate RediStik®, a wearable simulation trainer developed at Texas Children's for placing peripheral IVs, port lines and central venous catheters. Our critical care teams have trained over 350 multidisciplinary ECMO team members in several Latin American countries and our ECMO team members often lecture at conferences. Our team has also published multiple papers on the use of ECMO in several settings.

Quality, Safety and Outcomes

Monitoring of outcomes and performance is essential in an inpatient care environment. It helps us optimize the delivery of safe and evidence-based clinical care. Numerous performance and quality metrics are closely monitored through participation in national registries including the Pediatric Critical Care Consortium (PC4), Pediatric Acute Care Cardiology Collaborative (PAC3), Solution for Patient Safety (SPS), Extracorporeal Life Support Organization (ELSO), Society of Thoracic Surgery (STS) and Pediatric Interagency Registry for Mechanical Circulatory Support (PediMACS). Our Heart Failure team is also an active participant in the national Advanced Cardiac Therapies Improving Outcomes Network (ACTION) collaborative, with a focus on improving outcomes for pediatric heart failure and ventricular assist device patients. Patient safety and quality are monitored by our quality team, with regular reviews of all of our practices and procedures. Internal audit routinely includes benchmarking our performance alongside other high-volume U.S. centers.

There are ongoing quality initiatives spanning different areas, which include pain management and comfort, feeding, postoperative tube management, optimizing quality initiatives within our Heart Failure Intensive Care Unit such as early mobilization, nutrition, anticoagulation and ventricular assist device education. Our neonatal population requires a focus on neurodevelopmental care and cognizance of a healthy environment for healing. We highlight a few initiatives that have impacted the care we deliver to our patients.

CLEAN ROUNDS

CLEAN	LINES	EATING	AIRWAYS	NON-INTACT SKIN
CLEAN central access points, dressings, and environment	Review of invasive LINES and catheters to facilitate early removal	Ensuring patients transition from IV nutrition to EATING as soon as possible	Assess integrity of artificial AIRWAY to minimize risk of accidental extubation	Identify risk factors of sin injury that can lead to NON-INTACT skin

Hospital-Acquired Condition-Focused CLEAN Rounds

We are mindful that our patients are working hard every day to recover, and our quality team works together to ensure that we minimize any hospital-acquired events during their recovery. This includes close attention to the stability and integrity of invasive devices and facilitation of early removal, reduction of risk in infections and side effects of critical illness. Weekly rounds are conducted aimed at risk reduction in infections by maintaining a clean environment and approach to lifesaving invasive devices, reducing hospital acquired morbidities by auditing our practice of safe conditions for the patient minimizing unplanned extubations, optimizing nutrition, minimizing unnecessary lab draws while reducing invasive devices as soon as they are not medically needed.

Critical Care Nutrition

A multidisciplinary team of experts from neonatology, nutrition, nursing and intensive care lead structured nutrition rounds to enhance the nutritional health of our infants. This team works together to develop safe feeding pathways and a standardized approach to advancing oral and enteral feeding in infants after cardiac surgery to minimize the incidence of necrotizing enterocolitis, silent aspiration and malnutrition. The group has recently worked on reducing wastage of breastmilk and developed a process for donor breastmilk usage that has been shown to reduce gastrointestinal complications in newborns.

Continuity of Care Program

Some of our patients require prolonged ICU stays due to the complex nature of their heart disease. Optimal care of these patients often requires a focus on multiple organ systems and multidisciplinary involvement. Our families can feel overwhelmed with the complexity of clinical management. The clinical teams can find themselves in similar situations and often struggle with focused long-term goals for these complex patients. The CICU team offers support with nursing and physician continuity to bridge these gaps. Our nursing staff volunteers to support these families with focused assignments, enabling them to provide care that is catered to the complex needs of these patients. Our CICU providers establish close relationships with families and help them understand the complexities of management as well as help coordinate multidisciplinary decisions and updates to ensure families are included in important clinical decisions and understand the trajectory of their child's recovery. This program is continued into the patient's stay in the CPCU.

Global Health Initiatives

Texas Children's Heart Center has a long history of global health and international collaboration. The Cardiac Intensive Care Unit (CICU) team has historically been central to these initiatives. Our focus on a multidisciplinary train-the-trainer approach is intended to help build sustainable cardiac programs in low- and middle-income countries, and mentor them along the way of becoming themselves centers of excellence. We currently have three active long-term relationships with two programs in Mexico City, Mexico, and one program in Recife, Brazil. We recently started a new collaboration with a center in Guatemala. CICU faculty leads twice weekly teleconferences with the local teams, providing expert opinion on complex care patients, multidisciplinary team education and assists with quality and safety initiatives. Texas Children's Hospital provides the only pediatric cardiology care existing in Malawi, focusing on Rheumatic fever and congenital heart disease diagnosis, while training the local health care personnel. Our Heart Center also conducts free international webinars for expertise, knowledge and innovation sharing. In addition, numerous members of our Heart Center family volunteer their time to multiple congenital heart surgery missions.

Heart Failure & Transplantation

Our dedicated team manages the care for for more than 2,000 cardiomyopathy and heart failure encounters every year. Our program excels in managing heart failure, performing lifesaving transplants and providing mechanical circulatory support via ventricular assist devices (VADs). In 2023, our team was recognized as the Outstanding Heart Failure Care Team award winner by the Heart Failure Society of America.

In addition, Texas Children's has been named an accredited center of care by the Children's Cardiomyopathy Foundation, a national nonprofit committed to improving the health outcomes and quality of life for children with cardiomyopathy.

Heart Failure Management

We're proud to be named the first Pediatric Heart Failure Institute in Texas, home to the nation's first Heart Failure Intensive Care Unit, providing specialized care for children with complex cardiac conditions. We provide personalized care through a multidisciplinary approach, enhancing quality of life with medical management, lifestyle changes and surgical interventions. While the majority of cardiomyopathy and heart failure patients are managed with medication, a small percentage of patients will go on to require a heart transplant. For patients awaiting heart transplant, the Heart Failure team also successfully uses mechanical circulatory support with a ventricular assist device (VAD).

VAD Expertise

We offer a variety of circulatory support devices as a bridge to transplantation. Since we implanted our first VAD in 1996, we have become one of the largest, most comprehensive pediatric VAD programs in the world, implanting over 30 VADs annually, offering a vital lifeline for patients with severe heart failure.

Our program is also leading the way in using VADs as a bridge to recovery or eliminating the need for transplant. Our experts manage the largest outpatient VAD population, helping to ensure optimal outcomes and improved quality of life. The VAD team at Texas Children's has developed innovative therapies with additional devices, giving patients access to multiple VAD options, including Berlin Heart EXCOR®, Abbott HeartMate 3™ and Abiomed Impella®.

Texas Children's Hospital®

Heart and Lung Transplant Programs

Since its inception in 1984, the Heart Transplant Program at Texas Children's Heart Center has become one of the largest and most successful heart transplant programs in the nation. Over the program's history, our team has performed more than 560 heart transplants in patients from newborns to adults, a volume reached by only a few programs in the United States. For 7 consecutive years, Texas Children's has performed more solid organ transplants than any other program in the nation, achieving outcomes that rival the best in the country, offering hope and healing to families.

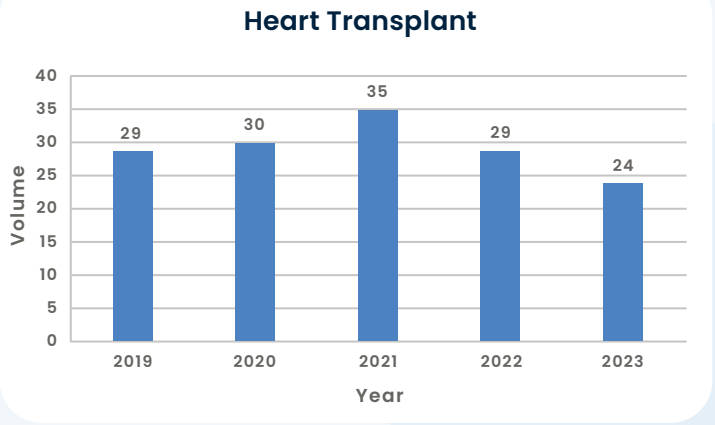
Additionally, Texas Children's Lung Transplant Program has performed more pediatric lung transplants than any other pediatric organization, all with outcomes that consistently meet or exceed national benchmarks. Leading the way for lung transplants, our program is also uniquely positioned to support those children whose lungs have been irreparably damaged by the effects of heart failure. Our team is committed to advancing the field of pediatric lung transplantation through ongoing research and clinical trials, aiming to improve outcomes and quality of life for our patients.

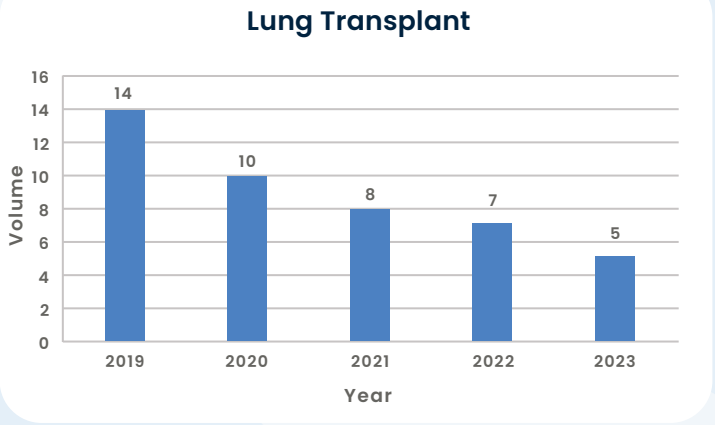
With a focus on comprehensive support at every step in the transplant journey, from evaluation to post-transplant care, we aim to maximize the longevity and health of the patient and transplanted heart or lung.

Innovative Care and Research

Committed to advancing pediatric cardiology, we lead innovative research and clinical trials to improve outcomes for heart failure and transplants, ensuring our patients benefit from the latest advancements in medicine. For example, Texas Children's Single Ventricle Program team has been awarded a 2024 Single Ventricle Research Fund (SVRF) grant to develop "ReVolution," a novel implantable device intended to transform care for infants with congenital heart disease who have undergone the Fontan procedure.

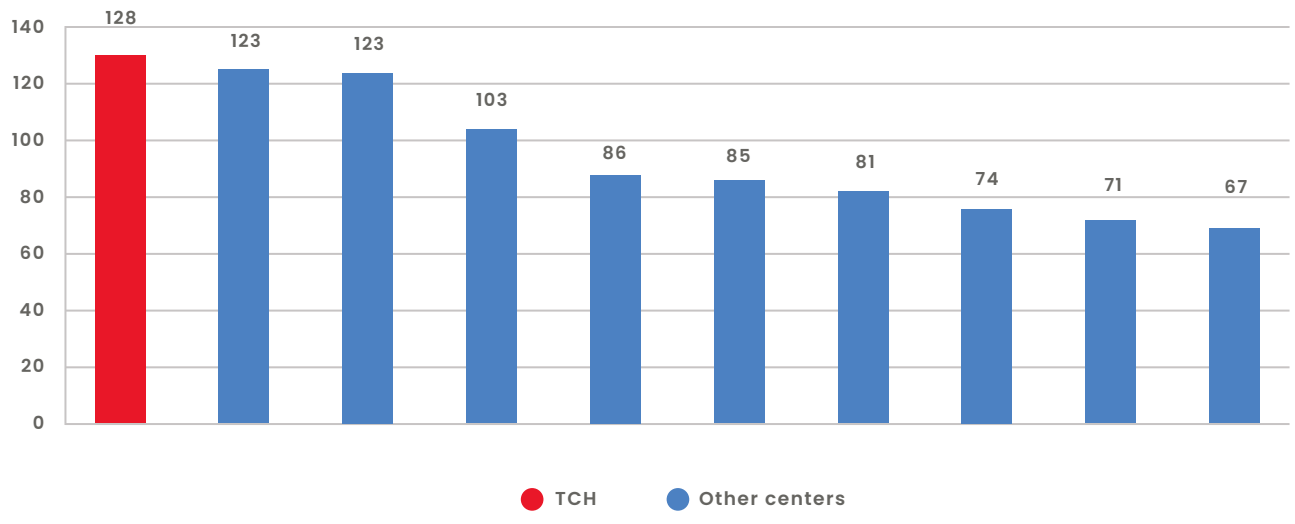
Transplant Volumes by Year





Source: Organ Procurement & Transplantation Network (OPTN)

National VAD to Pediatric Heart Transplant Volume

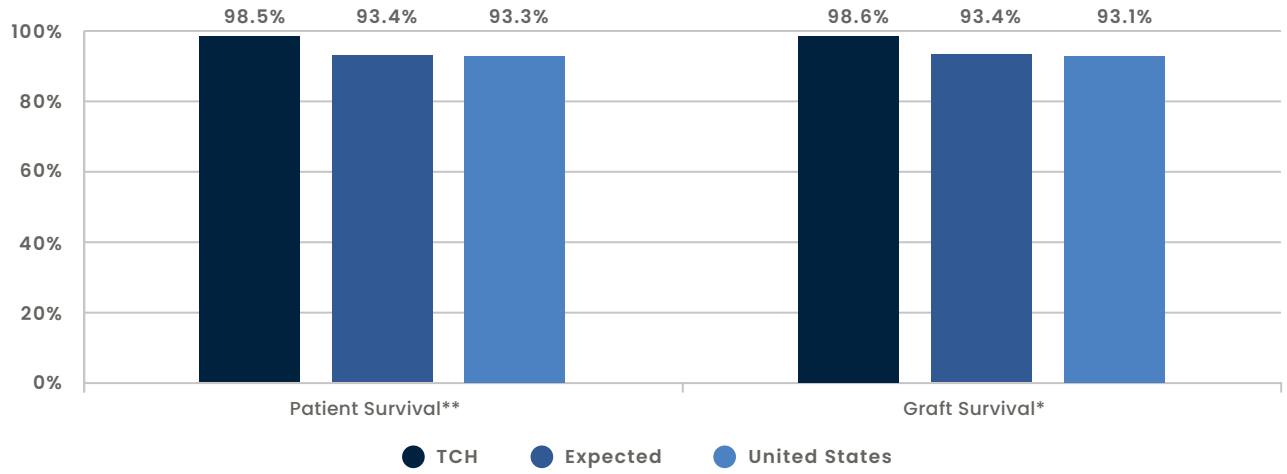


Source: Organ Procurement & Transplantation Network (OPTN)
Volumes in this graph are based on OPTN data to date through December 31, 2023

Pediatric Heart Transplant Survival Rates

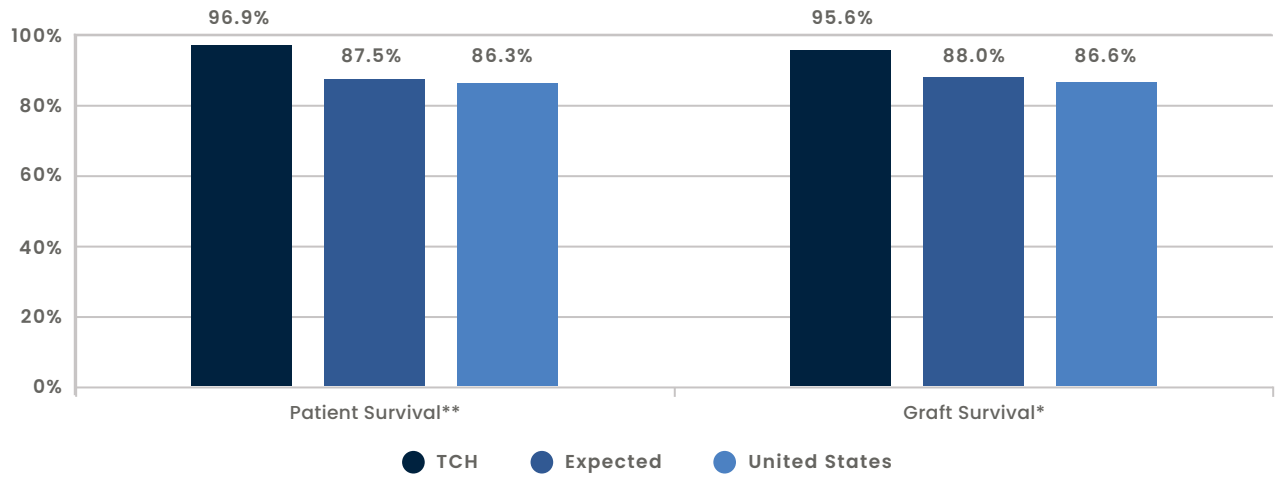
ONE-YEAR PEDIATRIC PATIENT AND GRAFT SURVIVAL

Based on 65 transplants performed January 1, 2021 to June 30, 2023.



THREE-YEAR PEDIATRIC PATIENT AND GRAFT SURVIVAL

Based on 61 transplants performed July 1, 2018 to March 12, 2020 and June 13, 2020 to December 31, 2020.

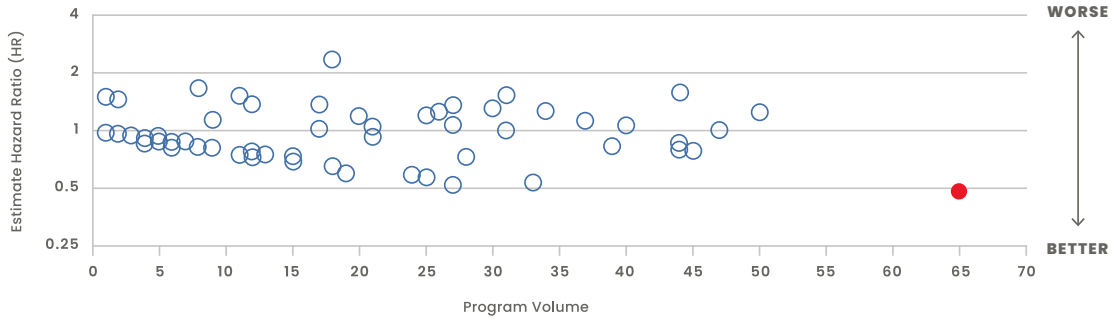


**Re-transplants are excluded in patient survival statistics.

*There is no significant statistical difference between Texas Children's Hospital rates and Expected rates.

July 2024 Program Report

Complete data available on the Scientific Registry of Transplant Recipients website (www.srtr.org)
Pediatric (Less than 18 y/o) | Organ: Heart (Graft=Heart)



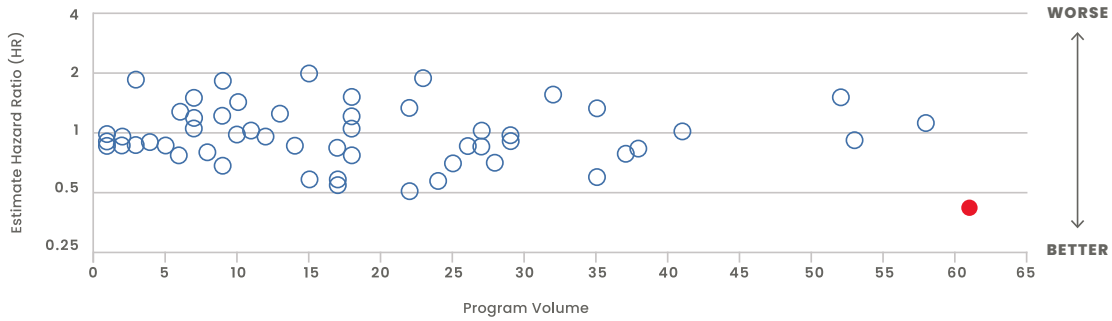
One-Year

Pediatric Patient Survival

● TCH

○ Other Centers

Based on 65 transplants performed January 1, 2021 to June 30, 2023.



Three-Year

Pediatric Patient Survival

● TCH

○ Other Centers

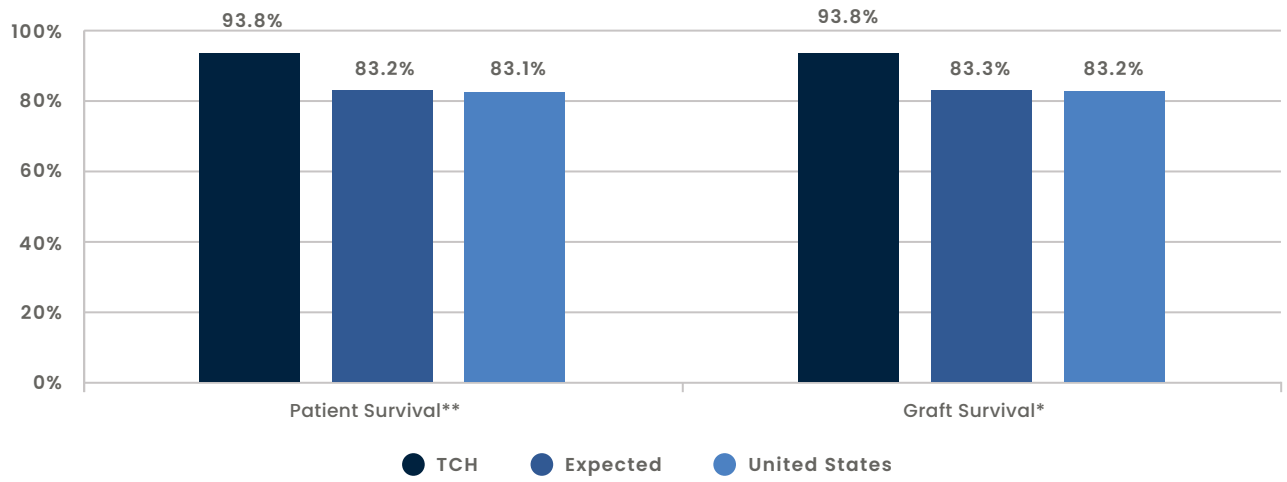
Based on 61 transplants performed July 1, 2018 to March 12, 2020 and June 13, 2020 to December 31, 2020.

Our program continues to lead in heart transplant volume with outcomes among the best in the nation.

Pediatric Lung Transplant Survival Rates

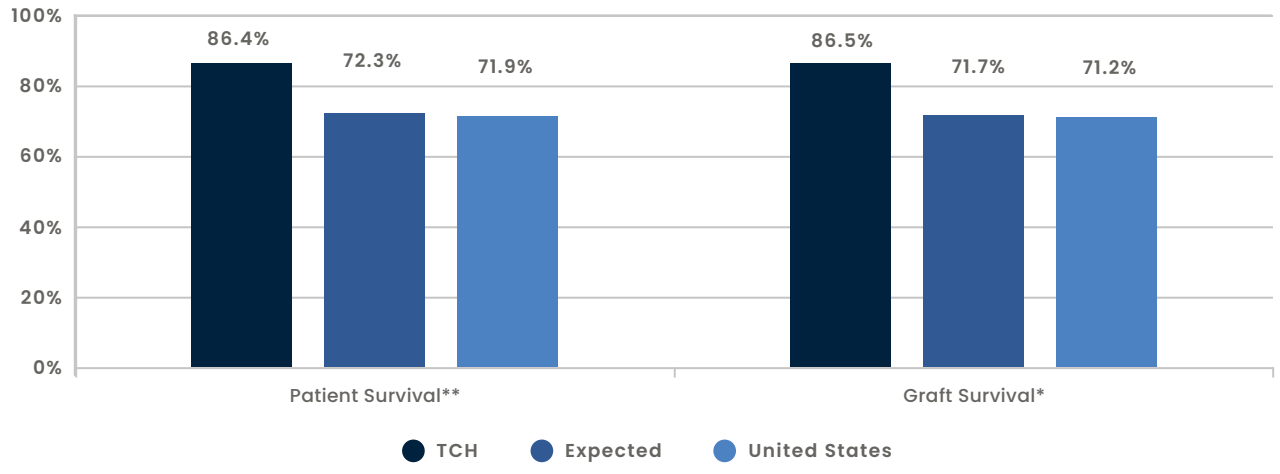
ONE-YEAR PEDIATRIC PATIENT AND GRAFT SURVIVAL

Based on 16 transplants performed January 1, 2021 to June 30, 2023.



THREE-YEAR PEDIATRIC PATIENT AND GRAFT SURVIVAL

Based on 26 transplants performed July 1, 2018 to March 12, 2020 and June 13, 2020 to December 31, 2020.

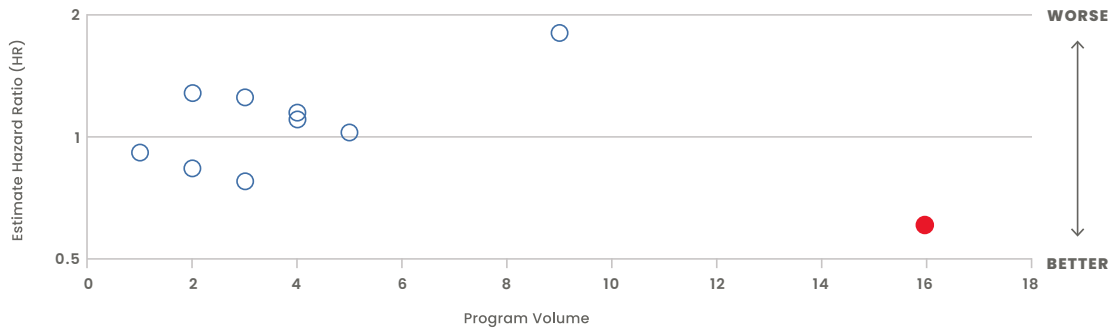


**Re-transplants are excluded in patient survival statistics.

*There is no significant statistical difference between Texas Children's Hospital rates and Expected rates.

July 2024 Program Report

Complete data available on the Scientific Registry of Transplant Recipients website (www.srtr.org)
Pediatric (Less than 18 y/o) | Organ: Lung (Graft=Lung)

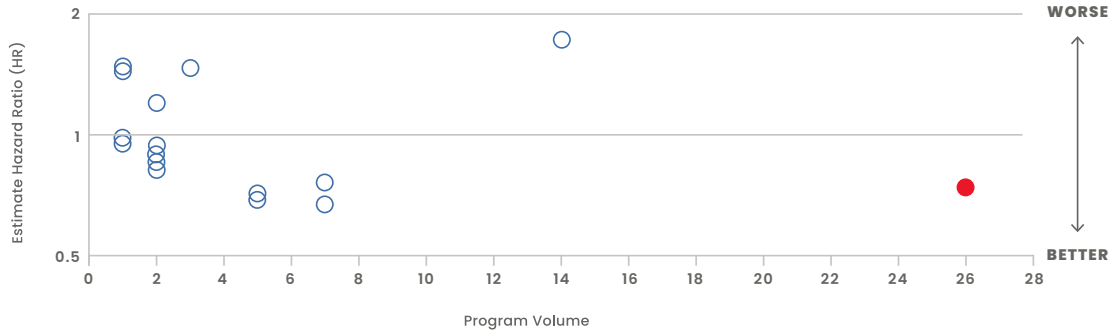


One-Year

Pediatric Patient Survival

● TCH
○ Other Centers

Based on 16 transplants performed January 1, 2021 to June 30, 2023



Three-Year

Pediatric Patient Survival

● TCH
○ Other Centers

Based on 26 transplants performed July 1, 2018 to March 12, 2020 and June 13, 2020 to December 31, 2020.

Our program continues to lead in lung transplant volume and outcomes are among the best in the nation.

Interventional Cardiology

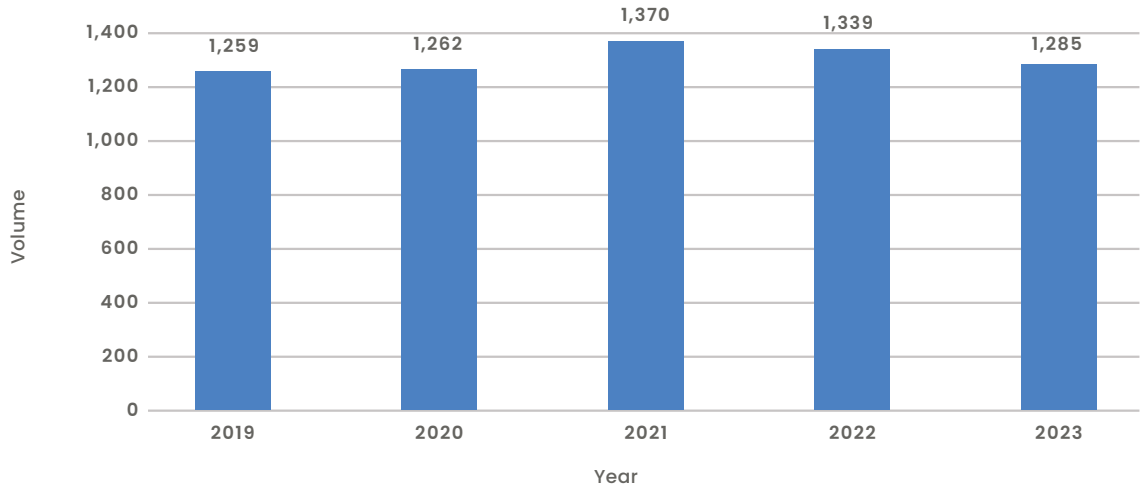
Texas Children's Hospital®

Led by world-renowned pediatric cardiologists and interventionalists, our Interventional Cardiology Program is a regional and national referral center for the most complex forms of acquired and congenital heart disease. With six practitioners who have dedicated their careers to treating defects with interventional techniques in children and adults with congenital heart disease, the Interventional Cardiology team is poised to lead the way on advanced treatment innovations into the future.

Our program is the largest in the region to offer interventional cardiac catheterization for infants, children, adolescents and adults with congenital heart disease, performing more than 1,200 cases annually (excluding electrophysiology). We also maintain an extraordinarily low complication rate from cardiac catheterizations.

From routine procedures—like balloon valvuloplasty, transcatheter pulmonary valve replacement and device closure of septal defects—to advanced treatments for rare conditions—including pulmonary vein stenosis and hypoplastic left heart syndrome—our team delivers cutting-edge interventions tailored to meet each patient's unique needs. Our expertise in fetal atrial septal stents and procedures for coronary artery anomalies also sets us apart. Our interventional cardiologists are at the forefront of developing new interventional cardiology tools, leading and participating in numerous national and international device trials. Our multi-disciplinary medical team is available 24/7, ensuring access to specialized care whenever it's needed.

CATH LAB VOLUME PER CALENDAR YEAR

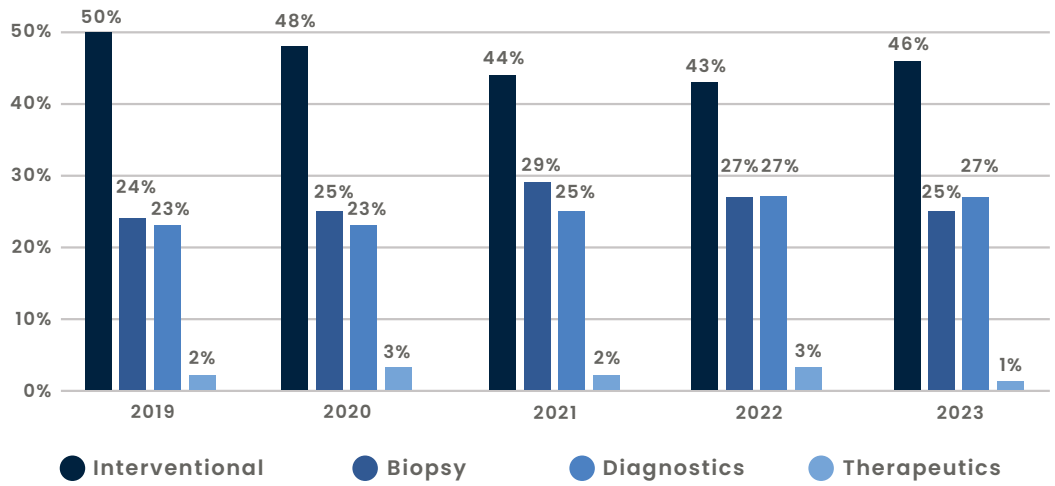


*Total Volumes excludes Electrophysiology cases

DEFINITIONS

Catheterization volume
Cath volume is the total number of procedures performed by our Interventional Cardiology team each year.

CATH LAB CASE DISTRIBUTION



DEFINITIONS

The case distribution — Our total cath volume broken down into case types, including diagnostic volume, biopsy volume, interventional volume and therapeutic volume.

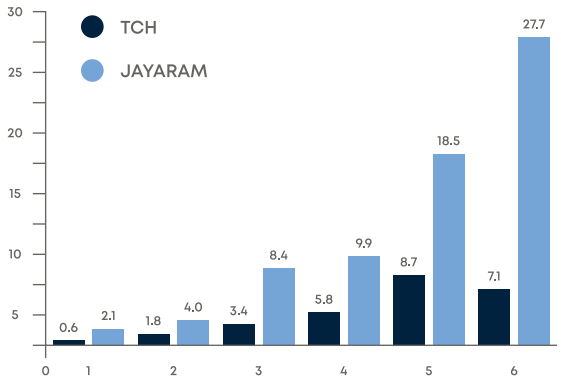
Therapeutic volume — The total number of procedures per year performed to drain fluid from around the heart (pericardiocentesis) or to place a pump to help the heart function (Impella placement).

Diagnostic volume — Diagnostic volume is the total number of procedures performed each year that did not involve intervention.

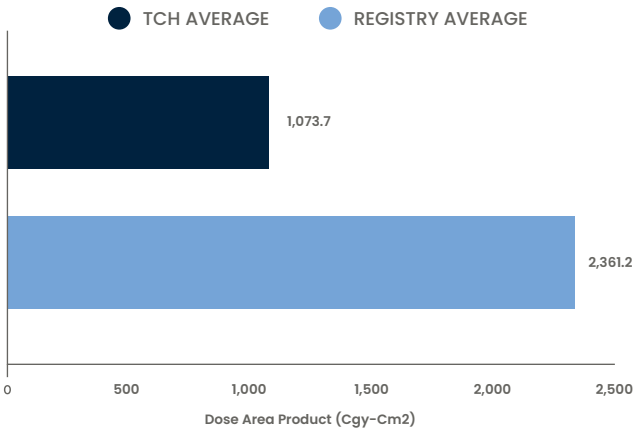
Biopsy volume — Biopsy volume is the total number of procedures performed to check for rejection in our post-heart transplant patients.

Interventional volume — Interventional volume is the total number of procedures performed each year that involve an intervention, including balloon dilation, stenting, valve placement, etc.

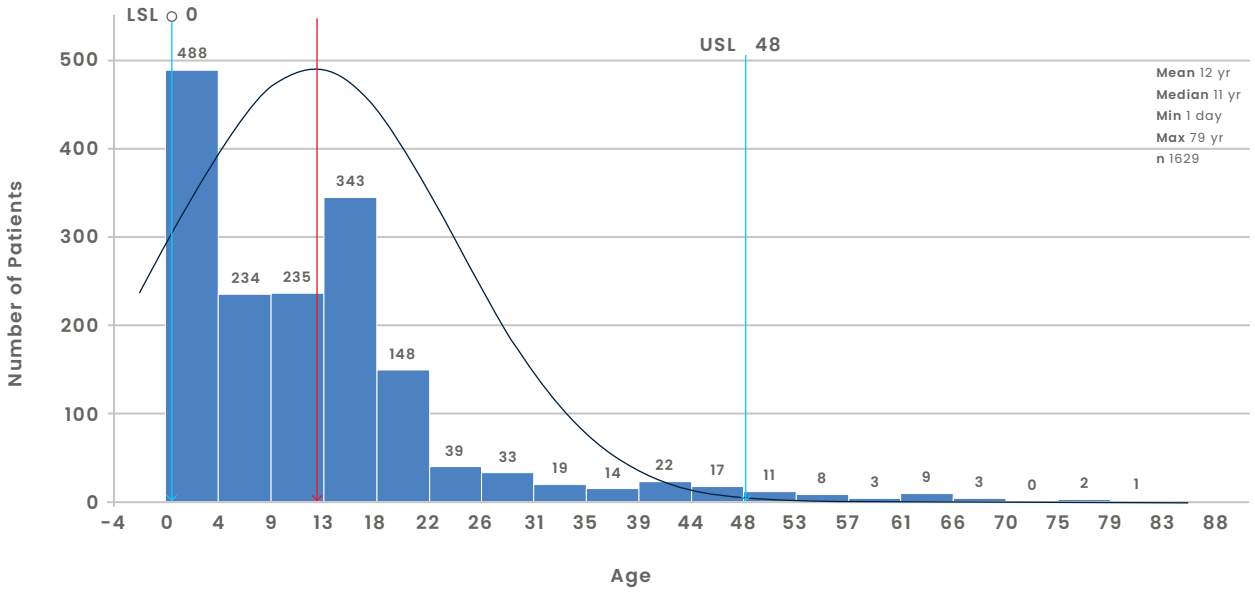
MAJOR COMPLICATION RATES (PER 100) BASED ON JAYARAM RISK SCORE (JAN 2018 – DEC 2023)



2023 AVERAGE RADIATION DOSE



INTERVENTIONAL CARDIOLOGY AGES IN YEARS



In 2023, the Interventional Cargiology team performed procedures on patients ranging in age from prenatal to 79 years old.

Second Opinion

Texas Children's Hospital®

For individuals grappling with a diagnosed cardiac condition or simply seeking reassurance on current management, we provide a Second Opinion Program within the Heart Center. We recognize that some cardiac cases can be intricate and multifaceted, and the decisions we make can profoundly influence the lives of our young patients and their families. Hence, this specialized program offers a second perspective and expert guidance.

During our first year with a formalized program, we have provided over 500 opinions throughout the U.S. and around the globe. Our program's multidisciplinary team includes experts from radiology, cardiac surgery, cardiac catheterization, cardiac genetics and heart failure/transplant. This dedicated team conducts a meticulous review of the clinical information and imaging provided prior to discussion.

Because of our well-defined processes, our turnaround times are markedly faster than all other opinion programs in the nation. We guarantee a 48-hour turnaround time for inpatient cases because we understand the difference that days can make in successful outcomes.

If you're seeking a comprehensive second opinion for one of your patients in the hospital or at home, contact our Second Opinion team at **832-822-7335** to initiate the process and data collection.

OUR OUTCOMES

500+	42	29
Cases reviewed	States	Countries

Quality Benchmarking and Partnerships

Texas Children's Hospital®

Quality Benchmarking and Partnerships

Texas Children's Hospital collaborates extensively with national registries across benchmarking, compliance, research and quality improvement programs. Through these partnerships, Texas Children's Heart Center compares performance metrics, ensures regulatory compliance, contributes to research initiatives and drives quality enhancement efforts.

- The Society of Thoracic Surgeons National Database Registry
- The Congenital Heart Surgeons' Society Data Center
- The Congenital Cardiac Anesthesia Society Database
- The National Pediatric Cardiology Quality Improvement Collaborative
- The National Cardiovascular Data Registry Improving Pediatric and Adult Congenital Treatment (NCDR-IMPACT)
- The Extracorporeal Life Support Organization (ELSO) Registry
- Pediatric Cardiac Critical Care Consortium (PC4) Registry
- The Pediatric Heart Transplant Society (PHTS) Registry
- Pediatric Acute Care Cardiology Collaborative (PAC3)
- The INTERMACS Pedimacs Registry
- The National Cardiovascular Data Registry, American College of Cardiology Quality Network (NCDR ACC QNET) Registry
- The Congenital Cardiac Catheterization Project Registry

2023 Highlights

Texas Children's Hospital®

2023 Highlights

Research, Residencies and Fellowships

The Heart Center at Texas Children's is renowned for its dedication to research aimed at improving the lives of children and adults with congenital heart disease. Their research efforts have led to many now-standard treatments and procedures, and they continue to develop and test new treatments to expand options for those with complex and rare conditions. From a combination of federal, philanthropic and industry related projects, our Heart Center Research funding for the year totaled $5.6 million.

The Baylor Pediatrics Residency Program is one of the largest Accreditation Council for Graduate Medical Education (ACGME) accredited programs in the country, with two main training sites – Texas Children's Hospital and the Harris Health system. There are four core pediatrics programs, Categorical Pediatrics, Global Health, Primary Care LEAD, and the Pediatric Physician Scientist Program, all of which are required to go through a cardiology rotation. Most of the combined programs, including Medicine-Pediatrics, Pediatrics-Medical Genetics, Child Neurology, and Neurodevelopmental Disabilities, will also attend a cardiology rotation. Regardless of their individual program, all residents assist with management of patients in our CPCU, where they are the front line provider for nights and evenings. We also offer electives in Pediatric Cardiology where residents help fellows and attendings provide cardiology consultations to the remainder of the hospital. Clinical electives are also offered in the CICU and residents interested in pursuing a cardiology fellowship will complete a Cardiology Capstone rotation.

Texas Children's is also the training site for the Baylor College of Medicine Cardiology Fellowship Program. Our ACGME Fellowship in Congenital Heart Surgery is one of only 16 programs in the US. The fellowship program includes three years of clinical and research training and allows for a fourth year of subspecialty training. On interviews conducted by the ACGME, the program scores above the national mean with 90% stating they would do it again and 95% of interviewees describing their experience as very positive.

Patient-Centered Promises

Our patient-centered promises approach ensures that every individual receives personalized care that aligns with their unique needs and preferences. We uphold a commitment to excellence in every aspect of care delivery.

In 2023, a multidisciplinary team within the Heart Center collaborated to enhance and re-energize our commitment to patient experience by developing a set of promises to keep patient care at the forefront. As a result, the Heart Center lives by the following patient-centered promises:

- We will create a safe environment.
- We will partner with patients and families and place them at the center of all care.
- We will be compassionate in all interactions.
- We will communicate clearly and transparently.

Clinical Pharmacy Services

Clinical pharmacists have specialized, advanced education and training that enables them to practice in a team-based, direct patient care environment. The CICU and CPCU at Texas Children's have access to a dedicated clinical pharmacy specialist who functions as the expert regarding selection and optimization of medical therapies to ensure evidence-based, high-quality care that meets the needs of each individual patient. Clinical pharmacists are also important to quality improvement and patient care. In research and scholarship activity, the development of evidence-based clinical guidelines and protocols, or new quality and performance improvement initiatives within the Heart Center, clinical pharmacists are an essential member of the team.

How the Milk Bank Optimizes Nutrition for Cardiac Patients

Additionally, Texas Children's provides easy access to the Milk Bank, which supplies breast milk for infants in our NICU and the Pavilion for Women. This state-of-the-art facility ensures that even our most vulnerable patients receive the nutrition they need for optimal growth and recovery. The Milk Bank prepares and delivers individualized doses of human milk for infants in the Heart Center daily. Nutritional components can be added to breast milk, based on the medical team's order, to help maximize nutritional outcomes. The Milk Bank also uses specialized equipment based on the patient's unique needs:

- A centrifuge is used to skim long-chain triglycerides from human milk for infants who have chylothorax, a condition that can occur after cardiac surgery.
- Near-infrared spectrometers enable us to test the macronutrients in breast milk to determine the exact caloric value, so the medical team can add extra nutrition specific to the infant's needs.

Neurodevelopmental Care

At Texas Children's Hospital, our neurodevelopmental team rounds highlight the importance of addressing both medical and developmental needs. Through weekly rounds, our multidisciplinary team engages with parents to assess their child's progress and discuss strategies for growth. In 2023, we assisted over 120 families, ensuring tailored care for each child. With dedicated experts and innovative approaches, we empower families to actively participate in their child's journey, leading to increased engagement and satisfaction.

Upon discharge from Texas Children's, our Cardiac Developmental Outcomes Program ensures a smooth transition to outpatient care, emphasizing comprehensive support for every family.

NG Free Initiative

Our feeding progression program supports patients in their journey toward improved nutrition and overall health. By focusing on gradual advancements in feeding practices, we empower patients and families to achieve positive outcomes. Malnutrition and oral feeding difficulties are common problems for hospitalized infants with congenital heart disease and often contribute to a prolonged hospitalization. While there is no consensus on when the nasogastric tube (NG) should be removed, evidence shows that standardizing the threshold for NG removal may decrease length of stay.

The NG Free Initiative was launched in our Heart Center in January 2023. Several of our physicians have worked to establish the threshold for NG removal at 60% of feeding volume. Upon reaching the goal of 60% of an infant's feeding volume through oral feeding, the NG was removed and they were allowed to feed spontaneously. The 1-year experience revealed that infants were highly successful at oral feeding when the NG was removed at this threshold, and very few required NG replacement. The most notable aspect was that 33% of these infants were discharged within 3 days of NG removal, supporting the hypothesis that NG dependence was the last barrier to discharge and that timely NG removal may lead to reduced length of stay.

Books@Heart

Books@Heart is a multidisciplinary inpatient early childhood literacy program founded in February 2021. The program aims to improve inpatient neurodevelopmental care and promote language development, parent–child bonding and family experience through parental reading.

In 2023, 826 children and families have received 1,273 books, been read to 12,670 times and received 400+ medals and 250+ reading trophies. In a survey of participating families, 100% of responding families felt that reading to their child helped them feel more connected and engaged in their care, and 95% felt it improved their hospital experience. The percentage of families reading to their child 3 times a week or more increased from 45% before the program to 84% after the program.

TEXAS CHILDREN'S HEART CENTER BOOKS@HEART

Initial

- All infants ≤1 year old admitted to Texas Children's Heart Center — Books and reading guidance at admission and regular intervals (newborn, 2 months, 4 months, 6 months, 9 months and 12 months)
- Reading calendar and stickers given — self-tracking of reading sessions by parents/nurses/therapists — everyone is invited to read to the babies!
- Speech/Language Pathology consultation for language development for all infants

Follow-Up

- Weekly sticker/session count:
  14 sessions = medal, 21 sessions = trophy, daily reading for 1 month = bonus book
- English, Spanish and bilingual books available
- Bookmarks (English and Spanish) with reading guidance and encouragement, as well as program details given to parents
- Program materials available in book cart and book boxes throughout ICU and ward
- Weekly check-in with the family by Books@Heart team

Contact Us

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Your loved one deserves the best care, and at Texas Children's Heart Center we're committed to delivering it. Visit our website, **texaschildrens.org/heart** and explore our educational resources or contact our team to learn more about how we can make a difference.

Texas Children's Hospital®

REFERRALS

To refer a patient to Texas Children's Heart Center, visit **texaschildrens.org/refer.**

For questions about referrals, please email **providerconnect@texaschildrens.org** or call **832-824-2273**.

ADDRESS

Texas Children's Hospital

6621 Fannin St.

Houston, TX 77030

HEART CENTER SECOND OPINIONS

If you're a patient or guardian seeking a second opinion on a child at home or in the hospital, call **832-822-7335** to get started.

CONTACT US

832-824-2273

providerconnect@texaschildrens.org

texaschildrens.org/heart

Texas Children's Hospital®

texaschildrens.org/heartoutcomes