



# **Snapshot: Quality Initiatives and Program Outcomes**



**The Heart Center participates in the following national quality and safety initiatives:**

National Pediatric Cardiology Quality Improvement Collaborative, a Joint Council on Congenital Heart Disease Initiative (JCCHD)

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Participation in national databases, including STS Congenital Heart Surgery Database, NACHRI and UNOS

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Surgeon participation on OptumHealth's Centers of Excellence Advisory Panel

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Interventional Cardiology Program, an international charter member of the Congenital Cardiovascular Interventional Study Consortium and one of only six centers in the nation participating in the Congenital Cardiac Catheterization Outcomes project

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One of 12 Adult Congenital Heart Association – Alliance for Adult Research in Congenital Cardiology Collaborative centers sponsored by the National Institutes of Health

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Aetna Institute of Excellence in Pediatric Congenital Heart Surgery

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CIGNA LifeSOURCE Transplant Programs of Excellence

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Pediatric Heart Transplant Study Group

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Ohio Solid Organ Transplant Consortium

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Interventional Cardiology participation in the IMPACT registry (Improving Pediatric and Adult Congenital Treatment), C3PO (Congenital Cardiac Catheterization Outcomes Project) one of eight participating centers and MAGIC registries

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American College of Cardiology, Adult Congenital and Pediatric Cardiology Section – Noninvasive Imaging, Adult Congenital Heart Disease, Ambulatory Cardiology Quality Metrics Work Groups

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American College of Cardiology – Adult Congenital Pediatric Cardiology Committee Council members

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Chairman Appointment of the Joint Council on Congenital Heart Disease

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**Quality and Safety: A Snapshot**

The Heart Center's multidisciplinary team shares a mission — to deliver safe, effective, timely, efficient and equitable care, resulting in optimal outcomes. We are out in front and by your side. Our success to date has been achieved due to our expertise, our clinical protocols and our case-review process. At every stage along the continuum of care, from entry to release to follow-up care at home, our case-review process ensures the right treatment is pursued for your patient's long-term health.

As leaders in pediatric care, we are committed to all quality and safety initiatives, including peer review, clinical outcomes review, variance analysis, performance appraisals and other techniques. The Heart Center staff, for example, completes Nationwide Children's "Zero Hero" training, an institution-wide safety initiative designed to reduce instances of Preventable Harm to zero.

Initiatives and measurements are in place for all areas, including cardiac critical care and the step-down unit, interventional cardiology, and surgery. Results to date are reported on the following pages.

**Timothy F. Feltes, MD**  
Co-Director, The Heart Center  
Chief of Pediatric Cardiology  
Timothy.Feltes@NationwideChildrens.org

**Mark Galantowicz, MD**  
Co-Director, The Heart Center  
Chief of Pediatric Cardiothoracic Surgery  
Mark.Galantowicz@NationwideChildrens.org

**John P. Cheatham, MD**  
Co-Director, The Heart Center  
Director, Cardiac Catheterization  
& Interventional Therapy  
John.Cheatham@NationwideChildrens.org

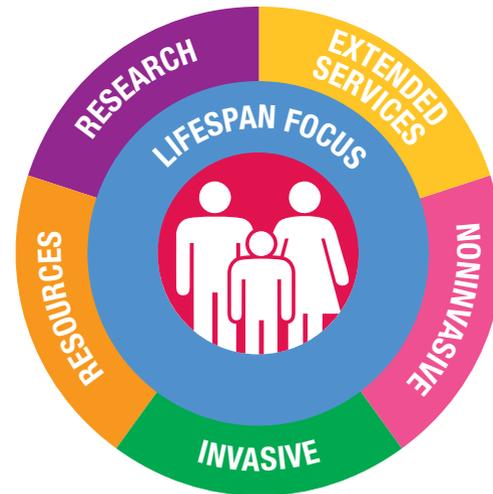


Ranked Top 5 in the country as one of the America's best for cardiology and heart surgery by *U.S. News & World Report*.

## The Heart Center at Nationwide Children's Hospital: Comprehensive, Innovative, Compassionate care

### About The Heart Center

The Heart Center at Nationwide Children's Hospital has earned an international reputation for innovation and forward thinking. From the creation of the world's first Hybrid Cardiac Catheterization Suites and the first Hybrid Cardiac Operating Suite in the nation, to the development of a comprehensive adolescent and adult congenital heart disease program, The Heart Center team is constantly looking to improve care options for all patients, from infants to adults. This dedicated group of cardiologists, surgeons, anesthesiologists, researchers, intensivists, advance practice nurses, technologists and clinical staff is "hands on" in determining the course of care for our patients.



#### ■ Lifespan Focus

- Fetal
- Infant
- Child/Adolescent
- Adult

#### ■ Research

- Center for Cardiovascular & Pulmonary Research
- Translational Research
- Cardiovascular Genetics
- Multiple FDA Sponsored Device Trials & Outcomes Research

#### ■ Resources

- Best-in-Class Web Site
- Welcome Center Concierge Services
- Coordination of Care through Nurse Navigator

#### ■ Invasive

- Cardiothoracic Surgery
- Hybrid Procedures
- Interventional Cardiology
- Heart Transplantation
- Lung and Heart-Lung Transplantation
- Pacemaker and Ablation Therapies
- Adult Congenital Procedures

#### ■ Noninvasive

- Specialized Cardiac Diagnostics & Imaging
- Heart Failure Program
- Electrophysiology
- Specialized Cardiac Inpatient Units

#### ■ Extended Services

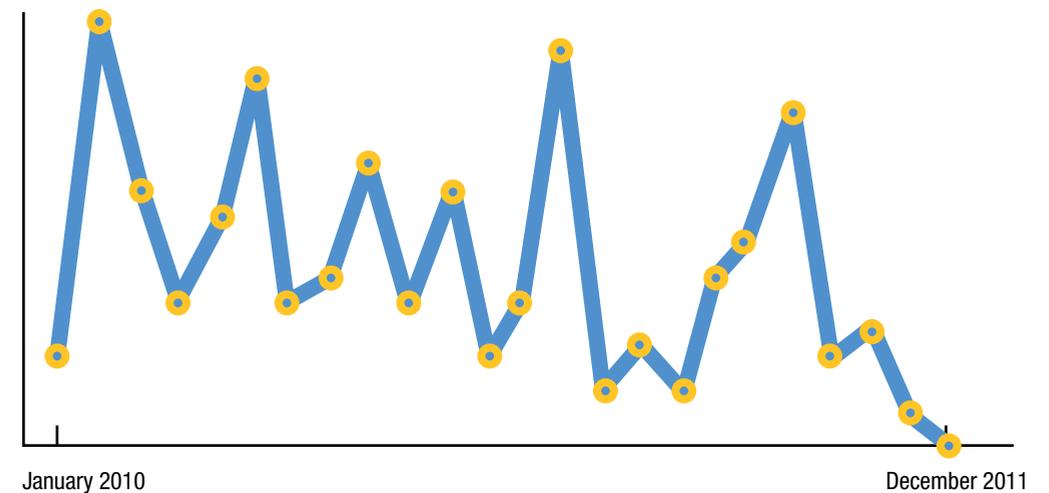
- Exercise Physiology
- Cardiac Rehabilitation
- Home Monitoring
- 11 Regional Outreach Clinics
- Cardiology-Based Telemedicine & Education
- Adolescent Transition Program
- Inpatient & Outpatient EMR
- Family Support Groups
- Support for Community Physicians
- Continuing Medical Education for Community Physicians

## We've reduced our Preventable Harm Index by 35 percent. And we're aiming for zero.

As an institution, we have developed the Preventable Harm Index as a tool to provide and track a combination of over 40 safety measures to reduce preventable harm, with a goal of reducing instances of preventable harm to zero.

In 2009, we began a safety culture transformation called "Zero Hero". Our goal was to educate and provide safety behavior tools to reduce Preventable Harm Index (PHI) throughout the hospital. PHI includes an aggregate of hospital-acquired infections (CLABSI; VAP; SSI; Ca-UTI), adverse drug events (severity 4-9), codes outside of the ICU, unplanned returns to OR within seven days, serious falls, pressure ulcers (stage 2-4) and serious safety events. Our goal is to reduce the PHI to zero by December 31, 2013. In addition, our safety culture has been transformed, demonstrated by the improvement in our teamwork and safety metrics on the Pascal safety attitudes questionnaire.

### Preventable Harm Index



### Preventable Harm Definition

Nationwide Children's Hospital's Preventable Harm Index is a classification system designed to track similar occurrences with the goal to eliminate each class of occurrence. We have chosen to classify these occurrences as "harm" and "preventable" as a call to action for Nationwide Children's health care community. It is designed to change the thinking that these occurrences are expected complications and, to instead, see them as a challenge that we need to work to reduce and to ultimately eliminate. Designation of "Preventable Harm" does not mean the occurrence in question was necessarily preventable at the time, which is often impossible to determine. We, instead, focus on the opportunity to improve patient care and, therefore, define harm as "preventable" in order to create the opportunity to eliminate classes of "harm" and get to ZERO.

## Cardiac Critical Care and Step-Down Unit

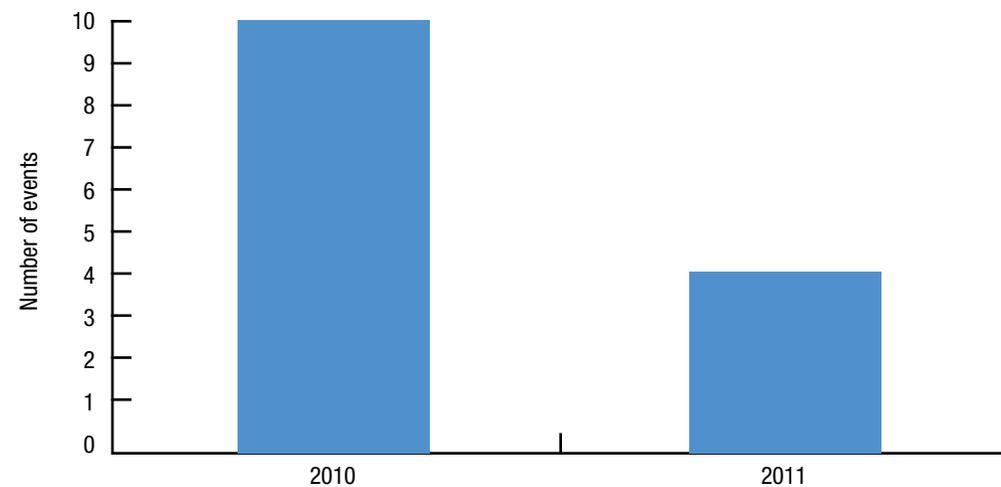
Our dedicated cardiothoracic intensive care unit (CTICU) and separate cardiac step-down unit are staffed 24 hours a day, 7 days a week by intensivists, CTICU APNs, attendings, nurses, respiratory therapists and other specialists, for complete coverage. These units were designed to be the optimum environment to care for the complex and unique needs of our cardiac patients. We have grown to 20 beds in our CTICU and 24 beds in our step-down unit. Our team is specially trained and equipped to provide the highest level of care to patients of all ages, from neonates to adults.

**In 2011, we reduced bloodstream infections by 60 percent.**

To eliminate bacteria in the bloodstream, we have focused on reducing Catheter Line Associated Blood Stream Infections (CLABSI).

The inpatient-unit team at Nationwide Children's has been focused on reducing CLABSI infections for several years. Much of the improvement is attributed to their compliance with the insertion and maintenance bundles developed through the National Association of Children's Hospitals and Related Institutions (NACHRI) national collaborative. Through the team's initiative, these bundles were implemented easily and naturally.

**Catheter Line Associated Bloodstream Infections**



**In 2011, we significantly outperformed the Centers for Disease Control and Prevention national average.**

### CTICU

2011 NCH = .9 per 1,000 catheter days

2011 CDC Pediatric Cardiothoracic = 2.1 per 1,000 catheter days

### Step-Down Unit

2011 NCH = 1.6 per 1,000 catheter days

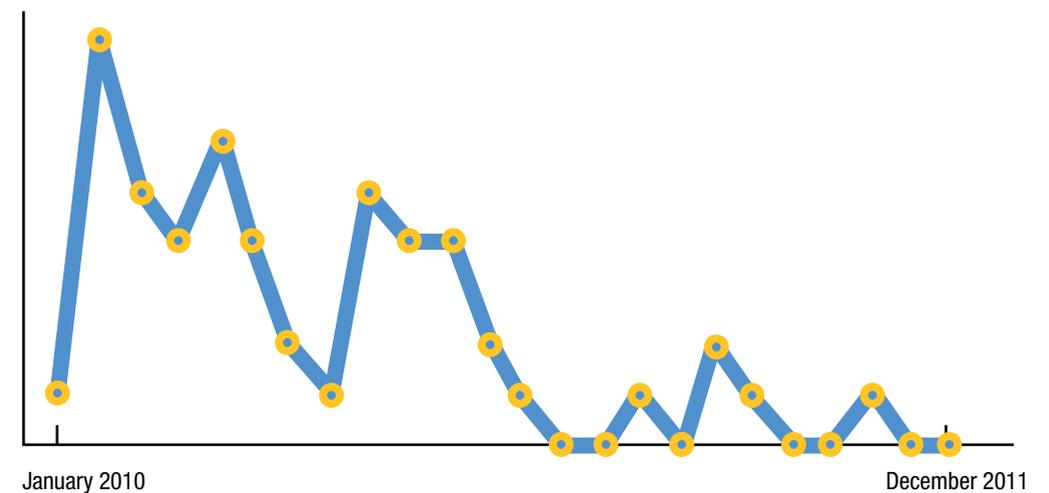
2011 CDC Pediatric Step-Down = 1.0 per 1,000 catheter days

**With new safety checks, we reduced Adverse Drug Events by 91 percent.**

An Adverse Drug Event (ADE) is an injury resulting from the use of a drug. Our goal is to avoid harm caused by a drug, such as overdoses, dose reductions, or a discontinuation of drug therapy.

The Heart Center's most successful project of 2011 resulted in the reduction of ADEs, due to the unit teams' efforts to identify causes and change processes. Focusing on events that caused harm to the patient, CTICU was able to reduce ADEs by 91 percent from the 2010 total. The implementation of the safety systems checklist, and its accompanying process, was the key intervention that changed the outcome. In this process, infused medications, lines and connections are double-checked from the bag to the patient during every shift change. The cardiac step-down unit was also successful in reducing ADEs by 70 percent during the same time period. Both units are making significant strides in reducing verbal orders, where higher risks of errors exist.

**Adverse Drug Events (Severity 4-9)**



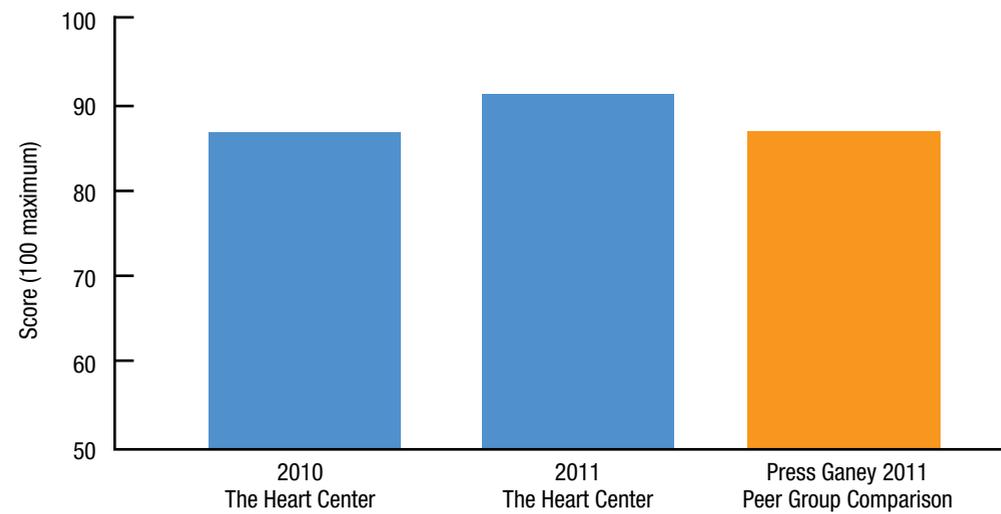
**Our inpatient satisfaction continues to grow every year.**

Nationwide Children’s utilizes the nationally recognized independent research organization, Press Ganey, to obtain patient and family feedback on inpatient services.

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We survey all of our inpatients in order to continue to learn, grow and provide two-way communication between our staff and our patients. Our ultimate goal is to provide an environment in which our patients and families feel comfortable and heal.

**Inpatient Satisfaction**



**We’ve not only standardized our OR to CTICU handoffs, but also improved them.**

Nationwide Children’s has developed a handoff standard, in which a patient’s name, description of care, pertinent past history, plan or procedure, as well as any precautions (the “5Ps”), are presented.

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Effective patient handoffs are an important step in the care continuum. The Heart Center has developed a customized handoff specifically for the OR to CTICU handoff, in which a team of OR staff escorts the patient to the CTICU, where the anesthesiologist from the case facilitates the handoff by the patient’s bedside, while the CTICU APN records all information on a standard form and posts it by the bedside. This process ensures safety, accurate communication, and a seamless continuum of care for our patients.



## Interventional Cardiology

Interventional cardiology is an internally recognized program that provides a full spectrum of diagnostic and interventional cardiac catheterization procedures. We offer state-of-the-art technology including two custom-built Hybrid Cardiac Catheterization Suites and a Hybrid Operating Suite equipped to provide for the interventional treatment of all patients (from a 700g premature infant to an 80-year-old adult) with congenital and acquired heart disease. This includes interventional transcatheter therapy of adults with congenital or structural heart disease.

### We've cut the annual median radiation dosage in half.

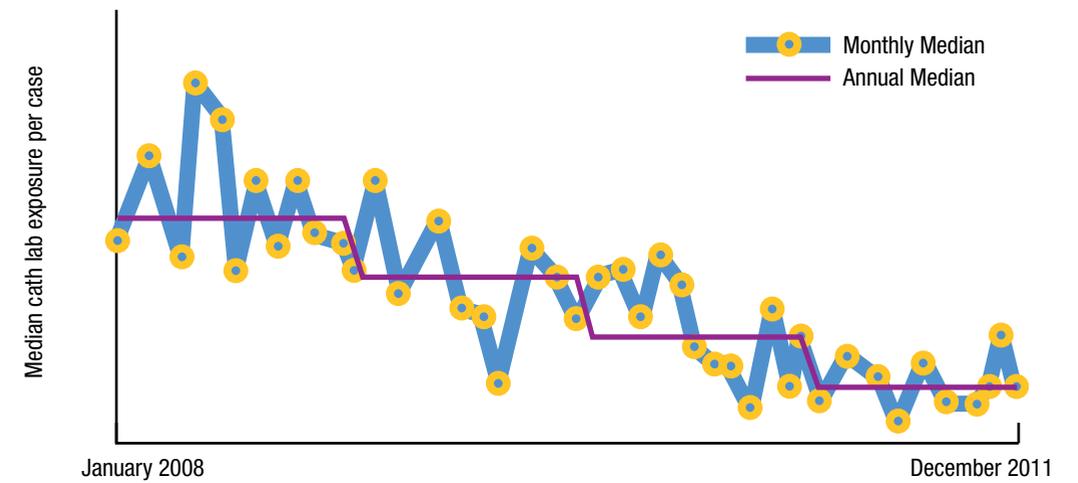
To help lower the risk and amounts of exposure of radiation that our patients could potentially absorb, we carefully manage the dosage on a case-by-case basis to keep that exposure as low as possible.

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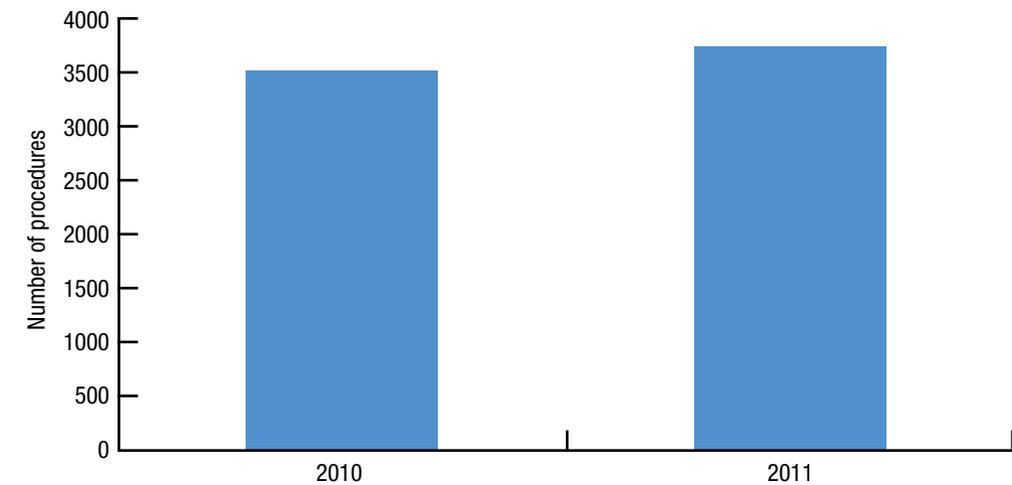
In all radiation-required procedures, the benefit from the procedure should outweigh the potential risk of exposure. Dose management requires careful consideration during the procedure. The Cath Lab always strives to keep doses As Low As Reasonably Achievable (ALARA). ALARA reminds us to use the lowest possible dose while completing the procedure safely. "Step Lightly" is an initiative from the Alliance for Radiation Safety in Pediatric Imaging reminding us to always use pediatric-sized doses and to "Step Lightly" on the fluoroscopy pedal.

In The Heart Center, our aim in 2011 was to attain a median dose exposure per case that was  $\leq 95$  percent of the median dose of 374 mGy from the previous two years. The Cath Lab surpassed this objective by achieving a 2011 median case dosage of 221 mGy, which was 59 percent of the median case dosage in 2009-10. From January 2008 to December 2011, the Cath Lab has reduced the annual median dose of radiation by approximately 50 percent.

Radiation Dosage



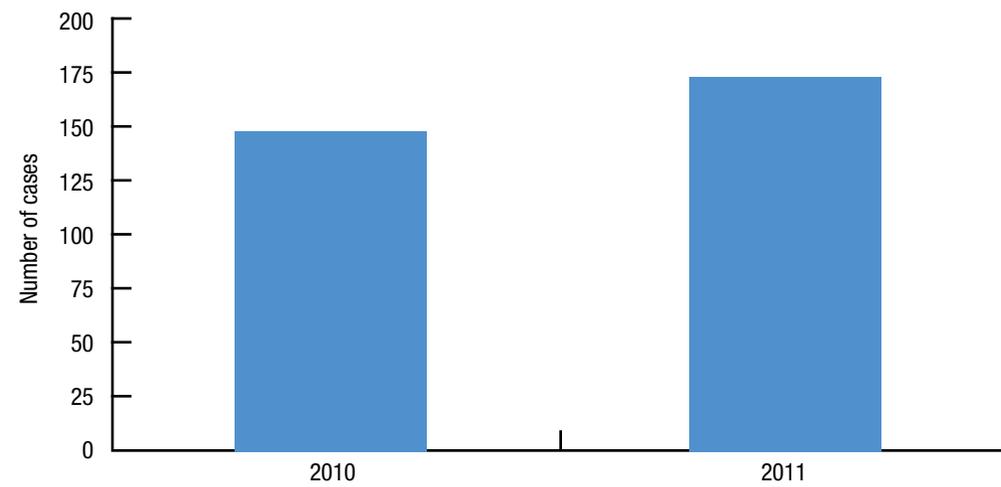
Volume for Total Interventional Cardiology Procedures



**Our Electrophysiology Program provides a full spectrum of care to a growing number of patients.**

We offer advanced, coordinated care – from the rapid turnover of EKG readings to sophisticated device implantation designed to give patients with congenital heart disease greater freedom and quality of life. The key to our program’s success is the seamless nature of the care provided across all disciplines of cardiology. Here, patients benefit from a team of specialists who are equipped to provide comprehensive diagnostic, therapeutic and surgical services within a framework that offers an unparalleled continuum of care.

**Volume for Interventional Electrophysiology Cases**



## Surgery

The Cardiothoracic Surgery Program is dedicated to the treatment of all patients, from children to adults, with congenital and acquired heart defects ranging from the most straightforward to the extremely complex. With extensive clinical, diagnostic and surgical capabilities, our program is equipped and staffed to address all aspects of heart failure and transplant care, including heart, heart-lung and lung transplant services. Our nationally ranked program, which performs over 500 procedures a year, continues to pioneer novel treatment strategies, including hybrid procedures, blood conservation, mechanical assist devices and use of minimally invasive techniques to improve long-term quality of life.

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According to the latest Society of Thoracic Surgery (STS) database, The Heart Center at Nationwide Children's outcomes rank among the best among high-volume centers for both children and adults undergoing congenital heart surgery. The Heart Center's 2011 mortality rate for children was 1.9% and for adults 0%, while the 4-year (2008–2011) average for children was 0.5% and adults 0.8%.

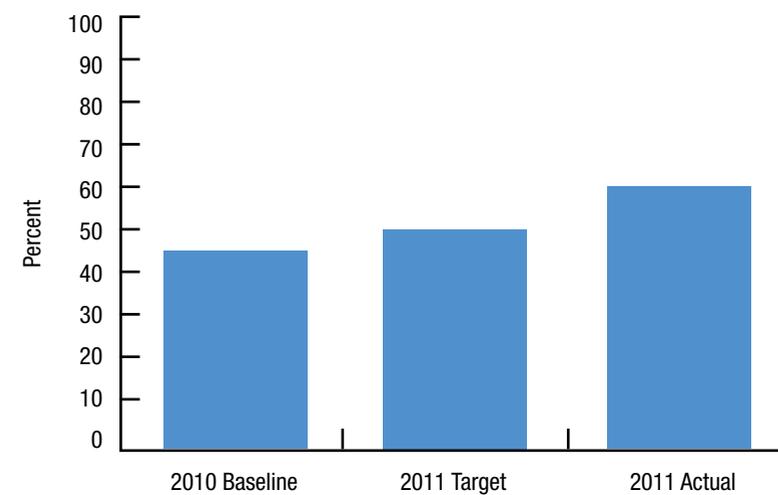
### Mortality Rates for RACHS 1, 2, 3, 4, 5 & 6

	2010		2011	
	Patients	Deaths at 30 days	Patients	Deaths at 30 days
RACHS 1	14	0	30	1
RACHS 2	84	1	92	1
RACHS 3	96	6	104	8
RACHS 4	29	0	25	1
RACHS 5 & 6	8	1	17	4

### Our bloodless, open-heart surgery target was 50%. And we exceeded it.

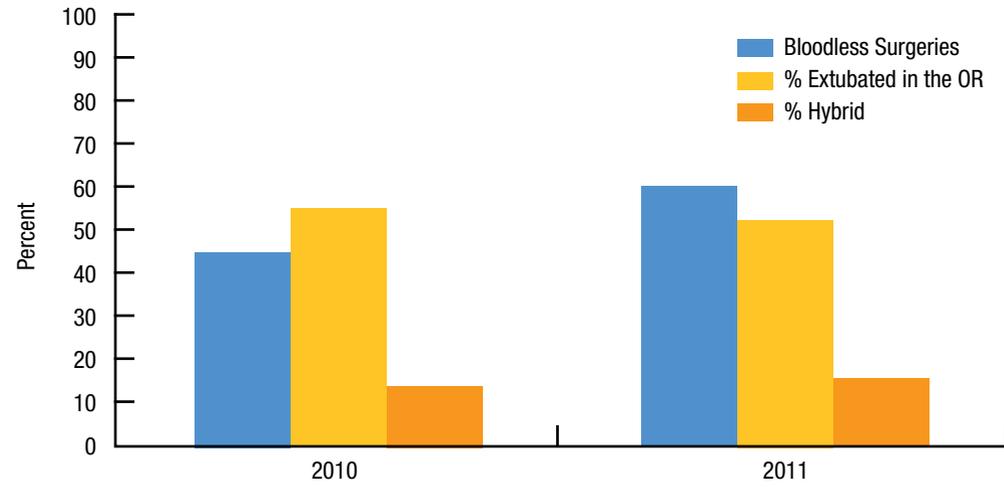
With the goal of limiting or eliminating blood transfusion, our comprehensive team of peri-operative nurses, cardiologists, intensivists, anesthesiologists and perfusionists work together, and have the expertise to deliver the latest advances, developments, standards and non-blood therapies. As pioneers in bloodless surgery, we accept the responsibility for setting standards and teaching others to the benefit of all patients everywhere.

Bloodless Surgery Rate



**A multidisciplinary team delivering tailored care leads to better cardiothoracic surgical outcomes.**

**Cardiothoracic Surgery Outcomes**



**Heart Transplant Outcomes**

93% 30-day survival (expected national average 92%)

88% 1-year survival (expected national average 84%)

**Lung Transplant Outcomes**

92.4% 1- and 2-year survival (expected national average 77%)



## Physician Referral Services

The goal is to provide your patients with the same outstanding care and compassion they receive at your practice. Please contact us at your convenience.

Call (614) 722-6200, (877) 722-6220, or visit [NationwideChildrens.org/HeartCenter](http://NationwideChildrens.org/HeartCenter).

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## Physician Direct Connect Line

We offer a 24-hour physician/provider consult-transfer center, managed by experienced RNs who can assist in caring for your patients by being a single point of contact for numerous requests, including transfers, local and regional referrals, emergency referrals, direct admissions and physician-to-physician consultations within minutes of your call.

Call (614) 355-0221 or (877) 355-0221.

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## Arranging a Consult

To submit an online form to central scheduling or to request an appointment, visit [NationwideChildrens.org/HeartCenter](http://NationwideChildrens.org/HeartCenter).

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## Welcome Center Services

Welcome Center Services are available to help support the unique needs of patients and families arriving from around the world.

Call (614) 355-9865 or (800) 792-8401.





The Heart Center  
700 Children's Drive  
Columbus, Ohio 43205-2696  
(614) 722-6200  
[NationwideChildrens.org/HeartCenter](http://NationwideChildrens.org/HeartCenter)

