

Spectrum Health Helen DeVos Children's Hospital

# Karl & Patricia Betz Congenital Heart Center

One Center for Exceptional,  
Lifelong Cardiac Care

ISAIAH LUNSFORD →

Fontan Avoidance Program patient.

Scan QR code to read about Isaiah  
and other patients.





**Karl & Patricia Betz Congenital Heart Center** is committed to providing personalized, compassionate care through innovative treatments and procedures.



## WELCOME

The Karl & Patricia Betz Congenital Heart Center at Helen DeVos Children's Hospital specializes in diagnosing and treating congenital heart disease (CHD) for patients of any age. Our dedicated and diverse specialists are an expert team capable of managing complex conditions only treated in the most advanced centers.

The outcomes reported in this document are based on the Society of Thoracic Surgeons (STS) database, which is a quality improvement and patient safety initiative among cardiothoracic surgeons. We are proud to be part of this initiative, and to participate in the public and transparent reporting of our outcomes. Our surgical data submitted to the STS for its latest report (July 2017 to June 2020) received the maximum 3 star rating. These outcomes are particularly evident in the highest-risk categories.

In addition to STS, we are part of the Pediatric Critical Care Consortium, which gives in-time feedback on cardiac intensive care performance and monitors the performance of cardiac intervention and catheters through the national IMPACT registry. The safety of our hospitalized patients is paramount, and they are supported by a hospital that is nationally ranked in several pediatric specialties in the *U.S. News & World Report*.

In this brochure, you will also find some of our recent treatment innovations using 3D visualization, 3D printing and 3D prototyping. Using this approach allows us to treat patients who were previously felt to be beyond further surgical or interventional help.

Integrated care is at the core of what we do. Our teams work collaboratively to diagnose and follow up with patients of all ages from fetus to old age. All levels of patient care are guided by a single team of specialists who deliver care at our main location in Grand Rapids as well as various outreach locations in the state of Michigan using in-person and telehealth care delivery methods.

In summary, our Congenital Heart Center is:

- Committed to continuous process improvement involving patient safety, quality initiatives and patient outcome analysis.
- Dedicated to precision interventions and surgery guided by advanced cardiac imaging and the latest innovations in 3D visualization and 3D printing technologies.
- Nationally recognized for treating both pediatric and adult patients with congenital heart disease to the highest standard, providing a lifelong medical home that offers the best outcomes.

We invite you to explore this brochure and learn more about who we are and what we do.



**JOSEPH VETTUKATTIL, MD**  
Medical Director,  
Congenital Heart Center



**MARCUS HAW, MD**  
Surgical Director,  
Congenital Heart Center



Our dedicated team of subspecialists for pediatric, teen and adult congenital heart patients focuses on making the impossible possible.

Our services include:

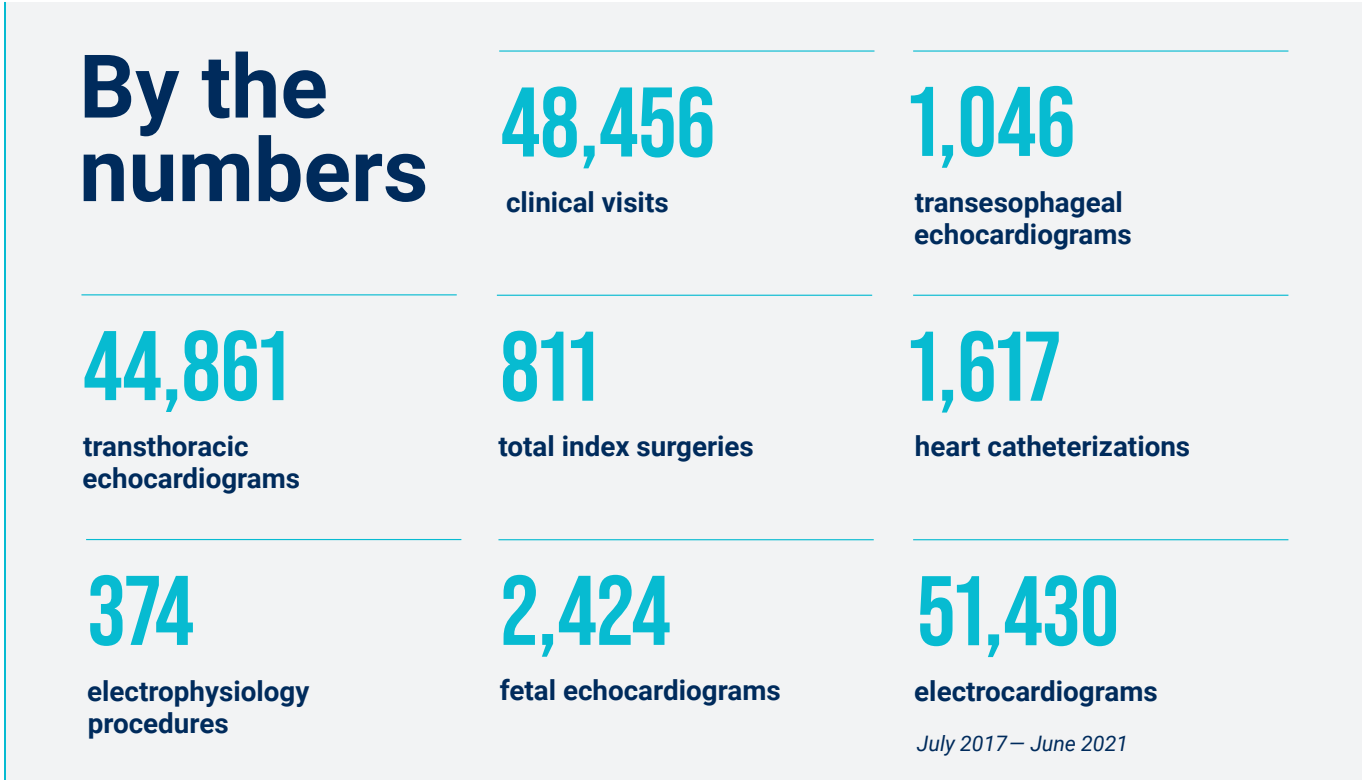
- Cardiac surgery
- Cardiac critical care and advanced therapies
- Cardiac catheterization
  - Transcatheter therapies
  - Custom intracardiac device development
  - Transcatheter valve placement
- Electrophysiology
  - Implantable devices and pacemakers
  - Transcatheter ablation
  - Exercise testing
  - Tilt testing
- Imaging
  - Echocardiography
  - Cardiac CT
  - Cardiac MRI
  - 3D imaging and printing

Our programs include:

- Fetal cardiology
- Teen transition program
- Adult congenital heart disease
- Pulmonary hypertension
- Cardiogenomics
- Fontan Avoidance
- Single ventricle neurodevelopmental screening
- Post COVID-19 sequelae
- Pediatric cardiology training program

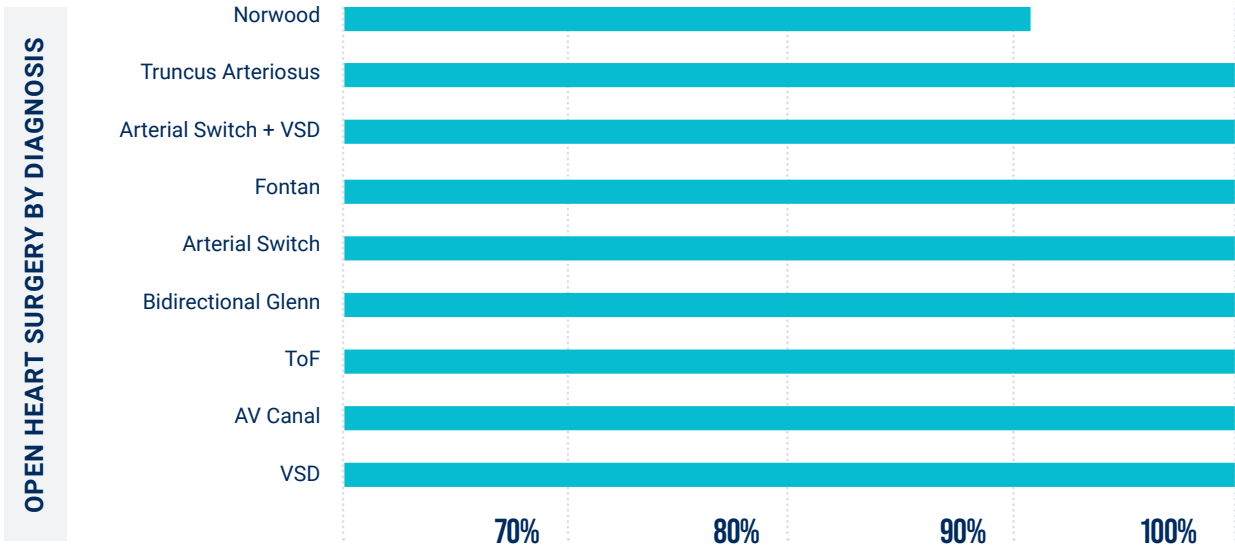


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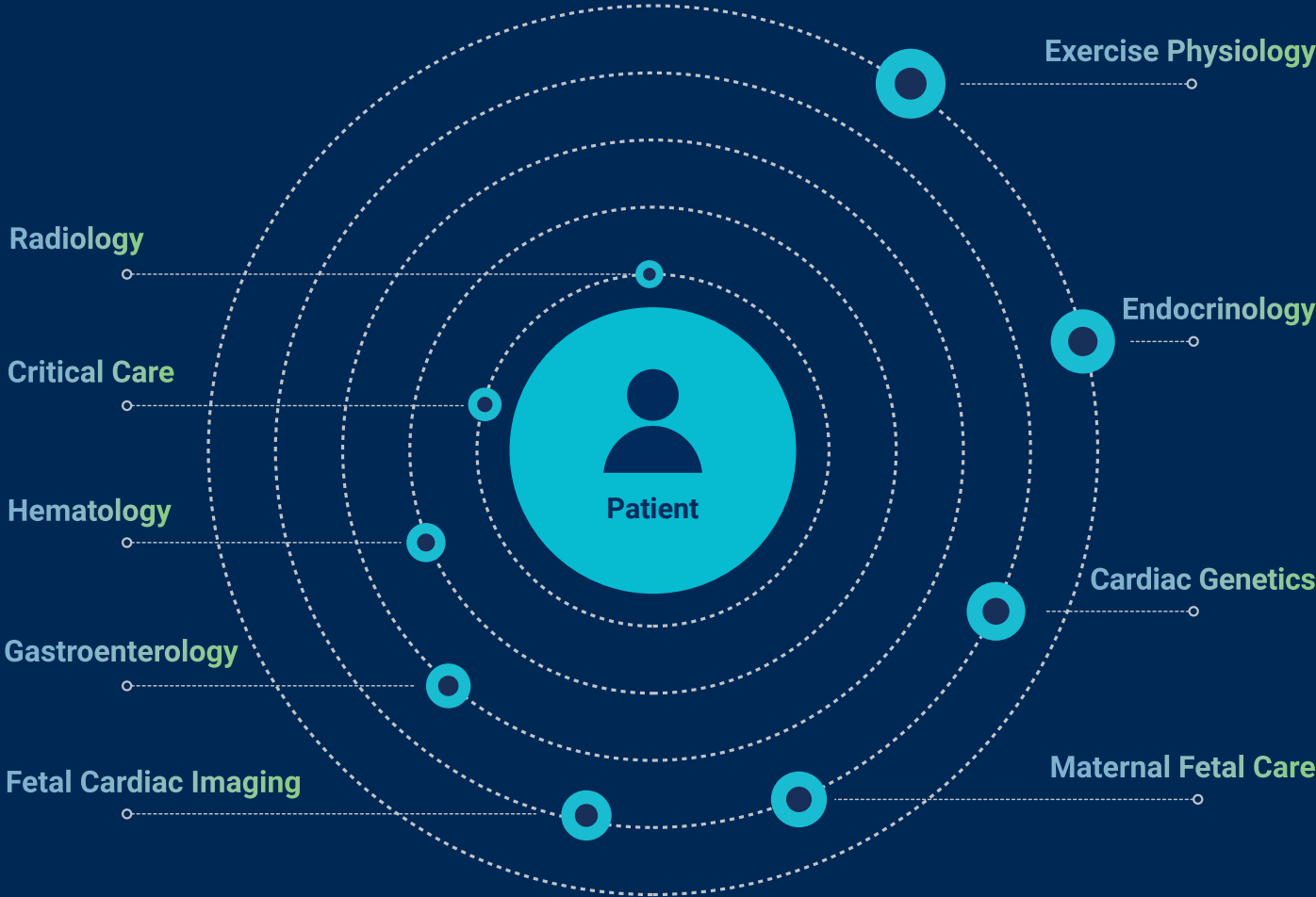
Helen DeVos Children's Hospital Surgical Survival Rate\* (July 2015 – June 2019)

This table shows surgical survival rates at Helen DeVos Children's Hospital for increasing levels of complexity (not adjusted for comorbidities).



# Integrated care

We act as one team, with families at the heart of what we do.



# Serving patients throughout their lifetime



- Our care often begins with the Fetal Medicine and Maternal Fetal Medicine programs, where precise in utero detection of congenital heart disease is what begins a strong and lifelong relationship between the family and their cardiac team.
- We are proud to offer the only pediatric cardiac intensive care unit in West Michigan, where transitions to inpatient treatment are seamless.
- We support teens and young adults as they transition to adult congenital services with a program that includes psychological support, counseling and education.
- Care continues in our adult CHD program, which was one of the first in the country to gain accreditation. It includes on-site advanced heart failure therapies and mechanical support. We provide high-risk pregnancy support and a full complement of surgical and transcatheter implantable valves and devices.
- We work closely with all subspecialty services to coordinate visits. This approach creates clear and effective communication and efficiencies of care.

“

The Maternal Fetal Medicine team at Spectrum Health strives to provide seamless care from uterine life to newborn life. If a baby is diagnosed with a birth defect, we immediately partner with the experts at the Congenital Heart Center to ensure that lifetime care begins as quickly as possible.”

DAVID COLUMBO, MD  
DIVISION CHIEF, MATERNAL FETAL MEDICINE

# Innovation and device development

“We are using 3D printing with materials that mimic the texture and pliability of real heart tissue to create devices specifically made for patients with complex congenital heart conditions. Through research and discovery, we are at the forefront of the latest in pediatric cardiac care.”

JOSEPH VETTUKATTIL, MD



Beyond Fontan. “Our advancements are proving successful at finding alternate surgical solutions to complex CHD, utilizing advanced imaging and collaborative planning,” says **Marcus Haw, MD**, surgical director of Karl & Patricia Betz Congenital Heart Center at Helen DeVos Children’s Hospital.



**Joseph Vettukattil, MD**, medical director of Karl & Patricia Betz Congenital Heart Center at Helen DeVos Children’s Hospital and inventor of the AFR and other listed devices. Joseph continues to push the boundaries of what is possible.

## Custom 3D Printed Devices

- Transcatheter Fontan device
- Sinus Venosus Atrial Septal Defect (VASD) device
- Post-Infarct Ventricular Septal Defect (VSD) device
- Vascular Plug for Closing Aneurysm of Coronary Vein Graft
- Atrial Flow Regulator (AFR) device
- Fenestrated Atrial Septal Defect (FASD)

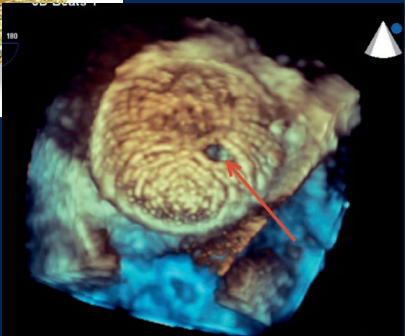
Hundreds of the devices have been placed worldwide and increasingly in the U.S. as we approach full FDA approval.



The Occlutech® Atrial Flow Regulator (AFR) patented and first in human implantation at our center.



First multimodality image integrated 3D printed model in the world.



Postdeployment 3D TEE of the FASD device in the interatrial septum with patent fenestration.



Scan code to learn more about each device listed here.

# Education and research

- For the team at the Karl & Patricia Betz Congenital Heart Center of HDVCH, it is not enough to merely provide the best clinical care. We are driven to push the frontiers of pediatric cardiology, challenging conventional wisdom and breaking barriers.
- Our extensive research includes extensive publications, book chapters, media stories, national and international meetings and even a TEDx talk.
- Collaborative research is ongoing and in diverse cardiac topics with Grand Valley State University, Van Andel Research Institute, Michigan State University, Michigan Technological University and the Spectrum Health Frederik Meijer Heart & Vascular Institute.
- Developing the next generation of leaders in pediatric cardiology highlights our dedication to excellence in teaching.
- We train pediatric cardiology fellows and pediatric residents in partnership with Michigan State University College of Human Medicine.
- Classroom teaching is supplemented with expert clinical training in ultrasound, exercise physiology and cardiovascular technology.

# Our network

Patient-centered care drives us to meet our patients closer to where they live, while still providing the same exceptional care.

## Locations

- ♥ Main Hospital
- 📍 Outreach Clinic
- 📍 Other practices

**Helen DeVos Children's Hospital  
Congenital Heart Center**  
25 Michigan Street NE, Suite 4200  
Grand Rapids, MI 49503

**Holland**  
588 East Lakewood Boulevard, First Floor  
Holland, MI 49424

**Lansing**  
3960 Patient Care Drive, Suite 113  
Lansing, MI 48911

**Mt. Pleasant**  
1205 South Mission Street, Suite 4  
Mount Pleasant, MI 48858

**Muskegon**  
2009 Holton Road  
Muskegon, MI 49445

**Owosso**  
802 West King Street, Suite K, Floor 2  
Owosso, MI 48867

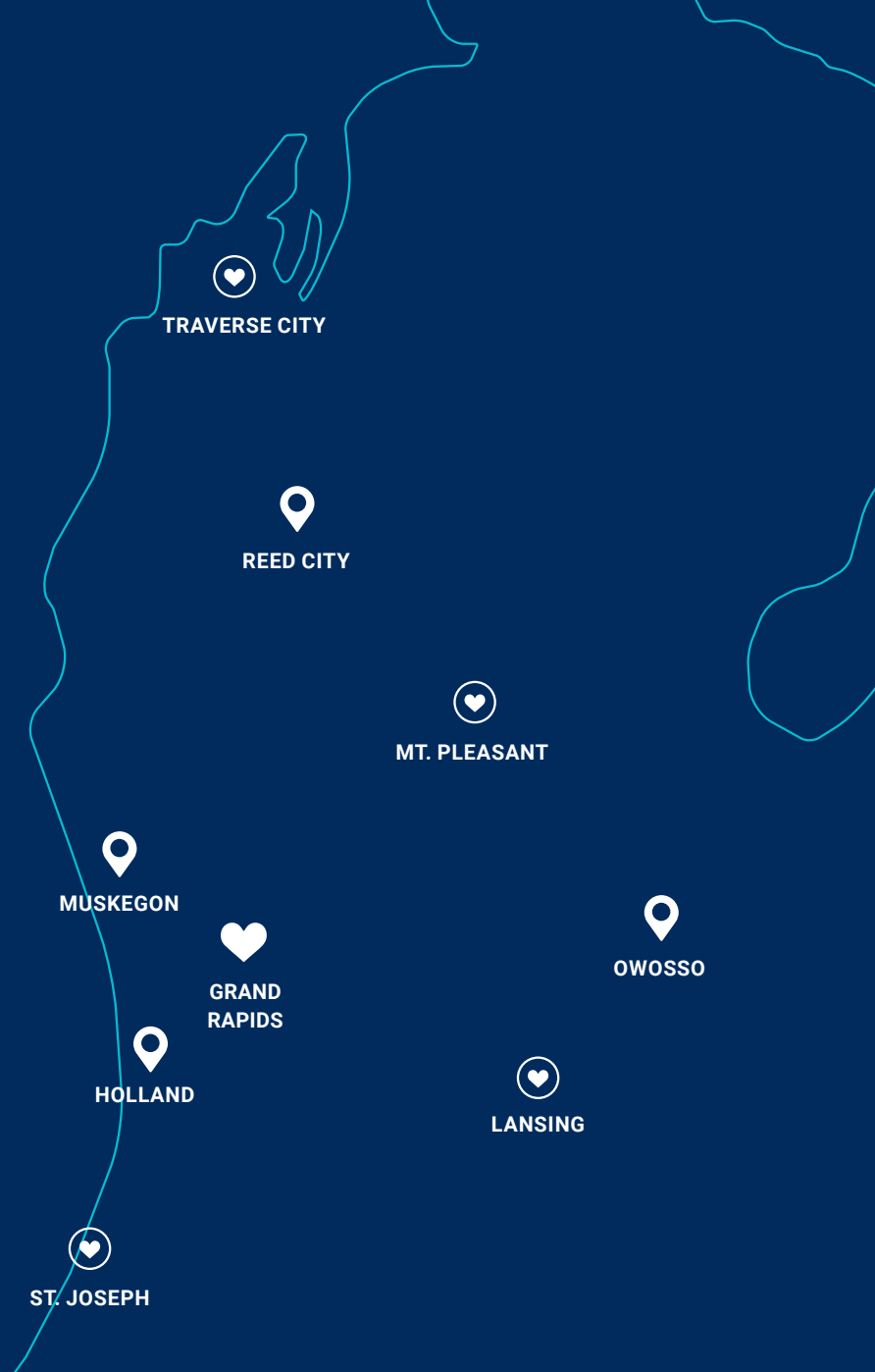
**Reed City**  
300 North Patterson Road  
Reed City, MI 49677

**St. Joseph**  
3950 Hollywood Road, Suite 240  
St. Joseph, MI 49085

**Traverse City**  
550 Munson Avenue, Suite 202  
Traverse City, MI 49686

**For more information:**

[helendevoschildrens.org/  
congenital-heart-center](https://helendevoschildrens.org/congenital-heart-center)



## For Referrals

→ **HDVCH Direct: 877.391.2345**

*HDVCH Direct is available 24 hours a day, seven days a week, to arrange an admission or patient transfer or request a consultation.*

**For more information about our clinics or to make a referral, call or fax:**

**Grand Rapids, Holland, Muskegon, Reed City, St. Joseph, Traverse City**  
p: 616.267.9150  
f: 616.267.1408

**Lansing, Mt. Pleasant, Owosso**  
p: 517.484.0004  
f: 616.267.1408

