

Congenital Heart Defect Awareness Week

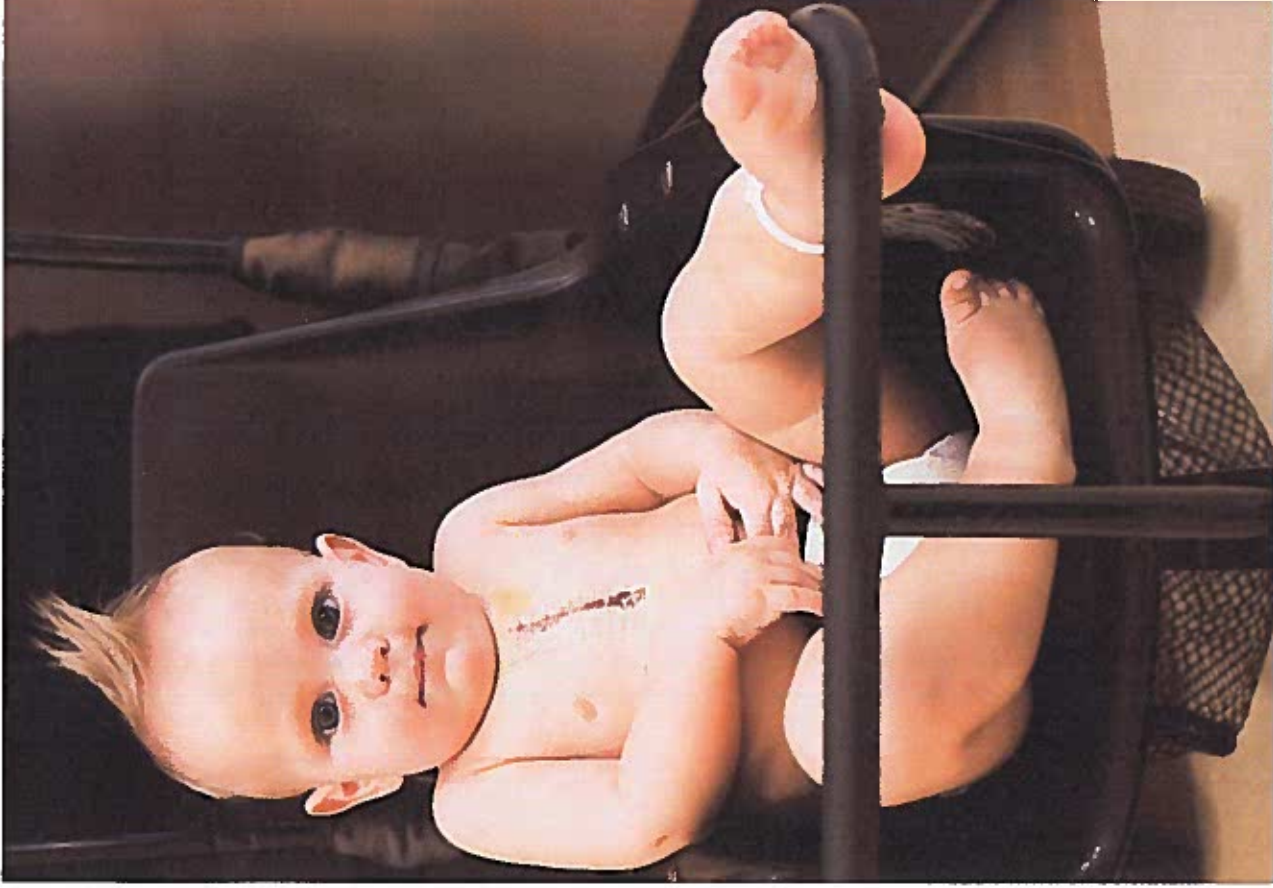
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Congenital Heart Disease (CHD)

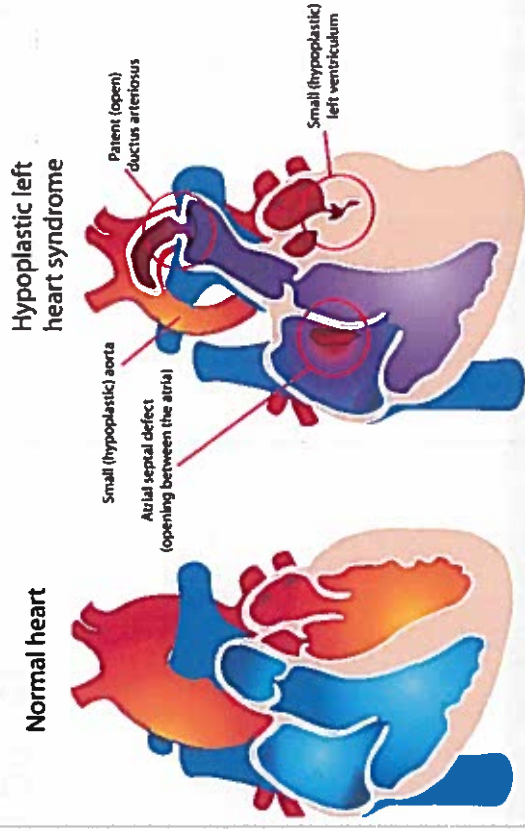
- Most common birth defect
 - Nearly 1 in every 100 births
- ~ 40,000 infants born with CHD in the US each year
 - 1,000 in Michigan
- Top tier of costs across US children's hospitals

CHD Background

- **Wide variety of defects**
 - More than 200 types of operations performed
- **Cause often unknown**
 - Genetic, environmental, maternal factors
- **Many have additional medical issues**
 - Other organ systems, neurodevelopment
 - Complex, coordinated, lifelong care



Spectrum of CHD



CHD Care Transformed Over Past 3 Decades

- Medical therapies
- Surgical techniques
- Recent advances
 - Newborn pulse oximetry screening (MI 2014)

MICHIGAN DEPARTMENT OF COMMUNITY HEALTH

Guidelines for
Implementing Pulse
Oximetry
Screening for Critical
Congenital Heart
Disease



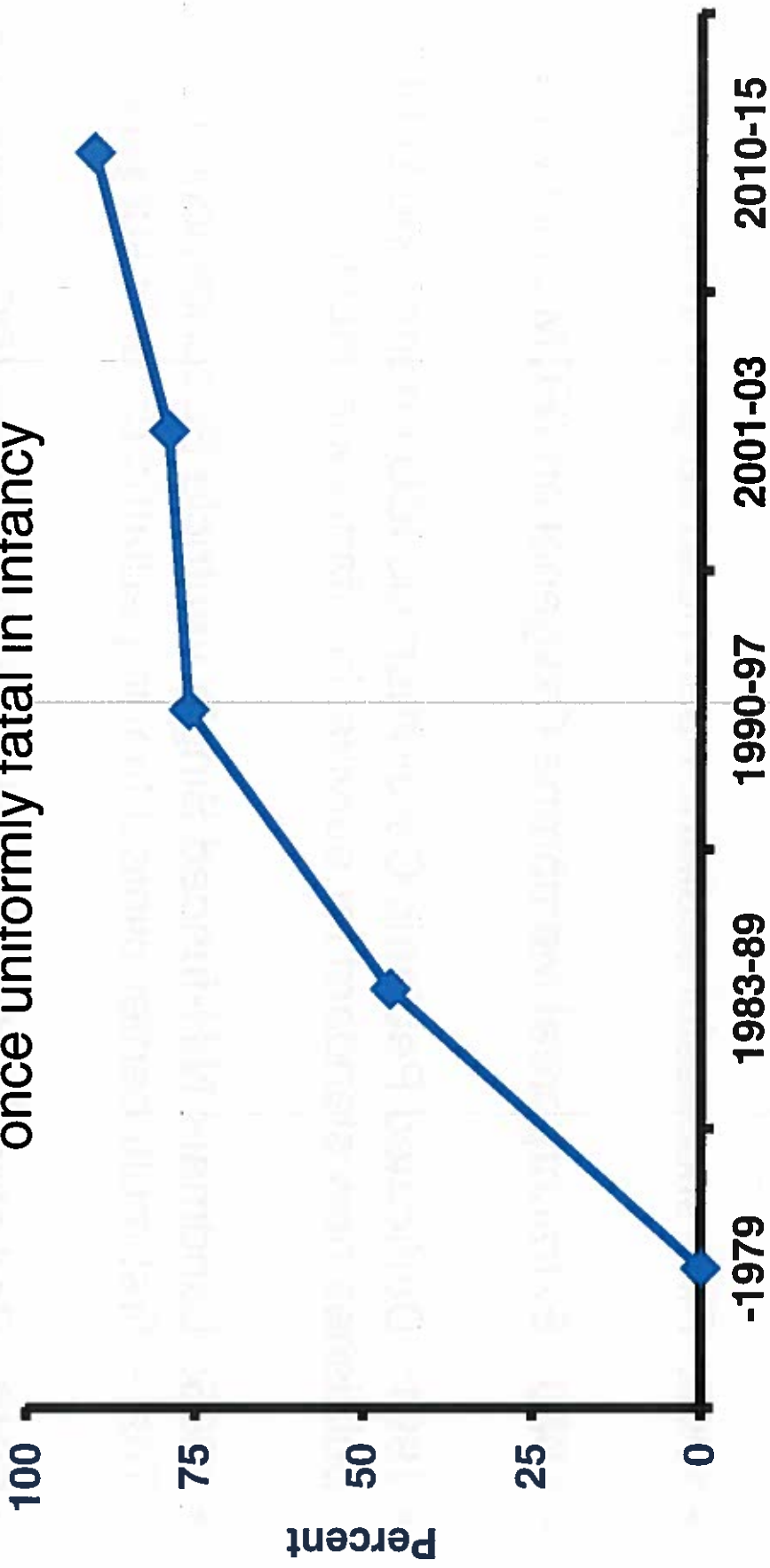
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U-M Norwood Survival

Change in survival over time for CHD once uniformly fatal in infancy



U-M History of Innovation in CHD

- **1960:** First successful pediatric open heart surgery in Michigan
- **1980:** Extracorporeal Membrane Oxygenation (ECMO) invented
- **1991:** Dedicated Pediatric Cardiothoracic ICU opens, and U-M publishes new standard for survival in infants with HLHS
- **2005:** Landmark NIH-funded Single Ventricle Reconstruction Trial – first multi-center clinical trial in pediatric cardiac surgery
- **2013:** Pediatric Cardiac Critical Care Consortium (PC⁴) launches

Extracorporeal Membrane Oxygenation (ECMO)

'Outrageous' Idea That's Saved Thousands of Babies

BEATA MOSTAFAVI | April 17, 2017 1:00 PM

The life's work of a Michigan surgeon demonstrates the importance of support for science research and big thinking.



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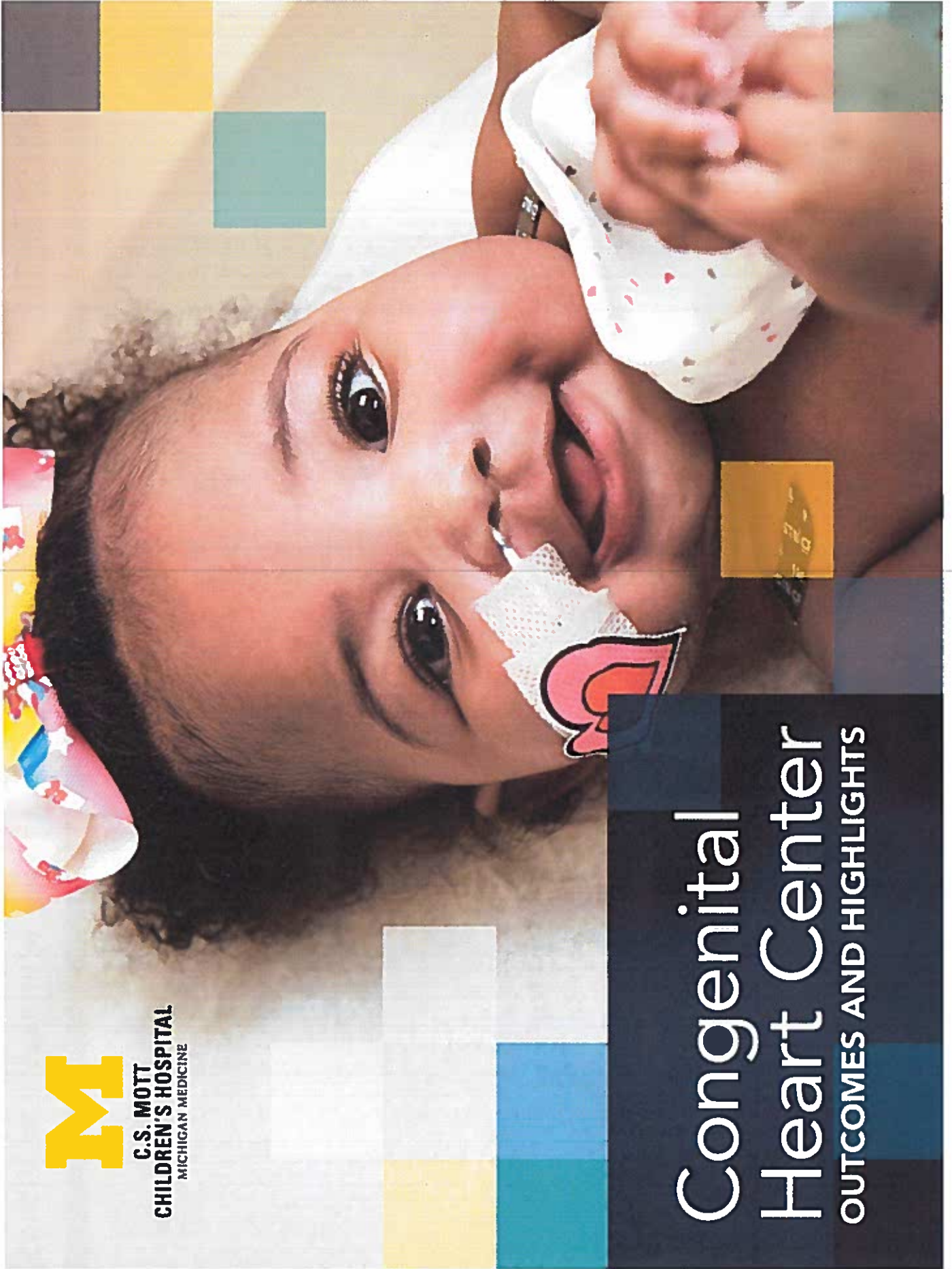


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OUTCOMES AND HIGHLIGHTS

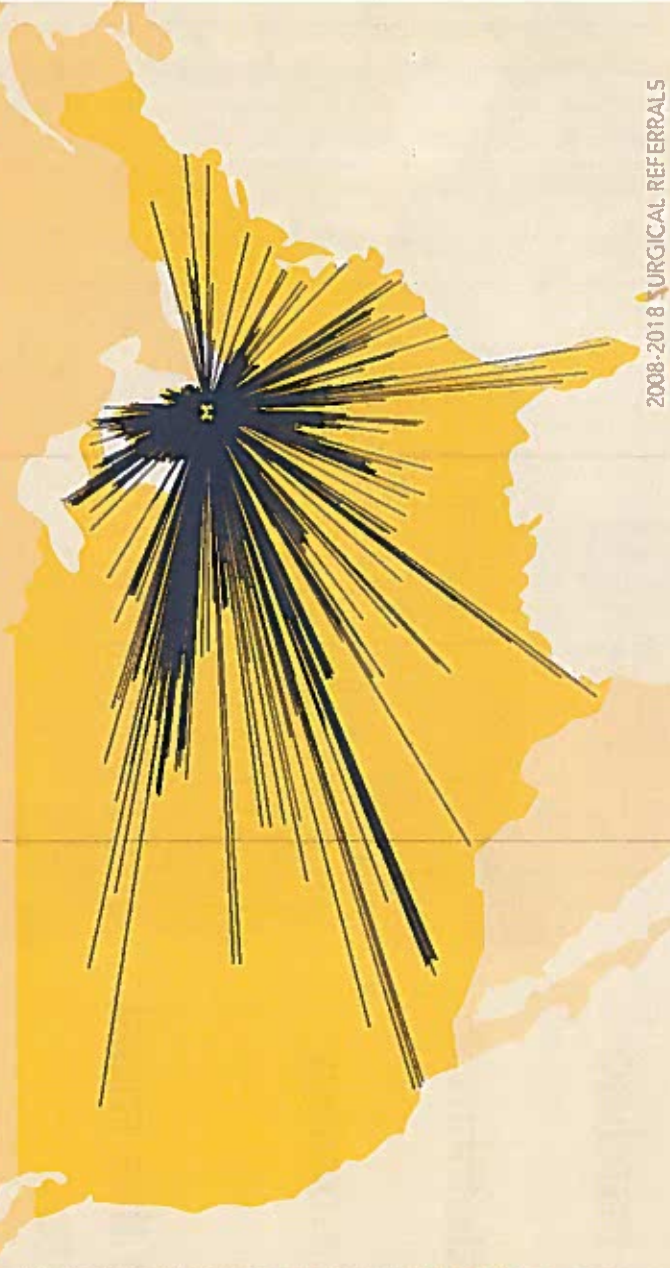




ACROSS MICHIGAN AND AROUND THE GLOBE

WE HAVE CARED FOR PATIENTS FROM:

Every county in Michigan • All 50 states • 60 countries



2008-2018 SURGICAL REFERRALS

BY THE NUMBERS

41

PEDIATRIC
CARDIOLOGISTS

5

CONGENITAL
CARDIAC
SURGEONS

13

PEDIATRIC CARDIAC
ANESTHESIOLOGISTS

22

ADVANCED
PRACTICE
PROVIDERS

13

CLINIC
LOCATIONS

State-of-the-Art Facilities & Care for CHD

- C.S. Mott Children's Hospital
- 24/7 physician and cardiac nursing care:
 - 22-bed Pediatric Cardiothoracic Intensive Care Unit
 - 32-bed Acute Care Cardiology Unit
- Expertise spanning the most common disorders to complex, rare CHD
- Fetal life through adulthood

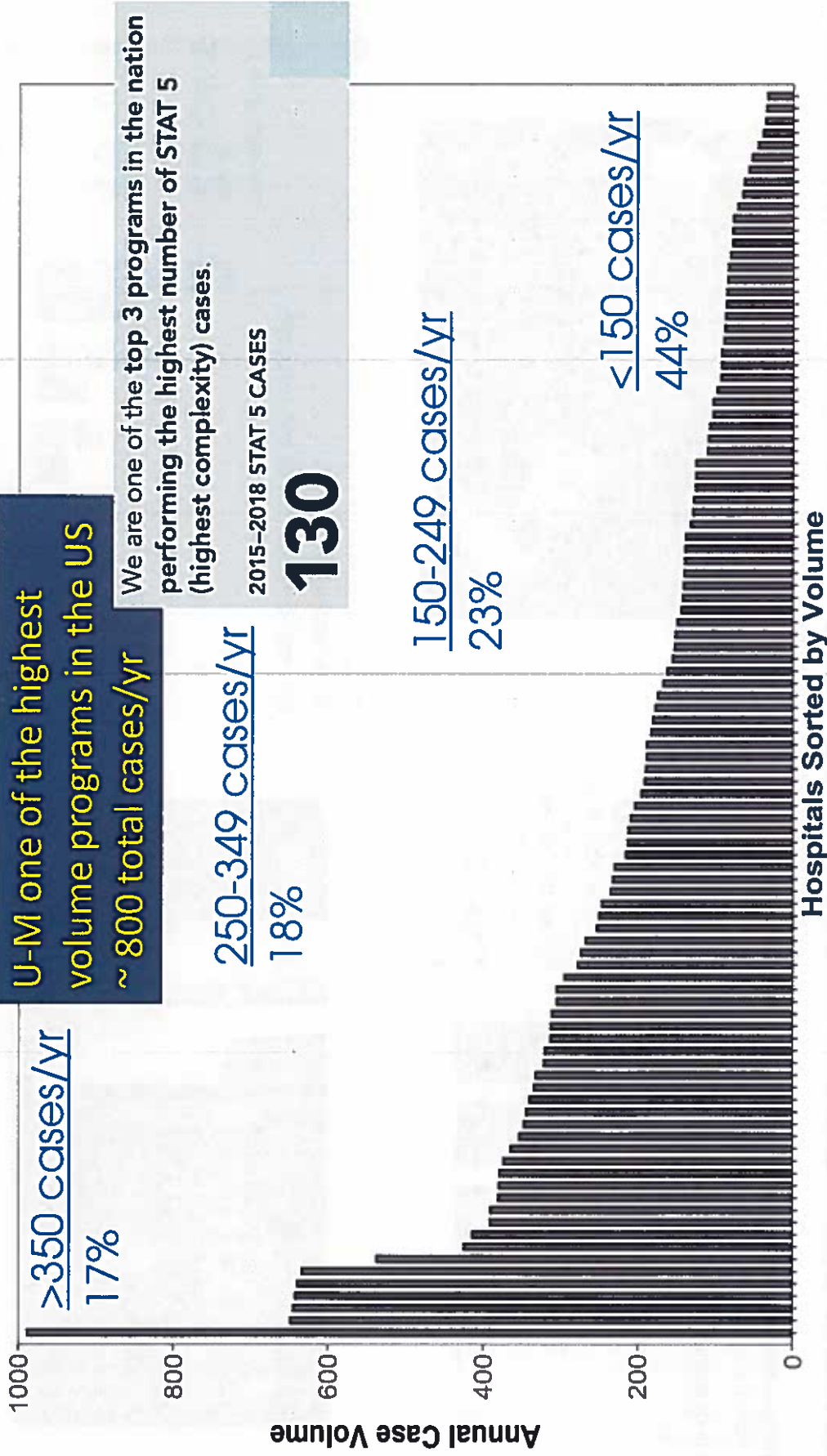


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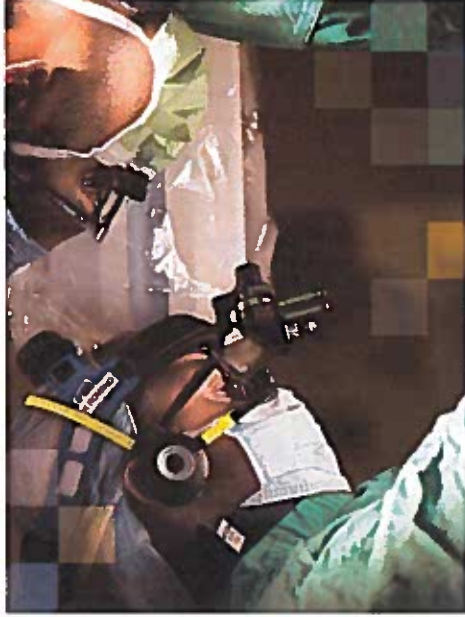
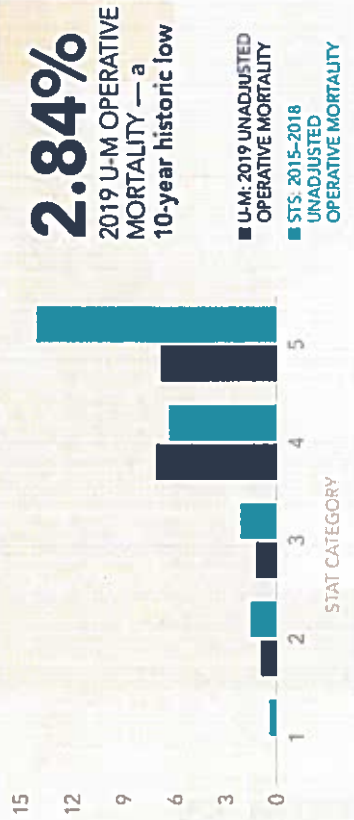
CHD Surgery Volume



CHD Surgery Outcomes

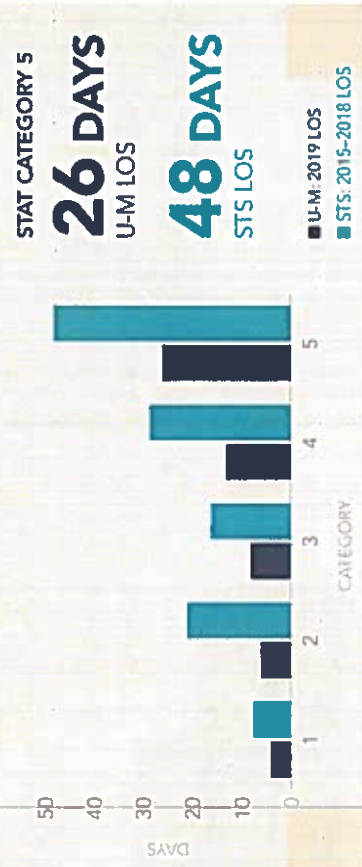
We have excellent outcomes compared to national benchmarks and continually strive to further optimize results.

2019 OPERATIVE MORTALITY BY STAT CATEGORY



Our post-operative length of stay (LOS) is substantially lower compared to national benchmarks.

2019 POST-OPERATIVE LOS BY STAT CATEGORY



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Serving the State – CHD Care Close to Home



- Nearly all Michigan families live within 90 miles of a U-M pediatric cardiology clinic
- Hospital partners:
 - Metro (Grand Rapids)
 - Hurley (Flint)
 - Sparrow (Lansing)
- Telehealth services



CHD Education - Training the Next Generation

- More than 20 fellows each year
- Pediatric Cardiology Fellowship
 - More than 120 fellows since 1979
- Congenital Heart Surgery Fellowship
 - One of only 12 training programs in US

CHD Research & Innovation

CREATING THE FUTURE OF CONGENITAL HEART CARE



Dedicated Congenital
Heart Research Core

2019 CONGENITAL HEART CENTER
RESEARCH ACTIVITY

>150
ONGOING PROJECTS

>50
ACTIVE GRANTS

>170
ANNUAL PUBLICATIONS

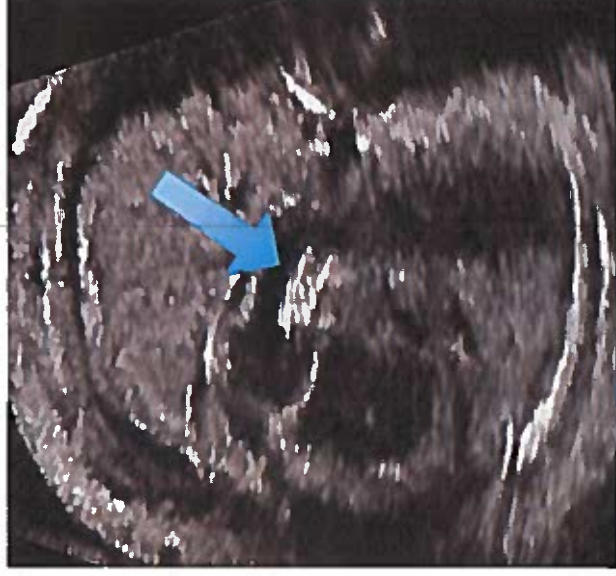
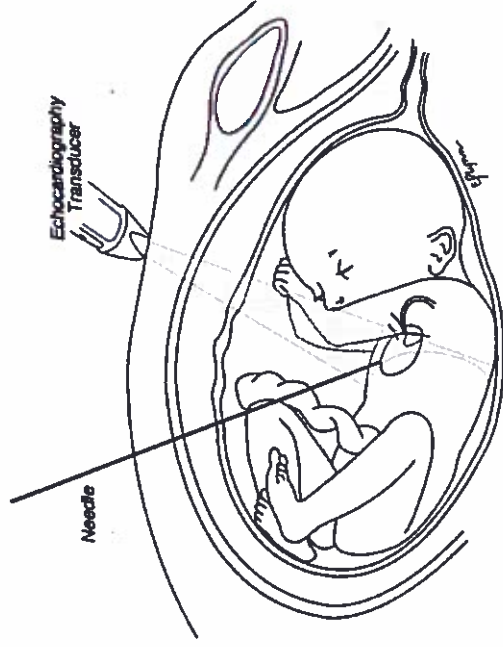
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CHD Research & Innovation

IMAGINE HEART SURGERY BEFORE YOU'RE BORN



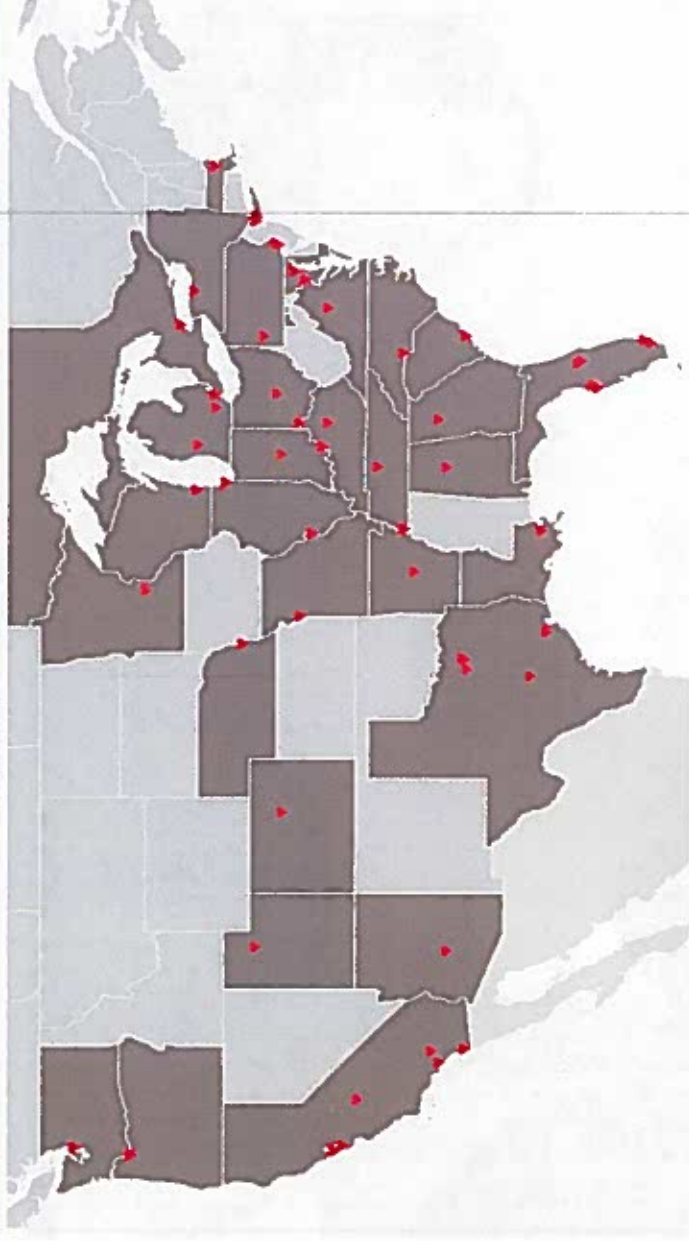
One of only 5 centers in the US offering full range of fetal interventions

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CHD Research & Innovation



**PEDIATRIC
CARDIAC
CRITICAL
CARE
CONSORTIUM**
PC⁴ Improving outcomes and
quality through collaboration

> 50 centers
collaborating on
research & quality
improvement

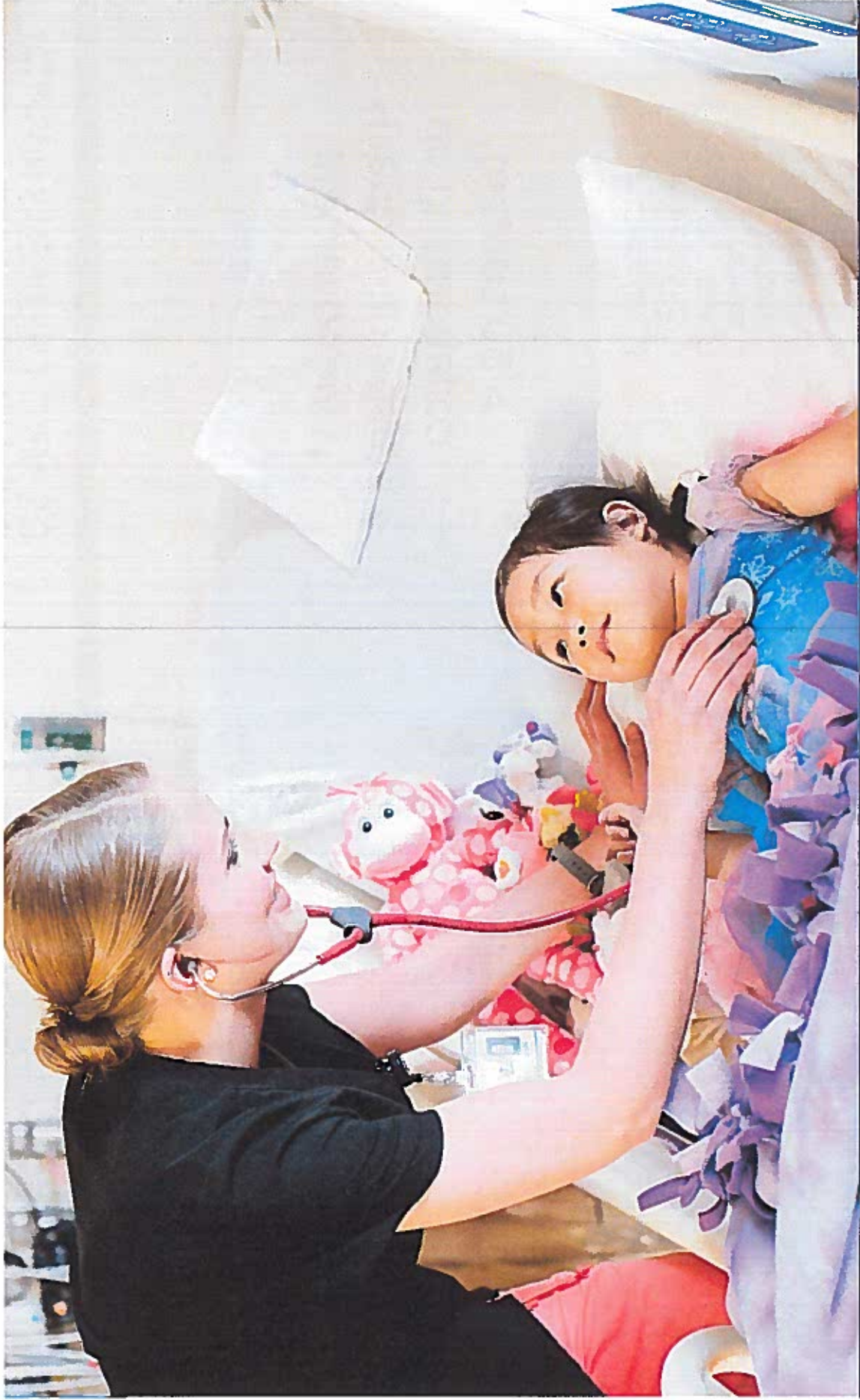


Mortality
Length of stay
Cardiac arrest

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MI HR0020

A resolution to declare February 7-14, 2019, as Congenital Heart Defect Awareness Week in the state of Michigan.





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