

# Cardiovascular Intensive Care Unit



The Edward J. Philips Cardiovascular Care Center (CVCC) in Minneapolis is the center of all pediatric inpatient cardiovascular care. A single floor houses a cardiovascular operating room, a hybrid cardiovascular operating room, a cardiac catheterization lab, and private, family-centered patient rooms. Patients are admitted and discharged within a single unit that includes 34 dedicated cardiac intensive care beds.

Over the last decade, the Children's Minnesota cardiovascular team and our clinical capabilities — including ventricular assist device and heart failure and heart transplantation programs — have expanded significantly. The daily patient census has grown from an average of 14 patients in 2010 to nearly 24 patients in 2020, and patient acuity and complexity have also increased.

## A team approach for exceptional care

As our census has grown, we've put a two-team intensivist model in place to ensure a proper team-to-patient ratio and offer safer, more efficient care. This staffing model — which includes a nurse practitioner, a cardiologist, a surgeon and an intensivist on each team — is a model used by the highest volume, most advanced units in the country.

Every morning, our team performs bedside rounds to review each patient's health status and develop a care plan for the day. This intensive, team approach means patients get the attention they need:

- Staff physicians have advanced experience and training to diagnose and treat children's cardiovascular problems.
- Pediatric cardiovascular intensivists offer 24/7 coverage in the hospital.
- Skilled cardiac nurse practitioners (NPs) — a unique aspect of our program — and highly trained CVICU nurses offer expert care for complex cardiac patients.

## Quality initiatives

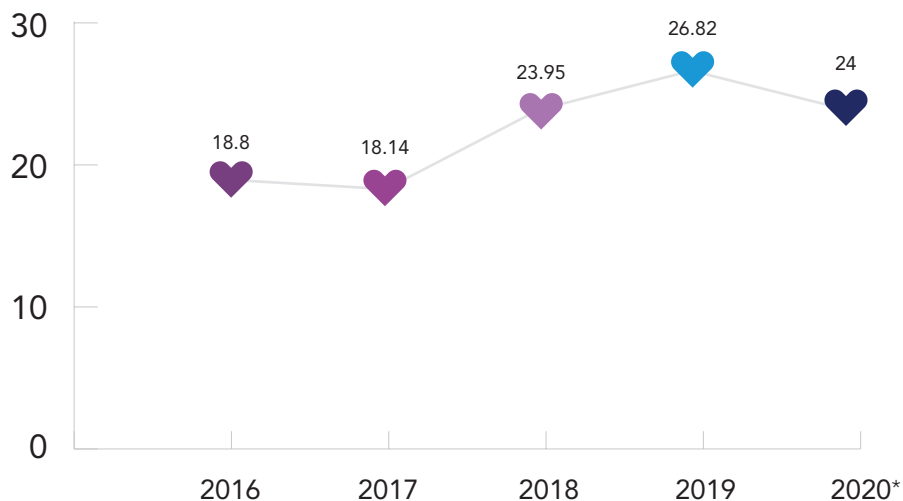
We're always looking at our data to improve our care.

- Acute kidney injury prevention (AKI)
- Central line-associated bloodstream infection (CLABSI) prevention
- Diversity and inclusion
- Early extubation after cardiac surgery
- Ventilator-associated infections (VAI)

To help evaluate our outcomes, we participate in Pediatric Cardiac Critical Care Consortium (PC4) and Pediatric Acute Care Cardiology Collaborative (PAC3) national databases.

## CVCC AVERAGE DAILY CENSUS

Our strong screening procedures have kept our unit free of COVID-19, ensuring the safety of our patients.



\*COVID-19 state mandate-impacted case volumes.

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**SURGICAL SITE  
INFECTIONS**

per 100 cardiac procedures

**IN 2020**

**1**

**CLABSI  
RATE PER**

1,000 central line days

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## Extracorporeal membrane oxygenation (ECMO)

The ECMO program at Children’s Minnesota is one of the largest neonatal and pediatric ECMO providers in the region. To date, we’ve completed more than 775 ECMO runs, and the number continues to grow each year — we provide around 6,000 hours annually. We have a lower complication rate than the national average, and our five-year survival rate is above the national average.

Our cardiovascular intensive care and surgical teams and CVICU NPs are all experienced and credentialed in ECMO. Each patient is cared for by an ECMO specialist and a bedside nurse to ensure safety. As a participating member of the Twin Cities ECMO Consortium — a group of area hospitals that provide ECMO to adults and children — we’ve prepared for how to handle a sudden increase in ECMO need. We’ve met extensively during the current pandemic to provide guidelines for resource utilization for critically ill patients.



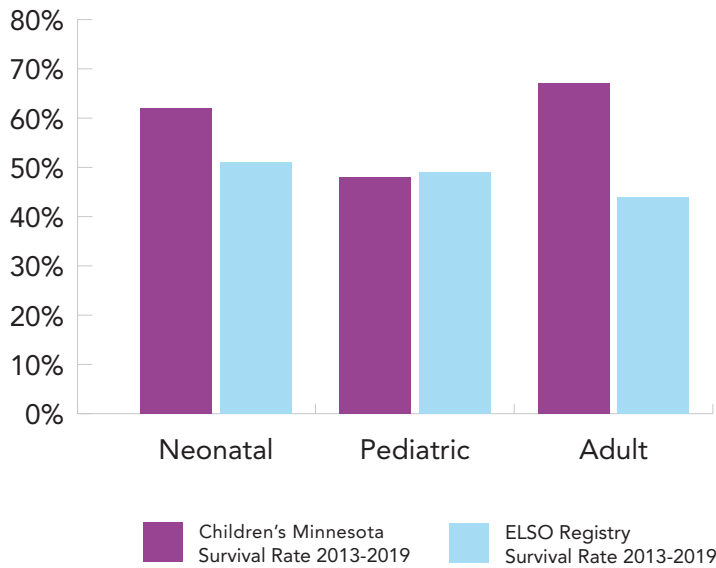
## On-site pediatric simulation center and team training

Steps away from the CVICU is the Michael and Judith Wright Family Pediatric Simulation Center, which features a replica of a Children’s Minnesota intensive care unit room. It provides a safe, realistic environment to train and practice high-risk procedures and increase team communication, coordination and skills through real-time hospital scenarios.

The center’s state-of-the-art control room allows technicians to run three simulations at once. In the debriefing room, groups can review video playback, discuss what went well, and analyze opportunities for change and improvement.

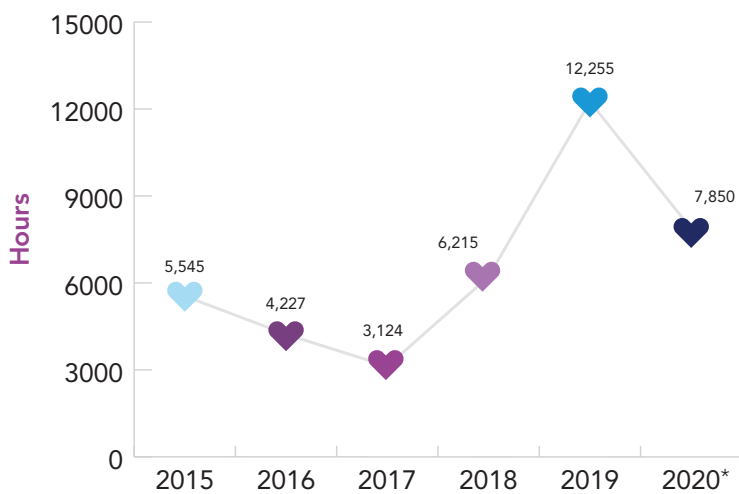


## ECMO SURVIVAL TO DISCHARGE CARDIAC



Our advanced ECMO experience and highly trained providers have allowed us to surpass the Extracorporeal Life Support Organization (ELSO) registry's survival rates for neonatal and adult cardiac patients receiving ECMO. ELSO, an international consortium of health care providers, maintains a registry of ECMO use in active ELSO centers.

## CHILDREN'S MINNESOTA ECMO HOURS – CARDIAC PATIENTS



\*COVID-19 state mandate-impacted case volumes.

Improvements in ECMO technology and patient management have reduced complications, allowing patients to remain on ECMO for longer periods. These enhancements, along with a better understanding of respiratory diseases, have allowed us to keep some patients — mainly those with primary respiratory illnesses — on ECMO for many weeks, giving their lungs time to recover.



We are continuously improving care by training our teams frequently on complex procedures. Simulations let teams improve how they function and communicate during high-stress situations in a low-risk setting.

– Dr. David Dassenko

# Cardiovascular Intensive Care Unit

## Cardiovascular Anesthesiology

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The Children's Minnesota pediatric cardiac anesthesia team specializes in caring for children with congenital heart disease. For more than 40 years, our expert team has cared for infants, children, teens and adults with various forms of congenital and acquired heart disease.

Our anesthesiologists and nurse anesthetists have advanced training in cardiovascular anesthesia. We care for children before, during and after cardiac procedures — including cardiac surgery, interventional cardiology and electrophysiology procedures. Our team also works with patients with congenital heart disease who need surgery unrelated to heart disease.

We specialize in keeping children comfortable using the latest, safest medicines. All our operating rooms share the same design and equipment, allowing us to provide care seamlessly in all procedure locations.

