

The Congenital Heart Collaborative

University Hospitals
Rainbow Babies & Children's
Nationwide Children's Hospital



Introducing the World's Most Technologically Advanced Hybrid Congenital Cardiac Catheterization/Operating Suites

Only Pediatric Hybrid Cardiac Catheterization/Surgical Suites in Northern Ohio

University Hospitals Rainbow Babies & Children's Hospital has opened the most advanced hybrid cardiac catheterization and surgical suites designed specifically for babies, children and adults. The two spacious (900 sq. ft.) hybrid laboratories are equipped with next generation Canon Infinix-i Biplane technology and advanced imaging capabilities to perform complex interventional cardiac catheterization procedures, minimally invasive hybrid operations, and complex bypass surgeries. The Congenital Heart Collaborative's (CHC) new suites are designed to provide the safest interventions while delivering the best possible patient outcomes.

Advanced Cardiac Imaging Technology

The hybrid suites offer the capability to perform interventional cardiac catheterization procedures with the most advanced imaging system available worldwide. The new Canon biplane angiography labs offer the highest

resolution imaging to aid in precise quantitative assessments and to facilitate the most accurate device delivery and interventional capabilities.

- **2-D Roadmap** – allows clinicians to create a roadmap from an injection or previous acquisition to assist with catheter guidance and implantable devices during fluoroscopy
- **3-D Rotation** – rotational angiography illuminates vascular structure for complex anatomic evaluation and interventional planning
- **3-D Roadmap** – enables a reconstructed 3-D image to be superimposed on the fluoroscopic image for guidewire manipulation or catheterization to be performed while observing the course of vessels
- **C-arm Angulation and Positioning** – to achieve the optimal view for complex interventions
- **3D Multi-Modality Fusion** – allows clinicians to overlay previously acquired 3-D data set with live, current image for precision accuracy

Radiation Dose Reduction

The Canon hybrid suites are designed to protect children. Employing an extensive array of Canon DoseRite™ features, the Infinix-i systems uses technology with the highest industry standard for radiation reduction to help clinicians lower dose. Dedicated to the principles of ALARA (As Low As Reasonably Achievable), the system's sophisticated software enables clinicians to customize exams to each child's diagnostic needs and size.

- **Spot Fluoroscopy** – allows clinicians to see more complete picture; clinicians see live fluoroscopy inside the target ROI while viewing the surrounding area over Last Image Hold feature without additional dose
- **Advanced Dose Tracking System** – estimates dose delivered to the skin in real time and displays on color-coded map during procedure to continuously monitor dose and make adjustments for patient safety
- **Weight-Specific Protocols and Setting** – customized protocols based on patient weight instead of age to enable image acquisition for their need and at the dose they want, reducing dose while prioritizing safety

Optimized Design and Flexibility

The CHC hybrid suites are designed for the future of interventional and surgical treatment of CHD patients. The medical systems' biplane C-arms and simplified movement deliver finger-tip to finger-tip and head-to-toe coverage without moving the patient. The spacious rooms are both equipped with biplane angiography capabilities, necessary for complex interventions. Single plane angiography can be used for hybrid procedures as well as for exit angiography following complex surgical repairs to assess anatomic results before leaving the suites. For cases not requiring angiographic evaluation, the rooms function fully as operating theaters for all forms of complex surgical repairs and electrophysiological studies.

- **WorkRite features** – Biplane angiography optimized for both pediatric and adult congenital heart patients
- **Access Halo** – ensures unobstructed head-end workspace to improve patient access for staff
- **Industry leading table** designed to optimize patient comfort and vascular access
- **Advanced environmental design** to maximize sterility and airflow containment
- **Ideal design and flexibility** to perform:
 - Complex single ventricle repairs, including hybrid and standard surgical palliation
 - Transcatheter valve replacement (pulmonary, mitral, tricuspid)
 - Aortic stenting and complex aortic arch repairs
 - Pacemaker and defibrillator lead extraction and replacement
 - Complex transcatheter therapies for adults with congenital heart disease

Centralized Location and Access

CHC hybrid catheterization/surgical suites are located within the Heart Center on the 2nd floor of UH Rainbow Babies & Children's Hospital – adjacent to the Pediatric Intensive Care Unit (PICU). The hybrid suites are uniquely positioned in close proximity to the Cardiothoracic Intensive Care Unit (CTICU), Cardiac Step-down Unit (CSU), the Rainbow Prentiss Operating Rooms and the Labor & Delivery Unit at UH MacDonald Women's Hospital. This centralized, strategic positioning maximizes the ability to rapidly treat the most critically ill CHD patients while minimizing distance and time required for transport.

- Centrally located within the Congenital Heart Collaborative for seamless transport
- Newborn infants requiring immediate surgical or interventional treatment are within one minute transport to hybrid suites



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