

Center for Structural Heart Disease

Notable first in country & first in human successful structural heart disease interventions

- [First percutaneous mitral valve replacement in the world](#)
- [First hospital in the world to perform transcaval \(from IVC to aorta\) TAVR when traditional approaches are not available](#)
- [First percutaneous tricuspid valve replacement in the United States](#)
- [First-in-man late partial recanalisation after LARIAT suturing of the left atrial appendage successfully treated with an AMPLATZER™ septal occluder device.](#)
- [First-in-man experience with cryoplasty during graded balloon atrial septostomy to reduce spontaneous closure in a patient with severe pulmonary arterial hypertension.](#)
- First fully percutaneous placement of a 5 liter Impella left ventricular support device via transcaval access
- [First intentional percutaneous laceration of the anterior mitral valve leaflet to prevent outflow tract obstruction during transcatheter mitral valve replacement- LAMPOON procedure](#)
- [Novel use of Watchman in ascending aorta for embolic protection](#)
- First ever transcrotid Lotus Valve TAVR procedure
- Multiple firsts in the state of Michigan including first Lariat percutaneous left atrial appendage closure, trans-apical TAVR, percutaneous trans-apical paravalvular leak closure, percutaneous transcatheter mitral valve-in-ring, first non-surgical mitral valve repair and commercial LOTUS Edge TAVR valve implantation
- Developed and lead the Detroit and now [National Cardiogenic Shock initiative](#)
- Developed, patented and published the Left Ventricular Outflow Tract Modeling protocol to assess for obstruction post mitral valve replacement. Now recognized as standard modeling protocol
- Developed and published left atrial appendage sizing algorithm: decreases procedure time and procedural complications
- Helped develop the use of Electrocautery transcatheter treatments
 - LAMPOON: intentional laceration of the Anterior Mitral Leaflet to prevent outflow obstruction during TMVR
 - BASILICA: intentional laceration of aortic valve leaflets to prevent obstruction during TAVR
- First institution in Michigan to perform over 350 Watchman (left atrial appendage closure) procedures

- Developed intentional right atrial exit insufflation to facilitate needle entry into the pericardial space
- Core lab for 3 major clinical trials: CT lab for MITRAL Trial, CT Lab for NIH Mitral trial and Echo lab for NIH Mitral trial
- First transcaval ECMO/LAVA-ECMO and Tandem heart in the Impella 5.0 section
- First left sided Angiovac in world