

Pediatric Echocardiography Core Lab

Location: Children's Hospital of Wisconsin, Herma Heart Center

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Overview

The Pediatric Echocardiography Core Lab housed in Children's Hospital of Wisconsin was established in 2005 and has functioned as a resource for both internal and external projects that require performance of echocardiograms and/or analysis of echocardiographic data. The lab has received multiple NIH sub-contract grants from the Pediatric Heart Network (PHN) to act as an echo core lab for several large, multi-institutional trials: the Single Ventricle Reconstruction Trial, the Single Ventricle Reconstruction Extension Trial, and the Pediatric Echocardiography Database Z-score Project. The core lab will have analyzed over 7000 echocardiograms for these trials as well as collating and managing all of the echo data.

In addition to the work with the NIH trials, the echo core lab has supported multiple industry and investigator-initiated research projects involving echocardiography. The echo core lab is located on the 2nd floor of the west tower of Children's Hospital in the Herma Heart Center and provides services to investigators for both the adult and pediatric TRUs of the CTSI. We have trained staff with expertise in congenital heart disease and pediatric echocardiography (including 2D, 3D, and myocardial deformation imaging).

Available Services:

- Performance of 2D and 3D echo imaging studies (pediatric or adult)
- Protocol development/consultation
- Data collection tool development
- Data collection and management
- Technical image review and analysis

- Data collation
- Physician review*
- Investigator consults for planning and developing echo components of research protocols
- Writing of echo components of research protocols, abstracts and manuscripts
- Screening subjects for study eligibility
- Data cleaning and basic descriptive statistical analysis*
- Echo image analysis training for students, nurses, research coordinators, residents, fellows and physicians.

*These services and fee schedules are discussed individually for each study

Equipment/Software	Accessibility
TomTec Workstations (3): HP Z420 with Xeon E5-1620 3.6 GHz (quad core), 10 MB cache per processor, 8 GB RAM, 500 GB hard drive, nVidia Quadro K2000 with 2 GB SDRAM video, DVD +/- RW drive with DVD RAM, Gigabit LAN networking, running Windows 7 64-bit operating system	Use is available only after training
Sequoia 512 Ultrasound Machine (4, 8, and 10 MHz 2D imaging probes)	Facility technicians use on behalf of investigators
Acuson SC2000 Ultrasound Machine (8 and 4 MHz 2D imaging and 4 MHz 3D imaging probes)	Facility technicians use on behalf of investigators
Phillips IE33 Ultrasound Machine (12, 8, 5 MHz 2D imaging and 7 and 3 MHz 3D imaging probes)	Facility technicians use on behalf of investigators
Image Arena TM 4.6 (Image analysis software – TomTec Imaging Systems, Germany): Diagnostic and report management system specifically designed for 2D/3D echo image review, archiving, and reporting with password-protected access	Use is available only after training
2D Cardiac Performance Analysis© software (ver. 1.2.0.27; TomTec Imaging Systems, Germany): Myocardial mechanics analysis tool that can analyze images from any US vendor (3 licensed PCs)	Use is available only after training
PASW 18: (Predictive Analytic Software): Statistical Analysis Software	Use is available only after training

Hours: Monday – Friday 7:00 am-4:30 pm. Special arrangements for service outside these times can be scheduled.

Common users of the facility: We work with NIH sponsored trials, industry, multiple hospital departments and investigator-initiated research projects involving echocardiography:

- **NIH: Pediatric Heart Network:** Single Ventricle Reconstruction Trial, Single Ventricle Reconstruction Trial Extension and Single Ventricle Reconstruction Trial III. Normative Z Score Database study; Residual Lesion Study;
- **Industry:** St. Judes Medical; CryoLife
- **Hospital Departments:** Oncology; Renal; Genetics; Cardiac Surgery

Rate: Costs are dependent on the type of services needed for specific projects.