

Cardiology Fellowship Manual

Goals & Objectives
-Transplant-Heart Failure-

Pediatric Cardiology Fellowship
Multidisciplinary: Transplant-Heart Failure
Goals and Objectives

Introduction/Purpose

The goal of this rotation is to expose trainees to clinical experiences in inpatient and outpatient heart failure / transplantation. The general goals are to (1) understand the clinical and basic science of heart failure and transplant medicine; (2) be exposed to and develop proficiency in the inpatient and outpatient care of these patients. (3) collaborate effectively with other physicians, members of the health care team, and with patients and families.

Faculty Supervisor(s)/Preceptor(s): Ballweg/Spicer/Putschoegl

Admin Assistant or Office Contact: Priscilla Phillips

Length of Rotation

- 1 month

Location:

- Pediatric intensive care unit, neonatal intensive care unit, and medical/surgical inpatient units as well as the outpatient clinics of Children's Hospital & Medical Center and in our outreach clinics

Prerequisites

- There will be no prerequisites
- Vacation / time off will be allowed during rotation. The fellow must submit the dates through the appropriate channels in accordance with the policies of the fellowship.

General Responsibilities and Expectations

Inpatient and Outpatient Clinics

- Hours: Average 10 hours/day
- The fellow will participate in cardiology rounds, inpatient consultations, and outpatient clinics pertinent to the rotation, with exceptions for required conflicting educational fellowship activities.
- Longest permitted continuous duty shift 28 hours.
- Maximum permitted weekly total duty 80 hours.

Weekly/monthly didactic schedules

- Attendance is required at Transplant Team Meetings when patients are presented for discussion / listing
- Fellows will be required to attend all required lectures and conferences.

Night or weekend call

- Fellows will continue to perform call as scheduled on evenings, weekends and holidays as dictated by the overall fellowship schedule, subject to the duty limitations above.

Educational Responsibilities and Expectations

- Obtain reading materials required for the rotation. This will include text book Moss and Adams Heart Disease in Infants, Children, and Adolescents, and key journal articles in care of pediatric patients with heart failure / transplant heart disease
- Complete and submit rotation experience and faculty evaluations.
- Submit a total list of admissions, consultations performed, clinic patients seen.

Expectations with Yearwise Progression of the Fellow's experience are the following:

First year: The fellows will be introduced to the organized standard approach for gathering history, physical and laboratory data relevant to clinical diagnosis and management of the patient with heart failure / transplant. The fellow will, with appropriate supervision, organize these data in clinical context, and understand the principles upon which clinical decision making is based.

Second or Third year: The fellow will be expected to exhibit greater independence in the gathering and organization of clinical data, culminating in proficiency in diagnosis and clinical management of the patient with heart failure / transplant.

Measurement of Expectations:

A checklist of yearly expectations based upon the goals and objectives listed below in the six core competencies will be provided to each fellow by the Program Director at the beginning of each year. This checklist will serve as a measurement tool to ensure all expectations will be met at the end of the first year before proceeding to the expectations checklist for the second year. Similarly, this measurement will be applied for the second year towards advancement to the third year.

Educational Goals and Objectives:

The following educational goals and objectives have been created as a composite of guidelines created by Task Force 7 of the Pediatric Cardiology Fellowship Training Guidelines published in 2015 and the American College of Cardiology's Advanced Heart Failure and Transplant Cardiology Training Statement published in 2017 by Jessup, et al. It is recommended that the trainee become familiar with each of these documents.

Medical Knowledge Goals

1. Heart Failure
 - a. Understand pathophysiology of heart failure in children with congenital

heart defects and acquired heart diseases. Concepts including remodeling, neurohormonal activation, gene expression, wall stress, and signaling pathways should be understood.

- b. Know the genetic underpinnings of the various types of cardiomyopathies and understand the role of genetic testing for patients and families.
- c. Understand hemodynamic principles of heart failure including length tension curves, pressure-volume loops, preload, contractility, and afterload.
- d. Understand the Ross and New York Heart Association classifications of heart failure as well as the stages of heart failure and management implications.
- e. Know the clinical presentation of patients with heart failure of various etiologies.
- f. Be able to identify indications for appropriate diagnostic testing including echocardiography, magnetic resonance imaging, CT scanning, and cardiac catheterization.
- g. Understand the pharmacology of the various categories of medications used for heart failure management including inotropes, diuretics, and neurohormonal modulators.
- h. Understand various types of mechanical support including mechanical ventilation, mechanical circulatory support, ECMO.
- i. Understand the concepts of systolic dysfunction, diastolic dysfunction, ventriculo-ventricular interactions, and pulmonary vascular resistance.

2. Cardiac Transplantation

- a. Know the indications and contraindications to cardiac transplantation.
- b. Know the outcomes of cardiac transplantation and understand the long term comorbidities including hypertension, diabetes, malignancies/PTLD, renal dysfunction, infection, allograft vasculopathy, and need for retransplantation.
- c. Understand the concepts of cellular and antibody mediated rejection including pathophysiology, identification, and treatment. Included in this should be an understanding of the commonly used chronic immunosuppressive medications used transplantation.

Patient Care Goals –

1. Heart Failure

- a. Skill to identify patients with advanced heart failure needing advanced pharmacologic and mechanical circulatory support.
- b. Identify the patient and laboratory characteristics suggesting need for cardiac replacement therapy in patients with congenital and acquired cardiac disease.
- c. Skill to implement advanced pharmacologic therapy for the patient with advanced heart failure.

2. Transplant

- a. Skill to identify effective immunosuppressive therapy and modify treatments.
- b. Skill to manage the common comorbidities early and late following cardiac transplantation.
- c. Understand and interpret noninvasive assessment of graft function in the post-transplant patient.

Interpersonal and Communication Skills Goals

1. Be able to communicate with and educate patients/families across a broad range of cultural, ethnic, and social economic backgrounds.
2. Communicate effectively with the interdisciplinary heart failure and transplant teams to promote comprehensive decision making.

Professionalism Goals

1. Demonstrate appropriate compassion.
2. Clearly explain indication, risks, and alternatives in the therapy of advanced heart failure including transplantation, mechanical circulatory support, and palliative care.

System-based Practice Goals

1. Be able to utilize and coordinate a team approach for the inpatient and outpatient management of patients with advanced heart failure and for those needing cardiac transplantation.
2. Identify the financial, cultural, social, and psychologic/emotional barriers to successful outcomes after cardiac transplantation and, when appropriate, mechanical circulatory support.

Practice-based Learning and Improvement Goals

1. Identify knowledge and performance gaps and engage in opportunities to achieve focused educational improvement.
2. Seek feedback from faculty and staff and incorporate that feedback to improve performance and knowledge.

“Work Product”

The rotation is designed with both exposure and core competency completion requirements.

During the course of this rotation, pediatric cardiology fellow will:

- The fellow should maintain a log of all consultations and admissions performed and reviewed, including the age of the patient and the diagnosis.

Methods of Evaluation and Feedback

Assessment of the fellow’s performance and the quality of the rotation experience will be documented with evaluation forms. These will include:

- Assessment of the fellow’s consultations and admission history and physical examination reports for completeness and accuracy.

- Assessment of the fellow's medical knowledge, practice based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice
- The consultation and admission log will be reviewed regularly to ensure that each trainee is obtaining adequate and balanced experience.
- The standard evaluation form will be used and discussed with the fellow at the end of the rotation and during the semi-annual meeting with the program director.
- The fellow will submit a rotation experience evaluation using the standard rotation evaluation form.