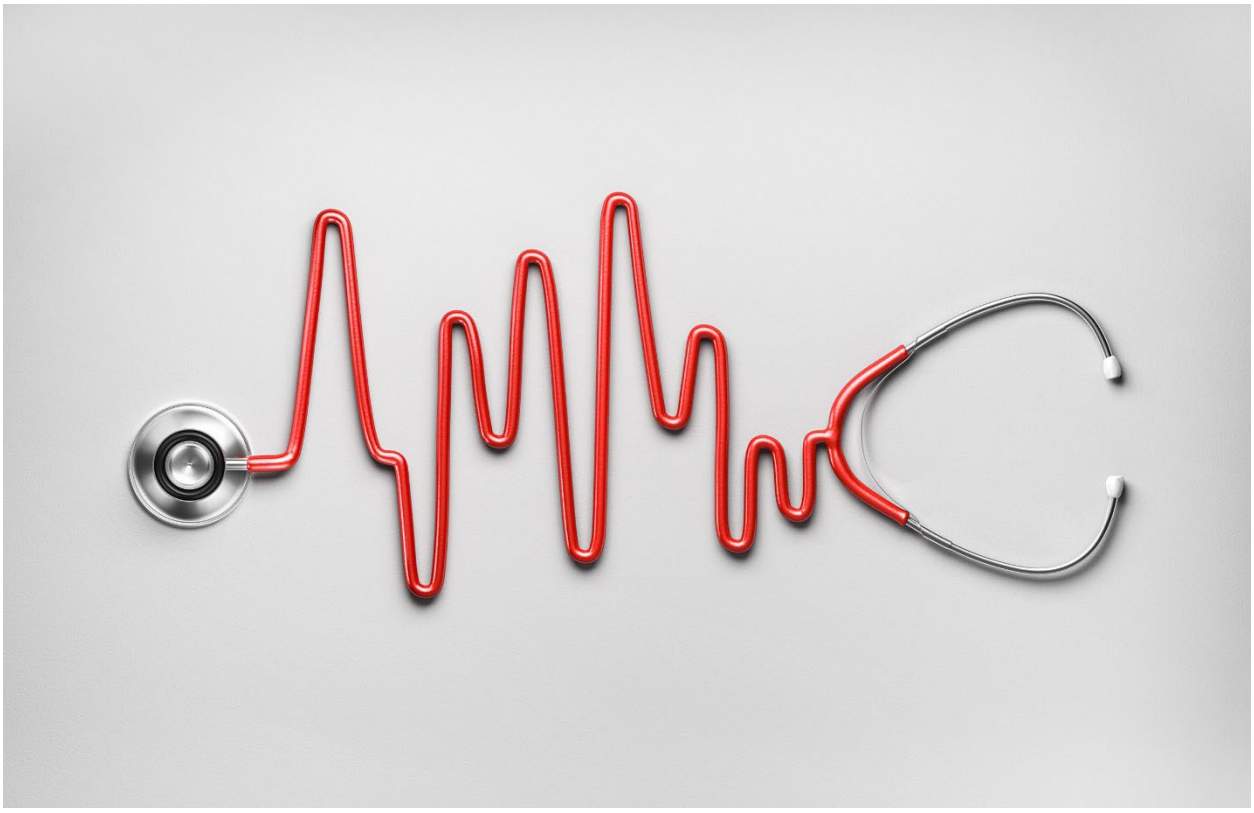
# University Of Texas Southwestern Medical Center

# Pediatric Cardiology Fellow Handbook

# 2024-2025



# Table of Contents

Program Leadership: 4
Current Fellows: 4
Categorical: 5
Advanced Fellows: 6
Senior Chief Roles **Error! Bookmark not defined.**
Current Faculty: 7
Cardiology Faculty 8
CT Surgery Faculty 9
Cardiac Anesthesia 9
Pediatric Heart Specialists 9
Critical Care 9
Cardiology Co-Pilots: 10
Important contact information 12
Policies and Procedures: 12
Meal Money 12
Inclement Weather 13
FMLA 13
Vacation/Sick Leave 14
UTSW Holidays 15
Jury Duty 17
Education funds 17
National and Local Meetings 17
Common Meetings and Approximate Submission Dates 20
Rotation Information and Goals and Objectives: 21
General Rotation Assignments per year 21
Education liaison 21
Acute Care Cardiology 22
Consults 27
CVICU 30
Heart Failure/Transplant 35
Cardiac Catheterization 39
Electrophysiology 43
Imaging 46
Additional Information on Inpatient and Consult Coverage 56

Escalation Pathway ..... 57
Continuity Clinic information: ..... 59
Important Meetings and Approximate Dates ..... 62
Semi-Annual Evaluations ..... 62
Scholarship Oversight Committee Information ..... 63
Research Proposal Form ..... 65
SOC Evaluation Form ..... 70
Evaluations: ..... 71
Education: ..... 72
Required Conferences: ..... 72
Conference attendance tracking: ..... **Error! Bookmark not defined.**
Recommended Textbooks/Resources ..... **Error! Bookmark not defined.**
Wellness ..... 74
GME wellness ..... 74
Fellow retreats: ..... 74
Program Procedure Requirements ..... 74

# Program Leadership:

Program Director

Sonali Patel

Cell: 720-413-5796

Email: Sonali.patel@utsouthwestern.edu

Associate Program Director

Melinda Cory

Cell: 940-727-8596

Email: Melinda.cory@utsouthwestern.edu

Associate Program Director

Brittney Hills

Cell: 770-342-9030

Email: Brittney.Hills@utsouthwestern.edu

Program Coordinator – Categorical Fellows

Kristy Friel

Cell: 919-609-3847

Email: Kristy.Friel@utsouthwestern.edu

Program Coordinator – Advanced Fellows

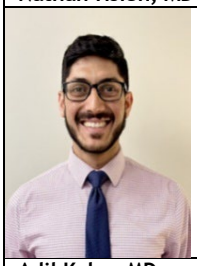
Crystal Nadeau

Cell: 401-464-1249

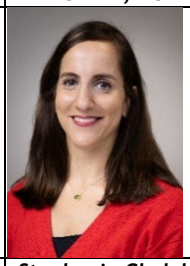
Email: Crystal.Nadeau@utsouthwestern.edu

# Current Fellows:

## Categorical:

| First Year | Second Year | Third Year |
|---|---|---|
| | | |
| **Meaghan Bruner, MD** | **Anusha Kodidhi, MD** | **Sara Alhousseiny, MD** |
| | | |
| **Nathan Hsieh, MD** | **Matthew Mosgrove, MD** | **Mohammad Mehdi, MBBS** |
|  | | |
| **Adil Kahn, MD** | **Natalia Testo, DO** | **Sarah Zoretic, DO** |
| | | |
| **Monisha Narayanan, MD** | **Byrd Cicero Willis Pineda, MD** | |
| | | |
| **Ernest Naturinda, MD** | | |

## Advanced Fellows:

| | | |
|---|---|---|
| | | |
| **Lauren Thai, MD – Advanced Imaging** | **Pezad Doctor, MBBS – Advanced Imaging** | **Lisa Settle, DO – Cardiac Critical Care** |
| | |  |
| **Felipe Murguia, MD – Advanced Imaging** | **Nic Robles, MD - Cath** | **Stephanie Ghaleb, MD - PACC** |

# Senior Chief Roles

Schedule Chief: **Sara Alhousseiny**

- Helps create and maintain the schedule for the academic year –
- Ensure that the needs of the fellows are being met by the rotation schedule (Program leadership will create the rotation schedule)
- Collect all vacation and schedule requests in the late winter/early spring.
- Create call/weekend schedule after block schedule has been created.
- Maintain an accurate schedule on Shared Drive
- Ensure that all schedule trades adhere to duty hour ACGME requirements.

Conference Chief: **Qasim Mehdi**

- Helps to manage all conferences and education for the academic year.
- Ensure appropriate scheduling of fellows for surgery conference, journal club and M&M
- Work as a liaison to Mansi and Munes for Surgery Conference, Yousef and Priya for M&M and Lynn for Journal Club
- Help program leadership ensure all educational goals are being met for the fellows.
- Advocate for the junior fellows in ensuring that they can attend all conferences.
- Maintain national conference schedule with dates and locations.

Wellness Chief: **Natalia Testo**

- Helps to ensure that the wellness needs are being met for the fellowship.
- Help program leadership schedule and execute the semi-annual Fellow retreats.
- Work with heart center Admins in ordering snacks and office supplies for the fellow office.
- Act as a liaison between the fellows and program leadership in advocating for activities/ideas that will improve the fellow wellness.

Recruitment Chief: **Sarah Zoretic**

- Helps to execute successful recruitment of the next year of fellows.
- Manage and update the UTSW pediatric cardiology social media accounts, following all UTSW rules/regulations.
- Ensure that the UTSW pediatric cardiology fellowship website is up-to-date and accurate.
- Work with program leadership to create videos of the fellows and hospital tours.
- Organize all fellow related sessions with the applicants (lunch during interview day, optional happy hours, etc.)
- Help facilitate optional second looks.

# Current Faculty:

## Cardiology Faculty

| | | |
|---|---|---|
| **NICOLAS MADSEN, M.D., M.P.H**<br>Professor<br>Chief of Cardiology<br>Co-Director of the Heart Center | **LASYA GAUR, M.D.**<br>Associate Professor<br>Advanced Cardiac Imaging<br>(Director of Echocardiography) | **MOLLY MCGETRICK, M.D.**<br>Assistant Professor<br>Cardiac Critical Care |
| **YOUSEF ARAR, M.D., M.P.H**<br>Assistant Professor<br>Cardiac Catheterization | **ERIN GORDON, D.O.**<br>Clinical Associate Professor<br>Cardiac Critical Care | **ROHIN MOZA, M.D.**<br>Assistant Professor<br>Cardiac Critical Care |
| **AHMED ASFARI, M.D**<br>Assistant Professor<br>Cardiac Critical Care | **F. GERALD GREIL, M.D., PH.D.**<br>Professor<br>Advanced Cardiac Imaging | **HOANG NGUYEN, M.D.**<br>Associate Professor<br>Electrophysiology |
| **SRAVANI AVULA, M.D**.<br>Assistant Professor<br>Acute Care Cardiology | **MEGAN GRIFFITHS, M.D.**<br>Assistant Professor<br>Pulmonary Hypertension | **SONALI PATEL, M.D., PH.D.**<br>Associate Professor<br>Acute Care Cardiology<br>(Medical Director of ACCU)<br>(Director of Medical Education) |
| **NATHANYA BAEZ HERNANDEZ, M.D**.<br>Assistant Professor<br>Pediatric Advanced Cardiac Care | **KATIE HANSEN, M.D.**<br>Assistant Professor<br>Sports Cardiology | **LAURA RADEL, M.D.**<br>Assistant Professor<br>Pediatric Advanced Cardiac Care |
| **SIRINE BALTAGI, M.D.**<br>Associate Professor<br>Cardiac Critical Care | **BRITTNEY HILLS, M.D., M.Ed.**<br>Assistant Professor<br>Acute Care Cardiology | **CLAUDIO RAMACIOTTI, M.D.**<br>Professor<br>Advanced Cardiac Imaging |
| **MARIA BANO, M.D.**<br>Associate Professor<br>Pediatric Advanced Cardiac Care | **TARIQUE HUSSAIN, M.D., PH.D.**<br>Professor<br>Advanced Cardiac Imaging<br>(Director of Advance Imaging) | **GIANNA ROMANO, M.D.**<br>Assistant Instructor |
| **PRIYA BHASKAR, M.D.**<br>Associate Professor<br>Cardiac Critical Care | **CATHERINE M. IKEMBA, M.D.**<br>Professor<br>Advanced Cardiac Imaging<br>(Director of Fetal) | **KAVITA SHARMA, M.D.**<br>Associate Professor<br>Advanced Cardiac Imaging |
| **RAMYA BILLA, M.B.B.S.**<br>Assistant Professor<br>Cardiac Critical Care | **MEHREEN IQBAL, M.D.**<br>Assistant Professor<br>Pediatric Advanced Cardiac Care | **STEPHEN SPURGIN, M.D.**<br>Assistant Professor<br>Research/General Cardiology |
| **SARAH D. BLUMENSCHEIN, M.D.**<br>Clinical Associate Professor<br>Preventive Cardiology | **PARAG JAIN, M.D.**<br>Associate Professor<br>Cardiac Critical Care | **SUREN VEERAM REDDY, M.D.**<br>Professor<br>Cardiac Catheterization<br>(Director of Cath lab) |
| **RYAN BUTTS, M.D.**<br>Professor<br>Pediatric Advanced Cardiac Care<br>(Director of PACC) | **COLIN E. KANE, M.D.**<br>Clinical Professor<br>General Cardiology | **JOSHUA WOLOVITS, M.D.**<br>Associate Professor<br>Cardiac Critical Care<br>(Medical Director of CVICU) |
| **RADOMIR CHABINIOK, M.D., PH.D.**<br>Associate Professor<br>Research | **JENNA KEELAN, M.D.**<br>Assistant Professor<br>Advanced Cardiac Imaging | **STEPHAN WU, M.D.**<br>Assistant Professor<br>Cardiac Catheterization |
| **MELINDA CORY, M.D.**<br>Assistant Professor<br>Cardiac Critical Care | **JAVIER LASA, M.D.**<br>Associate Professor<br>Cardiac Critical Care<br>(Director of Informatics and Strategy) | **PRISCILLA YU, M.D.**<br>Associate Professor<br>Cardiac Critical Care |
| **ABHAY DIVEKAR, M.B.B.S.**<br>Professor<br>Cardiac Catheterization | **MATTHEW S. LEMLER, M.D.**<br>Professor<br>Advanced Cardiac Imaging<br>(Director of Clinical Services) | **HAYDEN ZACCAGNI, M.D.**<br>Associate Professor<br>Cardiac Critical Care<br>(Director of Quality Improvement) |
| **JORDAN EZEKIAN, M.D., M.P.H.**<br>Assistant Professor<br>Electrophysiology | **MELODIE LYNN, D.O.**<br>Assistant Professor<br>Pediatric Advanced Cardiac Care | **THOMAS M. ZELLERS, M.D.**<br>Professor<br>Cardiac Catheterization |
| **MUNES FARES, M.D.**<br>Assistant Professor<br>Advanced Cardiac Imaging | **LYNN MAHONY, M.D.**<br>Professor<br>General Cardiology | **QING ZOU, PH.D.**<br>Assistant Professor<br>Research |
| **DAVID FIXLER, M.D.**<br>Professor<br>General Cardiology | **VIDHI MAKANJI, M.D.**<br>Assistant Professor<br>Acute Care Cardiology/ Palliative Care | **SCOTT WEINREB, M.D.**<br>Assistant Professor<br>Electrophysiology |
| **MANSI GAITONDE, M.D.**<br>Assistant Professor<br>Advanced Cardiac Imaging | **SADIA MALIK, M.D., M.P.H**<br>Professor<br>Preventive Cardiology (Director) | |

## CT Surgery Faculty

| | | |
|---|---|---|
| **ROBERT JAKE JAQUISS, M.D.**<br>Professor<br>Chief of Cardiac Surgery<br>Co-Director of the Heart Center | **RYAN DAVIES, M.D.**<br>Professor<br>Cardiac Surgery | **KARL REYES, M.D.**<br>Associate Professor<br>Cardiac Surgery |
| **NICHOLAS ANDERSEN, M.D.**<br>Associate Professor<br>Cardiac Surgery | **STEVEN LEONARD, M.D.**<br>Clinical Professor<br>Cardiac Surgery | |

## Cardiac Anesthesia

| | | |
|---|---|---|
| **LUIS ZABALA, M.D.**<br>Professor<br>Cardiac Anesthesia<br>(Director) | **INGRID MORENO DUARTE, M.D.**<br>Assistant Professor<br>Cardiac Anesthesia | **GARY TURNER, M.D.**<br>Cardiac Anesthesia |
| **MOHAMMED IQBAL AHMED, M.D.**<br>Professor<br>Cardiac Anesthesia | **MIKEL GORBEA, M.D.**<br>Assistant Professor<br>Cardiac Anesthesia | **SANA ULLAH, M.D.**<br>Associate Professor<br>Cardiac Anesthesia<br>Program Director |
| **MADELEINE ALVIN, M.D.**<br>Assistant Professor<br>Cardiac Anesthesia | **ROBY SEBASTIAN, M.D.**<br>Assistant Professor<br>Cardiac Anesthesia | |

## Pediatric Heart Specialists

| | | |
|---|---|---|
| **ALAN SING, M.D.**<br>General Cardiology<br>(Director) | **TRACY LAIRD, M.D.**<br>General Cardiology | **AMIT VERMA, M.D.**<br>General Cardiology |
| **SHANNON BLALOCK, M.D.**<br>General Cardiology | **ANDREW LASHUS, M.D.**<br>General Cardiology | **MERICK YAMADA, M.D.**<br>General Cardiology |
| **POOJA DESAI, M.D.**<br>General Cardiology | **BRIAN SNARR, M.D., PH.D.**<br>General Cardiology | **RAFAEL ZONAN AMKIE, M.D.**<br>General Cardiology |
| **PENN LAIRD JR., M.D.**<br>General Cardiology | **BRIANNA SOUDER, D.O**<br>General Cardiology | |

## Critical Care

| | | |
|---|---|---|
| **SAMUEL DAVILA, M.D.**<br>Clinical Associate Professor<br>Critical Care and ID<br>Associate Program Director | **MICHAEL GREEN, M.D.**<br>Professor<br>Critical Care<br>Associate Dean for GME and DIO | **OLIVIA HOFFMAN, M.D.**<br>Assistant Professor<br>Critical Care<br>Program Director |

# Cardiology Co-Pilots:

## UTSW Pediatric Cardiology Co-Pilot Program

Fellows are assigned a Fellowship Advisor, termed Co-Pilot. This role is different from a career or research mentor. The goal of this relationship is to provide the new fellows with a person that they can connect with early on when they are new and before they have had a chance to get to know all our faculty. The Co-Pilot will help the new fellows make transition into fellowship and will be a confidential person they can go to outside of program leadership when a problem arises.

Requirements:

- The program leadership will assign mentees to mentors. The goal will be to match personalities, not career interests.
- Mentors will be chosen from Junior Faculty (<5 years from leaving fellowship)
- Mentors will meet with assigned mentee at minimum once every 6 months (goal to meet quarterly).
- Mentors will commit to being a mentor for the 3 years that the fellow is in categorical fellowship. The goal is for this Mentor/Mentee relationship to be a constant relationship from the beginning to end of fellowship for each fellow.
- Program leadership will make every effort to assign fellows to faculty with complimentary personalities, however if the relationship is not compatible, program leadership will work to re-assign the fellows to a new mentor.

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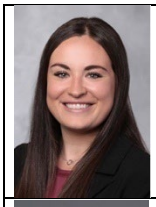
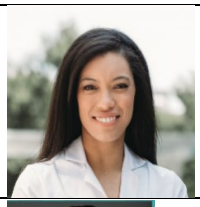
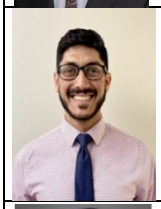
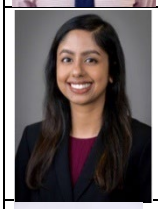
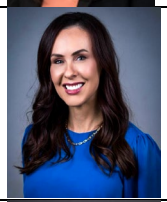
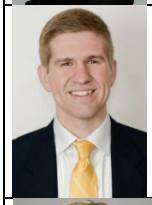
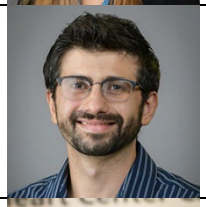
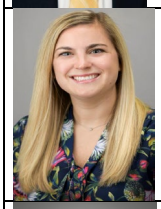
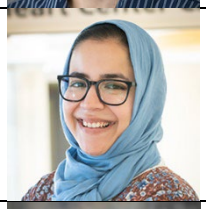
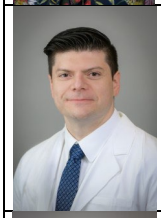
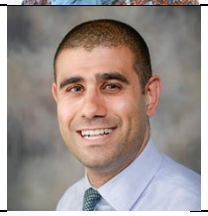
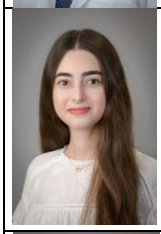
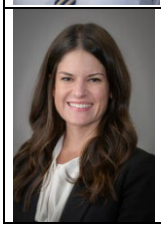
|  |  | Meaghan Bruner and Jordan Ezekian |
| | | Nathan Hsieh and Stephan Wu |
|  | | Adil Khan and Vidhi Makanji |
|  |  | Monisha Narayanan and Molly McGetrick |
| | | Ernest Naturinda and Rohin Moza |

| | | |
|---|---|---|
| | | Anusha Kodidhi and Jenna Keelan |
|  |  | Matt Mosgrove and Munes Fares |
|  |  | Natalia Testo and Mehreen Iqbal |
|  |  | Cicero Willis and Yousef Arar |
|  | | Sara Alhousseiny and Katie Hansen |
| | | Qasim Mehdi and Brittney Hills |
|  | | Sarah Zoretic and Melodie Lynn |

# Important contact information

Children's Help Desk: 214-456-6154

CICU Charge nurse 214-456-8599

CICU APP phone: 214-456-8342

C8 Charge nurse: 214-456-9278

Suji John (anesthesia APP): 469-934-7381

UTSW Safety Connection App: https://www.utsouthwestern.net/intranet/services/university-police/crime-prevention-programs/safety-connection/

# Policies and Procedures:

Below is a summary of the common policies that often affect our fellows. For more information and the full policy and procedures of UTSW and the GME, please go to the following links:

UTSW institutional policies: https://secure.compliance360.com/ext/jOlGKeirpRw=

GME policies: https://www.utsouthwestern.edu/education/graduate-medical-education/policies/

## Meal Money

**Purpose**

To outline the process for all qualified Residents and Fellows participating in overnight clinical activities at Children's to be assigned meal money by Graduate Medical Education (GME).

**Procedure**

1. Meal money is added based on the calendar month. For example, if a scheduled block falls over 2-months (i.e. August 15-September 15), money for shifts in August would only be available in August, and money for shifts in September would only be available in September.
2. Residents and Fellows will receive money based on the following criteria:
    a. $10 per every Overnight in-house (in-person, at a Children's location) call or night shift past midnight.
    b. Up to a maximum of $110 per month.
    c. **Meal Money does not rollover to the next month.**

- To use your badge money, inform the cashier that you are a Physician with Medical Education.
- Meal money can be used at the following locations: Main Cafeteria (Dallas and Plano), Tower D Café, Specialty Center Café, and coffee shops to purchase food and drinks only.
- Notify the GME office or your Program Coordinator as soon as you are aware that meal money is not on your badge.
- The Food Services staff is unable to view your account or help you with any badge issues. Call or email the GME office to verify funds are on your badge.

**RESTRICTIONS**

- Meal money cannot be used at the Gift Shops.
- Meal money cannot be used to purchase merchandise or gift cards (including reloading Starbucks card).
- Meal money is not intended for stocking up on non-perishable items. The GME office will receive notice of bulk purchasing.

Failure to comply with these restrictions may result in revoking your meal money privileges.

## Inclement Weather (Policy)

Official UTSW policy: As an institution involved in the delivery of medical care as well as teaching and research, UT Southwestern has an obligation to be open 24 hours a day, 7 days a week to provide ongoing patient care in its hospital and clinics and to be open for business hours in all other areas. In the event of an emergency (such as severe inclement weather, disease epidemic, or disaster) some of UT Southwestern's operations may be temporarily suspended, while at the same time, UT Southwestern's health care facilities may require full or supplemental staffing. Employees are expected to report to work unless otherwise directed by the UT Southwestern administration or other appropriate government authorities. In the event any applicable policies regarding attendance, leave, or use of accruals are modified in response to an emergency, UT Southwestern will notify employees of such changes as soon as practicable.

Inclement weather, as defined in this policy, may sometimes prevent an employee's timely attendance at work due to treacherous conditions caused by ice, snow, flood, or fog. Employees must use their best judgment when determining whether to travel to work and should inform their supervisors of their situation as soon as practicable. Unless other arrangements are made (see Adjustments to Work Hours and Locations, above), employee absences due to inclement weather will be charged to their available, applicable leave accruals. Sick leave may not be used to cover such absences, except in accordance with EMP-253 Sick Leave.

Essential personnel for our fellowship: If you are on consults, ACCU, CVICU or night float, then you should make every effort to be at the hospital for your shift. We can provide a place to sleep at the hospital if you do not feel it is safe to commute from the hospital to your residence. If you are unable to make it to the hospital for your shift, call Sonali or Melinda as soon as possible to help make arrangements.

Non-essential personnel: If you are on any other rotation, then you should plan to work from home.

## FMLA

- All fellows may take 12 weeks of FMLA during a 12-month period for FMLA qualifying reasons (as defined by law).
- Please communicate your need for FMLA with the PD/APD as soon as possible and we will help you make a plan.
- You will work with the program coordinator to complete the required paperwork.
- All fellows must complete 33 months of training (for a 3-year fellowship). If more than 3 months of leave/absences (including vacation, parental leave, illness, etc.) are taken, then this time must be made up by extending fellowship.

Official UTSW Policy: Eligibility and Qualifying Reasons Employees are eligible for FMLA leave if (a) they have worked for the State of Texas for at least 12 months and (b) they have worked at least 1,250 hours during the 12-month period immediately preceding the leave. The 12 months the employee must have worked for the State of Texas need not be consecutive months. However, periods of employment that precede a break in state service of seven (7) years or more

do not count toward the 12-month requirement, unless (i) the break is due to the fulfillment of the employee's National Guard or Reserve military service obligations, or (ii) there is a written agreement stating the State of Texas's intent to re-employ the employee after the break.

FMLA leave may be granted to an eligible employee for one or more of the following qualifying reasons:

1. The birth of a son/daughter and care after such birth;

2. The placement with the employee of a son/daughter for adoption or foster care;

3. The employee's own serious health condition that makes the employee unable to perform the functions of the employee's position;

4. To provide care for the employee's spouse, parent, or son/daughter with a serious health condition;

5. A qualifying exigency arising out of the fact the employee's spouse, son/daughter, or parent is on covered active duty or has been notified of an impending call or order to covered active duty ("military exigency leave"); or

6. To provide care for a covered servicemember with a serious injury or illness if the employee is the servicemember's spouse, son/daughter, parent, or next of kin ("military caregiver leave").

Because it is UT Southwestern's responsibility to designate leave as FMLA leave, UT Southwestern may require complete, sufficient documentation from an employee to determine if the leave requested is for an FMLA qualifying reason. If UT Southwestern does not have the information necessary to determine if the leave requested is for an FMLA qualifying reason, UT Southwestern may deny the FMLA leave request. Employees who are not eligible for FMLA leave under this policy may be eligible for leave for the birth, adoption, or placement of a child under EMP-257 State Parental Leave. Employees who are not eligible for or who have exhausted FMLA leave under this policy may also be eligible for leave as a reasonable accommodation under ETH-152 Reasonable Accommodations for Qualified Applicants and Employees with Disabilities or for unpaid leave under EMP-266 Leave of Absence Without Pay.

Health Insurance Coverage, Other Coverages, and Premium Payments: When an employee is on FMLA leave, UT Southwestern will continue the employee's group health insurance coverage as if the employee were not on FMLA leave, with the employee responsible for continuing any normal employee contributions. Employees will be responsible for payment of premiums for all other voluntary benefits during FMLA leave.

## Vacation/Sick Leave (Time Off Policy)

- Each fellow will accrue Paid Time Off benefits in accordance with the established UTSW policies. Currently, new employees can expect:
    - Vacation – 8 hours monthly (cannot be used for the first 6 months of employment)
    - Sick time – 8 hours monthly
    - Floating holiday time: accrue monthly, rate determined by UTSW in each fiscal year
    - Holidays: if you work on a UTSW designated holiday, please fill out the ROA form to have up to 8 hours of holiday time added to your PTO
    - If you have any unused vacation leave accrual at the time of separation from UTSW (end of fellowship) – you will receive a lump sum payment at the rate as if you worked that amount of time
- Please send your vacation requests to the program coordinator for the program director to approve at least 30 days prior
- Sick leave
    - Notify program coordinator and program director of sick leave request

- Notify on service attending, clinic attending and/or education liaison that you will not be on the rotation for the day
- Submit leave of absence form to program coordinator

| Employee with Total State Employment of: | Floating Holiday Hours Accrued Per Month | Vacation Hours Accrued Per Month | Total Hours Accrued Monthly | Maximum Vacation Hour Carryover into Next Fiscal Year |
|---|---|---|---|---|
| 0 but less than 2 years | 1.33 | 8 | 9.33 | 180 |
| 2 but less than 5 years | 1.33 | 9 | 10.33 | 244 |
| 5 but less than 10 years | 1.33 | 10 | 11.33 | 268 |
| 10 but less than 15 years | 1.33 | 11 | 12.33 | 292 |
| 15 but less than 20 years | 1.33 | 13 | 14.33 | 340 |
| 20 but less than 25 years | 1.33 | 15 | 16.33 | 388 |
| 25 but less than 30 years | 1.33 | 17 | 18.33 | 436 |
| 30 but less than 35 years | 1.33 | 19 | 20.33 | 484 |
| 35 years or more | 1.33 | 21 | 22.33 | 532 |

## UTSW Holidays

| | |
|---|---|
| Labor Day | Martin Luther King Jr. Day |
| Thanksgiving Day | Spring Holiday BreaK |
| Friday after Thanksgiving | Memorial Day |
| Christmas Day | Emancipation Day |
| New Year's Day | Independence Day |

- Holidays that fall on Saturday will be observed on Friday.
- Holidays that fall on Sunday will be observed on Monday.
- Employees also receive 3 floating holidays per year to be used on holidays not listed above.
- Employees who work on a designated holiday will be allowed holiday compensatory time on an hour-for-hour basis, up to 8 hours.

UT Southwestern Medical Center - Department of Pediatrics

# Request for or Report of Absence / Report of Holiday Worked

This form should be completed at least one week in advance of leave or immediately upon return from any unscheduled absence.

| **MONTH/YEAR (of leave):** | | |
|---|---|---|
| Employee Name (***print legibly***) | Person # | Division<br>Pediatric Cardiology |

| Leave Type | Beginning Date | Beginning Time | Ending Date | Ending Time | Hours Per Day ( < 100% FTE ) | Total # of Hours |
|---|---|---|---|---|---|---|
| **PERSONAL ABSENCE** | | | | | | |
| Vacation | | | | | | |
| Holiday used | | | | | | |
| Compensatory Time Used | | | | | | |
| **SICK LEAVE** | | | | | | |
| Employee sickness / doctor's appointment | | | | | | |
| Spouse sickness / doctor's appointment | | | | | | |
| Child sickness / doctor's appointment | | | | | | |
| FMLA (*prior approval required*) | | | | | | |
| **OTHER ABSENCE** | | | | | | |
| Funeral (*documentation required*) | | | | | | |
| Jury Duty (*documentation required*) | | | | | | |
| Non-paid Leave | | | | | | |
| Other (describe) | | | | | | |
| **Total # Hours of Leave Taken** | | | | | | |

| **HOLIDAY WORKED** | | | |
|---|---|---|---|
| Holiday Name | Date | # of Hours Worked | Supervisor Approval |
| | | | |
| | | | |

Employee Signature: Date:

_____ Approved _____ Denied

Supervisor's Signature: Date:

Comments:

**PLEASE NOTE: This report is an internal audit record and will be kept on file electronically in the Pediatrics Department.**

- Accrued holiday worked hours should be used during the 12-month period following the date of the holiday worked.
- FHOL accruals must be used before vacation accruals.
- Report all hours of leave. For exempt employees, leave of **less than four** hours will not be recorded in HCM; VSL accruals will be used for leave of **four or more** hours.
- All HCM forms should be processed through the Pediatrics Department by the 5th day of the month.

## Jury Duty

- Please communicate with the PD/APD and program coordinator when you need to miss work for Jury Duty

Official UTSW policy: It is UT Southwestern policy to permit an employee time away from work and to account for fees and expenses, in accordance with applicable state law, when an employee is required to serve as a juror or to appear as a witness in a judicial, administrative, or legislative proceeding.

Jury Service and Fees:

1. No deduction will be made from the salary or wages of any UT Southwestern employee who is called for jury service, nor will the employee be required to account to UT Southwestern for any fee or compensation received for jury service.

2. Absence for jury service will be recorded in myTime, and the employee's leave accruals will not be charged.

3. Employees are expected to work, if reasonably possible, when not actually serving on jury duty. For example, if the employee must report for jury service at 1:00 p.m. on a normal workday, the employee is expected to work from 8:00 a.m. – 12:00 p.m. At the discretion of UT Southwestern, evening and night shift employees may be reassigned to a day shift while they appear for jury service. If schedules or work demands do not permit reassignment, employees will be paid their regular wages for the time necessary to perform jury duty.

4. In order to qualify for pay during jury service, the employee must furnish documentary proof of service to their immediate supervisor. Employees are expected to promptly notify their supervisors if they receive a jury summons and to keep their supervisors regularly updated regarding the expected duration of jury service

## Education funds

- $1000 per year, these funds do not carry over from academic year to academic year.
- Any balance remaining at the end of the program reverts back to the Department.
- Can be used for books, software, travel, membership dues
- Review planned expenses beforehand with program coordinator to avoid non-reimbursement
- UTSW is very strict on what is reimbursable and how items are purchased. We have a particular vendor for ordering stethoscopes and books. Please reach out to me before purchasing.

**Limitations**

**Permitted Education Allowance Expenses:**

1. Educational Travel (conferences and meetings)
2. Textbooks
3. Board Prep Courses
4. General Pediatric Board Registration
5. Journal Subscriptions
6. Special Training Courses
7. Medical Association Fees
8. Medical Software
9. Texas Medical Board License
10. Texas Medical Jurisprudence Examination

**Prohibited Expenses:**

1. Desktop Computers/Laptops
2. Wireless devices, such as personal wireless communication devices or equipment
3. Cell phones, iPods
4. Field House Membership
5. Campus Parking Registration Fees
6. Immigration Fee
7. Passport Fee
8. Personal DEA
9. Dallas Area Rapid Transit (DART) Pass

## Poster Printing

- Funding for posters may require prior approval. Please communicate with your program coordinator in advance if poster printing is needed. We need to go through the printing services at UTSW. Submit to program

coordinator ~2 weeks prior to the conference. Send as a PDF and with the size you want. Program coordinator will submit the order and then deliver it to you.

## National and Local Meetings

Below are some instructions if you plan to travel to present at a conference during your fellowship.

- A completed intent to travel form **MUST** be submitted prior to any off-campus activity, i.e. away from workstation more than 6 + hours (applies to all local or out of state/country travel). Please submit the Intent to Travel form (attached) as soon as you know you are attending a conference. The approval process may take some time. The fellowship will cover your cost to attend the conference if you are presenting. The fellowship program covers two conferences during your categorical fellowship training (up to $2500 for each conference). Advanced 4th year fellows receive $5000 to use for one conference during their fellowship. If there is money left over, fellows may use it for another conference.
- Per policy **ALL** travel requests must be approved by PD regardless of whether paid for by division, educational funds, or host paid.
- You will submit these forms to the program coordinator upon completion and you will be notified once they have been approved.
- We utilize online booking tool Concur to complete travel arrangements. Below is the link to Concur:

  https://www.concursolutions.com/

  - Please log in and setup a profile as soon as you can. Be sure to add Kristy as an "admin" on your account profile so she can schedule your flights. Kristy cannot book flights for you if you do not set her up as your "admin." You can also set up all your travel preferences and your airline account numbers. Log in with your UTSW email address and password 'welcome' all lower case. If that does not work, select "forgot password" and they will send you a link to set up a new password.

Some travel rules:

- **Receipts**
  - After completion of trip please provide receipts to the program coordinator. Itemized meal receipts are **REQUIRED**.
  - Alcohol is not a permissible expense and if present, will be removed from receipt and total adjusted accordingly. (**TIP:** Have alcohol placed on a separate receipt to minimize reimbursement discrepancies)
  - If you are traveling with someone, it is much easier if you request separate receipts for meals, so you do not have to go in and separate the items.
  - Tips cannot exceed 20% of the **SUBTOTAL** (total not including tax).
  - **Itemized** hotel bill is required to be provided to your program coordinator. Hotel bill must be in fellows' name. Receipts must be itemized with the credit card method and a zero balance.
  - If you check bags, program coordinator will need a receipt for the checked bag and the actual bag tag.
  - Rental cars are not reimbursable. Please use Uber, Lyft or hotel shuttles.
- **Misc**
  - Do not book your own flights – they must be booked through Concur.
  - You must pay for your meals, hotel, and local transportation.
  - You will be reimbursed after the conference.

UT SOUTHWESTERN MEDICAL CENTER

# Absence Request - Intent to Travel

| Traveler's Name: | Date Submitted |
|---|---|
| | |

| Dates of Travel | | | | |
|---|---|---|---|---|
| **Beginning Date** | | **Start Time** | | **Total Days Requested** |
| **Ending Date** | | **End Time** | | |

| Vacation Days To Be Taken | | | | |
|---|---|---|---|---|
| **Beginning Date** | | **Start Time** | | **Total Days Requested** |
| **Ending Date** | | **End Time** | | |

| **Date of Birth** | **Domestic Travel**<br>City:<br>St | **International Travel**<br>Country: |
|---|---|---|
| **Benefit to UT Southwestern** | | |

**Business Related Leave**

☐ Conference:
Conference Dates:
Web Address of Conference:
☐ Invited Speaker/Visiting Professor
☐ Host Paid Amount: $ _____ Host Name:
☐ Honorarium Paid Amount: $ _____ Honorarium Name:
☐ Scientific Committee/Review Board
☐ Research Related
☐ Other Business Related:

**Traveler's Signature**

I certify that the information provided by me in this document is, to the best of my knowledge, true and correct.

Signature_____ Date_____

Printed Name: _____

**Report's To Signature**

Signature_____ Date_____

Printed Name:_____

**Optional Departmental Use**

| Approximate Cost: | | | | | |
|---|---|---|---|---|---|
| **Air Fare, Taxi, Shuttle, Rental** | **Meals** | **Lodging** | **Registration** | **Incidentals** | **TOTAL** |
| $ _____ | $ _____ | $ _____ | $ _____ | $ _____ | $ _____ |

____ individual discretionary funds to be used

____ division discretionary funds to be used (requires Division Chief approval and signature) Division Chief Signature:_____

# Common Meetings and Approximate Submission Dates

| | Conference | Abstract Deadline | Dates | Location |
|---|---|---|---|---|
| **General** | ACC | ~December 2024/ January 2025 | March 29-31, 2025 | Chicago |
| | AHA | June 6, 2024 | November 16-18, 2024 | Chicago |
| | AAP | April 12, 2024 | September 27 - October 1, 2024 | Orlando |
| | WCPCCS | April 2025 | December 7-12, 2025 | Hong Kong |
| | PC4/PAC3 | ~February 2025 | ~May 2025 | |
| **Imaging** | ASE | ~January/February 2025 | September 5-8, 2025 | Nashville |
| | SCMR | September 5, 2024 | January 29-February, 2025 | Washington DC |
| | NASCI | | September 2024 | Boston |
| **Interventional** | PICS | June 15 2024 | September 4-7, 2024 | San Diego |
| | SCAI | ~February 2025 | May 1-3, 2025 | Washington DC |
| | TCT | July 16, 2024 | October 27-30, 2024 | Washington DC |
| **Transplant** | ISHLT | ~October 2024 | April 27-30, 2025 | Boston |
| | American Transplant Congress | | | |
| **EP** | HRS | ~December 2024 | April 24-27, 2025 | San Diego |
| | PACES | | | |
| **CVICU** | PCICS | July 14, 2024 | November 14-17, 2024 | San Diego |
| **Congenital** | CHOP | | ~February 2025 | |
| **Neurodevelopment** | CNOC | | September 12-14, 2024 | St. Louis |

# Rotation Information and Goals and Objectives:

## General Rotation Assignments per year

| | 1st year | 2nd year | 3rd year |
|---|---|---|---|
| **Inpatient** | 4 weeks | 4 weeks | 4 weeks |
| **Consults** | 4 weeks | 4 weeks | 4 weeks |
| **CVICU/CVICU Nights** | 4 weeks | 6 weeks | 6 weeks |
| **Heart Failure/ Transplant** | 3 weeks | 3 weeks | 3 weeks |
| **Imaging** | 8 weeks | 4 weeks | 4 weeks |
| **Electrophysiology** | 3 weeks | 0 | 3 weeks |
| **Cardiac Catheterization** | 6 weeks | 4 weeks | 0 |
| **Adult Congenital** | 0 | 3 weeks | 0 |
| **Research** | 12 weeks | 16 weeks | 23 weeks |
| **Elective/Other** | 2 weeks | 5 weeks | 3 weeks |

## Education liaison

1. Serve as the main point of contact for your respective rotation with the fellowship program leadership.
2. Meet with the fellows on the first day of their rotation to outline expectations for them while they are on the rotation.
3. Ensure that the Goals and Objectives are being met for the fellows during their rotation.
4. Meet with the fellow at the end of their rotation to give feedback.
5. Collect feedback from the other faculty members in your subspeciality on the performance of the fellow during the rotation. Collate the feedback and submit the evaluation in Medhub at the end of the fellow rotation.
6. Update the Goals and Objectives for the pediatric cardiology fellowship rotation on an annual basis in partnership with an appointed fellow.

| Rotation | Attending |
|---|---|
| **Inpatient** | Brittany Hills |
| **CVICU** | Priya Bhaskar |
| **Consults** | Matt Lemler |
| **Cath** | Yousef Arar |
| **EP** | Hoang Nguyen |
| **Imaging** | Mansi Gaitonde |
| **Transplant** | Nathanya Baez-Hernandez |
| **Outpatient** | Sadia Malik |
| **ACHD** | Beth Brickner |

## Acute Care Cardiology

The fellow is responsible for all acute care cardiology inpatients. All patients are seen at least once each day with an attending cardiologist. Rounds on the cardiology inpatient floor are held daily with the attending cardiologist, senior resident (PL2 or PL3), 3 interns (PL1), 2-3 medical students, and the multidisciplinary team. The fellow participates actively in teaching discussions with the residents and attending physician. During this rotation, the fellow will become skilled in diagnosing congenital and acquired heart disease. He/she will demonstrate competence in treating patients with medical cardiology problems (e.g., congestive heart failure, pericarditis, rhythm disturbances) and in caring for preoperative and postoperative patients.

**Patient Care –** The fellow will demonstrate the ability to:

| **Goal** | **Fellow Year 1** | **Fellow Year 2** | **Fellow Year 3** |
|---|---|---|---|
| Obtain and report a detailed and comprehensive history and physical examination, interpret and obtain additional relevant diagnostic studies for cardiology patients on the ACCU. Present information at clinical conferences and document in the medical record | x | x | x |
| Formulate a daily assessment and plan using patient vital sign trends, diagnostic studies and daily physical exam | x | x | x |
| Evaluate if consultation services are required and formulate an appropriate question and rationale | x | x | x |
| Discriminate changes in clinical status and which need to be reported to the attending immediately versus those which can be addressed during rounds | x | x | x |
| Discriminate between patients who may be appropriately admitted to the ACCU, and those who require transfer to the CICU | x | x | x |
| Evaluate and manage growth failure in cardiac patients and understand the etiology of growth failure | x | x | x |
| Identify the unique complexities of caring for a chronically ill or technology-dependent pediatric cardiac patient and family (trach, gastrostomy tube for feedings, pacemaker, etc) and formulate an appropriate care plan to address these issues and ensure safe discharge | | x | x |
| Evaluate and manage postoperative complications | | x | x |

| | | | | |
|---|---|---|---|---|
| Lead daily rounds formulating daily plans and discharge care plans using evidence-based medicine, care team and family input. Predicting date of discharge to ensure medical and logistical readiness align | | | | x |
| Evaluate and manage patients with:<br>1. Acyanotic heart disease<br>2. Simple cyanotic heart disease<br>3. Complex cyanotic heart disease<br>4. Acquired heart disease including myocarditis, pericarditis, rheumatic fever, Kawasaki disease<br>5. Congestive heart failure secondary to decreased ventricular function<br>6. Systemic hypertension<br>7. Simple arrhythmias<br>8. Complex arrhythmias | 1. | x | x | x |
| | 2. | x | x | x |
| | 3. | | x | x |
| | 4. | | x | x |
| | 5. | | x | x |
| | 6. | x | x | x |
| | 7. | x | x | x |
| | 8. | | x | x |

**Goal – Medical Knowledge –** The fellow will:

| **Goal** | **Fellow Year 1** | **Fellow Year 2** | **Fellow Year 3** |
|---|---|---|---|
| Recognize heart disease versus other illnesses and develop a prioritized differential diagnosis for children hospitalized for acute illnesses | x | x | x |
| Demonstrate an understanding of cardiovascular manifestations associated with systemic diseases including chromosomal abnormalities, myopathies, renal failure, and/or collagen vascular disease | x | x | x |
| Demonstrate an understanding of pharmacology (mechanism of action, side effects, etc) of common cardiovascular medications | x | x | x |
| Apply knowledge of pharmacology in adding or removing medications to optimize cardiovascular hemodynamics | | x | x |
| Be able to incorporate evidence-based data to develop complete treatment plans | | x | x |

**Goal – Interpersonal and Communication Skills –** The fellow will demonstrate the ability to:

| **Goal** | **Fellow Year 1** | **Fellow Year 2** | **Fellow Year 3** |
|---|---|---|---|
| Communicate effectively in a developmentally appropriate manner with patients and families to create and sustain a professional and therapeutic relationship across a broad range of socioeconomic and cultural backgrounds | x | x | x |

| | | | |
|---|---|---|---|
| Effectively and efficiently communicate changes in patient status to attending physicians | x | x | x |
| Prepare and send updates to primary cardiologists regarding, admission and brief hospital course at discharge that are organized and concise | | x | x |
| Obtain informed consent for fellow-performed procedures and conscious sedation | x | x | x |
| Participate in all patient care and discharge conferences | x | x | x |
| Lead all patient care and discharge conferences | | | x |

**Goal – Practiced Based Learning and Improvement –** The fellow will:

| **Goal** | **Fellow Year 1** | **Fellow Year 2** | **Fellow Year 3** |
|---|---|---|---|
| Demonstrate the use of evidence-based medicine and information technology in the care of patients | x | x | x |
| Demonstrate acquisition of new knowledge through self-directed independent learning | x | x | x |
| Meet individually with attendings prior to and during rotation to review performance | x | x | x |
| Actively participate in the education of patients and families | x | x | x |
| Adapt existing education tools and teach students, residents and advanced practice providers | x | x | x |
| Design effective education opportunities for students, residents and advanced practice providers | | x | x |
| Demonstrate competence in conducting teaching rounds independently | | | x |
| Demonstrate the ability to assist in providing for continuity of care with surgeons, other cardiologists, and primary care providers | x | x | x |
| Actively seek out and listen to constructive feedback from other members on the care team as well as patients and families and incorporate this feedback, when appropriate, into a plan for professional development | x | x | x |
| Provide professional feedback to residents and medical students on presentations, and clinical work | | x | x |

**Goal – Professionalism –** The fellow will demonstrate:

| Goal | Fellow Year 1 | Fellow Year 2 | Fellow Year 3 |
|---|---|---|---|
| The ability to consistently maintain respect, compassion, integrity, honesty, and responsiveness to the needs of patients and the health care team in a way that supersedes self-interest | x | x | x |
| Accountability to all patients (even if other physicians are primarily responsible for their care) and the health care team | x | x | x |
| A commitment to excellence and ongoing professional development by being prepared, on-time, in appropriate attire, and contributing to rounds | x | x | x |
| The ability to be sensitive to the needs of the patient and the parent/guardian by applying negotiation, compromise, and mutual respect in the daily care of patients | x | x | x |
| The ability to recognize and demonstrate an understanding of ethical, cultural, religious, or spiritual values of importance to patients and families during communications and care decisions | x | x | x |
| A commitment to confidentiality, privacy, and respect for patients and families | x | x | x |
| Empathy towards the child and family in negotiating and designing goals of treatment, including relevant medical, legal, and psychological issues | x | x | x |
| Advocacy for patients and their families | x | x | x |
| The ability to honestly assess one's contribution to errors that are made, accept responsibility for personal mistakes, and implement plans to prevent oneself and others from making the mistake again | x | x | x |
| Understanding of how social determinants of health can contribute to both a patient's hospitalization and discharge and appropriately mitigating the risks we can | x | x | x |

**Goal – Systems-Based Practice –** The fellow will demonstrate the ability to:

| Goal | Fellow Year 1 | Fellow Year 2 | Fellow Year 3 |
|---|---|---|---|
| Prioritize the various modes of diagnostic testing and select the most appropriate testing modality, with a goal toward preventing unnecessary laboratory or imaging tests | x | x | x |
| Facilitate involvement of multidisciplinary team members in patient care and demonstrate ability to work with all members | x | x | x |

| | | | |
|---|---|---|---|
| Advocate for patients in the inpatient setting by helping them navigate within system complexities and directing them to support services as needed | x | x | x |
| Comply with institutional systems that have been developed to prevent errors in the administration of "high risk" medications, such as digoxin | x | x | x |
| Recognize and address any gaps in protocols that could lead to potential safety concerns | | x | x |
| Avoid use of ambiguous or unacceptable abbreviations in the medical record, prescriptions, and medical orders | x | x | x |

**Weekly Schedule**

| | **MONDAY** | **TUESDAY** | **WEDNESDAY** | **THURSDAY** | **FRIDAY** |
|---|---|---|---|---|---|
| **Morning** | • Surgical Rounds<br>• CT surgery Conference<br>• Medical Rounds | • Echo conference<br>• Surgical Rounds<br>• Medical Rounds | • Didactics<br>• Surgical Rounds<br>• Medical Rounds | • Heart center conference<br>• Surgical Rounds<br>• Medical Rounds | • Echo conference<br>• Surgical Rounds<br>• Medical Rounds |
| **Afternoon** | • Follow-up on plans from rounds<br>• Resident teaching | • Follow-up on plans from rounds<br>• Resident teaching<br>• Fellow Lecture Series | • Follow-up on plans from rounds<br>• Resident teaching<br>• CMAP rounds | • Follow-up on plans from rounds<br>• Resident teaching<br>• ACCU handoff<br>• Didactics | • Follow-up on plans from rounds<br>• Resident teaching |

## Consults

The consult cardiology fellow will be an integral part of the consultation team. In addition to the fellow, the team is made up of one to two advance pediatric practitioners and an attending cardiologist. The consult service provides cardiology consultation for the pediatric, cardiac, and neonatal intensive care units, as well as any cardiac issues in the emergency room and in-patient wards at Children's Medical Center. Additionally, consultations are performed in the NICU at Clements University Hospital and the NICU and burn unit at Parkland Memorial Hospital (adjacent to CMC campus). These consultations can be one-time visits, to answer a specific question or the management of more chronic cardiac issues thus requiring multiple and consistent follow up visits.

Additionally, patients with significant cardiac issues who require long term care are followed by a primary cardiology fellow and attending. This relationship will extend beyond the 4-week rotation, to provide continuity for the patient and for fellow education. It will be required that all categorical fellows have an extensive in-patient continuity experience. This will be evaluated as part of their consultation rotation.

During the consult rotation the fellow will become skilled in diagnosing congenital and acquired heart disease. The physician will demonstrate competency in treating patients with medical cardiology issues (e.g., congestive heart failure, pericarditis, rhythm disturbances, Kawasaki's disease). The peri-operative experience will concentrate on surgical planning and complications. The acute management of peri-operative operative patients are provided by ICU and ACC rotations. The fellow will be responsible for educating the patient and parents in addition to providing teaching opportunities to the pediatric residents.

**Goal - Patient Care –** The fellow will demonstrate the ability to:

1. Understand clinical conditions and management plans of all medical and surgical issues, through presentations and medical documentation to the cardiology attendings, cardiac surgeons, referring physicians and parents.
2. Evaluate, arrive at differential diagnosis, and manage patients with:
   a. Acyanotic heart disease (Year 1)
   b. Simple cyanotic heart disease (Year 2)
   c. Complex cyanotic heart disease (year 3)
   d. Acquired heart disease including myocarditis, pericarditis, rheumatic fever, Kawasaki disease (Year 2)
   e. Congestive heart failure secondary to decreased ventricular function (Year 2)
   f. Simple arrhythmias (Year 1)
   g. Complex arrhythmias (Year 3)
   h. By year 3. The fellow will be expected to competently obtain a history, perform the examination, order and interpret all cardiac testing required for diagnosis and therapy.
3. Evaluate and manage postoperative complications (Year 2).
4. Evaluate and manage growth failure in cardiac patients (Year 1).
5. Discriminate changes in clinical status of patients or severity of clinical status of patients which need to be reported to the attending immediately from those which can be presented during rounds (Year 1).
6. Effectively evaluate patients in the ER, provide needed diagnosis, with therapeutic plans (Year 1).
7. Determine the need for hospital admission and the most appropriate location and service (Year 1)
8. Identify complexities facing the chronically ill or technology-dependent pediatric patient and family (gastrostomy tube for feedings, pacemaker, etc) and formulate an appropriate care plan to address these issues (Year 1).

**Goal - Medical Knowledge –** The fellow will demonstrate:

1. Recognition of heart disease versus other illnesses and to develop a prioritized differential diagnosis for children hospitalized for acute illnesses or seen in the emergency referral center (Year 1).

2. Understand cardiovascular manifestations of systemic diseases including myopathies, chromosomal abnormalities, renal failure, collagen vascular disease (Year 1).
3. Understand pharmacology (mechanism of action, side effects, etc) of common cardiovascular medications (Year 2).

**Goal - Interpersonal and Communication Skills -** The fellow will demonstrate the ability to:

1. Communicate effectively in a developmentally appropriate manner with patients and families to create and sustain a professional and therapeutic relationship across a broad range of socioeconomic and cultural backgrounds (Year 1).
2. Ability to communicate difficult news and unpredicted poor results with parents (Year 3)
3. Effectively communicate changes in patient status to attending physicians (Year 1).
4. Participate in care conferences (Year 1).
5. Lead care conferences (Year 3).
6. Prepare progress and consultation notes that are organized and meet documentation requirements (Year 1).
7. Triage phone calls (after hrs) appropriately and well-document as demonstrated by discussion with attending cardiologist and in EPIC notes (Year 1).

**Goal - Practiced Based Learning and Improvement** - The fellow will:

1. Demonstrate acquisition of new knowledge through self-directed independent learning (Year 1).
2. Actively seek out and listen to constructive feedback from other members on the care team as well as patients and families and incorporate this feedback, when appropriate, into a plan for professional development (Year 1).
3. Meet individually with attendings during rotation to review performance (Year 1).
4. Actively participate in the education of patients and families (Year 1).
5. Demonstrate effective education of students, residents, and other health professionals (Year 1).

**Goal – Professionalism** – The fellow will demonstrate:

1. The ability to consistently maintain respect, compassion, integrity, honesty, and responsiveness to the needs of patients and the health care team in a way that supersedes self-interest (Year 1).
2. Accountability to all patients (Year 1).
3. A commitment to excellence and ongoing professional development by being prepared, on-time, in appropriate attire, and contributing to rounds (Year 1).
4. The ability to be sensitive to the needs of the patient and the parent/guardian by applying mutual respect in the daily care of patients (Year 1).
5. The ability to recognize and demonstrate an understanding of ethical, cultural, religious, or spiritual values of importance to patients and families during communications and care decisions **(**Year 1).
6. A commitment to confidentiality, privacy, and respect for patients and families (Year 1).
7. Empathy towards the child and family in negotiating and designing goals of treatment, including relevant medical, legal and psychological issues (Year 1).
8. Advocacy for patients and their families (Year 2).
9. The ability to honestly assess one's contribution to errors that are made, accept responsibility for personal mistakes (Year 1)

**Goal - Systems-Based Practice -** The fellow will demonstrate the ability to:

1. Prioritize the various modes of diagnostic testing and select the most appropriate testing modality, with a goal toward preventing unnecessary laboratory or imaging tests **(**Year 1).
2. Comply with institutional systems that have been developed to prevent errors in the administration of "high risk" medications. (Year 1).

3. Avoid use of ambiguous or unacceptable abbreviations in the medical record, prescriptions, and medical orders (Year 1).
4. Implement plans to prevent future error for both the individual and team (Year 2).

**Weekly schedule**

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| Morning | • Attend surgical conference<br>• "pre-round" on established consults<br>• Round on established consults | • Attend Echo conference<br>• "Pre-round" on established consults<br>• Round on established consults | • Attend didactics<br>• "Pre-round" on established consults<br>• Round on established consults | • Attend Thursday Conference<br>• "Pre-round" on established consults<br>• Round on established consults | • Attend echo conference<br>• "Pre-round" on established consults<br>• Round on established consults |
| Afternoon | • Answer pages and see new consults<br>• Follow-up on plans from rounds<br>• Follow-up on echoes ordered | • Answer pages and see new consults<br>• Follow-up on plans from rounds<br>• Follow-up on echoes ordered<br>• Attend didactics | • Answer pages and see new consults<br>• Follow-up on plans from rounds<br>• Follow-up on echoes ordered | • Answer pages and see new consults<br>• Follow-up on plans from rounds<br>• Follow-up on echoes ordered<br>• Medical Discussion/hand-off rounds (at 3PM)<br>• Attend didactics | • Answer pages and see new consults<br>• Follow-up on plans from rounds<br>• Follow-up on echoes ordered |

## CVICU

The fellow is responsible for managing all critically ill and postoperative cardiology patients in the cardiac intensive care unit and will work with the attending cardiac intensivist and the on-service inpatient cardiologist, as well as the cardiac surgeons. During this rotation the fellow becomes skilled in caring for postoperative patients and learns to manage patients with various complications. The fellow will demonstrate competence in caring for non-operative patients with acquired heart disease and children who require mechanical circulatory support. In addition, this rotation allows the fellow to demonstrate knowledge of cardiac anatomy as visualized by the surgeon and with techniques of cardiopulmonary bypass. The fellow provides daytime patient care for three weeks and one week of night float during this rotation. During the first 2 years of fellowship, the daytime rotation will consist of the fellow being the first call provider for their assigned patients. In the 3rd year of fellowship, the last 2 weeks of the rotation will consist of the fellow having a more supervisory role for the entire team and will act as the "pretending" under the guidance of the attending intensivist.

**Goal - Patient Care -** The fellow should demonstrate:

1. through presentations of patients on rounds and by documentation in the medical record the ability to report a detailed and appropriate history and physical examination along with pertinent diagnostic studies on cardiology ICU patients (Year 1).
2. the ability to identify, evaluate and manage postoperative complications (Year 2).
3. the ability to evaluate and manage critically ill patients involving:
    a. Ventilator management/cardiopulmonary interactions (single ventricle, heart failure, etc.)/extubation principles (Year 1)
    b. Determinants of O2 saturation and oxygen delivery (Year 1), Fick's principle and calculation of bedside Qp:Qs and it's application
    c. Assessment of myocardial performance/need for inotropic support, afterload manipulation (Year 2)
    d. Assessment of need for mechanical circulatory support/ECMO (Year 1
    e. Management of pulmonary hypertension (including use of inhaled NO) (Year 1)
    f. Enteral/parenteral nutritional support strategies (Year 1)
    g. Diuretic management/renal replacement therapy (Year 1)
    h. Pain/sedation management (Year 1)
    i. Thrombosis prophylaxis/Management of thrombosis (Year 1)
4. the ability to evaluate and manage patients with structural heart disease with regard to:
    a. Preoperative management
        1) Indications and contraindications for surgical/catheter-based intervention (Year 3).
    b. Intraoperative management
        1) Principles of general anesthesia/specific agents (Year 2)
    c. Diagnosis/management of postoperative complications
5. the ability to evaluate and manage patients with arrhythmias:
    a. General arrhythmia identification (Year 2)
    b. Postoperative arrhythmias
        1) Identification/diagnosis (atrial lead EKG interpretation, transesophageal lead, temporary pacing wire electrograms) (Year 2)
        2) Management (Year 2)
        3) Temporary pacemaker function (Year 1)
        4) Indications for permanent pacemaker placement (Year 1)
6. the ability to evaluate and manage patients with myocardial ischemia/infarction
    a. ECG characteristics/recognition (Year 2)
    b. Laboratory evaluation of ischemia (Year 2)
    c. Pharmacologic management (Year 3)

7. the ability, to evaluate and manage patients with cardiomyopathy/severe CHF (Year 2)
    a. Identify when long-term circulatory support (VAD) may be indicated (Year 2)
    b. Identify when long-term inotropic support is appropriate (Year 2)
8. proficiency in the following procedural skills with assistance as needed from attending physicians.
    a. CPR/PALS/ACLS/cardioversion (Year 1)
    b. Temporary pacing (using temporary pacing wires, esophageal probe, and transthoracic pads) (Year 2)
    c. Central venous line placement (Year 1)
    d. Arterial line placement (Year 1)
    e. Endotracheal intubation and ventilator management (Year 2)
    f. Thoracentesis and chest tube placement (Year 2)
9. Identify, evaluate, and manage low cardiac output
    a. Understand the different etiologies that can lead to low cardiac output state post-operatively (Year 1)
    b. Identify clinical and laboratory markers of low cardiac output state (Year 1)
    c. Develop a plan to directly address etiology of low cardiac output state (Year 2)

**Goal - Medical Knowledge –** The fellow should demonstrate:

1. competence in developing a prioritized differential diagnosis for children with heart diseases hospitalized in the cardiology intensive care unit (Year 1).
2. an understanding of pharmacology (mechanism of action, side effects, etc) of common cardiovascular medications (Year 2).
3. knowledge of the various forms of mechanical circulatory support (Year 1).
4. the ability to think analytically and apply it to direct patient care (Year 1).
5. The knowledge of different types of invasive and non-invasive monitoring for critically ill children and the appropriate use in different patient situations (Year 1)

**Goal - Interpersonal and Communication Skills -** The fellow should:

1. demonstrate the ability to communicate effectively in a developmentally appropriate manner with patients and families to create and sustain a professional and therapeutic relationship across a broad range of socioeconomic and cultural backgrounds (Year 1).
2. demonstrate the ability to effectively communicate changes in patient status to attending physicians (Year 1).
3. participate in care conferences (Year 1).
4. assist in leading care conference (Year 3).
5. demonstrate the ability to prepare progress and transfer notes that are organized and meet documentation requirements (Year 1).

**Goal - Practiced Based Learning and Improvement** – The fellow should:

1. demonstrate the use of evidence-based medicine and information technology in the care of patients (Year 1).
2. actively seek out and listen to constructive feedback from other members on the care team as well as patients and families and incorporate this feedback, when appropriate, into a plan for professional development (Year 1).
3. attend cardiology-cardiovascular surgery conference and peer review conference regularly (Year 1).
4. meet individually with attendings during rotation to review performance (Year 1).
5. demonstrate effective education of students, residents, and other health professionals (Year 1).

**Goal - Professionalism** – The fellow should demonstrate:

1. the ability to consistently maintain respect, compassion, integrity, honesty, and responsiveness to the needs of patients and the health care team in a way that supersedes self-interest (Year 1).
2. accountability to all patients (even if other physicians are primarily responsible for their care) and the healthcare team (Year 1).
3. a commitment to excellence and ongoing professional development by being prepared, on-time, in appropriate attire and contributing in rounds (Year 1).
4. the ability to be sensitive to the needs of the patient and the parent/guardian by applying negotiation, compromise, and mutual respect in the daily care of inpatients (Year 1).
5. the ability to recognize and demonstrate an understanding of ethical, cultural, religious, or spiritual values of import to patients and families during communications and care decisions (Year 1).
6. commitment to confidentiality, privacy, and respect for patients and families (Year 1).
7. empathy towards the child and family in negotiating and designing goals of treatment, including relevant medical, legal, and psychological issues (Year 1).
8. advocacy for patients and their families (Year 1)
9. the ability to honestly assess one's contribution to errors that are made, accept responsibility for personal mistakes and implement plans to prevent oneself and others from making the mistake again (Year 1)

**Goal - Systems-Based Practice -** The fellow should demonstrate the ability to:

1. prioritize the various modes of diagnostic testing and select the most appropriate testing modality, with a goal toward preventing unnecessary laboratory or imaging tests (Year 1).
2. facilitate involvement of multidisciplinary team in patient care and demonstrate ability to work with all members (Year 1).
3. advocate for patients in the inpatient setting by helping them navigate within system complexities and directing them to support services as needed (Year 1).
4. comply with institutional systems that have been developed to prevent errors in the administration of "high risk" medications, such as digoxin (Year 1).
5. avoid the use of ambiguous or unacceptable abbreviations in the medical record, prescriptions, and medical orders (Year 1).

**CICU Passport:**

Each fellow will receive a CICU passport to help keep track of goals and topics to learn.
https://d2l.utsouthwestern.edu/d2l/loginh/

The fellow must plan to have a 10 to 15 minute discussion with the attending on service and/or do self-directed learning on each of these topics by the end of the first year rotation.

| **Core topics** | | **Learning Modality** |
|---|---|---|
| CVICU orientation (required) | ☐ | |
| Identification and initial management of critical heart disease | ☐ | |
| Ductal dependent lesions | ☐ | |
| Components of cardiac output and Qp:Qs | ☐ | |
| Cardiopulmonary interactions | ☐ | |
| Hemodynamic monitoring | ☐ | |
| **Elective Topics** | | |
| Management of Heart Failure | ☐ | |
| Cardiopulmonary resuscitation and post arrest care | ☐ | |
| Post-op management and low cardiac output syndrome | ☐ | |
| Mechanical ventilation and non-invasive modes of ventilation | ☐ | |

**Skills that we will be keeping track of:**

| **Skills** | **Observe** | **Participate** |
|---|---|---|
| Arterial line | | |
| Central venous line | | |
| Chest tube | | |
| Intubation | | |
| Chest US | | |
| POCUS Echo | | |
| CPR | | |
| Defibrillation | | |
| Cardioversion | | |
| ECMO cannulation | | |
| Provider for ECMO | | |
| Removal of Lines/drains/pacing wires | | |

**Weekly schedule**

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| Morning | • Surgery Rounds<br>• CT surgery conference<br>• Medical Rounds | • Surgery Rounds<br>• Medical Rounds | • Surgery Rounds<br>• Medical Rounds | • Surgery Rounds<br>• Medical Rounds | • Surgery Rounds<br>• Medical Rounds |
| Afternoon | • Admit post-ops<br>• Follow-up on plans from rounds | • Admit post-ops<br>• Follow-up on plans from rounds | • Admit post-ops<br>• Follow-up on plans from rounds | • CVICU conference 12-2<br>• Admit post-ops<br>• Follow-up on plans from rounds | • Admit post-ops<br>• Follow-up on plans from rounds |

## Heart Failure/Transplant

The Pediatric Advanced Cardiac Care Program (PACC) has been developed to ensure best practice in the management of children with cardiac dysfunction or the potential to have cardiac dysfunction.

This rotation occurs in year 1, 2 and 3 and the goals of the rotation are to learn about the mechanisms of heart failure, its management and outcomes as well as the care of post-transplant patients. During the first year, the fellow will spend one month in the PACC program. This will include rounding on the relevant inpatients, attending transplant and heart failure clinic & conference, and seeing patients referred for transplant or heart failure evaluation. During the second and third year the fellow will spend 2 weeks in the PACC program. This will include rounding on the relevant inpatients where the fellow will serve as pretending, especially during the 3rd year. Participation in PACC related conferences is required.

Training will be through formal lectures, ward rounds and through the regular program meetings. Additionally, fellows will be required to prepare a lecture during their 1st year to be given at the final Tuesday educational conference on the Heart Failure, Mechanical Support, or Transplant topic of their choosing.

Evaluation of the fellow occurs through direct observation during the rotation.

### Heart Function

The goal of this rotation is to provide a general knowledge of heart function.

**Goals - Patient Care** – The fellow should demonstrate:

1. Knowledge of the indications for referral for heart function assessment (Year2, 3).
2. The ability to evaluate patients with reduced heart function (Year 2, 3).
3. Understanding the social and financial impact of heart failure on the patient and family. (Year 2, 3).
4. The ability to establish a surveillance program for those at risk of poor heart function (Year 2, 3).

**Goals - Medical Knowledge** – The fellow should demonstrate knowledge of:

1. Etiology of heart failure (Year 1, 2, 3).
2. Pathophysiology of heart failure (Year 1, 2, 3).
3. Mechanism of action of heart failure agents and their adverse effects (Year 1,2, 3).
4. Heart failure outcomes and risk factors for poor outcomes. The pre-transplant risk factors for poor outcome (Year 2, 3).
5. Genetics of cardiomyopathy. (Year 2, 3)

### Mechanical Circulatory Support

The goal of this rotation is to provide a general knowledge mechanical circulatory support.

**Goals - Patient Care** – The fellow should demonstrate:

1. Knowledge of the indications for mechanical circulatory support (Year 2, 3).
2. The ability to evaluate patients for mechanical circulatory support including performance and interpretation of metabolic stress tests and cardiac cath data (Year 2, 3).
3. Understanding of the mechanical circulatory support modalities and their limitations (Year 2, 3).
4. Understanding the psychosocial impact of mechanical circulatory support (Year 2, 3).

**Goals - Medical Knowledge** – The fellow should demonstrate knowledge of:

1. The indications for LVAD vs BiVAD support (Year 2, 3).
2. The mechanism of action of anticoagulant agents and their adverse effects (Year 2, 3).
3. The effect of adverse events on mechanical circulatory support and treatment (Year 2, 3).
4. The outcomes of mechanical circulatory support (Year 2, 3).
5. The risk factors for poor outcome (Year 2, 3).

Transplantation

The goal of this rotation is to provide a general knowledge of heart transplantation.

**Goals - Patient Care** – The fellow should demonstrate:

1. Knowledge of the indications for referral for transplantation through presentations of patients seen on new patient consults and on inpatient service (Year 2,3 ).
2. The ability to evaluate patients for transplantation including performance and interpretation of metabolic stress tests and pre-transplant cardiac caths (Year 2, 3).
3. Understanding of transplant evaluation, criteria for listing for transplantation, and relative contraindications to transplantation (Year 2, 3).
4. The ability to evaluate patients during postoperative admission (Year 2,3).
5. The ability to interpret post-transplant biopsies and coronary arteriography (Year 2, 3).
6. The ability to recognize rejection. (Year 2,3).

**Goals - Medical Knowledge** – The fellow should demonstrate knowledge of:

1. The mechanism of action of immunosuppressive agents and their adverse effects (Year 2, 3).
2. The management of rejection (Year 2,3).
3. The infectious complications after transplantation and appropriate treatment (Year 2,3).
4. The outcomes of heart transplantation at 1,5,10, and 15 years (Year 2,3).
5. The pre-transplant risk factors for poor outcome (Year 2,3).

**In addition to the specific goals for the individual elements of the service the following goals are also expected to be achieved:**

**Goal - Interpersonal and Communication Skills –** The fellow should demonstrate the ability to:

1. Communicate effectively in a developmentally appropriate manner with patients and families to create and sustain a professional and therapeutic relationship across a broad range of socioeconomic and cultural backgrounds. (Year 1).
2. Effectively communicate changes in patient status to attending physicians (Year 1).
3. Participate in care conferences (Year 1).

**Goal - Practiced Based Learning and Improvement** – The fellow should:

1. Demonstrate the use of evidence-based medicine and information technology in the care of patients (Year 2,3).
2. Demonstrate new knowledge through self-directed independent learning (Year 2,3).
3. Actively seek out and listen to constructive feedback from other members on the care team as well as patients and families and incorporate this feedback, when appropriate, into a plan for professional development (Year 2,3).
4. Attend transplant care conference regularly (Year 2,3).
5. Meet individually with attendings during rotation to review performance (Year 2,3).

6. Assist in providing for continuity of care with surgeons, other cardiologists, and primary care providers for transplant patients (Year 2,3).

**Goal – Professionalism** - The fellow should demonstrate:

1. The ability to consistently maintain respect, compassion, integrity, honesty and responsiveness to the needs of patients and the health care team in a way that supersedes self-interest (Year 1).
2. Accountability to all patients (even if other physicians are primarily responsible for their care) and the health care team (Year 1).
3. A commitment to excellence and ongoing professional development by being prepared, on-time, in appropriate attire, and contributing in rounds (Year 1).
4. The ability to be sensitive to the needs of the patient and the parent/guardian by applying negotiation, compromise and mutual respect in the daily care of inpatients (Year 1).
5. The ability to recognize and demonstrate an understanding of ethical, cultural, religious or spiritual values of importance to patients and families during communications and care decisions (Year 1).
6. A commitment to confidentiality, privacy, and respect for patients and families (Year 1).
7. Empathy towards the child and family in negotiating and designing goals of treatment, including relevant medical, legal and psychological issues (Year 1).
8. Advocacy for patients and their families (Year 1).
9. The ability to honestly assess one's contribution to errors that are made, accept responsibility for personal mistakes and implement plans to prevent one's self and others from making the mistake again (Year 1).

**Goal - Systems-Based Practice –** The fellow should demonstrate the ability to:

1. Prioritize the various modes of diagnostic testing and select the most appropriate testing modality, with a goal toward preventing unnecessary laboratory or imaging tests (Year 2,3).
2. Facilitate involvement of multidisciplinary team in patient care and demonstrate ability to work with all members (Year 1).
3. Advocate for patients in the inpatient setting by helping them navigate within system complexities and directing them to support services as needed (Year 2,3).
4. Comply with institutional systems that have been developed to prevent errors in the administration of "high risk" medications, such as immunosuppressant agents (Year 2,3).
5. Avoid the use of ambiguous or unacceptable abbreviations in the medical record, prescriptions and medical orders (Year 1).
6. Attend transplant care conferences regularly (Year 1,2,3).

## Weekly Schedules

### Inpatient

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| Morning | • CT Surgery conference<br>• CVICU round<br>• ACCU round | • Transplant selection meeting<br>• CVICU round<br>• ACCU round | • CVICU round<br>• ACCU round | • CVICU round<br>• ACCU round | • CVICU round<br>• ACCU round<br>• HLA meeting |
| Afternoon | • PACC team meeting<br>• PACC related consults | • Educational meeting<br>• PACC related consults | • CVICU follow up<br>• ACCU follow up<br>• PACC related consults | • CVICU follow up<br>• ACCU follow up<br>• PACC related consults | • PACC team meeting |

### Outpatient

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| Morning | • CT Surgery conference<br>• HF/TX clinic<br>• Caths<br>• Transplant evaluations | • Transplant Selection meeting<br>• Transplant evaluations<br>• VAD clinic<br>• Caths | • Transplant clinic<br>• Caths<br>• Transplant evaluations | • HF/TX clinic<br>• Caths<br>• Transplant evaluations | • Reading time,<br>• Transplant evaluations<br>• HLA meeting |
| Afternoon | • PACC team meeting | • Educational meeting | • Transplant clinic | • HF/TX clinic | • PACC team meeting |

*If an exercise stress test is happening this week, the fellow should try to observe and review the data with the PACC attending who is responsible for the study

## Cardiac Catheterization

The overall goal of this rotation is for the fellow to acquire the skills necessary to perform a safe and thorough cardiac catheterization in patients with both simple and complex cardiac anatomy. Evaluation of the fellow occurs through direct observation during the various activities of this rotation.

The fellow will develop an in-depth understanding of cardiac anatomy and physiology during this rotation while learning to manipulate different catheters to obtain the data that are necessary to make clinical and surgical decisions. The fellow will learn which data are necessary to obtain during the catheterization and how to interpret these data. Fellows will also learn about the equipment necessary to perform a cardiac catheterization, including the use of electronic recording devices, radiographic imaging equipment, and computer analysis of catheterization data. The fellow will be responsible for pre-catheterization evaluation of the patient, interpretation of data leading to cardiac catheterization, intra-catheterization analysis of hemodynamic, oximetric and angiographic information obtained and presentation of the case at cardiac catheterization conference. In addition, the fellow will be able to participate in interventional procedures, including determining which patients will benefit from interventional cardiac catheterization. Performance of a safe and effective balloon atrial septostomy is expected of all fellows by the end of the third year.

In the 3 year cardiology fellowship program there are 3 months dedicated to the Cardiac Catheterization. Regardless of long-term career plans it is essential as a future cardiologist that you know indications for a catheterization, what happens during the case, get a feel for what can be done and what can't be done, and understand the nuances of the report, so when you are the primary cardiologist, you understand the calculations and their limitations. A minimum of participation in 100 cases is required for board eligibility.

Pre-catheterization: The fellow is expected to participate actively in the pre-catheterization evaluation. Using the cath lab navigator, click from top to bottom. Complete H+P, obtain consent, review previous data and formulate a catheterization plan and present this plan to the attending.

Intra-catheterization: Perform and assist during procedures, under the supervision of attending staff. Assisting in catheterization of the newborn and interventional procedures begins in the first year. The goal for the fellow is to perform a safe and thorough right heart cardiac catheterization in patients with simple anatomy and to understand basic angiographic views and techniques. The fellow is expected to be able to not only obtain data, but to interpret it as it is gathered to make clinical decisions. The importance of doing the calculations by hand in addition to having this done on the computer is stressed; doing cath calculations quickly and accurately is very important to passing the credentialing examination in pediatric cardiology.

Post-catheterization: Understand and analyze data for simple and complex anatomy, complete diagram and be able to present the data at conference.

For those with a specific interest and skill level in catheterization or procedures, then in second year additional catheterization experience where possible is recommended. The goal for these fellows in the third year will be to perform a safe and thorough cardiac catheterization in patients with both simple and complex anatomy and to begin to perform catheterization of the newborn and interventional procedures. Fellows can develop expertise in this field by participating in a fourth year of training devoted to interventional catheterization.

**Goals - Patient Care/Medical Knowledge –**

1. Pre-Cardiac Catheterization (Cath) Evaluation – The fellow should demonstrate:
   a. understanding of the indications for cath through discussions regarding individual patients at cath conferences (Year 1).
   b. the ability to obtain pertinent history and perform physical examination with special attention paid to complicating features and contraindications to the procedure (Year 1).
   c. the ability to discuss risks and obtain consent (Year 1).
   d. the understanding of the need for and obtaining of appropriate pre-cath procedures (Year 1).
2. Cardiac Catheterization Procedure Planning – The fellow should demonstrate:
   a. the ability to schedule a cath and to determine which patients benefit from sedation vs anesthesia (Year 2).
   b. the understanding of the varying sedation options, including NPO orders (Year 1).
   c. the ability to plan a cath, including vascular access, catheters needed, catheter course, necessary hemodynamic data, and angiography required for each patient (Year 2).
3. Equipment – The fellow should demonstrate:
   a. knowledge of the various pieces of equipment required to perform a catheterization and can operate table efficiently (Year 1).
   b. understanding of the principles behind measurement and calculation of oxygen consumption at cath conference and during discussion of cath results after procedures (Year 1).
   c. the ability to identify each catheter type and its use (Year 1).
4. Radiation – The fellow should demonstrate understanding of the principles of:
   a. radiation and radiation safety (Year 1).
   b. fluoroscopy and cinefilming as they relate to doses of radiation (Year 1).
5. Cath technique – The fellow should be able to:
   a. demonstrate competence in obtaining vascular access from:
      1) Groin (Year 1)
      2) Neck (Venous) (Year 3)
   b. demonstrate the following skills:
      1) Prograde right heart cath (Year 1)
      2) Retrograde left heart cath (Year 1)
      3) Prograde left heart catheterization through a PFO or ASD (Year 2)
      4) Balloon atrial septostomy (Year 2)
      5) Right ventricular myocardial biopsy (Year 3)
      6) Thermodilution cardiac output (Year 1)
6. Hemodynamic evaluation – The fellow should demonstrate the ability to:
   a. obtain appropriate oxygen data, calculate flows and shunts, and interpret data (Year 1).
   b. identify wave forms for various chambers and vessels, properly measure pressures, calculate pressure differences (gradients) and resistances, and interpret data (Year 1).
   c. calculate valve gradient and area, arterial or venous gradient (Year 2).
7. Angiography – The fellow should demonstrate:
   a. the understanding of and indications for angled angiography during cath procedures (Year 2).
   b. the ability to calculate amount of contrast agent to give for certain injections and how to give it (Year 2).
   c. knowledge of the side-effects and complications of contrast media and appropriate treatment (Year 2).
   d. the ability to perform standard angiograms including angled angiography (Year 2).
   e. the ability to interpret standard angiograms (Year 2).
   f. the ability to perform standard right and left coronary angiography (Year 3).
8. Interventions – The fellow should demonstrate understanding of indications and basic guidelines for:
   a. Balloon valvuloplasty (Year 2)
   b. Device closure of ASD and VSD (Year 2)
   c. Coarctation angioplasty and stenting (Year 2)

   d. Pulmonary angioplasty and stenting (Year 2)
   e. PDA occlusion (Year 2)
   f. Vascular occlusion, including venous and arterial collaterals (Year 2)
9. Complications and post cath care – The fellow should demonstrate:
   a. the understanding of post-procedure monitoring and knows which patients can be observed as outpatients and which require inpatient care (Year 1).
   b. knowledge of the major and minor complications that can occur with a diagnostic catheterization (Year 1).
   c. the ability to treat common complications such as cath site bleeding, hematoma, and pulse loss (Year 1).
   d. the ability to treat postcath arrhythmias, such as SVT or heart block (Year 3).
   e. the ability to recognize cardiac tamponade and perform a pericardiocentesis (Year 3).
   f. the ability to determine which patients are unstable and require transfer to the intensive care unit after cath (Year 1).
10. The fellow should demonstrate understanding of the implications of cath data to patient management through presentations of catheterization data at cath conference and at surgery conference (Year 1).

**Goal - Interpersonal and Communication Skills** – The fellow should demonstrate:

1. the ability to communicate effectively in a developmentally appropriate manner with patients and families to create and sustain a professional and therapeutic relationship across a broad range of socioeconomic and cultural backgrounds (Year 1).
2. the ability to obtain informed consent for procedures (Year 1).
3. the ability to effectively communicate changes in patient status to attending physicians (Year 1).
4. competence in preparing organized and complete cath reports in a timely manner (Year 1).
5. the ability to communicate findings with ward/ICU and surgical attending (Year 1).

**Goal - Practiced Based Learning and Improvement –** The fellow should:

1. demonstrate the use of evidence-based medicine and information technology in the care of patients (Year 1).
2. demonstrate new knowledge through self-directed independent learning (Year 1).
3. demonstrate the ability to review procedure plans with an attending before the procedure and use information gained to optimize approach to the procedure (Year 1).
4. demonstrate the ability to review cath data and angiograms with faculty and use information gained to improve skills (Year 1).
5. actively seek out to listen to constructive feedback from other members on the care team as well as patients and families and incorporate this feedback, when appropriate, into a plan for professional development (Year 1).
6. attend cath conference regularly (Year 1).
7. meet individually with attendings during rotation to review performance (Year 1).
8. actively participate in the education of patients and families (Year 2).
9. demonstrate effective education of students, residents, and other health professionals (Year 2).

**Goal – Professionalism** – The fellow should demonstrate:

1. the ability to consistently maintain respect, compassion, integrity, honesty and responsiveness to the needs of patients and the health care team in a way that supersedes self-interest (Year 1).
2. accountability to all patients (even if other physicians are primarily responsible for their care) and the healthcare team (Year 1).
3. a commitment to excellence and ongoing professional development by being prepared, on-time, and in appropriate attire (Year 1).
4. the ability to be sensitive to the needs of the patient and the parent/guardian by applying negotiation, compromise and mutual respect in the daily care of inpatients (Year 1).

5. the ability to recognize and demonstrate an understanding of ethical, cultural, religious or spiritual values of importance to patients and families during communications and care decisions (Year 1).
6. commitment to confidentiality, privacy, and respect for patients and families (Year 1).
7. the ability to honestly assess one's contribution to errors that are made, accept responsibility for personal mistakes and implement plans to prevent one's self and others from making the mistake again (Year 1)

**Goal - Systems-Based Practice** – The fellow should:

1. demonstrate the ability to facilitate involvement of entire cath team in patient care and demonstrate the ability to work with all members (Year 1).
2. attend cath conference regularly (Year 1).
3. demonstrate the ability to communicate findings with ward/ICU and surgical attendings. (Year 1)

**Weekly schedule**

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| Morning | • Pre-cath evaluation – H&P/consent<br>• Cath procedure | • Pre-cath evaluation – H&P/consent<br>• Cath procedure | • Pre-cath evaluation – H&P/consent<br>• Cath procedure | • Pre-cath evaluation – H&P/consent<br>• Cath procedure | • Pre-cath evaluation – H&P/consent<br>• Cath procedure |
| Afternoon | • Write reports<br>• Prep for next day | • Write reports<br>• Prep for next day | • Write reports<br>• Prep for next day | • Write reports<br>• Prep for next day | • Write reports<br>• Prep for next day |

## Electrophysiology

During this rotation the fellow is exposed to all aspects of clinical electrophysiology including non-invasive studies (ECG, Holter monitoring, event monitoring, telemetry monitoring, and stress testing), cardiac pacing (esophageal, transvenous, and permanent) including implantation and analysis, and invasive studies including catheter ablation. The fellow will demonstrate competence in interpreting ECG and 24-hour ECG recordings, performing and interpreting direct cardiac recordings, and assessing pacemaker function. Evaluation of the fellow occurs through direct observation during the various activities of this rotation.

In addition, the fellow will participate in electrophysiology studies and catheter ablation procedures. All fellows will learn how to interpret the intra-cardiac studies, but only those with a specific interest will need to demonstrate proficiency in performing intra-cardiac studies and ablations (usually requires a fourth year of fellowship).

**Goal – Medical Knowledge**

1. Basic Science
   a. Anatomy and physiology of the conduction system (Year 1)
   b. Special considerations with CHD (Year 3)
2. Clinical electrophysiology
   a. Evaluation of syncope/diagnostic testing/treatment for
      1) Vasodepressor syncope (Year 1)
      2) Autonomic dysfunction (Year 3)
      3) Sudden cardiac death (Year 3)
3. Arrhythmias – mechanisms/pathophysiology/presentation/ management/treatment
   a. Supraventricular
      1) AVRT, AVNRT, WPW (Year 1)
      2) Atrial tachycardia, Atrial fibrillation, Atrial Flutter, Junctional Tachycardia (Year 1)
   b. Ventricular
      1) Monomorphic VT (Year 1)
      2) Polymorphic VT/VF (Year 1)
   c. Heart block (Year 1)
   d. Special considerations with respect to unrepaired and repaired CHD (Year 3)
4. Pharmacology (Year 1)
5. Channelopathies (Year 3)
6. Pacemaker/ICD problem identification and trouble shooting (Year 1)

**Goal – Patient Care**

1. Daily review of EP inpatients with appropriate communication/documentation (Year 1)
2. Review/interpretation of bedside telemetry (Year 1)
3. Interpretation of non-invasive EP studies (Year 1)
   a. ECG, Holter monitoring, event monitoring (Year 3)
4. Temporary Pacing – transcutaneous, esophageal, temporary wires, temporary leads (Year 3)
5. Permanent PM / ICD (Year 3): device interrogation in the ER/ outpatient and inpatient

**Goal – Invasive EP**

1. EPS / provocative drugs challenges (Year 3)
2. Ablations: SVT, VT (Year 3)
   a. 3D Mapping (Year 3)

   b. CHD (Year 3)
3. PM/ICD/loop recorder placement (Year 3)

**Goal - Interpersonal and Communication Skills –** The fellow should demonstrate the ability to:

1. communicate effectively in a developmentally appropriate manner with patients and families to create and sustain a professional and therapeutic relationship across a broad range of socioeconomic and cultural backgrounds (Year 1).
2. obtain informed consent for fellow performed procedures and conscious sedation (Year 1).
3. effectively communicate changes in patient status to attending physicians (Year 1).
4. prepare progress and consultation notes that are organized and meet documentation requirements (Year 1).
5. provide all readings in a timely manner (Year 1).

**Goal - Practiced Based Learning and Improvement** – The fellow should:

1. demonstrate the use of evidence-based medicine and information technology in the care of patients (Year 1).
2. demonstrate new knowledge through self-directed independent learning (Year 1).
3. review ECG/rhythm strip/Holter readings with attending and use information gained to improve EP skills (Year 1).
4. actively seek out and listen to constructive feedback from other members of the care team as well as patients and families. The fellow should incorporate this feedback, when appropriate, into a plan for professional development (Year 1).
5. meet individually with attendings during rotation to review performance (Year 1).
6. actively participate in the education of patients and families (Year 1).
7. demonstrate effective education of students, residents, and other health professionals (Year 1).
8. assist in providing for continuity of care with surgeons, other cardiologists, and primary care providers (Year 1).
9. Review interesting EKGs that the fellow/attending has identified at the end of every week with the EP attending on call to enhance education during the EP weekly conference.
10. attend electrophysiology conferences regularly (Year 1).

**Goal – Professionalism** - The fellow should demonstrate:

1. the ability to consistently maintain respect, compassion, integrity, honesty, and responsiveness to the needs of patients and the health care team in a way that supersedes self-interest (Year 1).
2. accountability to all patients (even if other physicians are primarily responsible for their care) and the health care team (Year 1).
3. a commitment to excellence and ongoing professional development by being prepared, on-time, appropriate attire, and contributing in rounds (Year 1).
4. the ability to be sensitive to the needs of the patient and the parent/guardian by applying negotiation, compromise, and mutual respect in the daily care of inpatients (Year 1).
5. the ability to recognize and demonstrate an understanding of ethical, cultural, religious, or spiritual values of importance to patients and families during communications and care decisions (Year 1).
6. a commitment to confidentiality, privacy, and respect for patients and families (Year 1).
7. empathy towards the child and family in negotiating and designing goals of treatment, including relevant medical, legal, and psychological issues (Year 1).
8. advocacy for patients and their families (Year 1).
9. the ability to honestly assess one's contribution to errors that are made, accept responsibility for personal mistakes and implement plans to prevent oneself and others from making the mistake again (Year 1).

**Goal - Systems-Based Practice** - The fellow should demonstrate the ability to:

1. prioritize the various modes of diagnostic testing and select the most appropriate testing modality, with a goal of preventing unnecessary laboratory or imaging tests (Year 3).

2. facilitate the involvement of a multidisciplinary team in patient care and demonstrate the ability to work with all members (Year 1).
3. comply with institutional systems that have been developed to prevent errors in the administration of “high-risk” medications, such as digoxin (Year 1).
4. avoid the use of ambiguous or unacceptable abbreviations in the medical record, prescriptions, and medical orders (Year 1).
5. PM/ICD problem identification, setting parameters and troubleshooting in outpatient and acute setting.
6. The fellow will attend weekly electrophysiology conferences and prepare the conference patient list for review (Year 1).
7. Use appropriate ICD and E&M codes for each patient visit (Year 2).

## Imaging

The following general and specific objectives have been prepared based on the 2015 Pediatric Training Statement: Noninvasive Cardiac Imaging (Srivastava et al, Circulation, Aug 2015) which were endorsed by the American Society of Echocardiography and the Society of Pediatric Echocardiography. Echocardiography refers to ultrasound-based imaging techniques used to assess cardiac anatomy and function, including 2-, 3-, and 4-dimensional imaging of the heart and related structures, functional assessment ranging from M-mode assessment, 2- and 3-dimensional imaging, tissue Doppler imaging, speckle tracking to assess global and regional deformation, color Doppler imaging, and spectral Doppler imaging for flow, hemodynamics, and tissue motion. Cardiac MRI refers to anatomic and functional cardiovascular MRI for assessment of acquired and congenital heart disease (CHD) in children and adults. Per Srivastava et al, "Two levels of fellowship training are discussed: core and advanced. Guidelines for the core level of training should be considered as minimum, mandated reference standards for a fellow to achieve competency in noninvasive cardiac imaging during standard 3-year pediatric cardiology fellowship training. The training should allow for independent and accurate use of transthoracic echocardiography (TTE) imaging to diagnose simple CHD, as well as acquired pediatric heart disease. A thorough education in TTE, as well as exposure to transesophageal echocardiography (TEE), fetal echocardiography, and cardiac MRI is essential for core pediatric cardiology training. Education in TEE, fetal echocardiography, and cardiac MRI during the core training period should allow for familiarity with techniques, indications, and limitations. Echocardiography skills for the diagnosis of more complex congenital heart disease, as well as expertise in other advanced imaging modalities inclusive of fetal echocardiography, TEE, MRI and their applications, will be considered as requirements for advanced noninvasive imaging training, as described in the following text. It is anticipated that fellows may, but are not required to, obtain levels of competence above the minimum core requirements in these advanced imaging skills (including diagnosis of complex congenital heart disease, fetal echocardiography, TEE, and/or cardiac MRI) during their core pediatric cardiology fellowship experience."

**Goal - Patient Care–** Fellows must:

1. Gather accurate, essential information from all sources, including prior studies, medical interviews, medical records, and review previous diagnostic, surgical and therapeutic procedures.
2. Make informed recommendations about level and type of diagnostic imaging studies required, based on clinical judgment, scientific evidence, and patient preferences.
3. Determine whether additional specialty services e.g., contrast echo, are indicated.
4. Develop, negotiate and implement patient management plans e.g., arrange for sedation, exam location or anesthesia.
5. Perform competently the diagnostic procedures considered essential to the practice of Clinical Echocardiography.
6. Communicate with ordering physicians about the diagnostic questions to be addressed and report back to them in a timely manner consistent with the clinical needs of the patient

**Goals – Medical Knowledge -** Fellows must demonstrate :

1. Apply an open-minded and analytical approach to acquiring new knowledge.
2. Develop clinically applicable knowledge of the basic and clinical sciences that underlie the practice of echocardiography.
3. Apply this knowledge in developing critical thinking, clinical and technical problem solving, and clinical decision-making skills.
4. Access and critically evaluate current medical information and scientific evidence and modify knowledge base accordingly.
5. The evaluation of both inpatients and outpatients being studied for the following:
    - Functional evaluation of the structurally normal heart:
        - Kawasaki disease

        - Hematologic and oncologic diseases
        - Arrhythmias
        - Infectious endocarditis
        - Pericardial disease
        - Other
    - Congenital heart disease (CHD) at all ages
    - Preoperative studies of CHD
    - Postoperative studies of CHD
    - Intraoperative studies of CHD
    - Emergency studies
    - Contrast studies
6. understanding of the physical properties of ultrasound
7. proper, safe and facile use of ultrasound instruments
8. knowledge of the limitations of echocardiography
9. recognition of cardiac structures displayed by echocardiography and the correlation between echocardiographic images and cardiac anatomy
10. interpretation of Doppler flow information and deduction of cardiovascular physiology
11. basic performance and interpretation of complete transthoracic two-dimensional and m-mode echocardiograms, Doppler color flow mapping and pulsed and continuous-wave spectral Doppler flow analysis in normal pediatric patients and in those with childhood heart disease
12. basic assessment of systolic, diastolic and regional myocardial function in normal pediatric patients and those with childhood heart disease
13. ability to review critically published clinical research in echocardiography

**Goal - Interpersonal and Communication Skills** – Fellows must demonstrate :

1. The fellows will be expected to be able to discuss in an effective, informative and compassionate way with the families before, during and after echocardiographic procedures. This will include a discussion of the procedure, obtaining consent for the procedure if needed e.g., for sedation or transesophageal echocardiography and communicating the results of the procedure.
2. Fellows are expected to demonstrate interpersonal and communication skills that enable them to establish and maintain professional relationships with patients, families, and other members of health care teams.
3. Provide effective and professional specialist consultation to other physicians and health care professionals and sustain therapeutic and ethically sound professional relationships with patients, their families, and colleagues.
4. Use effective listening, nonverbal, questioning, and narrative skills to communicate with patients and families.
5. Interact with consultants in a respectful and appropriate fashion.
6. Maintain comprehensive, timely, and legible medical records.

**Goal - Practiced Based Learning and Improvement –** Fellows must demonstrate:

1. Fellows are expected to be able to use scientific methods and evidence to investigate, evaluate, and improve their patient care practices.
2. Identify areas for improvement and implement strategies to improve knowledge, skills, attitudes, and processes of care.
3. Analyze and evaluate practice experiences and implement strategies to continually improve the quality of diagnostic imaging, especially echocardiography.
4. Develop and maintain a willingness to learn from errors and use errors to improve the system or processes of care.
5. Use information technology or other available methodologies to access and manage information and support patient care decisions and personal education.

**Goal – Professionalism** – Fellows must:

1. Demonstrate respect, compassion, integrity, and altruism in their relationships with patients, families, and colleagues.
2. Demonstrate sensitivity and responsiveness to patients and colleagues, including gender, age, culture, religion, sexual preference, socioeconomic status, beliefs, behaviors and disabilities.
3. Adhere to principles of confidentiality, scientific/academic integrity, and informed consent.
4. Recognize and identify deficiencies in peer performance.
5. Develop a clear understanding of the complex and challenging issues in imaging and echocardiography between clinician/providers, hospitals and industry; understand the inherent conflicts of interest in many relationships with industry and its representatives and develop strategies to ensure clear boundaries that are designed to uncompromisingly prioritize high quality patient care.

**Goal - Systems-Based Practice** – Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

1. Understand, access, and utilize the resources and providers necessary to provide optimal care.
2. Understand the limitations and opportunities inherent in various practice types and delivery systems and develop strategies to optimize care for the individual patient.
3. Given the high costs of many treatments, residents are expected to apply evidence based, cost-conscious strategies to selection of diagnostic imaging technologies and appropriateness of level of examinations.
4. Collaborate with other members of the health care team to assist patients in dealing effectively with complex systems and to improve systematic processes of care.

**Weekly schedule**

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| Morning | Scan/review with echo reader | • Echo conf 7:30 am<br>• Fetal lecture 7:30a (2nd Tues)<br>Scan/review with echo reader | • (optl) Fetal research meeting – 1st Wed 8a<br>Scan/review with echo reader | Scan/review with echo reader | • Echo conf 7:30 am<br>Scan/review with echo reader |
| Afternoon | Scan/review with echo reader | • MRI mtg 2p<br>• Scan/review with echo reader | • (optl) MFM conf – 3rd Wed 12p<br>• Scan/review with echo reader | Scan/review with echo reader | • Scan/review with echo reader |

## Echocardiography Curriculum

**Echo Rotation Director: Dr. Mansi Gaitonde**
**Echo Laboratory Director: Dr. Claudio Ramaciotti**
**Head Education Sonographer: Barry Gabbert, RDCS**

### Description of Rotation or Educational Experience

The echocardiography experience will consist of a series of 2–4-week rotations, each with increasing expectations and building upon skills acquired in preceding rotations. The fellow will be expected to independently perform studies at a high technical skill level at the completion of training. The fellow will work with the various echo attendings during the rotations, both in the echo laboratory and at the bedside for portable studies. The fellow will also be expected to attempt echoes when on call. The specific goals for each rotation are outlined at the end of this section.

### Pediatric Transthoracic Echocardiography (TTE)

Echocardiography includes two-dimensional imaging of the heart and related structures, m-mode echocardiography for assessment of chamber size and function, color flow Doppler mapping, pulsed and continuous-wave spectral Doppler flow analysis, Tissue Doppler evaluation, Strain and Strain Rate imaging, three-dimensional imaging, and other variations of these modalities used to assess the structure and function of the heart and related organs, including novel technologies.

### Level of Expertise

Training goals defined here are to enable trainees to achieve a *core* level of expertise in echocardiography as appropriate for a three-year training program: Advanced training may be obtained in a fourth year if available.

*Core*:

- Understanding of the general physical properties of ultrasound and clinical ultrasound technology.
- Ability to perform and interpret transthoracic echocardiography in normal infants, children and adolescents and in those with childhood heart disease with consultation as needed.

*Core* training should be achieved by all pediatric cardiology fellows during core clinical training, typically during 4 to 6 months dedicated to echocardiography over the course of the standard 3-year training program. This level of expertise is anticipated to be sufficient for those fellows who do not plan to pursue echocardiography as an area of sub-specialization. The expectation is that each fellow performs at least 150 echocardiograms during their fellowship and interprets 150 echocardiograms (which may include those interpreted within the echo conference setting).

### Goals of Training

Successful completion of each training level should result in competence in the following specific areas:

**During their rotations, the fellows will receive formal instruction, obtain clinical experience, and demonstrate competence in**:

1. The evaluation of both inpatients and outpatients being studied for the following disorders:
    a. Functional evaluation of the structurally normal heart:
        i. Kawasaki disease
        ii. Hematologic and oncologic diseases
        iii. Arrhythmias
        iv. Infectious endocarditis

   v. Pericardial disease
   vi. Other
2. Congenital heart disease (CHD) at all ages
3. Preoperative studies of CHD
4. Postoperative studies of CHD
5. Intraoperative studies of CHD
6. Emergency studies
7. Contrast studies

Fellows will be responsible for entering all data including demographic information and will be required to complete written comprehensive reports.

*Core:*

- understanding of the physical properties of ultrasound
- proper, safe and facile use of ultrasound instruments
- knowledge of the limitations of echocardiography
- recognition of cardiac structures displayed by echocardiography and the correlation between echocardiographic images and cardiac anatomy
- interpretation of Doppler flow information and deduction of cardiovascular physiology
- basic performance and interpretation of complete transthoracic two-dimensional and m-mode echocardiograms, Doppler color flow mapping and pulsed and continuous-wave spectral Doppler flow analysis in normal pediatric patients and in those with childhood heart disease
- basic assessment of systolic, diastolic and regional myocardial function in normal pediatric patients and those with childhood heart disease
- ability to review critically published clinical research in echocardiography

*Number of Studies*

- Each trainee should perform at least 150 pediatric echocardiograms, including at least 50 inpatients one year of age or younger, under the supervision of the laboratory director or other qualified staff pediatric cardiologist-echocardiographer(s).
- Each trainee should also review, or perform and interpret, at least 150 additional pediatric echocardiograms.
- The integration of echocardiography into the clinical practice of pediatric cardiology should be demonstrated on inpatient and outpatient rotations and at medical-surgical management conferences.

*Evaluation*

The rotation director, in consultation with the physician and sonographer staff, will evaluate each trainee in writing on a regular basis. It is expected that each trainee will maintain a log of all echocardiograms performed (which can be obtained in Syngo). The trainee is expected to ensure that this log is reviewed regularly by the rotation director to ensure that each trainee is obtaining adequate and balanced experience.

Each rotation will provide an evaluation which must be reviewed with each trainee and a written copy provided. If a trainee does not appear to be progressing adequately during the rotation, a meeting should be scheduled as soon as possible to inform the trainee and to discuss potential remedial measures. The evaluation should be based on achievement of the expected levels of competence for each progressive rotation.

Direct observation of the trainee during performance of echocardiograms will be used to provide information about imaging skills and understanding of the ultrasound instruments. Conferences in which echocardiograms are presented will provide an opportunity to assess skills in interpretation of images and Doppler recordings. Teaching skills and effectiveness can be evaluated by direct observation and from evaluations by sonographers and more junior trainees and by performance at teaching conferences prepared and delivered by trainees.

During the core training, the fellows should attain a basic understanding and exposure to the principles of performing and interpreting transesophageal and fetal echocardiograms and cardiac MRI. Physicians with *Core* expertise only are not expected to perform and interpret transesophageal and fetal echocardiograms or cardiac MRI independently.

## Teaching Methods

The fellows will have the opportunity to learn clinical echocardiography via several different mechanisms. These include but are not limited to:

- Didactic sessions: the echocardiography staff will meet twice weekly to discuss select topics in clinical echocardiography
- Lectures in the core curriculum will be devoted to the basics of clinical echocardiography
- Hands on learning: The fellow will be expected to perform an increasing number of studies commensurate with his/her skill levels and will work with the sonographers as well as the attending physician or advanced fellow to gain an understanding of the anatomy and physiology being investigated. Prior to each procedure, prior studies will be reviewed for anatomy, patient history and specifics of the request for study.
- Independent study: The fellows will be expected to have read and understood about echocardiography and Doppler assessment of congenital hemodynamics. *The Fellows will have access to all major scientific journals through the UTSW web site and will be expected to search the literature regarding providing care for their patients. The fellows will also have access to the echo library (reading room and sonographers room) and echocardiography textbooks.*
- *Echo Bootcamp: This occurs yearly and consists of a two-week program of both lectures and hands-on instruction. It is mostly geared to the first-year incoming fellows, but all fellows can attend, and the upper-level fellows do part of the didactic lectures.*

## Assessment Method (of fellow)

During the first week of the rotation, the fellows will meet with the attending charged with supervising the educational component of the service. The fellow will be required to provide a specific example as to how they are addressing each of the 6 competencies and their goals for the rotation. The fellow's performance over the first 2 weeks of the rotation will be reviewed and if needed, areas for extra work will be identified. The final fellow's performance will be assessed jointly by the echo attending physicians with input from the sonographers. This will be a summation from observed activities in the 6 competencies outlined above. A written report with assessment in the 6 competencies will be generated and reviewed with the fellow.

## Assessment Method (Program Evaluation)

At the completion of the rotation, the fellows will complete an evaluation of the rotation. This will be completed in an anonymous fashion, with the results tabulated by the fellowship coordinator and provided to the staff on a biannual basis.

## Level of Supervision

The fellow will be directly supervised by one of the attending physicians. They will provide consultative services in tandem. All procedures will be performed under the direct supervision of one of the attendings and other qualified staff pediatric sonographers.

## Educational Resources

- Echocardiography Laboratory Twice Weekly Conferences (Tuesday and Friday AM)
- Echo Boot Camp
- Echo Textbooks in echo library and attendings' offices
- Electronic access to all journals via UTSW library web site
- Access to all teaching presentations stored on the share drive
- Fetal echo conference once monthly
- MRI conference once weekly

## Rotation Goals

**Rotation I (50 cases) – Year 1**

1. Familiarity with ultrasound imaging devices
    a. Ability to select appropriate transducer
    b. Adjust settings to optimize image
    c. Complete understanding of "knobology"
2. Familiarity with imaging planes
    a. Subcostal
    b. Apical
    c. Parasternal
    d. Suprasternal
3. Basic understanding of Ultrasound, Doppler and color Doppler imaging
    a. Recognition of artifacts
    b. Nyquist limit
    c. Modified Bernoulli principle
4. Ability to record data in echo report format
5. **Competence**
    a. Complete a full exam of infant without assistance
    b. Complete report
    c. Performs not less than 3 exams/day

**Rotation II (50 cases) – Year 1**

1. Become familiar with physiologic changes from fetus to adult as they affect echo diagnosis
2. Ability to consistently obtain adequate images from all imaging planes
3. Ability to obtain quantitative data from study
4. Ventricular dimensions
5. Annulus dimensions
6. Measures of contractility
7. Assessment of valvar stenosis and regurgitation with spectral, pulsed, continuous wave Doppler and color Doppler
8. Identification and description of isolated lesions: ASD, VSD, PDA, AS, PS
9. **Competence**
    a. Complete full exams of simple congenital defects with full Doppler assessment
    b. Detail defect in reports
    c. Not less than 4/day

**Rotation III (50 cases) – Year 2**

1. Comfort with all imaging planes
2. Familiarity with techniques for imaging abnormal situs, dextrocardia
3. Understanding of data required from pre- and post-operative study and complications associated with various surgeries
4. Understand the full spectrum of surgical procedures and their echo detectable complications
5. Identification and description of complex heart disease
6. **Competence**
    a. Fellow should be able to complete a comprehensive study on a newborn with previously undiagnosed heart disease
    b. Learn indications for pediatric echo
    c. Understand indications, techniques and medications for sedation

**Rotation IV (50 cases) – Year 3**

1. Continued practice with complex congenital heart disease
2. Ability to make recommendations based on the finding of the echocardiogram, i.e., need for pericardiocentesis, intervention for valvar regurgitation
3. Familiarity with transesophageal and fetal imaging basics
4. Become familiar with TEE for catheter-based interventions

**Core Competence (end of 3rd year)**

1. Ability to complete full transthoracic studies including complete interpretation of the data independently
2. Understand indications and procedural nuances regarding transesophageal and fetal echocardiography
3. Focus work on areas of identified weakness
4. Supervision of junior fellows
5. Prepare presentations each year for echo boot camp

6. Prepare presentations for surgical conference
7. Attending and participate in weekly echo conferences, surgical conference, reading with attendings.

**Advanced Competence (4th year)**

1. Ability to complete full transthoracic studies including complete interpretation of the data independently
2. Ability to perform and interpret transesophageal and fetal echocardiograms independently
3. Ability to convey TEE interpretation to surgical and interventional colleagues in real time
4. Ability to independently perform prenatal counseling for simple and complex congenital heart disease
5. Focus work on areas of identified weakness
6. Supervision of junior fellows
7. Prepare presentations each year for echo boot camp and participate in planning
8. Prepare presentations for surgical conference
9. Attending and participate in weekly echo conferences, MFM fetal conferences, surgical conference, reading with attendings.

**On-call echoes (goal of at least 100 cases)**

The fellow will perform complete echo evaluation of all new patients with suspected structural or functional heart disease. Sonographer support is always available and should be utilized when necessary, either due to inexperience or workload as defined with on-call faculty. All cases must be reviewed for validity with echo faculty the next day (or overnight in the case of emergency). Fellows are not signed off as competent to evaluate the presence of congenital heart disease or to rule it out and must contact the on-call cardiologist for every echocardiogram they perform. They are not generally skilled enough to evaluate, for example, the presence of TAPVR, while a patient is being prepared for ECMO.

First year fellows may call in an echo sonographer for studies unless the attending specifically states otherwise, or the attending is present at the bedside and instructs them otherwise, based on their own echo interpretive or echo performance skills.

When a fellow does an echo while "on call" on a new patient:

1. It is recommended that it be a complete study unless the patient is in critical state (e.g., pre-ECMO) and the primary care team is requesting limited information.
2. If the attending on call with the fellow directs it be a limited study for the purpose of saving time to allow the fellow to provide immediate medical care, the attending must be certain that the pivotal diagnostic details are recorded. Limited echos as the initial study for patients new to Children's should be rare.
3. The fellow should subsequently attempt to return and complete the study during that call period if only a limited study was done.
4. Alternatively, there are always sonographers on-call, and if the workload is too great or if the fellow expertise is inadequate, the sonographer should be called in and a complete study of the new patient performed.
5. The fellow should place a preliminary report on all overnight echos in Syngo
6. After call, every echo performed by the fellow on call must be reviewed with an echo attending. The fellow should seek out the echo physician at the earliest opportunity to ensure their training and understanding as well as to be sure the diagnosis is both correct and complete. Fellows should email the appropriate echo attending while on call to notify them as a way to ensure that rounds/patient care issues the next day do not preclude this teaching opportunity.

## FELLOW'S OBLIGATIONS:

1. At the beginning of the rotation the fellow will provide for display to the lab, a printout of their daytime and nighttime schedule and expected hours of attendance for the rotation.
2. The fellow will arrange for a meeting with the Echo Rotation Director at the beginning of the rotation to discuss rotation goals that will be communicated with the echo lab staff.
3. In the middle and end of the rotation, the fellow will have the responsibility of arranging to meet with the Echo Rotation Director for exchange of feedback. The final fellow evaluation will also have input from the echo attendings and the sonography staff and will be submitted by Echo Rotation Director electronically.
4. When doing the transesophageal echocardiogram in the operating room or catheterization lab, pre-operative cases must be pulled up and reviewed with the attending each morning.
5. Conferences:
    a. Monday morning surgical conference: The assigned fellows will prep the images in advance and present to the weekend on-call echo attending. They will present these images to the heart center for pre-operative discussion and planning.

   b. Tuesday morning echo conference: The echo attending on call will select 1-2 interesting echoes and ask the fellows to discuss each echo in depth. The focus of this conference is to train fellows with interpretation of cardiac anatomy and function in pediatric patients and understand the clinical impact of these findings. In addition, tips for image optimization will be provided.
   c. 2nd Tuesday morning MFM/fetal lecture: Fellows will attend this conference in place of regular echo conference that focuses on interpretation of fetal echocardiograms, management of complex fetal cases, and communication with multidisciplinary team (MFM/OB).
   d. 3rd Wednesday noon MFM conference: The echo fellow will present the pertinent fetal echocardiograms (prepped in advance with fetal attending) for the patients they are presenting at the multidisciplinary fetal conference for management of complex fetal cases and communication with obstetrical and delivery teams.
   e. Friday morning echo conference: The echo attending on call will select 1-2 interesting echoes and ask the fellows to discuss each echo in depth. The focus of this conference is to train fellows with interpretation of cardiac anatomy and function in pediatric patients and understand the clinical impact of these findings. In addition, tips for image optimization will be provided.
6. Echo performance: During the first rotation the trainee MUST learn how to set up, perform and report a complete study. It is expected that this be done on normal hearts. There is no rule however, that proscribes the fellow from examining additional patients with abnormal hearts.
7. Daily review: The fellow must review all his/her studies with the attending each day and maintain a log of all studies done. The number of echoes done by each fellow will be tracked
8. During the fourth rotation (and any additional optional rotations), the fellow is expected to participate in TEE and fetal echocardiography, review this with the staff, and complete the report.

## FACULTY'S OBLIGATIONS:

1. The Echo Rotation Director will be responsible for pre-, mid-, and post-rotation feedback. Input from the other echo attendings will be solicited. In addition, sonographers will help provide feedback.
2. All echo staff will review as many studies with the fellow before the study is ended to assess if there is incomplete information and complete any incomplete studies with the go-to sonographer.
3. The faculty will review the overnight studies done by the fellows and given feedback for image quality and reporting of each cardiac segment.
4. All studies are finalized at the end of each day by the echo faculty assigned to the echo lab that day.
5. The Echo Lab Director will be responsible to ensure that echo faculty members attend each conference unless they are engaged in patient care.
6. Faculty commit to making themselves available to discuss evaluations midway and at the end of the rotation.
7. The combined faculty and sonography staff will provide a 360-degree evaluation of the fellow at the completion of the rotation.

## (Optional) Advanced Non-invasive Imaging Objectives

*Objectives have been prepared based on the 2015 Pediatric Training Statement: Noninvasive Cardiac Imaging (Srivastava et al, Circulation, Aug 2015) which were endorsed by the American Society of Echocardiography and the Society of Pediatric Echocardiography.*

**Transesophageal Echocardiography**

Fellows completing 3 years of core cardiology training are not expected to perform or interpret TEE. However, those with an interest in pursuing a career in noninvasive imaging may wish to obtain experience in TEE during the latter part of their core

training. Moreover, during the course of their 3-year training, fellows will often encounter situations in which they are required to order, review, and/or present TEE studies. Hence, they should be familiar with the general aspects of the procedure, including its advantages and limitations,5 as well as the individual TEE views and how they are utilized to evaluate congenital and acquired heart disease. Recommended goals for core fellowship training in TEE, therefore, include knowledge of the following:

- Indications and use of TEE in the operating room, interventional (cardiac catheterization) laboratory, intensive care unit, and outpatient settings.
- Strengths and limitations of TEE.
- Contraindications and potential complications of TEE.

- Familiarity with the TEE views obtainable from the major esophageal/gastric positions; these include the midesophageal, upper esophageal, transgastric, and deep transgastric, as well as supplementary views such as of the descending aorta.

For the trainee to satisfy these guidelines, the program must incorporate these topics into the general curriculum. This could be achieved in multiple ways, including didactic lectures, case discussions between cardiology fellows and pediatric cardiologists (or other qualified physicians) with expertise in pediatric/congenital heart TEE, video and "hands on" demonstrations, and/or multidisciplinary meetings such as combined cardiac surgery and cardiology conferences.

**Fetal Echocardiography**

Fellows completing 3 years in general cardiology training are not required to perform or interpret fetal echocardiograms, but all fellows are required to be knowledgeable about the subject. As with TEE, some trainees may wish to attain a higher level of competency in performing and interpreting fetal echocardiography during core fellowship.

The following represents recommended minimum knowledge for core training in fetal echocardiography:

- Indications for, and limitations of, fetal echocardiography.
- estational age at which to refer for a fetal echocardiogram.
- Normal physiology of fetal and transitional circulation.
- Alterations in fetal circulation associated with CHD that impact outcome.
- Fetal arrhythmia evaluation, management, outcomes, and utility of fetal echocardiographic monitoring.
- Extracardiac anomalies in the fetus that impact prenatal and perinatal outcome.
- Existing innovations in perinatal management.

For the trainee to satisfy these guidelines, there must be a provision in the program to incorporate these topics into the general curriculum. This could be achieved in multiple ways, including didactic lectures, video and "hands-on" demonstrations, journal club, and/or multidisciplinary meetings such as combined perinatal and cardiology conferences.

**Cardiac MRI**

Guidelines for training in pediatric cardiac MRI were published as part of the 2005 pediatric cardiology noninvasive cardiac imaging guidelines document in *Circulation* from which these revised training guidelines have been adapted. Guidelines to achieve clinical competence in cardiac MRI and CT as part of adult cardiology fellowship training have also been published. There is significant variation amongst institutions with respect to availability of pediatric cardiac MRI and in the expertise of pediatric cardiologists, adult cardiologists, and radiologists in performing pediatric/congenital cardiac MRI. Thus, the training guidelines described in the following text are suggested requirements. Similarly, institutions may also choose to include knowledge of cardiovascular CT indications, advantages, and disadvantages for imaging in children and adults with CHD as part of their core pediatric cardiology fellowship curriculum and may choose to include some level of competency in interpretation of cardiovascular CT as part of advanced noninvasive cardiac imaging training, depending on the level of institutional expertise and equipment availability.

Fellows completing 3 years of general pediatric cardiology training are not required to perform or interpret cardiac MRIs. However, the graduating pediatric cardiology fellow is required to be knowledgeable about cardiac MRI. He or she would be expected to refer patients for cardiac MRI when appropriate and should be able to view cardiac MRI images and incorporate diagnostic cardiac MRI reports as components of a patient's clinical evaluation. With this in mind, the following are guidelines for core training in cardiac MRI:

- Familiarity with basic principles used to generate MRI images.
- Awareness of current indications and contraindications for cardiac MRI
    - In patients with CHD, including children and adults,
    - In children with acquired heart disease, such as for assessment of ventricular volumes, mass, and/or function.
- Ability to read basic cardiac MRI acquired in infants, children, and young adults with either structurally normal or abnormal hearts.

For a pediatric cardiology fellowship trainee to satisfy these core cardiac MRI training guidelines, there must be provisions within the core fellowship training program that incorporate these topics into the general curriculum. This could be achieved in several ways, including: 1) case discussions with direct interaction between the core pediatric cardiology fellow and pediatric cardiologists or cardiac radiologists who have special expertise in cardiac MRI, including advanced cardiac MRI fellowship trainees, during the acquisition and interpretation of cardiac MRIs; 2) didactic lectures, videos, continuing medical education conferences, and "hands-on" demonstrations; and 3) multidisciplinary meetings, such as combined cardiology, radiology, and/or pathology conferences

## Additional Information on Inpatient and Consult Coverage

Consult Coverage model:

- Consult attending 24/7
- Consult fellow every weekday unless they are post-call (limited to once per 2 week rotation)
- Fellow covering inpatient and consults every weekend day
- Fellow covering inpatient and consults every night
- There will intermittently be an APP on consults during the daytime – weekday and weekend

- Day coverage weekday: Consult attending + Consult fellow +/- consult APP
- Day coverage weekend: Consult attending + on-call fellow +/- consult APP
- Night coverage both weekday and weekend: consult attending + on-call fellow

Fellow/APP responsibilities on Consults

- General cardiology consults:
    - Days with Fellow + APP: the APP and consult fellow will divide the consults throughout the day. The consult fellow will continue to complete the Parkland consults.
    - Days with Fellow only or APP only: The fellow/APP will complete all consults. If there is a high volume of consults, then the fellow/APP and attending will need to work together to decide on division labor.
    - The consult attending should continue to involve the fellow in reviewing echos and important discussions with medical teams and families.
- Pulmonary hypertension consults:
    - The pulmonary hypertension consults will come through the general cardiology consult team and the fellow/APP will notify Megan Griffin of the new consults.
    - The cardiology fellow/APP on consults will not have any responsibility for seeing or writing notes on these patients.
    - Megan will update the consult team in the afternoon regarding any potential pulmonary hypertension patients that the team may be called about overnight.
- PACC consults:
    - When there is a fellow and APP on daytime consults, then the consult service will complete the consult and staff with the PACC attending.
    - When there is only one provider on the consult service, then the PACC team will complete the consult.

Consult Attending responsibilities:

- Take all consult calls during the morning conferences 7:30-8:30 M-F so that the fellow can more reliably attend educational conferences. The fellow will still remain in the paging directory but will text the attending the information if they receive a page during conference.
- When the consult service is busy and there is only one provider on the consult team, the attending will help with division of labor to complete all the tasks in a timely manner
- The attending will continue to involve the fellow/APP in reviewing echos and in important discussions regarding the patients.

Weekend days:

- On weekend days, the fellow will be covering both the inpatient and consult service.
- When there is no APP on the weekend day, in the morning, the fellow's primary responsibility will be to the consult service, which means they may have to miss medical rounds.
- The fellow will attend surgical rounds as long as there is not an emergency on consults.
- The fellow should attend inpatient medical rounds if there is no active consult needs; however, if there are consults that need to be addressed, then they should be excused from inpatient rounds to address the consult needs.
- The ACCU attending will sign out the inpatient service to the fellow prior to leaving the hospital.

ACC/PACC Overflow patients in the CVICU:

- The consult team will no longer cover these patients.
- The ACC team and PACC team will be responsible for these patients during both the day and night. The teams will use the first call provider function within Epic to identify who the nurse should call.
    - ACC daytime: The inpatient fellow will log in as first call provider for these patients
    - PACC daytime: The coverage will be divided between, The 4th year transplant fellow, the inpatient fellow and the PACC APP.
        - When the 4th year fellow is on service, he/she will log in as first call provider for the patient.
        - When the 4th year fellow is not on service, PACC APP will be first call provider when he/she is in the hospital. On days that the PACC APP is not present, then the 1st year fellow will log in as first call provider.
    - Night coverage will continue to be provided by the on-call fellow for both ACC and PACC patients
- When able, the teams will prioritize the PACC patients being admitted to C8 to limit the times that PACC patients are admitted to the IMU with floor status.
- The overflow patients will take priority in transferring to C8 when a bed becomes available.

## Escalation Pathway

- C8 patients: ACC attending on-call
- PACC patients: PACC fellow or attending on-call
- B4 post-cath procedure patients: 1st escalation to the cath fellow, 2nd escalation to the on-call cath attending
- B4 post-EP procedure patients: EP attending on-call
- All other patients in Children's, Parkland, Clements: consult attending on-call
- Patients needing admission to the ACCU or CVICU from the ED: coordination with ACC attending on-call, escalation to CVICU attending on-call as needed
- Patients needing transfer to the CVICU from the floor: CAT

<u>Special considerations for B4 patients while the fellow is off campus at Parkland:</u>

1. Most nurse phone calls will hopefully be able to be managed over the phone while the fellow is at Parkland. Fellows should touch base with the nurses on B4 at the beginning of their night shift (when able) to make sure that the orders are up to date. This should help prevent getting phone calls regarding missing orders.
2. If for some reason the fellow is unreachable by phone, then the normal escalation to the on-call attending (as noted above) should occur.
3. If the B4 nurse has a concern that requires an in-person assessment, the fellow will triage the urgency of the assessment

a) If the B4 patient does not need to be seen urgently, they will finish their task at Parkland and then return to see the B4 patient as soon as possible.
b) If the B4 patient needs to be seen urgently, the fellow and B4 nurse should escalate to the C8 charge nurse who will be able to help the bedside nurse until a physician can arrive to the bedside
    i. If the Parkland patient is stable, the cardiology fellow will return to Children's (~10 minutes) to assess the B4 patient.
    ii. If the Parkland patient is unstable, the fellow should escalate to an attending for help (2 options)
        1. The consult attending can be called in to help manage the Parkland patient OR
        2. The Cath/EP fellow/attending can be called in to help manage the B4 patient

4. If there is a true emergency that cannot wait for the fellow to return from Parkland or an attending to arrive to the hospital, then a MET, CAT or Code should be called to alert the CICU charge nurse and attending.
    a) Established response times: Code STAT, MET 10 minutes, CAT 30 minutes

# Continuity Clinic information:

You will spend ½ day per week in continuity clinic with your assigned attending. You are expected to be in clinic every week except for when you are on ACCU, consults, CVICU, nights and vacation. Please communicate with your attending when you will not be in clinic.

Expectations of the fellow continuity clinic experience:

- Fellows will be present for afternoon clinic only (depending on when your afternoon patients are scheduled, they should start around 12:30-1pm) – they should not come to morning clinic unless that has been approved by myself or Melinda.
- The fellow will be responsible for seeing all afternoon patients that have been scheduled to see the faculty member –patients will not be scheduled for the fellow individually.
- The fellow will determine which patient orders are needed and place them prior to clinic.
- The fellow should see the patient, review labs and testing, develop an assessment and plan, present the patient to the attending, see the patient with the attending and present the plan to the patient/family, and then complete the documentation. The expectation is that the documentation is complete within 24 hours of seeing the patient.

| Fellow | Attending | Day | Location |
|---|---|---|---|
| Meaghan Bruner | Jenna Keelan | Tuesday | Dallas |
| Nathan Hsieh | Sravani Avula | Friday | Dallas |
| Adil Khan | Sonali Patel | Wednesday | Dallas |
| Monisha Narayanan | Mansi Gaitonde | Friday | Dallas |
| Ernest Naturinda | Yousef Arar | Wednesday | Dallas |
| Anusha Kodidhi | Kavita Sharma/ Stephan Wu | Monday (1/3/5) Tuesday (2/4) | Plano |
| Matthew Mosgrove | Kavita Sharma | Thursday | Plano |
| Natalia Testo | Munes Fares | Monday | Dallas |
| Cicero Willis Pineda | Matt Lemler/Claudio Ramaciotti | Wednesday | Dallas |
| Sara Alhousseiny | Colin Kane | Tuesday | Plano |
| Qasim Mehdi | Colin Kane | Wednesday | Plano |
| Sarah Zoretic | Kavita Sharma | Friday | Plano |

Beginning in the first year the fellow will be assigned to a faculty outpatient clinic for one-half day per week. The fellow will evaluate the patient and results of laboratory data and then present his/her findings, assessment, and plan to the assigned faculty cardiologist who will also examine the patient. The overall goal of this experience is to provide a continuum of patient contact so that the fellow can develop knowledge of the natural history of selected clinical problems and develop a satisfactory doctor-patient relationship. Evaluation of the fellow occurs through direct observation in the outpatient clinic as well as through observation of follow-up care and review of clinic letters.

**Goals - Patient Care/Medical Knowledge –** The fellow should demonstrate:

1. the ability to report a detailed and appropriate history and physical examination along with pertinent diagnostic studies on cardiology patients through presentations of patients on rounds and by documentation in the EPIC letter (Year 1).
2. the ability to distinguish innocent from pathologic murmurs (without echo) (Year 1).
3. the ability to evaluate and manage patients with:

   a. Chest pain (Year 1)
   b. Syncope (Year 2)
   c. Irregular and/or fast heart rhythm (palpitations) (Year 1)
   d. Hypertension (Year 2)
   e. Lipid disorders (Year 2)
4. the ability to evaluate and plan treatment, including catheter intervention or surgery, for patients with:
   a. Acyanotic defects (Year 2)
   b. Simple cyanotic defects (Year 2)
   c. Complex cyanotic defects including single ventricle physiology (Year 3)
5. the ability to evaluate and manage patients with ventricular dysfunction/heart failure (Year 3).
6. the ability to anticipate, recognize and manage complications after open heart surgery (Year 2).
7. knowledge of cardiovascular manifestations of systemic diseases including myopathies, chromosomal abnormalities, pre renal transplant evaluation, collagen vascular disease (Year 3).
8. the ability to determine which patients need prompt admission to the hospital (Year 1).
9. the ability to be diligent regarding necessary follow-up of patient care issues (Year 1).
10. the ability to communicate effectively with primary care providers and other consultants and completes all paper work in a timely manner (Year 1).
11. the ability to facilitate processes necessary for proper reimbursement (Year 2).

**Goal - Interpersonal and Communication Skills –** The fellow should demonstrate the ability to:

1. communicate effectively in a developmentally appropriate manner with patients and families to create and sustain a professional and therapeutic relationship across a broad range of socioeconomic and cultural backgrounds (Year 1).
2. obtain informed consent for conscious sedation (Year 1).
3. prepare organized letters that meet documentation requirements in a timely manner (Year 1).

**Goal - Practiced Based Learning and Improvement –** The fellow should**:**

1. demonstrate the use of evidence-based medicine and information technology in the care of patients (Year 1).
2. demonstrate new knowledge through self-directed independent learning (Year 1).
3. actively seek out and listen to constructive feedback from other members on the care team as well as patients and families and incorporate this feedback, when appropriate, into a plan for professional development (Year 1).
4. actively participate in the education of patients and families (Year 1).
5. demonstrate effective education of students, residents, and other health professionals (Year 1).
6. assist in providing for continuity of care with surgeons, other cardiologists, and primary care providers (Year 1).

**Goal – Professionalism -** The fellow should demonstrate:

1. the ability to consistently maintain respect, compassion, integrity, honesty and responsiveness to the needs of patients and the health care team in a way that supersedes self-interest (Year 1).
2. a commitment to excellence and ongoing professional development by being prepared, on-time, and in appropriate attire (Year 1).
3. the ability to be sensitive to the needs of the patient and the parent/guardian by applying negotiation, compromise and mutual respect in the daily care of inpatients (Year 1).
4. the ability to recognize and demonstrate an understanding of ethical, cultural, religious or spiritual values of importance to patients and families during communications and care decisions (Year 1).
5. a commitment to confidentiality, privacy, and respect for patients and families (Year 1).
6. empathy towards the child and family in negotiating and designing goals of treatment, including relevant medical, legal and psychological issues (Year 1).
7. advocacy for patients and their families (Year 1).

8. the ability to honestly assess one's contribution to errors that are made, accept responsibility for personal mistakes and implement plans to prevent one's self and others from making the mistake again (Year 1).

**Goal - Systems-Based Practice –**

1. The fellow should demonstrate the ability to:
   a. prioritize the various modes of diagnostic testing and select the most appropriate testing modality, with a goal toward preventing unnecessary laboratory or imaging tests (Year 1).
   b. facilitate involvement of multidisciplinary team in patient care and demonstrate the ability to work with all members (Year 1).
   c. advocate for patients in the inpatient setting by helping them navigate within system complexities and directing them to support services as needed (Year 1).
2. The fellow should:
   a. comply with institutional systems that have been developed to prevent errors in the administration of "high risk" medications, such as digoxin (Year 1).
   b. avoid the use of ambiguous or unacceptable abbreviations in the medical record, prescriptions and medical orders (Year 1).
   c. Use appropriate ICD and E&M codes for each patient visit (Year 2).

# Important Fellow Meetings and Activities

- New Fellow Bootcamp: 1st 2 weeks of July
- Fall Fellow Retreat: November
- Fall CCC: 1st 2 weeks of December
- Fall SOC: 1st 2 weeks of December
- 1st Semi-annual Evaluation: 1st 2 weeks of January
- 1st Program Evaluation Committee meeting: Middle of January
- SITE exam: February
- Spring Fellow Retreat: April
- Spring CCC: last 2 weeks of May
- Spring SOC: last 2 weeks of May
- 2nd Semi-Annual Evaluations: 1st 2 weeks of June
- 2nd Program Evaluation Committee Meeting: Beginning of June
- Fellow Graduation Event: mid-June

# Semi-Annual Evaluations

- Each fellow will meet with either the PD or an APD twice per year
- The meetings for each fellow will rotate between each of the program leaders
- Topics addressed:
    - The result of the CCC meeting
    - Milestones and progression
    - Goals for next 6 months
    - Potential Barriers to achieving your goals
    - Overall career goals and how the program leadership can help
    - Any concerns that you have

# Scholarship Oversight Committee Information

**Introduction to the Scholarship Oversight Committee**

As instructed by the American Board of Pediatrics (ABP), every pediatric cardiology fellow must be involved in scholarly activity that results in the generation of a written work product. Each fellow must have a Scholarship Oversight Committee (SOC). The minimum requirement for the SOC structure is 3 individuals, with one whose subspecialty is outside of our division. The committee's responsibilities include determining whether a specific activity is appropriate to meet the ABP guidelines for scholarly activity, determine a course of preparation to ensure the successful completion of the project, evaluate the fellow's progress as related to scholarly activity, meet with the fellow regularly, require the fellow to present/defend the project, advise the program director on the fellow's progress, and assess whether the fellow has satisfactorily met the guidelines associated with the requirement for active participation in scholarly activities. Signature of the members of the SOC in conjuncture with the fellow's work product will be required for ABP board eligibility. In addition, the SOC members must be listed at the time of application for the Pediatric Cardiology Certifying Examination.

Based on these requirements by the ABP, we have structured our SOC as follows.

- Every fellow will meet with the SOC semiannually for a total of 6 meetings, starting in their 1st year
- Each meeting will be 30-45 minutes in length where the fellow presents their research projects and receive feedback on the career related items (based on the below schedule)
- The SOC committee will be made up of the SOC chair, 2 junior cardiology faculty, 2 senior cardiology faculty, and 2 non-cardiology faculty (all will be chosen by the division)
- The fellow's primary research mentor will be expected to attend each meeting
- Before presenting the research project to the SOC committee, the fellow should complete the Fellow Research Proposal Form under the guidance of their research mentor. The research mentor will need to sign this form prior to the fellow starting the research project, indicating their review.
- Each fellow will turn in an SOC evaluation form and the career deliverable (see below) 2 weeks prior to the meeting
- SOC slides are required to be approved by the primary research mentor at least 1 week prior to the SOC meeting. The slides are meant to be built upon during each SOC meeting with the final result of a portion of an interview job talk.
- SOC slide template will be provided to the fellows prior to the first SOC meeting

We recognize the importance of scholarly work, not only for the requirements outlined by the ABP, but as the beginning of an academic career for our fellows. As such, our goal is for each fellow to complete an academic research project from IRB submission to manuscript acceptance. The goal of each fellow should be to complete the scientific process with one main project; taking one good project to completion is much more important than having several smaller projects. Therefore, we want to emphasize the importance of choosing a primary project and completing the majority of work on that project prior to picking up additional secondary projects. Below is a breakdown of what will be expected at each SOC throughout our fellowship.

In addition to research goals, we have outlined specific deliverables related to your career search. These can be turned into the committee for review and feedback. We hope that this will better prepare all the fellows for searching for and interviewing for a job.

**Expectations for each SOC meeting**

| SOC # | PGY | Research deliverables | Career deliverable |
|---|---|---|---|
| **1** | PGY 1 - December | • Background/interests<br>• Goals for next 6 months | • CV |
| **2** | PGY 1 - June | • Signed research form turned in prior to meeting<br>• Project background<br>• Specific scientific question<br>• Outcome measures<br>• Project timeline<br>• Goals for next 6 months<br>• Anticipated barriers to meeting goals | • Description of what you think you want your future career to entail |
| **3** | PGY 2 – December | • Project progress<br>• Problems encountered<br>• Report initial results<br>• Updated project timeline<br>• Goals for next 6 months<br>• Anticipated barriers to meeting goals | • Cover letter |
| **4** | PGY 2 - June | • Project progress<br>• Problems encountered<br>• Report results<br>• Updated project timeline<br>• Goals for next 6 months<br>• Anticipated barriers to meeting goals | • List of programs interested in<br>• Plan for finding open positions<br>• SOC slides should start to have the components of what your job talk will need |
| **5** | PGY 3 – December | • Final results<br>• Conclusions<br>• Status of manuscript submission<br>• Optional: secondary project<br>• Goals for next 6 months<br>• Anticipated barriers to meeting goals | • Present your Elevator Pitch<br>• SOC slides should be easily adaptable into your job talk on interviews |
| **6** | PGY 3 – June | • Tie up any loose ends on primary project<br>• Present status of secondary projects<br>• Plan for continuing or handing off any unfinished projects | • Plan for first 5 years of career |

*Secondary projects should not be taken on until primary project has entered manuscript writing phase and the fellow has >6 months left within fellowship to ensure work will be completed on the primary project*

Research Proposal Form

## Fellow Research Proposal Form

### 1. Basic Information

| | |
|---|---|
| *Working Title:* | |
| *Proposal Submission Date:* | |
| *Primary Author's Name:* | |
| *Primary Author's E-mail Address:* | |
| *Senior Author's Name:* | |
| *Collaborator Name(s):* | |
| *Research question:*<br>*<insert main question(s) here – be as specific as possible!>* | |
| *Hypothesis:*<br>*<what do you think the outcome will be?>* | |

### 2. Background/Significance

Write your 3-paragraph intro here (include references where able):

| | |
|---|---|
| *a) What is the big picture? Why is this topic important?* | |
| *b) What is the knowledge gap?* | |
| *c) What is the purpose of the study? What is your hypothesis? (rehash from above)* | |

## 3. Methods

| | |
|---|---|
| *Study Design:*<br>*(cohort vs. case control vs. RCT, prospective vs. retrospective, other)* | |
| *Data Source(s):* | |
| *Study Population:*<br>*Inclusion & exclusion criteria* | |
| *Primary Outcome Variable:* | |
| *Secondary Outcome Variable:* | |
| *Main Predictor Variable:* | |
| *Potential Confounders:* | |
| *Planned Statistical Analysis:*<br>*(To be completed at first meeting)* | |

**4. Results**

*a) Insert proposed table shells here*

*b) Insert proposed figure shells here*

## 5. Work Product Information

| | |
|---|---|
| *Intended meeting for abstract presentation* | |
| *Approximate Date of Abstract Submission deadline*: | |
| *Approximate Date of Meeting* | |
| *Intended Journal for Publication:* | |
| Funding Source needed? | |
| IRB Approval needed? | |
| IRB Approval obtained?<br>(If so, please attach a copy) | |
| IRB Expiration Date: | |
| Does data source require approval or submission of proposal?: | |
| Other Comments: | |

## 6. Target Timeline (to be completed at initial meeting)

| | |
|---|---|
| Initial Meeting: | |
| IRB Submission, if needed: | |
| Database proposal submission, if needed: | |
| Begin Data Collection: | |
| Finish Data Collection: | |
| Prelim Analysis Complete: | |
| Final Analysis Complete: | |
| Abstract Submission: | |
| First Draft of Manuscript: | |
| First Submission to Journal: | |

## 7. References

## 8. Signature of Research Mentor

Name: _____

Signature: _____

SOC Evaluation Form

**UT SOUTHWESTERN PEDIATRIC CARDIOLOGY**
**SCHOLARSHIP OVERSIGHT COMMITTEE MEETING**

Date of Meeting: _____

Fellow Name: _____ Year of Training: ____ 1 ____ 2 ____ 3

Attendees: _____

Research Mentor: _____

**Academic Projects**

**Project 1**

Title:
Brief Description of Project:.
Role (PI/Co-I/etc.):
Primary Mentor:
Secondary Mentor(s):
Collaborator(s):
Progress:
IRB submitted (date):
IRB approval (date):
Data Collection Initiation (date/anticipated if not yet started):
Data Collection Completion (date/anticipated if not yet completed):
Data Analysis Completion (date/anticipated if not yet completed):
Abstract Submission (e.g., AHA 2022, can be anticipated):
Abstract Presentation (enter N/A if not yet accepted or presented):
Manuscript Completion (anticipated date):
Intended Journal for Manuscript Submission:
Problems Encountered:

**Plan/Goals for Next 6 Months:**
- **Writing of manuscript for Project 1 and 2**
- **Completion of recruitment of patients for Project 3**

**Scholarship Oversight Committee Assessment**

☐ No Concerns

☐ Not Applicable

☐ Concerns (requires comments)

**Comments:**

# Evaluations:

| Rotation name | Faculty who fills out a fellow evaluation | Fellow receives the following evaluations | Frequency of evaluation |
|---|---|---|---|
| Cath | Arar | -Rotation evaluation<br>-Divekar<br>-Reddy<br>-Zellers<br>-Arar<br>-Wu | At the end of their last cath block for the year |
| Imaging | Gaitonde | -Rotation evaluation<br>-Ramacciotti<br>-Lemler<br>-Ikemba<br>-Keelan<br>-Gaitonde<br>-Fares<br>-Gaur<br>-Ossa Galvis | After completing 4 weeks of imaging (1st years will receive this evaluation twice) |
| EP | Ezekian | -Rotation Evaluation<br>-Nguyen<br>-Ezekian<br>-Weinreb | At the end of their last EP rotation for the year |
| ACCU | 2 faculty members on ACCU during their rotation | -Rotation evaluation<br>-2 faculty members on ACCU during their rotation | At the end of every ACCU block |
| Consult | 2 faculty members on consults during their rotation | -Rotation evaluation (needs to be created)<br>-2 faculty members on consults during their rotation | At the end of every consult block |
| CVICU | 2 faculty members on CVICU during their rotation | -Rotation evaluation<br>-2 faculty members on CVICU during their rotation | End of every CVICU block |
| HFT | Baez-Hernandez | -Rotation evaluation<br>-2 faculty members on inpatient service during their rotation<br>-primary PACC attending they worked with on their one-week outpatient portion | End the end of every HFT rotation |
| ACHD | Brickner | -rotation evaluation | At the end of ACHD rotation |
| Continuity Clinic | Clinic mentor | -rotation evaluation<br>-clinic mentor | Twice per year |
| Elective rotation | Appropriate education liaison | -rotation evaluation | End of each elective rotation |
| Night float | none | -rotation evaluation | End of year |

# Education:

## Required Conferences:

- You will have protected time to attend these conferences.
- We will have a hybrid set up with zoom and an in person in B3 Conference room. If you need to remain close to patients (for example: in the CVICU) during these conferences, then you can log in virtually.
- You should not attend in person when you are on night float, but you may choose to log in virtually on your drive home (this is optional)

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---|---|---|---|---|---|
| **MORNING (7:00/7:30-8:15am)** | Combined Cardiology/CT Surgery Conference | Echo Conference | Cath/EP/Surgery Conference<br><br>3rd – Surgery | Heart Center Conference | Echo Conference |
| **AFTERNOON (4-5pm)** | | Didactics<br>2nd – Board Review<br>3rd – Book Club | C-MAP | Didactics | |

Tuesday and Thursday Didactics topics

- Pathophysiology
- CVICU
- Simulation
- Heart Failure, Transplant and mechanical circulatory support
- Exercise Cardiology
- Pulmonary Hypertension
- Advanced imaging: Fetal and 3D Imaging
- Neurodevelopment
- Palliative care

## Recommended textbooks for categorical cardiology fellows

1) Moss and Adam's Heart Disease in Infants, Children and Adolescents – Hugh D Allen, David J Driscoll, Robert E. Shaddy, Timothy F. Feltes
2) Congenital Diseases of the Heart: Clinical-Physiological Considerations – Abraham Rudolph
3) Anderson's Pediatric Cardiology: Expert Consult – Gil Wernovsky, Robert Anderson, Kumar Krishna, Kathleen A Mussato, Andrew Redington, James S Tweddell, Justin Tretter
4) Nadas' Pediatric Cardiology – John F Keane, Donald C Fyler, James E Lock, Sarah Teele
5) Comprehensive Surgical Management of Congenital Heart Disease – Richard Jonas
6) The Natural and Modified History of Congenital Heart Disease – Robert M. Freedom, Shi-Joon Yoo, Haverj Mikailian, William G. Williams
7) Electrophysiologic Testing – Richard Fogoros
8) Clinical Cardiac Electrophysiology in the Young – MacDonald Dick II
9) Echocardiography in Pediatrics and Congenital Heart Disease: From Fetus to Adult – Wyman Lai
10) Echocardiography in Pediatric and Adult Congenital Heart Disease – Benjamin W. Eidem

<u>Practical handbooks:</u>

1) Congenital Heart Disease: The Catheterization Manual - Lisa Bergersen, Susan Forester, Audrey Marshall, Jeffrey Meadows
2) How to Read Pediatric ECGs – Myung Park and Warren Guntheroth
3) Cardiac Electrophysiology: A Visual Guide for Nurses, Techs, and Fellows – Paul Purves, George Klein, Peter Leong-Sit, Raymond Yee, Allan C Skanes, Lorne Gula, Andrew Krahn
4) Pediatric Cardiac Intensive Care Handbook – through PCICS
5) Atlas of Congenital Heart Disease Nomenclature – David S Ezon, Jason F Goldberg, William B Kyle

<u>Free Resource (everyone should create an account!)</u>

- Heart University – heartuniversity.org

<u>Textbooks for a deeper dive:</u>

EP

- Josephson's Clinical Cardiac Electrophysiology – David J Callans (according to Hoang, the older editions, 3rd-5th, are as good as the 6th edition and can be purchased for less)

Imaging

- Transesophageal Echocardiography for Pediatric and Congenital Heart Disease – Pierre C Wong and Wanda C. Miller-Hance
- Cardiovascular MR Manual - Sven Plein, John Greenwood, John P Ridgway
- Fetal Cardiovascular Imaging – Jack Rychik, Zhiyun Tian

Cath

- Cardiac Catheterization in Congenital Heart Disease – Charles E. Mullins
- Percutaneous interventions for Congenital Heart Disease – Horst Sievert, Shakeel A Qureshi, Neil Wilson, Ziyad M Hijazi

Exercise Stress Testing

- Principles of Exercise Testing and Interpretation: Including Pathophysiology and Clinical Applications – Karlman Wasserman

Cardiac Intensive Care

- Critical Heart Disease in Infants and Children – Ross M Ungerleider, Kristen Nelson, David Cooper, Jon Meliones, Jeffrey Jacobs

Transplant/ Heart Failure

- ISHLT Monograph series
- Heart failure in the Child and Young Adult – John Jeffries, Anthony Chang, Joseph Rossano, Roert Shaddy, Jeffrey Towbin

# Wellness

## GME wellness

https://www.utsouthwestern.edu/education/graduate-medical-education/wellness/

## Fellow retreats:

The fellowship will sponsor 2 fellow retreats per year in which all categorical fellows will be excused from clinical care. These retreats will include:

- Discussion of what is working/what is not working
- Discussion on various wellness topics
- Fall retreat: Recruitment, fellow applicant discussion
- Spring retreat: SWOT, Brainstorming for the following year Action Plan
- Team building activity

# Program Procedure Requirements

| Your total # completed | Study/Procedure | Required # to graduate |
|---|---|---|
| | Echocardiographic Studies | 300 |
| | Cardiac Catheterization | 75 |
| | Temporary Pacemaker Interrogations | 5 |
| | Permanent Pacemaker Interrogations | 5 |
| | Intracardiac Electrophysiology Procedures | 10 |
| | Electrocardiographic Studies | 400 |
| | TEE's | optional |
| | Exercise testing | optional |