**Rotation Contacts and Scheduling Details**

**Rotation Director:** Inger Olson, M.D  iolson@stanford.edu  
**Phone:** 723-7913  
**Office:** LPCH Heart Center

**Administrator:** Lupe Romero-Villanueva  lupe.romero@stanford.edu  
**Phone:** 650 721-6849  
**Office:** 750 Welch Road, Suite 305

**Positions Available:** 1 position available per month, can be done in either 2 week or 4 week blocks. Previous Purple Team rotation preferred, not offered during December holidays. Areas of focus may include one or more of the following: electrophysiology, heart failure/transplant, imaging, catheterization, inpatient consults, or outpatient clinics* (*depends on availability).

**Introduction**

The cardiology selective/elective will introduce residents to the common congenital and acquired cardiac conditions of infancy, childhood, and adolescence. The focus will be on physical examination, interpretation of routine diagnostic studies, understanding circulatory pathophysiology, and a developmental approach to pediatric heart disease; however, this rotation can be fully customized as above (requires at least 1 month notice, and depends on availability).

**Rotation Specifics**

**Orientation**

Residents will receive an email with instructions for their first day. Orientation usually takes place in the Echo lab or the rotation director’s office.

**Weekly Schedule** – *schedule is individualized and will vary from below (distributed on first day of rotation)*

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30-8:30</td>
<td>Fellow lecture</td>
<td>Fellow lecture</td>
<td>Surgery conference</td>
<td>Fellow lecture</td>
<td>Surgery lecture</td>
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<tr>
<td>8:00-8:30</td>
<td>Morning report</td>
<td>Morning report</td>
<td>Morning report</td>
<td>Morning report</td>
<td>Grand rounds</td>
</tr>
<tr>
<td>8:30-12:00</td>
<td>Clinics or Echo lab or Cath lab</td>
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<tr>
<td>12:00-1:00</td>
<td>Noon conference</td>
<td>Noon conference</td>
<td>Noon conference</td>
<td>Noon conference</td>
<td>Noon conference</td>
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<tr>
<td>1:00-5:00</td>
<td>Clinics or Echo lab or Cath lab</td>
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Note: conference schedule and location may vary. Schedule and locations distributed first day of rotation.

**Other:**

There may be additional teaching sessions if a specific area of focus is chosen.

**Resident Roles and Responsibilities**

1. Attend outpatient clinics. Residents will take histories on patients and then present to the attending.
2. Read ECGs
3. Observe/participate in cardiac catheterization procedures
4. Observe/participate in echocardiographic procedures
5. Observe/participate in cardiopulmonary exercise studies
6. Attend all cardiology conferences and teaching sessions (unless pre-rounding on the wards or seeing consults)
Methods of Evaluation and Feedback
1. Written evaluations will be done after each encounter in the outpatient clinic. The attending of clinic may review the resident’s progress and/or forward the evaluation to the Resident Rotation Director (Dr. Olson).
2. The Resident Rotation Director (or her associate) will be available weekly to review the resident’s progress and address problems/concerns.
3. The Resident Rotation Director (or her associate) will meet with the resident the last week of the rotation, and summarize the evaluations obtained from the Division of Pediatric Cardiology faculty if available.

References and Readings
The Acute Care Cardiology Handbook covers many topics generally. For additional reading, there are a number of articles available on the Purple Team website as well as the Cardiology selective website. Most of the articles chosen are appropriate for general pediatricians in training and in practice.
## ACGME Competency-based Goals and Objectives

### Goal 1. Understand the appropriate use of imaging/assessment modalities in establishing the diagnosis of heart disease in children and in monitoring their progress

<table>
<thead>
<tr>
<th>Resident Objectives</th>
<th>Instructional Strategies</th>
<th>Assessment of Competence</th>
<th>ACGME Competency Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demonstrate the ability to accurately assess the following features of a pediatric 12-lead EKG   • Rate   • Axis   • Intervals (PGY 1, 2, 3)</td>
<td>- Overview of EKG reading by cardiology attending   - Bi-weekly review of EKGs with cardiology attending   - Reading materials (see CD, website)</td>
<td>- Direct observation of EKG review   - 1:1 feedback regarding EKG review</td>
<td>MK—Demonstrate knowledge evolving sciences and apply this knowledge to patient care   PC—Provide effective health care services</td>
</tr>
<tr>
<td>2. Demonstrate a working knowledge of the following features of an echocardiogram   • Ejection fraction (PGY 1, 2, 3)</td>
<td>- Echocardiogram reading with echo attending with on-the-spot teaching   - Reading materials</td>
<td>- Discussion during echocardiogram reviews</td>
<td>MK—Demonstrate knowledge evolving sciences and apply this knowledge to patient care</td>
</tr>
<tr>
<td>3. List the indication for and limitations of echocardiogram including   • function   • situational limitations (uncooperative patient, limited image quality) (PGY 1, 2, 3)</td>
<td>- Echocardiogram reading with echo attending with on-the-spot teaching   - Reading materials</td>
<td>- Discussion during echocardiogram reviews</td>
<td>MK—Demonstrate knowledge evolving sciences and apply this knowledge to patient care</td>
</tr>
<tr>
<td>4. Verbalize the indications for cardiac catheterization as well as the types of assessments it allows (PGY 1, 2, 3)</td>
<td>- Observation in during cardiac catheterization procedure   - Review of cases to undergo cardiac catheterization (obtain case list from fellow day prior)</td>
<td>- Discussion with attendings in context of patient care</td>
<td>MK—Demonstrate knowledge evolving sciences and apply this knowledge to patient care   PC—Provide effective health care services</td>
</tr>
</tbody>
</table>

### Goal 2. Develop skill in differentiating innocent from pathologic murmurs in infants and children

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<tr>
<td>1. Describe murmur quality including   • Phase: systolic, diastolic, continuous   • Location: RUSB, LUSB, LLSB, apex, back   • Radiation   • Tone: vibratory, harsh, high-pitched   • Description: crescendo, decrescendo   • Grade: I, II, III, IV, V (PGY 1, 2, 3)</td>
<td>- Patient care with comparison to attending description of murmur   - Reading materials</td>
<td>- Active observation and discussion of murmur assessment by clinic attending</td>
<td>PC—Provide effective health care Services   MK—Demonstrate knowledge evolving sciences and apply this knowledge to patient care</td>
</tr>
</tbody>
</table>
2. List features of a murmur that suggest specific anatomic pathology (PGY 1, 2, 3)
   - Patient care with comparison to attending description of murmur
   - Reading materials
   - Active observation and discussion of murmur assessment by clinic attending

### Goal 3. Participate in the acute and chronic management of children with heart disease

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</table>
| 1. Identify when activity restrictions are indicated for a particular patient (PGY 1, 2, 3) | • Patient care  
• Reading materials | • Discussion of patient care plan with clinic attending  
• Review of dictations for inclusion of this information | PC—Provide effective health care services  
MK—Demonstrate knowledge evolving sciences and apply this knowledge to patient care  
ICS—(a) Communicate effectively with physicians, other health professionals, and health related agencies; (b) Work effectively as a member or leader of a health care team |
| 2. Identify patients who will require subacute bacterial endocarditis prophylaxis with dental or other procedures associated with transient bacteremia (PGY 1, 2, 3) | • Patient care  
• Reading materials | • Discussion of patient care plan with clinic attending  
• Review of dictations for inclusion of this information | PC—Provide effective health care services  
MK—Demonstrate knowledge evolving sciences and apply this knowledge to patient care  
ICS—(a) Communicate effectively with physicians, other health professionals, and health related agencies; (b) Work effectively as a member or leader of a health care team |

### Goal 4: Learn the appropriate use of pharmacologic and other treatment modalities in cardiac disease

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<thead>
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<th>ACGME Competency Goals</th>
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</table>
| 1. List the characteristics of cardiac medications within the following classes (including indication, frequent side effects)  
• Diuretics  
• Afterload reducers  
• Inotropes (PGY 1) | • Patient care with medication reconciliation  
• Reading materials  
• Lectures | • Discussion of medications with attending during clinic visits | PC—Provide effective health care services  
MK—Demonstrate knowledge evolving sciences and apply this knowledge to patient care |

### Goal 5. Understand the differential diagnosis and evaluation of common complaints requiring referral (e.g. chest pain, palpitations, syncope)

<table>
<thead>
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<th>ACGME Competency Goals</th>
</tr>
</thead>
</table>
| 1. Obtain a complete history of the above complaints and identify features of the history that support items on the differential | • Patient care  
• Reading materials | • Active observation of patient encounter by clinic attending and discussion of plan | MK—Demonstrate knowledge evolving sciences and apply this knowledge to patient care  
PC—Provide effective health care services |
2. Identify patients with the above complaints who based on history and/or exam require further evaluation (PGY 1, 2, 3)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient care</td>
<td>• Reading materials</td>
</tr>
<tr>
<td>Active observation of patient</td>
<td>• Demonstrate knowledge evolving sciences and apply this knowledge to patient care</td>
</tr>
<tr>
<td>encounter by clinic attending</td>
<td>• Provide effective health care services</td>
</tr>
<tr>
<td>and discussion of plan</td>
<td></td>
</tr>
</tbody>
</table>

PBLI = practice based learning and improvement
ICS = interpersonal and communication skills
P = professionalism
MK = medical knowledge
PC = patient care
SBP = systems based practice