

# Electrophysiology – Goals & Objectives

- **Participating Site(s):** Inpatient cardiology units; electrophysiology labs; outpatient electrophysiology clinics
- **Duration:** 2-4 weeks
- **Required or Elective:** Elective

## Rotation Overview

The Electrophysiology (EP) rotation provides residents with focused exposure to the diagnosis and management of cardiac arrhythmias and conduction disorders. Residents participate in the care of patients undergoing evaluation for rhythm disturbances, device implantation, and catheter-based electrophysiologic procedures. The rotation emphasizes ECG interpretation, arrhythmia management, device knowledge, and interdisciplinary cardiovascular care.

## Overall Rotation Goal

The goal of this rotation is for residents to develop a foundational understanding of cardiac electrophysiology, including arrhythmia recognition, appropriate use of antiarrhythmic therapies, and indications for electrophysiologic procedures and cardiac implantable electronic devices.

## Educational Objectives (Aligned with ACGME Competencies)

### Patient Care

Residents will be able to:

- Evaluate patients with suspected or known cardiac arrhythmias
- Recognize and manage common arrhythmias, including atrial fibrillation, atrial flutter, supraventricular tachycardia, ventricular arrhythmias, and bradyarrhythmias
- Participate in pre- and post-procedural care for electrophysiology studies, ablations, and device implantations
- Monitor and manage patients with pacemakers, implantable cardioverter-defibrillators (ICDs), and loop recorders
- Communicate arrhythmia management plans clearly with patients and interdisciplinary teams

### Medical Knowledge

Residents will be able to:

- Interpret ECGs and telemetry findings related to arrhythmias and conduction abnormalities
- Understand indications, contraindications, and complications of:
  - Catheter ablation
  - Pacemakers and ICDs
  - Antiarrhythmic medications
- Describe basic principles of cardiac electrophysiology, including conduction pathways and mechanisms of arrhythmias
- Recognize when electrophysiology consultation is appropriate

### Practice-Based Learning and Improvement

Residents will be able to:

- Reflect on arrhythmia management decisions and procedural outcomes
- Use evidence-based guidelines to inform rhythm and rate control strategies

- Identify personal learning gaps in ECG interpretation and arrhythmia management

### **Interpersonal and Communication Skills**

Residents will be able to:

- Communicate effectively with patients regarding arrhythmia diagnoses, procedural options, and device therapy
- Collaborate with cardiologists, electrophysiologists, nurses, and device representatives
- Provide clear handoffs and documentation related to rhythm management

### **Professionalism**

Residents will be able to:

- Demonstrate professionalism in high-acuity and procedure-oriented clinical settings
- Maintain patient-centered communication, particularly when discussing invasive procedures and long-term device therapy
- Respect patient preferences and shared decision-making in arrhythmia care

### **Systems-Based Practice**

Residents will be able to:

- Understand the role of electrophysiology within the broader cardiovascular care system
- Coordinate care across inpatient, outpatient, and procedural settings
- Recognize system-based factors affecting access to electrophysiologic procedures and follow-up care

## **PGY-Level Expectations**

### **PGY-1:**

- Observe electrophysiology clinics and procedures
- Learn basic ECG interpretation and common arrhythmia presentations
- Participate in patient care discussions under direct supervision

### **PGY-2:**

- Actively evaluate patients with arrhythmias and device-related issues
- Interpret telemetry and ECGs with increasing independence
- Participate in pre- and post-procedural patient management

### **PGY-3:**

- Demonstrate independent understanding of arrhythmia evaluation and management
- Integrate electrophysiology recommendations into comprehensive patient care plans
- Assist in teaching ECG interpretation and arrhythmia concepts to junior residents

### **Teaching and Learning Activities**

- Electrophysiology clinics
- Inpatient consultations and device follow-up
- Observation of electrophysiology studies and ablation procedures
- ECG and telemetry review sessions
- Independent reading and guideline review

## **Evaluation and Feedback**

Resident performance is evaluated through:

- Direct faculty observation
- Review of ECG interpretation and clinical reasoning
- Participation in procedural and clinical activities
- End-of-rotation evaluation mapped to ACGME milestones

Residents receive ongoing formative feedback and summative feedback at the conclusion of the rotation.

## **Supervision**

Faculty supervision is provided by electrophysiology attendings in accordance with ACGME supervision guidelines. Residents are expected to seek guidance for complex arrhythmias, device-related issues, and procedural decision-making.