



**The Ohio State University Medical Center, Division of Cardiovascular Medicine
Consultative and Laboratory Electrophysiology:
Fellowship Training Guidelines and Clinical Responsibilities**

General Information

Duration of rotation: 1 month
Location to report on 1st day: Ross Heart Hospital Electrophysiology Lab

Available Resources:

Textbooks:

1. Cardiac Electrophysiology: From Cell to Bedside, Douglas Zipes.
2. Clinical Cardiac Pacing, Defibrillation and Resynchronization Therapy, Kenneth Ellenbogen.
3. Clinical Cardiac Electrophysiology: Techniques and Interpretations, Mark Josephson.
4. Electrophysiologic Testing, Richard Fogoros.

Web-based:

1. Heart Rhythm Society – www.hrsonline.org.
2. The American College of Cardiology – www.acc.org.
3. Electronic resources within the Prior Health Sciences Library.

Teaching Methods:

1. Tuesday Electrophysiology Conference.
 - a. Didactic topics in EP.
 - b. Case-based discussions.
2. Clinical teaching during consultation.
3. Individual performance, interpretation of EP studies.
4. Faculty mentorship.
5. Fellow-directed supplemental reading.

Overall Curriculum Goals During 39-Month Fellowship:

1. Instruction in basic principles of cardiac electrophysiology:
 - a. Arrhythmia mechanisms.
 - b. Antiarrhythmic medications.
 - c. Implantable device interrogation, troubleshooting and reprogramming.
2. Competency to perform and interpret the following diagnostic procedures:
 - a. Electrophysiologic testing.
 - b. Tilt table testing.
3. Understanding of indications, risks, benefits and alternatives for common therapeutic procedures:
 - a. Cardioversion.
 - b. Radiofrequency ablation of arrhythmias.
 - c. Pacemaker and/or defibrillator implantation and post-procedure complications.

First Year Fellow in Cardiovascular Medicine:

Overall Focus: Consultative electrophysiology; introduction to EP lab

Number of months: 2

Objectives:

1. Learn basic arrhythmia mechanisms and their management.
2. Understand indications for ordering a diagnostic study.
3. Become familiar with operations of the EP lab.
4. Understand indications, contraindications and complications for therapeutic procedures (RF ablation, device implantation, cardioversion, etc.).
5. Become familiar with interrogation and reprogramming of implanted devices.

Mandatory Reading:

Introductory chapters in either textbook listed above, or equivalent.

Clinical Responsibilities:

1. Develop schedule for the month with supervising attending that allows for:
 - a. Blocks of time in the implantable device clinic at least once per week.
 - b. Coverage of 1 weekend during the month, where the fellow will be responsible for rounding on new and follow-up consults, as well as aiding the attending in the discharge of post-procedure patients.
2. Perform inpatient EP consultations, formulating an assessment and plan to be discussed and finalized with the supervising attending.
3. Daily participation in the EP lab (8-10 am) during diagnostic and/or therapeutic procedures being performed on patients seen by the fellow in a preceding consult.

Didactic Responsibilities:

Each first year fellow is required to present a didactic focusing on a specific topic of their choosing during the month.

Second Year Fellow in Cardiovascular Medicine:

**NOTE: Second year fellows are not required to rotate through EP*

Overall Focus: Continued progress in understanding of arrhythmia pathogenesis; develop advanced skills in diagnostic and therapeutic EP lab procedures

Number of months: 0-4

Objectives:

1. Continued development of consultative skills.
2. Emphasis on more time in EP lab performing diagnostic and therapeutic procedures for patients seen during preceding consults.
3. Develop a further understanding of intracardiac tracing interpretation.
4. Exposure to implantation of pacemakers and ICDs, with supervised participation when appropriate.
5. Further develop skills in device interrogation, trouble-shooting and reprogramming.

Mandatory Reading:

1. Specialized, diagnosis-specific chapters in either textbook listed above.
2. ACC/AHA/HRS guidelines and statements.

Clinical Responsibilities:

1. Develop schedule for the month with supervising attending that allows for:

- a. Blocks of time in the implantable device clinic at least once per week.
- b. Coverage of 1 weekend during the month, where the fellow will be responsible for rounding on new and follow-up consults, as well as aiding the attending in the discharge of post-procedure patients.
2. Perform inpatient EP consultations, formulating an assessment and plan to be discussed and finalized with the supervising attending.
3. Daily participation in the EP lab (8-10 am) during diagnostic and/or therapeutic procedures being performed on patients seen by the fellow in a preceding consult.
4. **Scrub in and perform portions of device implantation procedures when appropriate.**

Didactic Responsibilities:

Each second year fellow is required to present a case-based conference. These topics will be assigned by the chief fellow and should focus on a specific theme, with a brief review of guidelines and primary literature.

Third Year Fellow in Cardiovascular Medicine:

**Note: Third year fellows are not required to rotate through EP – those that do so will likely be pursuing training in advanced non-invasive arrhythmia management (Level 2) or clinical invasive electrophysiology (Level 3).*

Overall Focus: Continued progress in understanding of arrhythmia pathogenesis; develop advanced skills in diagnostic and therapeutic EP lab procedures; competency in cardiac device implantation

Number of months: 0-6

Objectives:

1. Continued development of consultative skills.
2. Emphasis on more time in EP lab performing diagnostic and therapeutic procedures for patients seen during preceding consults.
3. Develop a further understanding of intracardiac tracing interpretation.
4. Further develop skills in device interrogation, trouble-shooting and reprogramming.
5. Competency to independently implant pacemakers and ICDs..

Mandatory Reading:

1. Specialized, diagnosis-specific chapters in either textbook listed above.
2. ACC/AHA/HRS guidelines and statements.
3. Primary literature regarding arrhythmias, anti-arrhythmic drugs, ablation and device therapies.

Clinical Responsibilities:

1. Develop schedule for the month with supervising attending that allows for:
 - a. Blocks of time in the implantable device clinic at least once per week.
 - b. Coverage of 1 weekend during the month, where the fellow will be responsible for rounding on new and follow-up consults, as well as aiding the attending in the discharge of post-procedure patients.
2. Perform inpatient EP consultations, formulating an assessment and plan to be discussed and finalized with the supervising attending.
3. Daily participation in the EP lab (8-10 am) during diagnostic and/or therapeutic procedures being performed on patients seen by the fellow in a preceding consult.

4. Scrub in and perform portions of device implantation procedures with the goal of being able to do so independently.

Didactic Responsibilities:

Each third year fellow is required to present a case-based conference. These topics will be assigned by the chief fellow and should focus on a specific theme, with a brief review of guidelines and primary literature.

Evaluations:

Fellows will be assessed and evaluated by the electrophysiology attending staff based on the 6 core competencies and associated Milestones as seen below:

Competencies	Milestones
Patient Care	<ul style="list-style-type: none"> ▪ Gathers and synthesizes essential and accurate information to define each patient's clinical problem(s) ▪ Develops and achieves comprehensive management plan for each patient ▪ Requests and provides consultative care
Medical Knowledge	<ul style="list-style-type: none"> ▪ Possesses clinical knowledge ▪ Knowledge of diagnostic testing and procedures
Professionalism	<ul style="list-style-type: none"> ▪ Accepts responsibility and follows through on tasks ▪ Responds to each patient's unique characteristics and needs
Interpersonal and Communication Skills	<ul style="list-style-type: none"> ▪ Communicates effectively in interprofessional teams ▪ Appropriate utilization and completion of health records