Cardiac Rhythm Device Summit:
Implantation, Management, and Follow Up
June 26-28, 2015 | Swissotel Chicago

Course Directors:
Paul A. Friedman, M.D.
Yong-Mei Cha, M.D.
David L. Hayes, M.D.

ce.mayo.edu/cardiacdevice
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Course Description
The Cardiac Device Summit will provide an update on the indications, follow-up, and management of cardiac rhythm technology, emphasizing clinical pearls. Hundreds of thousands of patients receive cardiac rhythm devices each year for brady or tachyarrhythmias and heart failure. In addition, the number of people who may benefit from an implantable cardioverter defibrillator (ICD) and/or cardiac resynchronization device (CRT) has substantially increased in the past decade. Evolving device technology has increased programming complexity, follow-up, and management. Cardiac implantable device management related to electrophysiology remains a major part of daily practice for cardiologists, electrophysiologists, and non-physician caregivers involved in the management of these devices.

Presentations will highlight the following:
1. Update on cardiac pacing technology
2. Review information for device management germane to patient management
3. Lead extraction tips
4. Cardiovascular implantable electronic device infection management

Course Learning Objectives
Upon conclusion of this program, participants should be able to:

- Describe the current indications for pacemakers, ICDs, subcutaneous ICDs, and resynchronization therapies (CRT)
- Recognize upcoming technologies such as leadless and epicardial pacemakers
- Interpret diagnostic material (electrograms, impedance, radiography, and other sources) to troubleshoot suspected implantable device malfunction
- Discuss when and how to extract implantable devices
- Identify the current capabilities and roles of remote monitoring to manage patients with cardiovascular risk and disease

Attendance at this Mayo course does not indicate nor guarantee competence or proficiency in the performance of any procedures which may be discussed or taught in this course.

Intended Audience
The symposium is designed for physicians, scientists, and allied health staff including nurse practitioners, physician assistants, and nurses who are specialized in cardiology, cardiac rhythm management, or internal medicine.

Date and Location
Cardiac Rhythm Device Summit will be held June 26-28, 2015, at the Swissotel Chicago. The conference will be held in the Lucerne Ballroom on the Lucerne Level.

Credit
Mayo Clinic College of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Mayo Clinic College of Medicine designates this live activity for a maximum of 18 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.
Lodging Accommodations

Guest rooms have been reserved for attendees and their guests with special course rates at the Swissotel Chicago, Chicago, IL. In order to receive the special rate, reservations must be made before the room block is filled or before the expiration date of May 25, 2015 whichever comes first. Please identify yourself as a part of the Mayo Clinic group when making your reservation. Course headquarters will be located in the Lucerne Ballroom of the Swissotel.

**Swissotel** ($259 single/double)
323 E. Wacker Drive
Chicago, IL 60601
Call: 888-73-SWISS, Group Name: Mayo Clinic

**Online Reservation:** [https://resweb.passkey.com/go/mayoclinicpacing2015](https://resweb.passkey.com/go/mayoclinicpacing2015)

Lodging arrangements are the sole responsibility of the individual registrant.

Faculty

**Course Directors**
Paul A. Friedman, M.D.
Yong-Mei Cha, M.D.
David L. Hayes, M.D.

**Mayo Faculty**
Samuel J. Asirvatham, M.D.
Atta Behfar, M.D., Ph.D.
Bryan C. Cannon, M.D.
Raul E. Espinosa, M.D.
Siva K. Mulpuru, M.D.
Peter A. Noseworthy, M.D.
Michael J. Osborn, M.D.
Sorin V. Pislaru, M.D., Ph.D.
Robert F. Rea, M.D.
Margaret M. Redfield, M.D.
Win-Kuang Shen, M.D.
M. Rizwan Sohail, M.D.
Komandoor Srivathsan, M.D.
K.L. Venkatachalam, M.D.

**Guest Faculty**
Kenneth Ellenbogen, M.D.
Westby G. Fisher, M.D.
Jagmeet P. Singh, M.D., Ph.D.

Faculty Disclosure

As a provider accredited by ACCME, Mayo Clinic College of Medicine (Mayo School of Continuous Professional Development) must ensure balance, independence, objectivity and scientific rigor in its educational activities. Course director(s), planning committee, faculty, and all others who are in a position to control the content of this educational activity are required to disclose all relevant financial relationships with any commercial interest related to the subject matter of the educational activity. Safeguards against commercial bias have been put in place. Faculty also will disclose any off-label and/or investigational use of pharmaceuticals or instruments discussed in their presentation. Disclosure of this information will be published in course materials so those participants in the activity may formulate their own judgments regarding the presentation.
Friday, June 26, 2015

6:45 a.m.  Registration and Continental Breakfast
7:20 a.m.  Welcome
Paul A. Friedman, M.D.

Device Therapy: Basics, Controversies, and Future Technologies
Moderator: Paul A. Friedman, M.D.

7:45 a.m.  Pacemaker Timing Cycles and Trouble Shooting: Section I
Raul E. Espinosa, M.D.

8:15 a.m.  Pacemaker Timing Cycles and Trouble Shooting: Section II
David L. Hayes, M.D.

8:40 a.m.  Implantable Devices and MRI: When Is It Safe and How Do We Do It?
Paul A. Friedman, M.D.

9:00 a.m.  Device of the Future: Leadless Pacemakers
Yong-Mei Cha, M.D.

9:20 a.m.  Panel Discussion
Drs. Espinosa, Cha, and Hayes

9:40 a.m.  Refreshment Break

Pacemaker Guidelines, Management, and Troubleshooting
Moderator: Yong-Mei Cha, M.D.

10:00 a.m.  Pacemaker and Implantable Monitor Guideline Update
Win-Kuang Shen, M.D.

10:20 a.m.  Implant Techniques and How to Prevent and Manage Implant Complications
K. L. Venkatachalam, M.D.

10:40 a.m.  Pacing in Complex Congenital Heart Diseases
Bryan C. Cannon, M.D.

11:00 a.m.  Managing Anticoagulation Before, During, and After Device Implantation
Robert F. Rea, M.D.

11:20 a.m.  Device of the Future: Biologic Pacemaker
Atta Behfar, M.D., Ph.D.

11:40 a.m.  Panel Discussion and Questions
Drs. Shen, Venkatachalam, Rea, Cannon, and Behfar

12:00 p.m.  Lunch Break

Implantable Cardioverter Defibrillator
Moderator: David L. Hayes, M.D.

1:00 p.m.  Primary Sudden Death Prevention Controversies: Dual vs. Single Chamber ICDs and How to Program Devices to Prevent Shocks and Prolong Life
Kenneth Ellenbogen, M.D.

1:20 p.m.  SQ-ICD: Patient Selection and Implant Pearls
Paul A. Friedman, M.D.

1:40 p.m.  Lead Performance and Recalls: Managing Patients with Fidelis and Riata Leads
Kenneth Ellenbogen, M.D.

2:00 p.m.  Clinical Application of Implantable Monitor for Arrhythmia
Peter A. Noseworthy, M.D.

2:20 p.m.  Panel Discussion and Questions
Drs. Friedman, Noseworthy, and Ellenbogen

2:45 p.m.  Adjourn
Saturday, June 27, 2015

7:00 a.m.   Continental Breakfast
7:25 a.m.   Welcome
            Yong-Mei Cha, M.D.

Cardiac Anatomy for Implanters and Safe Lead Extraction
Pre-registration required at the time of registration.
7:30 a.m.   Cardiac Anatomy to Guide Device Implant
            Samuel J. Asirvatham, M.D.
7:50 a.m.   Hands-on Cardiac Anatomy Session

9:30 a.m.   Refreshment Break

Cardiac Resynchronization Therapy (CRT), Monitor and Heart Failure
Moderator: Yong-Mei Cha, M.D.
9:50 a.m.   Expanding CRT Indications for Patients With or Without Heart Failure: Current Guideline
            Jagmeet P. Singh, M.D., Ph.D.
10:10 a.m.  CRT Implant Techniques and Device Selection
            Yong-Mei Cha, M.D.
10:30 a.m.  Stepwise Management of CRT Non-responders
            Jagmeet P. Singh, M.D., Ph.D.
10:50 a.m.  Device of the Future: Intramyocardial and Epicardial Leads
            Samuel J. Asirvatham, M.D.
11:10 a.m.  Utilization of Advanced Device Monitor for Heart Failure
            Margaret M. Redfield, M.D.
11:30 a.m.  Panel Discussion
            Drs. Singh, Asirvatham, and Redfield

11:45 a.m.  Case-Based Discussions
            Working Lunch: Illustrative Case Presentations
            Moderator: David L. Hayes, M.D.
            A 60-year-old Man, CRT-D at ERI, LVEF 50%, Replace CRT-P or CRT-D?
            Win-Kuang Shen, M.D.
            A 72-year-old Man Received Inappropriate Shocks for AF.
            How to Optimize Device Programming and Avoid Inappropriate ICD Shocks
            Westby G. Fisher, M.D.
            A 56-year-old Man With Recurrent Syncope: What Monitor Do You Choose?
            Peter A. Noseworthy, M.D.
            Patient Requests to Turn off ICD
            David L. Hayes, M.D.
            Panel Discussion
            Drs. Shen, Hayes, and Noseworthy

1:15 p.m.   Stretch/Refreshment Break

Cardiac Implantable Electronic Device (CIED) Infection and Lead Extraction
Moderator: Samuel J. Asirvatham, M.D.
1:30 p.m.   Diagnosis of CIED Infection
            Rizwan M. Sohail, M.D.
1:50 p.m.   Techniques for Extracting Older Leads in High-Risk Patient: Tips and Tricks
            Michael J. Osborn, M.D.
2:10 p.m.  Management and Prevention of CIED Infection  
Rizwan M. Sohail, M.D.

2:30 p.m.  Role of Cardiac Imaging in CIED Infection  
Sorin V. Pislaru M.D., Ph.D.

2:50 p.m.  Panel Discussion  
Drs. Sohail, Osborn, and Pislaru

3:10 p.m.  Refreshment Break

3:30 p.m.  Concurrent Illustrative Case Session  
Select session of interest to attend.  Pre-registration required at the time of registration.

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**CONCURRENT SESSION 1**

**Lead Extraction: Would you Extract Differently?**  
Moderator: Yong-Mei Cha, M.D.

**Pocket Infection: How to Diagnose and Treat**  
Siva K. Mulpuru, M.D.

**Extract or Abandon Nonfunctioning Leads: Pros and Cons**  
Raul E. Espinosa, M.D.

**Failed Extraction From Subclavian Vein: How to Extract From Below**  
Michael J. Osborn, M.D.

**Ask the Expert**  
Drs. Mulpuru, Espinosa, Osborn, and Sohail

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**CONCURRENT SESSION 2**

**Cardiac Resynchronization Therapy: How to Implant S-ICD and CRT?**  
Moderator: Samuel J. Asirvatham, M.D.

**Techniques of Implanting S-ICD**  
Komandoor Srivathsan, M.D.

**How to Navigate Coronary Sinus Anatomy: Choose Deliver System and LV Leads**  
Robert F. Rea, M.D.

**How to Overcome High Pacing Threshold and Diaphragmatic Stimulation**  
Westby G. Fisher, M.D.

**Ask the Expert**  
Drs. Srivathsan, Rea, and Fisher

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**Sunday, June 28, 2015**

7:00 a.m.  Continental Breakfast

**Self-Assessment – Cardiac Devices**  
Moderator: Yong-Mei Cha, M.D.

7:30 a.m.  Interactive Knowledge Assessment  
The MOC learning module will provide an opportunity to review questions on a Knowledge Module for Maintenance of Certification.  
This session is intended to assist physicians with completing the ABIM requirements.  
Panelists: Drs. Shen, Srivathsan, and Venkatachalam

9:30 a.m.  Refreshment Break

**Device Troubleshooting**  
Moderator: Yong-Mei Cha, M.D.

9:50 a.m.  Illustrative Case Presentation (10 min for each case with discussion)  
Faculty

10:30 a.m.  PM/CRT Troubleshooting  
David L. Hayes, M.D.

11:00 a.m.  ICD Troubleshooting  
Paul A. Friedman, M.D.

11:30 a.m.  Closing Remarks  
Paul A. Friedman, M.D.
Registration Fee:
Course Registration (MD, PhD, DO, PharmD) .................................................... $685
Course Registration (Fellow, Resident, RN, NP, PA) ............................................ $655

Mayo Clinic Division of Cardiology has implemented an online conference registration system. If this is your first time using the online system, you will need to create a profile and login account.

Register by entering the url: ce.mayo.edu/cardiacdevice and click on Register Now. The system will guide you through the profile and login process. An e-mail address is required upon registration. A letter of confirmation will be forwarded to this address upon receipt of payment and submitted registration. Present this letter of confirmation when checking in at the meeting registration desk.

The registration fee includes tuition, electronic course materials, continental breakfasts, break refreshments, and lunch. Although it is not Mayo School of Continuous Professional Development (CPD) policy to limit the number of registrants for a course, conference room facilities may necessitate closing of enrollment; therefore, early registration is advised. A letter of confirmation will be e-mailed upon receipt of payment. Please present the confirmation letter when checking in at the meeting registration desk.

For additional information contact:
Cardiovascular Continuing Education
200 First Street SW – Gonda 6
Rochester, MN 55905
E-mail: cvcme@mayo.edu
Phone: 800-283-6296
Website: http://ce.mayo.edu/cardiacdevice

Cancellation Policy

If you cancel your participation in this course, your registration fee, less a $75 administrative fee, will be refunded when written notification is received by Mayo Cardiovascular CME before June 12, 2015 (cvcme@mayo.edu or fax#: 507-538-0146). No refunds will be made on or after June 12, 2015. Canceled registrations are non-transferable.

Mayo School of CPD reserves the right to cancel or postpone any course due to unforeseen circumstances. In the unlikely event Mayo School of CPD must cancel or postpone this course, Mayo School of CPD will refund the registration fee, but is not responsible for any related costs, charges, or expenses to participants, including fees assessed by airline/travel/lodging agencies.