CLINICAL CARDIAC ELECTROPHYSIOLOGY (CCEP) Fellowship Training Program

University of California, San Diego
UCSD Health System (SCVC/Thornton Hospital) and VA San Diego Healthcare System

Policy and Procedures Manual
Revision Effective July 1, 2014

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CONFIDENTIAL
1. **Definition of Program:** A 12-month training program in clinical cardiac electrophysiology.

2. **Faculty Members and Staff:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Gregory K. Feld, M.D.</td>
<td>Professor of Medicine</td>
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<tr>
<td></td>
<td>Director, EP Program UCSD</td>
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<tr>
<td></td>
<td>Director, EP Fellowship Training UCSD</td>
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<tr>
<td>Ulrika Birgersdotter-Green, M.D.</td>
<td>Clinical Professor of Medicine</td>
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<td></td>
<td>Clinical Electrophysiologist, UCSD</td>
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<td>Director, Pacemaker and ICD Clinic UCSD</td>
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<td>David Krummen, MD</td>
<td>Associate Professor of Medicine</td>
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<td>Director EP, VAMC</td>
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<td></td>
<td>Clinical Electrophysiologist, UCSD</td>
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<tr>
<td>Vincent Chen, MD</td>
<td>Clinical Electrophysiologist UCSD</td>
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<td></td>
<td>Research Fellow, Burnham Institute</td>
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<tr>
<td>Jonathan Hsu, MD</td>
<td>Clinical Electrophysiologist UCSD</td>
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<tr>
<td>Ramesh Sivagnanam, MS</td>
<td>EP Program Manager</td>
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<tr>
<td>Joycelle Martinez, NP</td>
<td>EP Nurse Practitioner, UCSD</td>
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<tr>
<td>Vivika Wax, NP</td>
<td>EP Nurse Practitioner, UCSD</td>
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<tr>
<td>Stephanie Yoakum, NP</td>
<td>EP Nurse Practitioner, VAMC</td>
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<tr>
<td>Jennifer Novacyk, PA-C</td>
<td>EP Physicians’ Assistant, VAMC</td>
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<tr>
<td>Peter Hall, RN, MPA, CCRN</td>
<td>EP Lab Head Nurse</td>
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<td>Holly Sink, RN</td>
<td>EP Lab Nurse</td>
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<tr>
<td>Dawna Steltzner, RN</td>
<td>EP Data Collection/QA Specialist</td>
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<tr>
<td>Claudia Stein , RN, BSN</td>
<td>EP Lab Nurse</td>
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<tr>
<td>Thomas Collins, RN</td>
<td>EP Lab Nurse</td>
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<tr>
<td>Jessica Hunter, BHS</td>
<td>EP Research Coordinator</td>
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<tr>
<td>Maylene Alegre</td>
<td>EP Research Coordinator</td>
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3. Facilities and Resources Available to CCEP Program:

Facilities available to the CCEP program for patient care, education, training and research at each of UCSD Hillcrest, UCSD Thornton and Sulpizio Cardiovascular Center and VA San Diego Hospitals include dedicated Electrophysiology Laboratories, CCU, SICU, Heart Station, Cardiac Catheterization Laboratories, Ambulatory Clinics, Pacemaker & ICD Clinics, Research Laboratories
and Cardiac Surgery. All three performance sites also have additional Ancillary Personnel (e.g. secretary, nurses, technicians), and the ability to perform a full complement of invasive and non-invasive electrophysiology procedures (including Tilt Table Testing, SAECG and additional metrics at certain sites). Electrophysiology services delivered at each site will conform to the policies and procedures of the site at which care is being delivered, and to the policies and procedures of the UCSD CCEP Program.

All fellows must ensure that they complete all necessary training for electronic medical record (EMR) and order entry systems at SCVC/Thornton (EPIC) and at the VAMC (CPRS, Vista).

4. EP Laboratory Attending Schedules

UCSD Medical Center (SCVC /Thornton Hospital – see online schedules for details):

| UCSD/SCVC Procedural Schedule. Please refer to online schedules for UCSD/VAMC |
|-----------------------------------------------|-----------------------------------------------|
| Monday | Tuesday | Wednesday | Thursday | Friday |
| AM     | Feld/Hsu/Green | Feld | Feld/Hsu | Bui/Whitwam | Feld/Sawhney |
| PM     | Feld/Hsu/Green | Hsu/Green | Feld/Green | Bui/Whitwam/Krummen/Chen/Green | Feld/Green/Sawhney |

| VAMC Schedule |
|----------------|----------------|----------------|----------------|----------------|
| Monday | Tuesday | Wednesday | Thursday | Friday |
| AM     | Arrhythmia and Device Clinic | Device/SVT | Ablation | Ablation | Ablation |
| PM     | Device/SVT | Device/SVT | Device or Ablation | Arrhythmia and Device Clinic | Device or Ablation |

<table>
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<th>UH/SCVC Clinic Schedule</th>
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<td>EP Studies at VA Medical Center: Dr. Krummen will cover.</td>
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5. Attending coverage of EP Consult Service:

SCVC/Thornton Hospital – GK Feld, UB Green, J Hsu
VA Medical Center – D Krummen

6. Arrhythmia and Pacemaker/ICD Clinics:
CCEP fellows should attend 1-2 half-day clinics each week.
VAMC: Monday AM, Thursday PM in Clinic Area 2, Wednesday AM EP NP Clinic (clinic area 2).

7. **UCSD CCEP Fellowship Program Policy on Night and Weekend Call:** The CCEP fellow will be on duty Monday - Friday (except while on vacation or leave) during normal working hours, typically from 7:00 AM - 7:00 PM during all rotations. When not on-call, the CCEP fellow will not be required to be on duty for longer than 12 hours consecutively. The CCEP fellow on-call schedule will consist of taking beeper call from home (no in-house call is required for CCEP fellows) every fourth week and weekend (seven consecutive days per month). On-call fellows will be responsible for all patients at UCSD Medical Center (Hillcrest and Thornton Hospitals) and the VASDHIS. Faculty supervisory coverage for weekend and night call will be rotated among the six CCEP faculty members who will be on call every sixth week and weekend to supervise and provide backup coverage for the on-call CCEP fellow. When on-call, the CCEP fellow will take first call, and then contact the attending for consultation in all cases where there is an anticipated significant change in previously discussed patient management or new admission. It is anticipated that the CCEP fellow will work 60-80 hours per week maximum while on clinical rotations, with 6 full days off per month.

8. **UCSD CCEP Fellow Rotation Schedule:**

<table>
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<th>Two months</th>
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<th>Three months</th>
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9. **UCSD CCEP Conferences:**

   The CCEP program has one didactic core lecture and one clinical conference each week, and a journal club and research conference once per month each. At Clinical Case Conference the CCEP fellow will present current cases, which may represent common, unusual or complex arrhythmia or CIED cases. The salient points of each case will be discussed in detail, and pertinent literature reviewed, by the CCEP faculty with the fellow. The core lectures cover required didactic subjects in CCEP, which are usually presented by CCEP faculty. However, the CCEP fellow must present at least one didactic lecture during the year. These lectures are intended to be comprehensive reviews of current topics in cardiac electrophysiology, requiring textbook and current literature reading. The CCEP fellows are also responsible for selecting one or two articles for review and discussion at journal club each month. Attendance at conferences is mandatory for all CCEP fellows, CCEP faculty and Cardiovascular Diseases fellows rotating on the EP service, and is optional for EP nurses and technicians, research post-docs and fellows.

   Clinical EP procedures are also reviewed, either after each case or after completion of all cases that day, by the CCEP attending with the CCEP fellow for interpretation of tracings, findings,
diagnosis and treatment plan. Cardiovascular Disease fellows and students usually attend these study interpretation sessions three days a week.

In addition to the CCEP conferences the CCEP fellow must attend Cardiology Grand Rounds and Catheterization Conference held each week. The CCEP fellow presents an EP case at catheterization conference once each month.

An electrophysiology research conference is held monthly, and is attended by the CCEP faculty, postdoctoral fellows, and medical students working in the research laboratories. The CCEP fellow is encouraged to attend, time permitting on non-research rotations, and is required to attend during his/her EP Research rotation. This conference is a forum to present and review ongoing and proposed research projects of all faculty and fellows. The CCEP fellows will also attend cardiology research conference when the topic is arrhythmia related.

Fellows will also attend the monthly Department of Medicine Fellow Core Lectures Series on Ethics, Risk Management, Socioeconomics, Utilization and Cost Effectiveness, Quality Assurance and Performance Improvement, and Physician Well Being. If the fellow is unable to attend, they are required to review DVDs of these lectures, which are available in the CCEP administrative assistant’s office for check-out.

10. UCSD CCEP Fellowship Program Policy on Patient assignment on the CCEP Service:

UCSD Medical Center

All patients referred to the Clinical Cardiac Electrophysiology (CCEP) service for outpatient procedures (i.e. <24 hour stay), including diagnostic electrophysiology procedures, catheter ablation, pacemaker and ICD implantation, tilt tests, and cardioversions, are to be admitted to the CCEP service, where they will be evaluated and treated by the CCEP fellow under the direct supervision of the CCEP faculty attendings.

All patients admitted for inpatient treatment (i.e. >24 hours) are to be admitted to the UCSD Cardiology service, where the Internal Medicine fellows and Cardiovascular Disease fellow will provide continuous patient care, under supervision of the admitting CCEP attending with assistance of the CCEP fellow on the CCEP Consult rotation.

VA Medical Center

At the VA Medical Center, patients admitted for outpatient procedures (i.e. < 24 hour stay) will be admitted to the CCEP team, and managed by the CCEP attending, fellow and EP Physician Assistant. Patients admitted for inpatient treatment (i.e. >24 hours) will be admitted to the CCU or medicine team with the CCEP service as a consult service. The CCEP fellow will provide continuous care of such patients, under the supervision of the CCEP attending.

At all sites, the CCEP team will coordinate patient care with the Internal Medicine and Cardiovascular Disease Fellows on the Cardiology Service. The CCEP service attending is ultimately responsible for the care of all patients admitted for arrhythmia evaluation and treatment.

11. UCSD CCEP Fellowship Program Policy on Order Writing on the CCEP Service:
The CCEP fellows and faculty will use the standardized pre- and post-operative orders that have been standardized at each center, for all patient procedures. The CCEP program director or attending will review the charts and orders of all patients preoperatively, amend orders where necessary and co-sign the orders to ensure that all pre-operative evaluations and instructions are complete. All post-operative orders are to be reviewed, amended where necessary and signed by the CCEP fellow. The CCEP fellow will write all orders related to day-to-day patient care, consultations, and outpatient care, except in those instances when it is either not convenient or expeditious for patient care, in which case the CCEP attending may write and sign orders. In the event that orders are written, they must be flagged appropriately. All orders must be legible, dated and timed, and signatures must be followed by PID number. Verbal orders require co-signature within 24 hours.

12. UCSD CCEP Fellowship Program Policy on the Role of the CCEP Faculty in CCEP Fellow supervision:

The CCEP fellow is to be closely supervised during all aspects of his/her training at the UCSD and VA Medical Centers. The CCEP fellow will receive evaluations by the CCEP faculty following each rotation throughout the academic year.

Inpatient Supervision – Consultation Service

The CCEP consultation service at the UCSD and VA Medical Centers is staffed by a CCEP Consult attending, duty for which is rotated monthly, and CCEP fellow. A schedule of CCEP fellows and attending faculty is distributed at the beginning of each academic year to each fellow, faculty member and telephone operators at the UCSD and VA Medical Centers.

Daily rounds are to be made by the CCEP attending with the CCEP fellow on all inpatients admitted to the CCEP service, and all consultations to the CCEP service. The CCEP fellow will present all patients to the CCEP attending, with whom he/she will discuss the patient's history, physical exam, current clinical condition, diagnosis and treatment plans, and then coordinate recommended evaluation and treatment with the patient's primary physician. During these rounds significant teaching should occur with respect to the arrhythmia condition of individual patients, and including discussions of mechanisms, clinical syndromes, evaluation and management of arrhythmias (e.g. didactic discussion, referral to literature, review of graphics, etc). The CCEP fellow will then dictate or type a consultation note, indicating that the case has been presenting and discussed with the attending, and will include pertinent history, physical examination and laboratory findings, and treatment recommendations.

For emergencies or urgent consultations the operator will contact the CCEP consult fellow on-call who will then evaluate the patient and contact the CCEP attending faculty member on call. Emergent or urgent consultations will be seen by the CCEP fellow and presented to the CCEP faculty on call within 1-2 hours and 4-8 hours of first contact, respectively. Whether a consultation is urgent or emergent can be discussed by the fellow with the attending at any time after first contact. Routine consultations will be seen within 24 hours by the CCEP fellow and faculty. CCEP fellows will not perform non-emergent in-patient consultations on patients on the “non-teaching” service at SCVC/Thornton or Hillcrest Hospitals.
Procedure Supervision – EP Lab Rotations

All electrophysiology procedures performed by the CCEP fellow either as assistant or a primary operator, including diagnostic EP studies, catheter ablation, pacemaker and ICD implantation, and tilt tests are to be supervised by at least one CCEP attending who will be present for all critical components of each procedure. The CCEP fellow will undergo close procedural scrutiny at the beginning of training, with progressively more responsibility during training with the aim of achieving independence at the conclusion of training.

Supervision includes observation and teaching of all aspects of these procedures, beginning with proper pre-operative evaluation and informed consent. The duration of time and number of attempts that will be afforded to the CCEP fellow in any task will vary with the complexity of the procedure, the level of fellow training and other factors. The CCEP attending will monitor the CCEP fellow throughout these attempts. Supervision will include, but is not limited to, the following components:

1. Sterile surgical skin preparation and draping. The CCEP attending will ensure that the fellow is fully cognizant of issues regarding sterility and patient preparation.
2. Percutaneous vascular access;
3. Skin incision (for ICD and pacemaker implantation), including appropriate use of blunt and sharp dissection and electrocautery, and purse-string sutures for hemostasis as necessary.
4. Arterial and Venous Vascular access. The CCEP attending will initially instruct the CCEP fellow on the correct approaches, then supervise the fellow during vascular access.
5. Catheter (or lead) insertion, manipulation and placement
6. Programmed stimulation
7. Electrogram and arrhythmia interpretation
8. Catheter mapping and ablation
9. Operation of fluoroscopy equipment
10. Operation of recording and stimulating equipment
11. Insertion of transvenous pacemaker and ICD leads and generators
12. Lead and device testing
13. Use of intravenous pharmacological agents
14. Tilt testing
15. Postoperative care.

Outpatient Supervision – Outpatient Clinics

Outpatient clinics (i.e. Arrhythmia, ICD and Pacemaker), at which the CCEP fellow will see patients for two 1/2 day sessions per week, are staffed by at least one CCEP attending who supervises the CCEP fellow in seeing new and follow-up patients. This supervision includes teaching and evaluation of the proper methods for obtaining and/or performing a history, physical exam, device interrogation and reprogramming, and development of treatment plans.

13. UCSD CCEP Fellowship Program Policy on Evaluation of CCEP Faculty and Program by CCEP Fellows:
The CCEP fellow will be required to provide written, confidential evaluation of each the CCEP faculty following each rotation. The evaluation form is standardized, and evaluates all aspects of the faculty member’s personal, teaching, and technical capabilities, and includes a section for additional open comments. Faculty evaluations will be reviewed by the CCEP Program Director, summarized and presented to each faculty member individually, and general issues relating to all faculty, when identified, will be presented and discussed at regular CCEP program staff meetings. Counseling of CCEP faculty, if required due to identification of problem areas with respect to CCEP fellow training, will be performed by the CCEP Program Director in conjunction with the Chief, Cardiology Division and if necessary the Chairman, Department of Medicine. Evaluations of the faculty and program director will be kept in confidence so as to allow the fellows to express their opinions without concern about potential adverse consequences. Confidentiality is maintained by these evaluations being done on-line using the New Innovations system, with no fellow identifiers reported. The program director will review and summarize the fellow’s evaluations of the individual CCEP faculty, and the Chief, Division of Cardiology will review and summarize the fellow’s evaluations of the CCEP Program director in order to maintain this confidentiality.

The CCEP fellows will also evaluate each rotation shortly after completing it, using a standardized form on-line on New Innovations to assess all aspects of their experience on that rotation, with additional area for open comments. The CCEP fellow will also complete a final evaluation of the CCEP program after completion of training. All evaluations completed by the CCEP fellows of the CCEP program rotations, will be summarized by the training program director’s assistant, and these summary evaluations will be reviewed and discussed with all CCEP faculty at the semi-annual CCEP program review meeting. These summaries will then be used to identify problem areas, or suggested areas of improvement in the program, which will then be implemented whenever possible, and if appropriate, by the program director and faculty.

14. Program Directors Reporting Relationships:

The internal medicine program director monitors all internal medicine subspecialty programs sponsored by the institution, to ensure compliance with all ACGME accreditation standards. The Internal Medicine and CCEP program directors are members of the Graduate Medical Education Committee (GMEC), and both attend regularly. They are therefore both appraised of all internal program reviews and issues introduced during these reviews and concerns raised by the Associate Dean for Graduate Medical Education. The internal medicine program director disseminates information about national changes in GME, such as new ACGME core competencies, dates of relevant conferences. The CCEP Program Director and Cardiovascular Disease Program Director will also meet at least monthly, or more often if needed, to review progress, and discuss actions and plans to ensure that the goals and requirements of both programs are achieved, particularly where those goals overlap, and as they relate to the goals of the core Internal Medicine Residency Program and the core requirements for specialty training. Program
director’s meetings and general Cardiology staff meetings are regularly scheduled during the year to discuss divisional and program issues to ensure complimentary interaction of the CCEP and Cardiovascular Disease Programs. Regular quarterly QA meetings are to be held to address issues of quality of care and clinical competency. Regular fellowship training and recruitment meetings are to be held during the year to discuss CCEP and Cardiovascular Disease fellow’s progress.

15. Description of CCEP Program Rotations and Fellow Duties and Responsibilities:

**CCEP Consult Rotation:** On the EP Consult rotation the CCEP fellow must see all patients referred for arrhythmia consultation by other inpatient services, including all scheduled DC cardioversions. These patients are evaluated and their cases presented to the CCEP Consult attending, with whom evaluation and treatment plans for the patient will be discussed during daily consultation rounds. During the EP Consult rotation the CCEP fellow may also attend and assist in EP procedures, particularly those performed on patients seen by the CCEP fellow on the consult service, when all his/her duties on the EP Consult service are completed each day. This provides continuing experience in the procedural aspects of CCEP, particularly on those patients with whom the CCEP fellow is familiar. During the EP Consult rotation teaching emphasis is on evaluation and treatment of patients with a wide range of arrhythmia conditions, including but not limited to, syncope, atrial and ventricular arrhythmias, sudden death, bradycardia, pacemaker selection, pacemaker interrogation and programming, indications for ICDs, ICD interrogation and programming, basic and clinical mechanisms of arrhythmias, electropharmacology of antiarrhythmic drugs and indications for their use and side effects, interpretation of non-invasive tests for arrhythmia detection and diagnosis including signal averaged ECG, heart rate variability, transtelephonic pacemaker analysis, ambulatory electrocardiography, social and ethical issues including the role of electrophysiologist in relation to the primary care physician and Cardiologist, and issues of health care costs and insurance. All arrhythmia patients admitted to and treated by the CCEP service are cared for in either the CCU or Cardiology telemetry ward (Direct Observation Unit at the VA Medical Center), including pacemaker and ICD patients. Only patients who have arrhythmias post-operatively after cardiac surgery, or who are undergoing arrhythmia surgery, are cared for and treated in the Surgical ICU, and these patients are transferred to the CCU or Cardiology telemetry ward when surgically stable for continued arrhythmia management. The CCEP Consult rotation is expected to provide training and experience in one or more components in all six clinical competencies including patient care, medical knowledge, practice-based learning and improvement, interpersonal skills and communication, professionalism, and systems-based practice (see #28 and appendix A for a list of competencies and details).

**CCEP Research Rotation:** The EP Research rotation provides the CCEP fellow a one month period of protected time early in the course of training to perform clinical or basic research. This training is necessary if the fellow has plans for further research training after one year of CCEP training. Research training will be supervised by a CCEP faculty member, who has been designated by the CCEP fellow as preceptor, depending on the area of research and faculty expertise. A written proposal of the proposed research will be presented by the CCEP Fellow to the CCEP program directors and preceptor. A written summary of the completed research will be prepared and submitted to the CCEP director prior to completion of CCEP training and the projected will be presented at a CCEP Research Conference. Despite devoting the majority of time to formulating a
research proposal during this rotation, the CCEP fellow will still have meaningful patient responsibility during night and weekend call, and whenever the fellow's research is of a clinical nature (e.g. clinical studies in the EP lab or clinics). During the research rotation, the CCEP fellow will continue to attend the outpatient clinic for continuing continuity of patient care and will attend any procedures involving research patients followed by the fellow. Due to continuing patient care activities in all locations, the CCEP Research rotation is expected to provide training and experience in one or more components in all six clinical competencies including patient care, medical knowledge, practice-based learning and improvement, interpersonal skills and communication, professionalism, and systems-based practice (see #28 and appendix A for a list of competencies and details).

**EP Lab Rotations I, II, III:** During these rotations the CCEP fellow is responsible for evaluating and consenting all patients undergoing EP procedures. The CCEP fellow will review the chart to ensure that all necessary pre-operative evaluation is complete, and the indications for the procedure are appropriate. The CCEP fellow will then discuss the case with the CCEP attending prior to beginning the procedure. The CCEP fellow will participate as assistant or primary operator depending on the complexity of the case and his/her stage of training. The CCEP fellow will write orders to discharge the patient from the laboratory and the hospital after appropriate post-operative evaluation. The CCEP fellow will then review all graphic materials from the case and after review with the CCEP attending, enter data into the CCEP program database for reporting. The EP Lab I, II, and III rotations provide comprehensive progressive training, with increasing responsibility as primary operator in all aspects of CCEP procedures including, but not limited to, pre- and post-operative care, patient education, informed consent procedures, laboratory equipment and its operation, intra-operative patient care, catheterization techniques, catheter placement, performance and interpretation of diagnostic EP studies, catheter mapping and ablation, pacemaker and ICD implantation and testing, tilt testing, and arrhythmia surgery.

During EP Lab I the emphasis is placed on teaching the fundamental requirements for diagnostic electrophysiology studies, including catheter selection and placement, programmed stimulation, electropharmacology, interpretation of EP tracings, understanding basic arrhythmia mechanisms, tilt table testing, and sterile surgical techniques for placement and testing of endocardial pacemaker and ICD leads and generators.

In EP Lab II an emphasis is placed on intra-cardiac mapping techniques, understanding complex arrhythmia mechanisms, pace mapping, entrainment, fundamentals of catheter ablation, implantation of pacemakers and ICDs, advanced pacemaker programming and ICD testing.

In EP Lab III emphasis is placed on mapping and ablation techniques in complex arrhythmias, with continued experience implanting, programming and testing pacemakers and ICDs.

The CCEP EP Lab rotations are expected to provide training and experience in all six clinical competencies including patient care, medical knowledge, practice-based learning and improvement, interpersonal skills and communication, professionalism, and systems-based practice.

Since UCSD is a referral center both locally and nationally, and occasionally internationally, patients with a wide range of arrhythmia problems are admitted for diagnosis and treatment, ensuring that the CCEP fellow will receive exposure to and training in all required elements of clinical cardiac electrophysiology. All procedures, including EP studies, catheter ablation,
pacemaker and ICD implantation, and tilt tests are performed in fully dedicated EP laboratories at each performance site, with the exception of pacemaker and ICD laser lead extractions at UCSD which are performed in the cardiac catheterization laboratory adjacent to the surgery suites in the operating room.

The CCEP EP Lab rotations are expected to provide training and experience in one or more components in all six clinical competencies including patient care, medical knowledge, practice-based learning and improvement, interpersonal skills and communication, professionalism, and systems-based practice (see #28 and appendix A for a list of competencies and details).

Continuing Care Clinics: The CCEP Arrhythmia/ICD/Pacemaker Outpatient Clinics are held several days per week at each site. These clinics provide long-term follow-up for chronic patients, and consultation for new patients referred for arrhythmia evaluation and treatment, and for pre-operative evaluation, post-operative care and long-term follow-up of patients with pacemakers and ICDs, including device interrogation and reprogramming. The CCEP fellow will attend two half-day clinics a week throughout the year providing him/her with a broad ranging exposure to patients with cardiac arrhythmias and arrhythmia control devices, and a continuity of care experience over the course of their training by following a specific segment of the patient population in the clinic during their followup visits. The CCEP fellows will see all patients that they have previously seen in clinic, as identified by the previous dictated clinic report, so that they and the patient will receive a continuity of care experience. The CCEP fellows will also evaluate new patients as time permits, who are presenting for evaluation and treatment of arrhythmias, as well as see patients previously followed by other fellows when those fellows are unavailable due to participation in procedures or rotation at an affiliate institution.

Throughout the year the CCEP fellow will be assigned one day a week to read and interpret Heart Station graphics, including ECGs, pacemaker trans-telephonic analysis, signal averaged ECGs, and Holter monitor recordings. This duty requires approximately 1-2 hours each week, but provides exposure to a large volume of noninvasive tests for interpretation, an important requirement for training in CCEP.

The CCEP Continuing Care Clinics are expected to provide training and experience in one or more components in all six clinical competencies including patient care, medical knowledge, practice-based learning and improvement, interpersonal skills and communication, professionalism, and systems-based practice (see #28 and appendix A for a list of competencies and details).

16. UCSD CCEP Fellowship Program Policy on CCEP Fellows Responsibilities for Teaching and Supervision of other Residents:

When on the EP consultation rotation, the CCEP fellow may engage in teaching of the Internal Medicine, Surgical, or Cardiovascular Diseases residents who are responsible for care of the patient on whom the consult is requested. The CCEP fellow will discuss specific details of individual cases including evaluation and treatment plans, convey medical knowledge, and provide reading material or references relevant to arrhythmia diagnosis and treatment. During all other months when the CCEP fellow is not on the EP Consult rotation, it is the responsibility of the CCEP attending on the EP Consult rotation to teach and supervise the Internal Medicine, Surgical and
Cardiovascular Disease residents who are responsible for the patient being consulted on, or who are on the EP Consult rotation themselves.

When on EP Lab I, II, or III rotations the CCEP fellow may engage in teaching of Internal Medicine, Surgical, or Cardiovascular Diseases residents or medical students rotating on the CCEP service, or whose patients are being evaluated and treated by the CCEP service. The CCEP fellow will discuss specific details of individual cases including evaluation and treatment plans, convey medical knowledge, provide reading material or references relevant to arrhythmia diagnosis and treatment, and provide instruction in the procedural techniques and skills, as related to the level of training and needs of the Internal Medicine, Surgical, or Cardiovascular Diseases residents who are responsible for the care of the patient.

17. UCSD CCEP Fellowship Program Policy on CCEP Fellows Responsibilities for Teaching and Supervision of Cardiovascular Disease Fellows:

CCEP Fellows rotate on the CCEP Consult rotation approximately 4 months each year (2 months each). During these months the CCEP fellow will consult with the Cardiovascular Disease fellow on Cardiology Service each morning. The CCEP fellow will review cases to update patient conditions and management plans, and for salient teaching points, both of whom will then report to the CCEP attending. During all other months when a CCEP fellow is not on the EP Consult rotation, it is the responsibility of the CCEP attending on the EP Consult rotation to teach and supervise the Cardiovascular Disease fellow on the EP Consult rotation.

During diagnostic electrophysiology procedures the Cardiovascular Disease fellow on service is instructed in the techniques of insertion of venous sheaths and placement of diagnostic electrophysiology catheters in the heart only (i.e. for training in placement of temporary pacemaker wires). This instruction may be provided in part by the CCEP fellow, under the direct supervision of the CCEP attending. All other aspects of the EP procedure, and pacemaker and ICD implantation are performed by the CCEP fellow under supervision of the CCEP attending, and not the Cardiovascular Disease fellow. Following venous cannulation and catheter placement, the Cardiovascular Disease fellow then observes the EP procedure as it progresses with additional teaching provided by the CCEP attending, including a relevant review and summary of the findings, interpretation of tracings, diagnosis and subsequent treatment plans. Subsequent interpretation of EP tracings may also be reviewed by the CCEP fellow with the Cardiovascular Disease fellow. Interrogation and programming of pacemakers and ICDs on inpatients may be reviewed by the CCEP fellow with the Cardiovascular Disease fellow on rotation with the CCEP service, since the Cardiovascular Disease fellow is required to have a basic understanding in these areas as well.

The CCEP fellow may indirectly provide additional teaching to the Cardiovascular Disease fellows by giving several lectures during the year at various Core, Case presentation, Catheterization and Graphics conferences, which are mandatory attendance for all Cardiovascular Disease fellows.

18. Expected Number of EP/Pacemaker/ICD Procedures to be Performed by the CCEP Fellow During 12 Months Clinical Training:

A. EP Diagnostic Studies - minimum 150 as assistant or primary operator, in at least 75 patients
B. Catheter Ablations - minimum 75 of which at least 50% will be supraventricular, and include AV node, accessory pathway, atrial flutter, atrial fibrillation and ventricular tachycardia ablation
C. Pacemakers - minimum 50 implants as primary operator, minimum 100 follow-up visits.
D. ICDs - minimum 25 implants as primary operator, minimum 50 follow-up visits.

19. UCSD CCEP Fellowship Program Research Experience:

All CCEP fellows are required to participate in meaningful research during their training. A one month block of protected time is set aside for emphasis on research, so that the fellow may identify an area of interest and begin such research to obtain preliminary data and experience. This is important in the event that the CCEP fellow intends to pursue a career in academics, since application for research funding must be done early for additional training after the one year CCEP residency. The research experience may be in clinical research or basic electrophysiology. At UCSD the CCEP program has numerous ongoing clinical research projects, some of which are multi-center trials, but many of which are investigator originated. This program is known for developing new treatment approaches for cardiac arrhythmias, particularly in the areas of catheter ablation for atrial arrhythmias and defibrillator therapy for ventricular arrhythmias, thus providing the CCEP fellow with ample opportunity to participate in innovative clinical research. In addition, this electrophysiology program has both animal and basic cellular arrhythmia research laboratories, from which research studies are frequently published, providing an opportunity for the CCEP fellow to participate in basic arrhythmia research if preferred over clinical research. The CCEP program director is also past Vice-Chairman and member of the UCSD IRB Committee, thus giving the program director additional experience required to teach the CCEP fellow all aspects of research study development, protocol submission, informed consent, moral and ethical considerations, study performance, interaction with industry sponsors, data analysis, manuscript preparation and presentation, etc. During the research rotation, the CCEP fellow will continue to attend the outpatient clinic for continuing continuity of patient care and will attend any procedures involving research patients followed by the fellow.

20. UCSD CCEP Fellowship Program Policy on Funding for CCEP Fellows:

The CCEP fellow is not required to generate any portion of his/her salary. Funds for CCEP fellow salary are obtained via various grants and donors to the CCEP program general fund. Salary will be commensurate with the PGY level at this institution and includes benefits and insurance. Salary ranges will be provided on request to applicants to the program. A total of four weeks paid vacation annually is allowed, with timing at the discretion of the CCEP fellow as rotation scheduling permits. Fellows are encouraged whenever possible to stagger their vacation time to prevent multiple fellows being on vacation simultaneously.

21. UCSD CCEP Fellowship Program Policy on Fellow Eligibility and Selection:

The CCEP program follows the Eligibility Criteria, Selection criteria and Nondiscrimination practices as identified in the UCSD House Staff Policy and Procedure document. For eligibility for
the UCSD CCEP Fellowship Program, applicants will be expected to have completed an Internal Medicine residency and Cardiovascular Diseases residency in the United States or Canada, accredited by the LCME, or to have completed an Internal Medicine residency and Cardiovascular Diseases residency or its equivalent at an international medical school located outside the United States or Canada, or to hold a current, valid certificate issued by the ECFMG. The applicant must also hold a full unrestricted license in the State of California to practice medicine or have received written notification from the Medical Board of California of approval to commence training in an accredited program in this State.

Applicants must also be in good standing in their CVD training program at the time of interview, and have acceptable letters of recommendation and evaluations. Selected candidates will be interviewed by the CCEP faculty members. Final acceptance to the program will be based strictly on qualification and accomplishments of the applicants, including completion of their CVD fellowship training. An interest on the part of the applicant in pursuing an academic career is preferred for acceptance into the program but not required. Applications to the training program are reviewed on an annual basis between July and November two years prior to the start date (e.g. July to November 2009 for July 2011 start). Each application is reviewed by the CCEP faculty after a complete application is received, including the applicants CV, personal statement and letters of recommendation. Each applicant will receive a copy of the CCEP program description, and appointment policies of the medical center prior to interview. Decisions for acceptance of applicants are made by a committee composed of all CCEP faculty members, with the final decision for acceptance made by the program director, typically by March of the year prior to the proposed start date.

22. **UCSD CCEP Fellowship Program Policy on Appointment and Promotion:** The CCEP program follows the Appointment and Promotion criteria identified in the UCSD House Staff Policy and Procedure document.

23. **UCSD CCEP Fellowship Program Policy on Evaluations of Fellows by Faculty:**

   The CCEP program follows the Evaluation policy and practice identified in the UCSD House Staff Policy and Procedure document. All CCEP fellows will be evaluated by the CCEP faculty after each rotation for their performance on that rotation. Critical competencies in six areas will be evaluated for each rotation (see #28 and appendix A for a list of competencies and details). The CCEP Program Director will review all evaluations, summarize them and report this summary evaluation to the CCEP fellow bi-annually and prepare a final overall evaluation upon completion of training (i.e. using the AIBM Annual Training Evaluation form). These evaluations will become part of the CCEP fellow’s permanent record. Twice a year the CCEP fellows will be given a written examination to assess their fund of knowledge in essential clinical areas required by ABIM, using a testing format consistent with the ABIM examination for the certificate of added qualifications in CCEP. The results of this examination will be provided to the CCEP fellow shortly after each exam, in order to allow the CCEP fellow to identify areas that may require additional attention to ensure clinical competency. The results of this examination will also be used by the CCEP director and CCEP faculty to improve areas of the CCEP training program that may be identified as weaknesses based on inadequate responses by the CCEP fellows to specific questions. The CCEP faculty will also evaluate each fellow’s clinical skills with a competency evaluation checklist designed for each
of the common procedures performed during training during each rotation. The CCEP fellows will also be sent a post-graduation survey within 6-12 months following their departure from the program to assess their preparedness for academic or private practice after training.

24. UCSD CCEP Fellowship Program Policy on Discipline, Dismissal and Due Process: The CCEP program follows the Discipline, Dismissal and Due Process policies identified in the UCSD House Staff Policy and Procedure Document.

25. UCSD CCEP Fellowship Program Policy on Fellow On-Call and Duty Hours:

   **Duty hours:** Shall be limited to 80 hours per week, averaged over a four-week period. Each fellow shall have an adequate time for rest and personal activities. This shall consist of a 10 hour time period provided between all daily scheduled duty periods, except when on-call. No new patients will be assigned after 24 continuous duty hours. Duty hours will be monitored by the program director by an on-line self-reporting system, whereby the fellows will report their hours worked, and make scheduling adjustments as necessary to mitigate excessive service demands and/or fatigue.

   **On-Call Activities:** The CCEP fellow on-call schedule will consist of taking beeper call at night from home (no in-house call is required for CCEP fellows) Monday – Friday and all weekend (seven consecutive days per month) every fourth week. No in-house call shall be required for CCEP fellows. Continuous on-site duty must not exceed 24 consecutive hours. Home-call (pager call) is defined as call taken from outside the assigned institution. If the fellows are called into the hospital from home for patient care purposes, those hours spent in-house must be counted toward the 80-hour limit. The training program director will monitor all duty hours by an on-line self-reporting system, whereby the fellows will report their hours worked, and make scheduling adjustments as necessary to mitigate excessive service demands and/or fatigue.

26. UCSD CCEP Fellowship Program Policy on Moonlighting: Fellows are allowed, but not required or encouraged, to moonlight during their training. Fellows must notify the CCEP program director for approval prior to participating in any moonlighting activities. If fellows engage in moonlighting they must be licensed for unsupervised medical practice in the state of practice; it is the responsibility of the institution at which the fellow moonlights to determine whether such licensure is in place and whether the fellow has appropriate training to carry out assigned duties. Under no circumstances will UCSD liability coverage be extended to cover moonlighting activities that fall outside the course and scope of my UCSD activities. Moonlighting activities must comply with all UCSD policies, including the total weekly hours of duty and whether the fellow appears to be overly fatigued. Moonlighting at UCSD or the VA will be counted in the ACGME-controlled work-week of 80 hours maximum per week. In the event a fellow is given permission to moonlight, the CCEP program director and faculty shall monitor the fellow’s performance for the effect of these activities upon performance in the trainee’s residency program. Should performance in the fellowship be unsatisfactory, fellows will be asked to curtail or terminate moonlighting activities immediately.

27. UCSD CCEP Fellowship Program Policy on Monitoring Fellow Fatigue and Stress:
CCEP fellows, due to their close interaction with CCEP faculty on a daily basis, will be monitored by the faculty for any signs of fatigue or inability to perform their duties that might be related to lack of rest or fatigue. In the event that excessive fatigue is identified by any CCEP faculty to be interfering with the fellows ability to perform his/her expected duties, this will be immediately reported to the program director who will arrange clinical coverage for the fellow in question in order that the fellow may obtain adequate rest required to perform his/her expected duties. The fellow may also make a request of any CCEP faculty member or the program director for an appropriate period of rest, if his/her required clinical activities have created a situation of insufficient rest that might interfere with the appropriate delivery of patient care.

CCEP fellows, due to their close interaction with CCEP faculty on a daily basis, will also be monitored by the faculty for any signs of stress, including any mental or emotional conditions that may affect performance or their duties or learning, or any drug or alcohol related dysfunction. In the event that such stress or dysfunction is identified by any CCEP faculty, this will be immediately reported to the CCEP Program director who, in conjunction with the Cardiovascular Diseases Program director, and Internal Medicine Program director, will arrange for clinical coverage for the fellow in question in order that the fellow may obtain appropriate evaluation and treatment, and time off from expected duties if required, as outlined in the UCSD Housestaff Policy and Procedures Manual. In the case of drug or alcohol dependent dysfunction, residents can self refer or be referred to the Physician Well Being Committee which is very active and supportive of all trainees. In addition, the fellows attend the Core lecture series which has an annual presentation on physician well-being and stress.

28. UCSD CCEP Fellowship Program Policy on Evaluation of CCEP fellow competencies:

The Accreditation Council for Graduate Medical Education (ACGME) has defined six areas of competency, which fellows must attain over the course of their post-graduate training. In the Cardiac Electrophysiology Curriculum, the educational program goals have been organized around these core competencies. Internal and external methods of assessment have also been developed to address the success of the program in achieving adequate fellow training in these defined competencies (See Appendix A). The following activities within the fellowship program and locations within the institution (see abbreviations), provide the learning and teaching opportunities for the trainee to obtain these core competencies in clinical cardiac electrophysiology:

Direct Patient Care:
The collaborative relationship between attending physician and trainee in the delivery of patient care is at the core of this Program; the provision of high-quality patient care is the fundamental vehicle for teaching and learning of all the required competencies. In the development of educational objectives direct patient care is broadly and somewhat arbitrarily divided into those three loci of care where the particular skills required of the successful sub-specialist in cardiac electrophysiology differ:

- Out-Patient clinic including implantable device follow up clinic (DPC-OP*)
· Hospital, including coronary, medical and surgical intensive care units and the emergency department (DPC-H*)
· Electrophysiology Laboratory (DPC-EPL*)

Teaching Conferences:

Teaching conferences are convened at the institutional, departmental and section level and all contribute to the educational experience of the cardiac electrophysiology trainee:

· Core Curriculum Lecture Series (CCL*)
· Department of Medicine Grand Rounds (GR*)
· Division of Cardiology Grand Rounds (CGR*)
· Electrophysiology Program Conference (EPC*)
· Electrophysiology Program Journal Club (JC*)
· Electrophysiology Program Case Conference (CC*)

The six defined competencies, the principal educational goals of the Clinical Cardiac Electrophysiology program, and the most relevant teaching activity and location for each goal, are described below as they relate to each competency:

1. **Patient Care:** Fellows are expected to provide patient care that is compassionate, appropriate and effective for the promotion of health, prevention of illness, treatment of disease and care at the end of life.
   · Gather accurate, essential information from all sources, including medical interviews, physical examination, records, and diagnostic/therapeutic procedures.
   · Make informed recommendations about preventive, diagnostic, and therapeutic options and interventions that are based on clinical judgment, scientific evidence, and patient preferences.
   · Develop, negotiate and implement patient management plans.
   · Perform competently the diagnostic and therapeutic procedures considered essential to the practice of Clinical Cardiac Electrophysiology.

<table>
<thead>
<tr>
<th>Principal Educational Goals</th>
<th>Learning Activities</th>
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<tbody>
<tr>
<td>Interview and examine patients more skillfully</td>
<td>DPC-OP, DPC-H</td>
</tr>
<tr>
<td>Interpret noninvasive data more skillfully</td>
<td>DPC-OP, DPC-H, EPC, CC</td>
</tr>
<tr>
<td>Interpret invasive data more skillfully</td>
<td>DPC-EPL, EPC, CC</td>
</tr>
<tr>
<td>Successfully evaluate and manage implanted devices</td>
<td>DPC-OP, DPC-H, DPC-EPL, EPC, CC</td>
</tr>
<tr>
<td>Generate and prioritize differential diagnoses</td>
<td>DPC-OP, DPC-H, DPC-EPL, EPC, CC</td>
</tr>
<tr>
<td>Develop rational, evidence-based management strategies</td>
<td>DPC-OP, DPC-H, DPC-EPL, EPC, CC</td>
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</table>
2. **Medical Knowledge:** Fellows are expected to demonstrate knowledge of established and evolving biomedical, clinical and social sciences, and demonstrate the application of their knowledge to patient care and education of others.

- Apply an open-minded and analytical approach to acquiring new knowledge.
- Develop clinically applicable knowledge of the basic and clinical sciences that underlie the practice of Clinical Cardiac Electrophysiology.
- Apply this knowledge in developing critical thinking, clinical and technical problem solving, and clinical decision-making skills.
- Access and critically evaluate current medical information and scientific evidence and modify knowledge base accordingly.

<table>
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<th>Principal Educational Goals</th>
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<tbody>
<tr>
<td>Expand clinically applicable knowledge base of the basic and clinical sciences underlying the care of patients with cardiac arrhythmias in accordance with the syllabus in Parts 5.1-5.7 of this curriculum</td>
<td>DPC-OP, DPC-H, DPC-EPL, GR, CGR, EPC, JC, CC</td>
</tr>
<tr>
<td>Access and critically evaluate current medical information and scientific evidence relevant to care of the arrhythmia patient</td>
<td>DPC-OP, EPC, JC, CC</td>
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3. **Practice-Based Learning and Improvement:** Fellows are expected to be able to use scientific methods and evidence to investigate, evaluate, and improve their patient care practices.

- Identify areas for improvement and implement strategies to improve knowledge, skills, attitudes, and processes of care.
- Analyze and evaluate practice experiences and implement strategies to continually improve the quality of the practice of Clinical Cardiac Electrophysiology.
- Develop and maintain a willingness to learn from errors and use errors to improve the system or processes of care.
- Use information technology or other available methodologies to access and manage information and support patient care decisions and personal education.

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<tr>
<th>Principal Educational Goals</th>
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<tbody>
<tr>
<td>Identify and acknowledge gaps in personal knowledge and skills in the care of arrhythmia patients</td>
<td>DPC-OP, DPC-H, DPC-EPL, CC, EPC</td>
</tr>
<tr>
<td>Develop and implement strategies for filling gaps in knowledge and skills</td>
<td>JC, CC, EPC, CGR, GR</td>
</tr>
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4. **Interpersonal Skills and Communication:** 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.
• 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.
• Use effective listening, nonverbal, questioning, and narrative skills to communicate with patients and families.
• Interact with consultants in a respectful and appropriate fashion.
• Maintain comprehensive, timely, and legible medical records.

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<thead>
<tr>
<th>Principal Educational Goals</th>
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<tbody>
<tr>
<td>Communicate effectively with patients and families</td>
<td>DPC-H, DPC-OP, DPC-EPL</td>
</tr>
<tr>
<td>Communicate effectively with physician colleagues at all levels</td>
<td>DPC-H, DPC-OP, DPC-EPL, CCL</td>
</tr>
<tr>
<td>Communicate effectively with all non-physician members of the health care team to assure comprehensive and timely care of arrhythmia patients</td>
<td>DPC-H, DPC-OP, DPC-EPL</td>
</tr>
<tr>
<td>Present patient information concisely and clearly, verbally and in writing</td>
<td>DPC-OP, DPC-H, DPC-EPL, EPC, CC</td>
</tr>
<tr>
<td>Teach colleagues effectively</td>
<td>DPC-H, DPC-EPL, EPC, JC, CC</td>
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### 5. Professionalism:
Fellows are expected to demonstrate behaviors that reflect a commitment to continuous professional development, ethical practice, an understanding and sensitivity to diversity and a responsible attitude toward their patients, profession, and society.
• Demonstrate respect, compassion, integrity, and altruism in their relationships with patients, families, and colleagues.
• Demonstrate sensitivity and responsiveness to patients and colleagues, including gender, age, culture, religion, sexual preference, socioeconomic status, beliefs, behaviors and disabilities.
• Adhere to principles of confidentiality, scientific/academic integrity, and informed consent.
• Recognize and identify deficiencies in peer performance.
• Develop a clear understanding of the complex and challenging relationships in Clinical Cardiac Electrophysiology 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.

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<tr>
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<th>Learning Activities</th>
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<tr>
<td>Behave professionally toward patients, families, colleagues, and all members of the health care team</td>
<td>All</td>
</tr>
<tr>
<td>Recognize the substantial pressures in cardiac electrophysiology that create a potential for conflicts of interest and develop strategies for avoidance of impropriety</td>
<td>DPC-EPL, DPC-H, DPC-OP</td>
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</table>
6. **Systems-Based Practice:** Fellows are expected to demonstrate an understanding of the contexts and systems in which health care is provided, and demonstrate the ability to apply this knowledge to improve and optimize health care.

- Understand, access, and utilize the resources and providers necessary to provide optimal care.
- Understand the limitations and opportunities inherent in various practice types and delivery systems, and develop strategies to optimize care for the individual patient.
- Given the high costs of many treatments, fellows are expected to apply evidence based, cost-conscious strategies to prevention, diagnosis, and treatment selection in cardiac electrophysiology.
- 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.

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<tr>
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<th>Learning Activities</th>
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<tbody>
<tr>
<td>Understand and utilize the multidisciplinary resources necessary to care optimally for patients with cardiac arrhythmias</td>
<td>DPC-H, CCL, M&amp;M</td>
</tr>
<tr>
<td>Collaborate with other members of the health care team to assure comprehensive patient care</td>
<td>DPC-H, DPC-OP</td>
</tr>
<tr>
<td>Use evidence-based, cost-conscious strategies in the care of arrhythmia patients</td>
<td>DPC-H, DPC-OP, DPC-EPL, CCL, GR, EPC, JC, CC, CGR</td>
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Appendix A.

Methods and Tools for Evaluating Core Competencies in Clinical Cardiac

1. **Patient Care:**
   
   Current evaluation forms contain an assessment of the fellows' patient care abilities, including compassionate, appropriate and effective treatment of health problems and the promotion of health. This competency is formally evaluated during each rotation by direct observation of the fellow by the faculty during history taking, physical examination, order and note writing, and during presentation to the attending of the patient’s history and physical finding and discussion of treatment plans and follow-up. This is also assessed during outpatient clinics. It is proposed that the evaluation and assurance of this competency be continued in the manner that it is currently determined through direct observation by the faculty and written evaluation, particularly since this competency cannot be evaluated by any single observation or test.

2. **Medical Knowledge:**

   Currently, medical knowledge is evaluated on an ongoing daily basis by the faculty during routine interactions with the fellow, by observing the fellow during case presentations and discussion of treatment plans, procedures, lectures, teaching activities, research etc. The level of medical knowledge of each fellow is then noted in the written evaluation provided by each faculty member during each rotation. This method of evaluation, while certainly valid, is subjective however, and therefore a written examination is being developed at this institution as an additional tool to test the level of medical knowledge in specific required core areas as noted in the ACGME Program Requirements for Residency Education in CCEP, IV. Specific Program Content. This examination is given to the CCEP fellows semiannually (December and May). This written examination is composed of 40-60 questions supplied by the CCEP faculty members, and designed to test the fellows medical knowledge in areas of rotations that they have already completed during the program. The questions may be derived from those provided to fellows at each core lecture presented by the faculty, from ABIM approved self-assessment programs taken by the faculty, from textbooks, journals, and other peer-reviewed resources. The examination taken by each fellow may differ slightly depending on the rotations completed at the time of the examination.

   In addition, the procedural skills that must be acquired in CCEP require faculty observation and testing to determine fellow competency. The determination of procedural competencies has been traditionally evaluated on an ongoing basis during procedures performed by the fellow under the direct observation or with the assistance of the CCEP faculty, who has then duly noted the level of skill and areas of competency or deficiency in a written evaluation at the end of each rotation. Again, since this is a subjective method of evaluation, we have developed at this institution, a set of proctoring forms, with specific skills listed for each type of procedure that the fellow is expected to acquire during his/her training. During each rotation each faculty member will then be required to complete for each fellow all proctoring forms relevant to the types of procedures performed during that rotation. This approach will provide a more reliable objective assessment of the skills that each fellow is competent or deficient in,
which will allow the director and faculty to identify any specific areas that a fellow will need additional training in order to achieve the desired level competency in all required skills.

3. Practice-based learning and improvement:
Fellows will review with the attending their workup, treatment plan, procedures and follow-up plan in specific cases that they have been involved with. The fellows will be required to review the current scientific literature regarding their patient's specific medical conditions, and then re-evaluate their approach to this patient's care to determine if there could have been any improvement. The fellows will then present these cases for review by the faculty at regularly scheduled case presentation conferences held Thursday mornings throughout the year. The faculty will evaluate the critical components of the fellows care of these patients, review and discuss the known scientific literature as it pertains to these cases, and discuss areas where their could have been improvement in care if any. Attendance and presentation of cases at the regularly held case presentation conferences is mandatory and will be documented on sign-in sheets.

4. Interpersonal and Communication Skills:
This is an ongoing activity, which is evaluated during each rotation by the faculty and is documented in the evaluation forms completed by the faculty at the end of each rotation. The fellow will be observed directly by the faculty during interaction with patients and family at least three times during each clinical rotation. The faculty will observe the fellow during initial contact with the patient to determine skills in history taking, physical examination, communication of the conclusions regarding the patients medical condition and the proposed plan of treatment, during the informed consent process if a procedure is to be performed, and during communication of the results and follow-up plans with the patient and family after completion of any proposed treatment. The skills in these areas will be documented by the faculty member on each occasion for inclusion in the final evaluation or the fellow after completion of each rotation, and the faculty member will discuss with the fellow his/her proficiencies and any deficiencies and means for improvement after each observation. Interaction of the fellows with other health professionals in the clinics or EP laboratory will be assessed by the faculty member during each rotation as well, for inclusion in the final evaluation.
This same process will be ongoing in the outpatient clinics as well, during which time the faculty will observe the fellow interacting with patients, patient's family members, and other health care professionals on a weekly basis.

5. Professionalism:
The faculty will observe the fellows throughout their training for their commitment to behaving in a professional manner, adhering to ethical principles, and their sensitivity to others regardless of economic or ethnic background or social beliefs. Any incidents of unprofessional or unethical conduct, or disregard or lack of sensitivity for diversity among patients, staff or colleagues, observed by the faculty will be brought to the immediate attention of the program director, who will then through documented policies and procedures of the institution take appropriate corrective action.
The fellows will also be required to attend the regularly scheduled Core Lecture series offered by the Department of Medicine, where topics on ethics, physician well being, diversity, etc. are discussed.

6. **Systems-Based Practice:**
   The fellows will utilize the hospital system of their own accord and the faculty members will direct the fellow to perform many actions within this system related to the care of their patients during the course of training. These actions in most cases will involve awareness and the capability of working within the context of the global health care system in order to coordinate and implement the treatment plan for their patients. The ability of the fellow to function in this capacity will be evaluated on an ongoing basis during the course of each rotation and this ability and any recommendations for improvement will be documented in the evaluation provided by each faculty member at the end of each rotation. Any deficiencies in this capacity will be discussed with each fellow during each rotation so that they are allowed time for improvement, and again at the end of each rotation during discussion of the final evaluation.