CARDIAC ELECTROPHYSIOLOGY (PGY-2 TO 4)

THE ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF CANADA
Objectives of Training and Specialty Training Requirements in Anesthesia

Specific Objectives in CanMEDS Format

ROTATION OBJECTIVES
At the completion of training, the resident will have acquired the following competencies and will function effectively as:

Medical Expert/Clinical Decision Maker

Specific Knowledge Requirements
The resident will be able to:
- Demonstrate diagnostic and therapeutic skills for ethical and effective patient care.
- Access and apply relevant information to clinical practice.
- Demonstrate effective consultation services with respect to patient care, and education.

Specific Skill Requirements

A. Clinical Skills
The resident must be able to:
- Obtain an accurate patient history and perform an appropriate physical examination.
- Develop a weighted differential diagnosis.
- Develop an appropriate plan of care and interpret electrocardiographic, laboratory and radiological investigations.
- Recommend an appropriate therapeutic plan taking into account such matters as age, general health, risk/benefit ratio, and prognosis.

EP Specific
- Develop a logical and systematic approach to interpretation of ECGs with regard to bradycardia, tachycardia, and pacing.
- Gain a detailed understanding of the pathophysiology of common cardiac arrhythmias (AF, A flutter, SVT, VT, bradycardia), their investigation and treatment.
- Understand of the pharmacology and clinical use of antiarrhythmic medications.
- Be proficient at assessment of the patient with bradycardia, tachycardia, palpitations, syncope, cardiac arrest, and high risk of arrhythmia.
Gain a detailed understanding of the pathophysiology of the common cardiac arrhythmias, their investigation and treatment (medication, ablation, pacing therapy or surgery).

Develop an understanding of the role in synchronization pacing in patients with heart failure.

**B. Technical Skills**

The resident will:

**EP Specific**

- Gain knowledge of indications for implantation of temporary and permanent pacemakers, and an understanding of the role of biventricular pacing for heart failure management.
- Gain knowledge of indications, both primary and secondary, for implantation of ICDs.
- Gain knowledge of indications for EP study and ablation.
- Gain knowledge of indications for laser lead extraction.
- Gain experience interpreting ECGs, holter monitors and event recorder tracings.
- Become familiar with preparation, risks and perioperative issues regarding device implant, EP study, and lead extraction.
- Develop an awareness of the technical approaches to pacemaker and ICD implantation. This includes implantation of single and dual lead devices, as well as programming and troubleshooting.
- Gain exposure to lead extraction in terms of indications, techniques, preoperative and postoperative management of extraction patients.

**Communicator**

**General Requirements**

The resident will be able to:

- Establish therapeutic relationships with patients / families.
- Obtain and synthesize relevant information from patients/families/communities.
- Listen effectively.
- Discuss appropriate information with patients/families and the health care team.

**Specific Knowledge Requirements**

The resident must be able to:

- Communicate with the patients and be sensitive to the patients’ emotional status surrounding illness.
Describe the dynamics of the traumatized family.
Discuss the concerns patients have of loss of control, self-worth, and personal dignity.
Describe the need for effective use of language.
Discuss the need to explain medical matters in simple terms.
Describe the role of interpreters in dealing with some patient groups (cultural, deaf).
Appreciate how differences in race, gender and ethnicity affect patient/families responses to therapeutic suggestions and diagnosis.

**Specific Skill Requirements**

The resident must able to:

- Address patients concerns with empathy and respect in every encounter.
- Explain details of medical conditions and therapy in understandable terms.
- Include all members of the health care team in discussions of therapeutic plan when appropriate.
- Communicate with medical colleagues, health team personnel, patients, and families in a professional, timely, accurate, informative and, compassionate manner, at all times.

**EP Specific**

- Independently perform full history and directed physical exam on patients referred for arrhythmia assessment
- Present a clear, concise history and physical exam pertaining to arrhythmia inpatients and outpatients, with a logical plan for investigation and therapy
- Actively participate in patient education discussions regarding risks and benefits of implant, extraction, and ablation procedures

**Collaborator**

**General Requirements**

The resident will be able to:

- Consult effectively with other physicians and health care professionals.
- Contribute effectively to interdisciplinary team activities.

**Specific Knowledge Requirements**

The resident must be able to:

- Describe the roles of the health care professionals in a team.
- Describe the unique aspects of care provided by nursing, physiotherapy, and health care technologists.
Specific Skill Requirements

The resident must be able to:

- Seek the advice of other members of the health care team.
- Effectively participate in team meetings to discuss problems in investigation and therapy.
- Consult with other physicians.

  EP Specific
  - Actively participate in a multidisciplinary approach to the arrhythmia patient.

Manager

General Requirements

The resident will be able to:

- Utilize resources effectively to balance patient care, learning needs, and outside activities.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization.
- Utilize information technology to optimize patient care, life-long learning and other activities.

Specific Knowledge Requirements

The resident must be able to:

- Describe the essential aspects of health care funding and the different models of health care delivery.

Specific Skill Requirements

The resident must be able to:

- Undertake quality assurance and quality delivery analyses.
- Develop plans more effective use of resources for health care programs.
- Apply technology effectively to patient care.
- Contribute effectively in strategic planning.

  EP Specific
  - Gain understanding of resource utilization in arrhythmia management, in terms of cost-effective investigation and therapy for the arrhythmia patient.
Health Advocate

*General Requirements*

The resident will be able to:

- Identify the important determinants of health affecting patients.
- Contribute effectively to improved health of patients and communities.
- Recognize and respond to those issues where advocacy is appropriate.

*Specific Knowledge Requirements*

The resident must be able to:

- Describe the epidemiology of cardiac arrhythmias.
- Discuss the importance of preventive medicine for cardiac diseases.
- Describe methods of patient education and preventive medicine intervention for cardiac diseases.

*Specific Skill Requirements*

The resident must able to:

- Participate in patient education.
- Assist patients in the acquisition and interpretation of health care information.

  *EP Specific*
  
  - Advise families of the role of genetics in the genesis of arrhythmia.
  - Understand arrhythmia therapy options and alternatives, including the risks and benefits of interventional procedures.

Scholar

*General Requirements*

The resident will be able to:

- Develop, implement and monitor a personal continuing education strategy.
- Critically appraise and apply sources of medical information.
- Facilitate the learning of patients, house staff, students and other health professionals.
- Contribute to development of new medical knowledge.

*Specific Knowledge Requirements*

The resident must be able to:

- Describe the important role of clinical and basic research in arrhythmia practice.
- Describe the scientific method and of outcome based research.
- Discuss the application of statistical methods to critical appraisal.
Discuss the importance of continuing medical education (CME) for arrhythmia specialists.
Describe where information on medical matters is reliably obtained.

**Specific Skill Requirements**

The resident must able to:
- Question current practice.
- Apply outcome-based methodology to interpretation of clinical information.
- Critically appraise the current literature.
- Develop a plan for continuing personal professional development that includes but is not limited to CME meetings.
- Appraise the relevant medical literature on a regular basis.

**EP Specific**
- Teach other health care professionals about arrhythmia related topics.
- Gain knowledge of important clinical trials and other manuscripts which have guided modern arrhythmia management.
- Actively search peer-reviewed literature to answer management questions pertaining to patients seen in clinic and on the ward.

**Professional**

**General Requirements**

The resident will be able to:
- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviour.
- Practice medicine ethically consistent with the obligations of a physician.

**Specific Knowledge Requirements**

The resident must be able to:
- Discuss the professional and ethical responsibilities of a specialist.
- Describe the requirements of patient confidentiality.

**Specific Skill Requirements**

The resident must able to:
- Demonstrate personal and professional attitudes consistent with a specialist.
- Display sensitivity to patient needs even when they conflict with best medical care.
- Maintain patient confidentiality.
- Practice in an ethical, honest, and forthright manner.
• Respond to conflict and abuse constructively.

    *EP Specific*

  o Actively participate in ongoing management of arrhythmia inpatients and consults
  o Attend outpatient clinic at least 1 day per week, seeing patients independently and presenting the case and proposed management to attending physician
  o Attend and participate in arrhythmia service rounds on Wednesday and Friday 8-9am
  o Inform the service of expected absences or leave prior to beginning rotation, to allow for appropriate patient and physician scheduling

Revised: April 2011, Dr. Granton