Objectives of Training in the Subspecialty of Endocrinology & Metabolism

2008

This document applies to those who begin training on or after July 1st, 2008.

(Please see also the “Policies and Procedures.”)

DEFINITION

Endocrinology and Metabolism is the branch of medicine concerned with the study of the diseases of the endocrine organs, disorders of hormone systems, and their target organs and disorders of the pathways of glucose and lipid metabolism. It encompasses the assessment of patients with such disorders and the use of laboratory methods for diagnosis and monitoring of therapy. It also encompasses knowledge of endocrine physiology, particularly regarding normal control of hormone secretion and action.

GOALS

Upon completion of training, a resident is expected to be a competent specialist in Endocrinology and Metabolism capable of assuming a consultant’s role in the specialty. The resident must acquire a working knowledge of the theoretical basis of the specialty, including its foundations in the basic medical sciences and research.

Only candidates certified by the Royal College of Physicians and Surgeons of Canada in Internal Medicine or Pediatrics may be eligible for certification in Endocrinology and Metabolism.

Residents must demonstrate the requisite knowledge, skills, and attitudes for effective patient-centered care and service to a diverse population. In all aspects of Endocrinology and Metabolism practice, the graduate must be able to address issues of gender, sexual orientation, age, culture, ethnicity and ethics in a professional manner.

ENDOCRINOLOGY & METABOLISM COMPETENCIES

At the completion of training, the resident will have acquired the following competencies and will function effectively as a:
Medical Expert

Definition:

As Medical Experts, Endocrinologists integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centered care. Medical Expert is the central physician Role in the CanMEDS framework.

Key and Enabling Competencies: Endocrinologists are able to....

1. Function effectively as consultants, integrating all of the CanMEDS Roles to provide optimal, ethical and patient-centered medical care
   1.1. Perform a consultation effectively, including the presentation of well-documented assessments and recommendations in written and/or verbal form in response to a request from another health care professional
   1.2. Demonstrate effective use of all CanMEDS competencies relevant to their practice
   1.3. Identify and appropriately respond to relevant ethical issues arising in patient care
   1.4. Demonstrate ability to effectively and appropriately prioritize professional duties when faced with multiple patients and problems
   1.5. Demonstrate compassionate and patient-centered care
   1.6. Recognize and respond to the ethical dimensions in medical decision-making
   1.7. Demonstrate medical expertise in situations other than patient care, such as providing expert legal testimony or advising governments, as needed

2. Establish and maintain clinical knowledge, skills and attitudes appropriate to Endocrinology and Metabolism
   2.1. Apply knowledge of the clinical, socio-behavioural, and fundamental biomedical sciences (including genetics, physiology, biochemistry, and histopathology) relevant to Endocrinology and Metabolism including:
      2.1.1. Normal growth and development and its variations
      2.1.2. Alterations in the endocrine system in persons with systemic disease
      2.1.3. Alterations in the endocrine system in pregnant women
      2.1.4. Disorders of glucose metabolism including hypoglycemia and hyperglycemia
      2.1.5. Disorders of lipid metabolism
      2.1.6. Obesity
      2.1.7. Type 1 and Type 2 diabetes mellitus including the role of nutrition, exercise, pharmacological management including insulin pump therapy and complications
      2.1.8. Metabolic bone disease and disorders of calcium metabolism including disorders of the parathyroid glands and the Vitamin D system
      2.1.9. Disorders of the thyroid gland and metabolism
2.1.10. Disorders of reproduction including disordered sexual development and gender identity, abnormalities of puberty, menstrual disorders, infertility and hyperandrogenic states in females

2.1.11. Disorders of protein metabolism

2.1.12. Disorders of growth in children and adolescents (limited to pediatric Endocrinology and Metabolism)

2.1.13. Disorders of the adrenal cortex and the adrenal medulla

2.1.14. Disorders of the pituitary gland (anterior and posterior)

2.1.15. Endocrine hypertension

2.1.16. Fluid, electrolyte and acid-base disorders related to the endocrine system

2.1.17. Screening for endocrine disorders and autoimmunity as it relates to the endocrine system

2.1.18. Nutrition as it applies to endocrine disorders

2.1.19. Genetics as it relates to endocrine disorders

2.1.20. The study of endocrine tumours and cancer

2.2. Describe the CanMEDS framework of competencies relevant to Endocrinology and Metabolism

2.3. Apply lifelong learning skills of the Scholar Role to implement a personal program to keep up-to-date, and enhance areas of professional competence

2.4. Contribute to the enhancement of quality care and patient safety in their practice, integrating the available best evidence and best practices

3. Perform a complete and appropriate assessment of a patient

3.1. Identify and explore issues to be addressed in a patient encounter effectively, including the patient’s context and preferences

3.2. For the purposes of prevention and health promotion, diagnosis and or management, elicit a history that is relevant, clear, concise and accurate to context and preferences

3.3. For the purposes of prevention and health promotion, diagnosis and/or management, perform a focused physical examination that is relevant and accurate

3.4. Select medically appropriate investigative methods in a resource-effective and ethical manner

3.5. Demonstrate effective clinical problem solving and judgment to address patient problems, including interpreting available data and integrating information to generate differential diagnoses and management plans

3.5.1. Interpret diagnostic imaging in the diagnosis of endocrine disorders

3.5.2. Interpret results of hormonal assays in basal, stimulated and suppressed states
4. **Use preventive and therapeutic interventions effectively**
   4.1. Implement an effective management plan in collaboration with a patient and their family
   4.2. Demonstrate effective, appropriate, and timely application of preventive and therapeutic interventions relevant to Endocrinology and Metabolism
   4.3. Ensure appropriate informed consent is obtained for therapies
   4.4. Ensure patients receive appropriate end-of-life care

5. **Demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic**
   5.1. Demonstrate effective, appropriate, and timely performance of diagnostic procedures relevant to Endocrinology and Metabolism, including the ability to perform the following:
      5.1.1. Fine needle thyroid biopsy (limited to adult Endocrinology and Metabolism)
      5.1.2. Use of radioisotopes in diagnosis and management of endocrine disorders, including knowledge about radiation safety and the regulatory requirements pertaining to the use of radioactive isotopes
   5.2. Demonstrate effective, appropriate, and timely performance of therapeutic procedures relevant to Endocrinology and Metabolism
   5.3. Ensure informed consent is obtained for procedures
   5.4. Document and disseminate information related to procedures performed and their outcomes
   5.5. Ensure adequate follow-up is arranged for procedures performed

6. **Seek appropriate consultation from other health professionals, recognizing the limits of their expertise**
   6.1. Demonstrate insight into their own limitations of expertise
   6.2. Demonstrate effective, appropriate, and timely consultation of another health professional as needed for optimal patient care
   6.3. Arrange appropriate follow-up care services for a patient and their family

**Communicator**

**Definition:**

As *Communicators*, Endocrinologists effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter.
Key and Enabling Competencies: Endocrinologists are able to...

1. Develop rapport, trust, and ethical therapeutic relationships with patients and families
   1.1. Recognize that being a good communicator is a core clinical skill for physicians, and that effective physician-patient communication can foster patient satisfaction, physician satisfaction, adherence and improved clinical outcomes
   1.2. Establish positive therapeutic relationships with patients and their families with endocrine or metabolic disease that are characterized by understanding, trust, respect, honesty and empathy
   1.3. Respect patient confidentiality, privacy and autonomy
   1.4. Listen effectively
   1.5. Be aware and responsive to nonverbal cues
   1.6. Facilitate a structured clinical encounter effectively

2. Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals
   2.1. Gather information about a disease, but also about a patient’s beliefs, concerns, expectations and illness experience
   2.2. Seek out and synthesize relevant information from other sources, such as a patient’s family, caregivers and other professionals

3. Convey relevant information and explanations accurately to patients and families, colleagues and other professionals
   3.1. Deliver information to a patient and family, colleagues and other professionals in a humane manner and in such a way that it is understandable, encourages discussion and participation in decision-making

4. Develop a common understanding on issues, problems and plans with patients, families, and other professionals to develop a shared plan of care
   4.1. Identify and explore problems to be addressed from a patient encounter effectively, including the patient’s context, responses, concerns, and preferences
       4.1.1. Demonstrate open-mindedness to consideration of alternative health care practices in the treatment of endocrine diseases
   4.2. Respect diversity and difference, including but not limited to the impact of gender, religion and cultural beliefs on decision-making
   4.3. Encourage discussion, questions, and interaction in the encounter
   4.4. Engage patients, families, and relevant health professionals in shared decision-making to develop a plan of care
4.5. Address challenging communication issues effectively, such as obtaining informed consent, delivering bad news, and addressing anger, confusion and misunderstanding

5. Convey effective oral and written information about a medical encounter
   5.1. Maintain clear, accurate, and appropriate records (e.g., written or electronic) of clinical encounters and plans
   5.2. Present verbal reports of clinical encounters and plans effectively
   5.3. Present medical information effectively to the public or media about a medical issue

Collaborator

Definition:

As Collaborators, Endocrinologists effectively work within a healthcare team to achieve optimal patient care.

Key and Enabling Competencies: Endocrinologists are able to...

1. Participate effectively and appropriately in an interprofessional healthcare team
   1.1. Describe the specialist’s roles and responsibilities to other professionals
   1.2. Describe the roles and responsibilities of other professionals within the health care team
   1.3. Recognize and respect the diversity of roles, responsibilities and competencies of other professionals in relation to their own
   1.4. Work with others to assess, plan, provide and integrate care for individual patients (or groups of patients) particularly those most often associated with Endocrinology and Metabolism
   1.5. Work with others to assess, plan, provide and review other tasks, such as research problems, educational work, program review or administrative responsibilities
   1.6. Participate effectively in interprofessional teams respecting confidentiality, resource allocation and professionalism
   1.7. Consult effectively with other professionals particularly those most often associated with Endocrinology and Metabolism

2. Work effectively with other health professionals to prevent, negotiate, and resolve interprofessional conflict
   2.1. Demonstrate a respectful attitude towards other colleagues and members of an interprofessional team
   2.2. Work with other professionals to prevent conflicts
2.3. Employ collaborative negotiation to resolve conflicts
2.4. Respect differences and address misunderstandings and limitations in other professionals
2.5. Recognize one’s own differences, misunderstanding and limitations that may contribute to interprofessional tension
2.6. Reflect on interprofessional team function

Manager

Definition:

As Managers, Endocrinologists are integral participants in healthcare organizations, organizing sustainable practices, making decisions about allocating resources, and contributing to the effectiveness of the healthcare system.

Key and Enabling Competencies: Endocrinologists are able to...

1. Participate in activities that contribute to the effectiveness of their healthcare organizations and systems
   1.1. Work collaboratively with others in their organizations
   1.2. Participate in systemic quality process evaluation and improvement, such as patient safety initiatives
   1.3. Describe the structure and function of the healthcare system as it relates to Endocrinology and Metabolism, including the roles of physicians
   1.4. Describe principles of healthcare financing, including physician remuneration, budgeting and organizational funding

2. Manage their practice and career effectively
   2.1. Set priorities and manage time to balance patient care, practice requirements, outside activities and personal life
   2.2. Manage a practice including finances and human resources
       2.2.1. Recognize the role of audits, budget reviews, quality improvement, risk management, incident reporting, and complaint management in various settings including metabolic day treatment centers, clinical investigation units, the laboratory and the ambulatory care setting
   2.3. Implement processes to ensure personal practice improvement
   2.4. Employ information technology appropriately for patient care
3. **Allocate finite healthcare resources appropriately**

   3.1. Recognize the importance of just allocation of healthcare resources, balancing effectiveness, efficiency and access with optimal patient care

       3.1.1. Demonstrate the use of cost/benefit ratios of diagnostic and therapeutic interventions for endocrine disorders as well as cost containment, efficacy and efficiency as they relate to decision making and quality assurance

   3.2. Apply evidence and management processes for cost-appropriate care

4. **Serve in administration and leadership roles, as appropriate**

   4.1. Chair or participate effectively in committees and meetings
   4.2. Lead or implement change in health care
   4.3. Plan relevant elements of health care delivery (e.g., work schedules)

**Health Advocate**

*Definition:*

As *Health Advocates*, Endocrinologists responsibly use their expertise and influence to advance the health and well-being of individual patients, communities, and populations.

**Key and Enabling Competencies: Endocrinologists are able to...**

1. **Respond to individual patient health needs and issues as part of patient care**
   1.1. Identify the health needs of an individual patient
   1.2. Identify opportunities for advocacy, health promotion and disease prevention with individuals to whom they provide care

2. **Respond to the health needs of the communities that they serve**
   2.1. Describe the practice communities that they serve
   2.2. Identify opportunities for advocacy, health promotion and disease prevention in the communities that they serve, and respond appropriately
   2.3. Appreciate the possibility of competing interests between the communities served and other populations

3. **Identify the determinants of health for the populations that they serve**
   3.1. Identify the determinants of health of the populations, including barriers to access to care and resources
       3.1.1. These include those contributing to the burden of illness from common endocrine disorders such as diabetes, thyroid disorders, mellitus, obesity,
hypertension, metabolic bone disease and lipid disorders

3.2. Identify vulnerable or marginalized populations within those served and respond appropriately such as children and adults with rare genetic disorders, patients from Aboriginal communities, and psychiatric patients

4. Promote the health of individual patients, communities, and populations

4.1. Describe an approach to implementing a change in a determinant of health of the populations they serve

4.2. Describe how public policy impacts on the health of the populations served

4.3. Identify points of influence in the healthcare system and its structure

4.4. Describe the ethical and professional issues inherent in health advocacy, including altruism, social justice, autonomy, integrity and idealism

4.5. Appreciate the possibility of conflict inherent in their role as a health advocate for a patient or community with that of manager or gatekeeper

4.6. Describe the role of the medical profession in advocating collectively for health and patient safety

Scholar

Definition:

As Scholars, Endocrinologists demonstrate a lifelong commitment to reflective learning, as well as the creation, dissemination, application and translation of medical knowledge.

Key and Enabling Competencies: Endocrinologists are able to...

1. Maintain and enhance professional activities through ongoing learning

1.1. Describe the principles of maintenance of competence

1.2. Describe the principles and strategies for implementing a personal knowledge management system

1.3. Recognize and reflect learning issues in practice

1.4. Conduct a personal practice audit

1.5. Pose an appropriate learning question

1.6. Access and interpret the relevant evidence

1.7. Integrate new learning into practice

1.8. Evaluate the impact of any change in practice

1.9. Document the learning process
2. Evaluate medical information and its sources critically, and apply this appropriately to practice decisions
   2.1. Describe the principles of critical appraisal
   2.2. Critically appraise retrieved evidence in order to address a clinical question
   2.3. Integrate critical appraisal conclusions into clinical care

3. Facilitate the learning of patients, families, students, residents, other health professionals, the public and others, as appropriate
   3.1. Describe principles of learning relevant to medical education
   3.2. Identify collaboratively the learning needs and desired learning outcomes of others
   3.3. Select effective teaching strategies and content to facilitate others’ learning
   3.4. Demonstrate an effective lecture or presentation
   3.5. Assess and reflect on a teaching encounter
   3.6. Provide effective feedback
   3.7. Describe the principles of ethics with respect to teaching

4. Contribute to the development, dissemination, and translation of new knowledge and practices
   4.1. Describe the principles of research and scholarly inquiry
   4.2. Describe the principles of research ethics
   4.3. Pose a scholarly question
   4.4. Conduct a systematic search for evidence
   4.5. Select and apply appropriate methods to address the question
   4.6. Disseminate the findings of a study appropriately

Professional

Definition:

As Professionals, Endocrinologists are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behaviour.

Key and Enabling Competencies: Endocrinologists are able to...

1. Demonstrate a commitment to their patients, profession, and society through ethical practice
   1.1. Exhibit appropriate professional behaviors in practice, including honesty, integrity, commitment, compassion, respect and altruism
1.2. Demonstrate a commitment to delivering the highest quality care and maintenance of competence
1.3. Recognize and appropriately respond to ethical issues encountered in practice
1.4. Manage conflicts of interest appropriately
1.5. Recognize the principles and limits of patient confidentiality as defined by professional practice standards and the law
1.6. Maintain appropriate relations with patients

2. Demonstrate a commitment to their patients, profession and society through participation in profession-led regulation

2.1. Appreciate the professional, legal and ethical codes of practice
   2.1.1. Abide by the RCPSC-endorsed guidelines of ethical interactions with industry (especially the pharmaceutical industry) with respect to research, education and clinical care

2.2. Fulfill the regulatory and legal obligations required of current practice
2.3. Demonstrate accountability to professional regulatory bodies
2.4. Recognize and respond to others’ unprofessional behaviours in practice
2.5. Participate in peer review

3. Demonstrate a commitment to physician health and sustainable practice

3.1. Balance personal and professional priorities to ensure personal health and a sustainable practice
3.2. Strive to heighten personal and professional awareness and insight
3.3. Recognize other professionals in need and respond appropriately