

2013
VERSION 2.0

This document applies to those who begin training on or after July 1st, 2013.

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

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 linear growth and development
 - 2.1.2. Alterations in the endocrine system in persons with systemic disease
 - 2.1.3. Alterations in the endocrine system in persons with critical illness
 - 2.1.4. Alterations in the endocrine system in pregnant women
 - 2.1.5. Disorders of glucose metabolism including hypoglycemia and hyperglycemia
 - 2.1.6. Disorders of lipid metabolism
 - 2.1.7. Disorders of obesity
 - 2.1.8. Type 1 and Type 2 diabetes mellitus including the role of nutrition, exercise, pharmacological management including but not limited to insulin pump therapy, and complications
 - 2.1.9. Metabolic bone disease and disorders of calcium metabolism including but not limited to disorders of the parathyroid glands and the vitamin D system

OBJECTIVES OF TRAINING IN ENDOCRINOLOGY AND METABOLISM (2013)

- 2.1.10. Disorders of the thyroid gland
 - 2.1.11. Disorders of reproduction in females, including disordered sexual development and gender identity, abnormalities of puberty, menstrual disorders, hypogonadism, infertility, and hyperandrogenic states
 - 2.1.12. Disorders of reproduction in males, including disordered sexual development and gender identity, abnormalities of puberty, infertility, and hypogonadism
 - 2.1.13. Disorders of growth in children and adolescents (limited to pediatric Endocrinology and Metabolism)
 - 2.1.14. Disorders of the adrenal cortex and the adrenal medulla
 - 2.1.15. Disorders of the pituitary gland (anterior and posterior)
 - 2.1.16. Hypertension related to endocrine disorders
 - 2.1.17. Fluid, electrolyte and acid-base disorders related to the endocrine system
 - 2.1.18. Screening for endocrine disorders and autoimmunity as it relates to the endocrine system
 - 2.1.19. Nutrition as it applies to endocrine disorders
 - 2.1.20. Genetics as it relates to endocrine disorders
 - 2.1.21. Endocrine tumours and cancers
 - 2.1.22. Radiation safety in the use of radioactive isotopes in endocrine disorders
- 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 investigations 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 including but not limited to:
 - 3.5.1. Interpreting diagnostic imaging in the diagnosis of endocrine disorders
 - 3.5.2. Interpreting results of hormonal assays in basal states
 - 3.5.3. Interpreting results of dynamic endocrine testing
 - 3.5.4. Interpreting pathology reports in the diagnosis of endocrine disorders
 - 3.5.5. Interpreting and providing advice on glucose monitoring results
 - 3.5.6. Interpreting bone density reports

4. Use preventive and therapeutic interventions effectively

- 4.1. Implement an effective management plan in collaboration with a patient and their family
 - 4.1.1. Provide intensive diabetes care and management including insulin pump therapy
- 4.2. Demonstrate effective, appropriate, and timely application of preventive and therapeutic interventions relevant to Endocrinology and Metabolism including but not limited to:
 - 4.2.1. Counseling patients on preventative behavior
 - 4.2.2. Smoking cessation
 - 4.2.3. Dietary modifications
 - 4.2.4. Exercise
 - 4.2.5. Weight loss
- 4.3. Ensure appropriate informed consent is obtained for therapies
- 4.4. Use radioisotopes in the diagnosis of endocrine disorders
- 4.5. Provide referral and transfer to 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. Dynamic endocrine testing

- 5.2. Ensure informed consent is obtained for procedures
- 5.3. Document and disseminate information related to procedures performed and their outcomes
- 5.4. 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 limits 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 that are characterized by understanding, trust, respect, honesty and empathy
- 1.3. Respect patient confidentiality, privacy and autonomy
- 1.4. Listen effectively
- 1.5. Use patient appropriate language
- 1.6. Recognize and respond to non-verbal cues
- 1.7. 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 an empathetic manner and in such a way that it is understandable, and encourages discussion and participation in decision-making
- 3.2. Counsels patients and/or families in an empathetic, accurate and supportive manner with attention to age, disability, gender, gender identity, sexual orientation, ethnicity, religion, level of education and cultural beliefs

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. Engage in dialogue with respect to patient's use 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 age, gender, gender identity, sexual orientation, religion and cultural beliefs
- 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 written or electronic records of clinical encounters and plans
- 5.2. Present verbal reports of clinical encounters and plans effectively
- 5.3. Develops and communicates a management plan for patients being discharged from his/her care
- 5.4. Present medical information effectively to the public or media

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 Endocrinologist's roles and responsibilities to other professionals
- 1.2. Describe the roles and responsibilities of other professionals within the health care team including but not limited to: diabetes educator, dietician, endocrine testing nurse, genetic counselor, mental health professional, pharmacist, physiotherapist, registered nurse and social worker
- 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
- 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 inter-professional teams respecting confidentiality, resource allocation and professionalism
- 1.7. Consult effectively with other professionals particularly those most often associated with Endocrinology and Metabolism including but not limited to: diagnostic imaging specialists, obstetrician-gynecologists, oncologists, ophthalmologists, pathologists, primary health care providers, and surgeons
- 1.8. Describe the principles of team dynamics
- 1.9. Respect team ethics, including confidentiality, resource allocation and professionalism
- 1.10. Demonstrate leadership in a health care team, as appropriate

2. Work effectively with other health professionals to prevent, negotiate, and resolve interprofessional conflict

- 2.1. Demonstrate a respectful attitude towards 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 including diabetes education centers
- 1.2. Participate in systemic quality process evaluation and improvement, such as patient safety initiatives
 - 1.2.1. Recognize the role of audits, budget reviews, quality improvement, risk management, incident reporting, and complaint management in various settings including diabetes centres, endocrine testing units, the laboratories, and ambulatory care settings
- 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 the 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 clinical practice effectively and efficiently by:
 - 2.2.1. Avoiding duplication of services
 - 2.2.2. Involving other caregivers when appropriate
 - 2.2.3. Using appropriate information technology

- 2.2.4. Delegating responsibility effectively and appropriately as a team leader to optimize patient care
 - 2.2.5. Prioritizing patient visits appropriately
 - 2.3. Implement processes to ensure personal practice improvement
 - 2.4. Employ information technology appropriately for patient care
 - 2.5. Manage a practice including finances and human resources
- 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 including but not limited to work schedules and participation in on-going monitoring of clinical care in Endocrinology and Metabolism

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 endocrine 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 including
 - 1.2.1. Hypoglycemia in diabetes
 - 1.2.2. Driving and diabetes

- 1.2.3. Diabetes sick day management
- 1.2.4. Adrenal insufficiency
- 1.2.5. Medication and supply reimbursement for endocrine conditions

2. Respond to the endocrine health needs of the communities that they serve

- 2.1. Describe the practice communities that they serve including ethnicity and socioeconomic status
- 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 with endocrine disease that they serve

- 3.1. Identify the determinants of health of the populations, including barriers to access to care and resources
 - 3.1.1. The high burden of illness from common endocrine disorders such as diabetes mellitus, thyroid disorders, obesity, hypertension, metabolic bone disease and lipid disorders that may strongly contribute to inadequate access to care and resources
- 3.2. Identify and respond appropriately to vulnerable or marginalized populations, including:
 - 3.2.1. Aboriginal communities
 - 3.2.2. Patients with language, cultural or social barriers
 - 3.2.3. Patients with mental health concerns
 - 3.2.4. Patients with orphan diseases with significant endocrine involvement

4. Promote the health of individual patients, communities, and populations at risk for endocrine disease

- 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. Deliver 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. This requires the completion or significant participation in a scholarly project related to any aspect (research, education, or creative professional activity) of Endocrinology and Metabolism

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 boundaries with patients

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

- 2.1. Demonstrate knowledge and an understanding of the professional, legal and ethical codes of practice
 - 2.1.1. Abide by accepted 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 including but not limited to provincial driving regulations
- 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

REVISED – Specialty Standards Review Committee – June 2008

REVISED – Specialty Standards Review Committee – January 2013