Objectives of Training in the Subspecialty of Pediatric Hematology/Oncology

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

NOTE: Throughout this document, references to the patient’s family are intended to include all those who are personally significant to the patient and are concerned with his or her care, including, according to the patient’s circumstances, family members, partners, caregivers, legal guardians, and substitute decision-makers.

NOTE: Throughout this document, each reference to “child” or “children” includes infants, children, and adolescents.

DEFINITION

Pediatric Hematology/Oncology is that branch of medicine concerned with the diagnosis and treatment of infants, children, and adolescents with cancer and non-malignant disorders of the blood and blood-forming tissues. A subspecialist in Pediatric Hematology/Oncology has the necessary medical knowledge and skills to deal with the prevention, diagnosis, and management of a broad range of conditions affecting children with cancer and non-malignant disorders of the blood. In addition to providing clinical care in Pediatric Hematology/Oncology and hematopoietic stem cell transplantation for children, he/she may make significant contributions to the development of knowledge in the field and to educating the next generation of subspecialists.

GOALS

Upon completion of training, a resident is expected to be a competent subspecialist in Pediatric Hematology/Oncology, capable of assuming a consultant’s role in the subspecialty. The resident must acquire a working knowledge of the theoretical basis of the subspecialty, including its foundations in related medical sciences and research.

Only candidates certified by the Royal College of Physicians and Surgeons of Canada in Pediatrics or Internal Medicine may be eligible for certification in Pediatric Hematology/Oncology.

Residents must demonstrate the requisite knowledge, skills, and behaviours for effective patient-centred care and service to a diverse population. In all aspects of subspecialist practice, the graduate must be able to address ethical issues and issues of gender, sexual orientation, age, culture, beliefs, and ethnicity in a professional manner.
PEDIATRIC HEMATOLOGY/ONCOLOGY COMPETENCIES

Two levels of knowledge and proficiency are referred to in this document:

**Foundational knowledge** indicates a level of knowledge sufficient for the clinical management of a condition.

**Expert knowledge** refers to an in-depth understanding of an area, from basic science to clinical application, and possession of skills to manage a problem in the area independently.

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**, Pediatric Hematologists/Oncologists integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centred care. **Medical Expert** is the central physician role in the CanMEDS framework.

**Key and Enabling Competencies: Pediatric Hematologists/Oncologists are able to...**

1. **Function effectively as consultants, integrating all of the CanMEDS Roles to provide optimal, ethical, and patient-centred medical care**
   1.1. Perform a consultation, including the presentation of well-documented assessments and recommendations in oral, written, and/or electronic form in response to a request from another health care professional
   1.2. Demonstrate use of all CanMEDS competencies relevant to Pediatric Hematology/Oncology
   1.3. Identify and appropriately respond to relevant ethical issues arising in patient care and medical decision-making
   1.4. Demonstrate the ability to prioritize professional duties when faced with multiple patients and problems
   1.5. Demonstrate compassionate and patient- and family-centred 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 behaviours appropriate to their practice**
   2.1. Apply knowledge of the clinical, socio-behavioural, and fundamental biomedical sciences relevant to Pediatric Hematology/Oncology, including the knowledge needed to effectively and ethically provide medical care for children with cancer and non-malignant hematologic disorders
   2.1.1. Foundational knowledge of...
OBJECTIVES OF TRAINING IN PEDIATRIC HEMATOLOGY/ONCOLOGY (2013)
(editorial revision 2016)

2.1.1. Physiological changes in growth and development as they relate to
cancer and non-malignant hematological disorders in pediatric
patients, including but not limited to normal values and the
maturation of hematopoietic organs and tissues

2.1.1.2. Pathophysiological processes as they relate to cancer and non-
malignant hematological disorders

2.1.1.3. Psychological processes in pediatric patients with cancer and non-
malignant hematological disorders

2.1.1.4. Cellular and molecular biology, biochemistry, pharmacology, and
immunology as they relate to the understanding of cancer and
non-malignant hematologic disorders

2.1.1.5. General principles of anatomical pathology as they relate to
Pediatric Hematology/Oncology

2.1.1.6. Disorders of immune function as related to Pediatric Hematology/
Oncology

2.1.2. Expert knowledge in hematopathology and laboratory medicine as it
relates to Pediatric Hematology/Oncology, including but not limited to
knowledge of the appropriate indications for, methods of, and limitations of

2.1.2.1. Peripheral blood morphology

2.1.2.2. Bone marrow aspirations and biopsies

2.1.2.3. Cerebral spinal fluid (CSF) assessment

2.1.2.4. Hemostasis and thrombosis evaluation

2.1.2.5. Transfusion medicine

2.1.2.6. Flow cytometry, including but not limited to immunophenotyping

2.1.2.7. Hemoglobinopathy investigations

2.1.2.8. Cytogenetics and molecular diagnostics

2.1.3. Foundational knowledge of general principles of diagnostic imaging as
they apply to Pediatric Hematology/Oncology

2.1.4. Expert knowledge of pediatric cancer, including but not limited to

2.1.4.1. Diagnostic workup for a patient with a potential underlying
malignancy

2.1.4.2. Diagnosis and management of pediatric malignancies, including
but not limited to

2.1.4.2.1. Leukemias and preleukemic disorders

2.1.4.2.2. Lymphomas

2.1.4.2.3. Central nervous system (CNS) tumours

2.1.4.2.4. Retinoblastoma
2.1.4.2.5. Wilms tumour
2.1.4.2.6. Neuroblastoma
2.1.4.2.7. Hepatoblastoma
2.1.4.2.8. Ewing sarcoma
2.1.4.2.9. Osteogenic sarcoma
2.1.4.2.10. Rhabdomyosarcoma
2.1.4.2.11. Germ cell tumour

2.1.4.3. Common pediatric oncologic emergencies, including but not limited to
2.1.4.3.1. Fever and neutropenia
2.1.4.3.2. Tumour lysis syndrome
2.1.4.3.3. Superior mediastinal syndrome
2.1.4.3.4. Hyperleukocytosis
2.1.4.3.5. Spinal cord compression

2.1.4.4. Cancer chemotherapy as it applies to pediatric oncology patients, including but not limited to its role, mechanisms of action, and toxicities related to specific chemotherapy agents
2.1.4.5. The role, indications, and complications of surgery as applied to the management of children with cancer
2.1.4.6. The role, indications, and complications of radiation therapy as applied to the management of children with cancer
2.1.4.7. The potential genetic implications for patients and families with inherited cancer predispositions, and the importance of genetic counselling

2.1.5. Expert knowledge of non-malignant hematologic diseases, including but not limited to
2.1.5.1. Diagnosis and management of pediatric hematological diseases, including but not limited to
2.1.5.1.1. Disorders of hematopoiesis
   2.1.5.1.1.1. Aplastic anemia
   2.1.5.1.1.2. Red cell aplasia and polycythemia
   2.1.5.1.1.3. Leukopenia and leukocytosis
   2.1.5.1.1.4. Amegakaryocytic thrombocytopenia and thrombocytosis
2.1.5.1.2. Red cell disorders
   2.1.5.1.2.1. Hemoglobinopathies
2.1.5.1.2.2. Red cell membrane defects
2.1.5.1.2.3. Red cell enzyme deficiencies
2.1.5.1.2.4. Nutritional anemias
2.1.5.1.2.5. Iron deficiency
2.1.5.1.2.6. Megaloblastic anemia
2.1.5.1.2.7. Dyserythropoiesis
2.1.5.1.2.8. Immune hemolytic anemia

2.1.5.1.3. White cell disorders
2.1.5.1.3.1. Lymphopenia and lymphocytosis
2.1.5.1.3.2. Neutropenia and neutrophilia
2.1.5.1.3.3. Eosinophilia
2.1.5.1.3.4. Neutrophil function defects
2.1.5.1.3.5. Storage diseases

2.1.5.1.4. Disorders of hemostasis and thrombosis
2.1.5.1.4.1. Thrombocytopenia and thrombocytosis
2.1.5.1.4.2. Platelet dysfunction
2.1.5.1.4.3. Congenital coagulation disorders
2.1.5.1.4.4. Acquired coagulation disorders
2.1.5.1.4.5. Hypercoagulable states
2.1.5.1.4.6. Disorders of fibrinolysis

2.1.5.1.5. Perinatal and developmental hematology
2.1.5.1.5.1. Anemia
2.1.5.1.5.2. Neutropenia
2.1.5.1.5.3. Thrombocytopenia
2.1.5.1.5.4. Bleeding diatheses
2.1.5.1.5.5. Leukocytosis

2.1.5.1.6. Splenomegaly and disorders of splenic function
2.1.5.1.7. Lymphadenopathy
2.1.5.1.8. Histiocytic disorders
2.1.5.1.8.1. Langerhans cell histiocytosis
2.1.5.1.8.2. Hemophagocytic lymphohistiocytosis
2.1.5.2. Potential genetic implications for patients and families with inherited hematological conditions, and the importance of genetic counselling

2.1.6. Expert knowledge of stem cell transplantation as it applies to Pediatric Hematology/Oncology, including but not limited to

2.1.6.1. Basic biology of hematopoiesis and hematopoietic stem cell transplant (HSCT), and the immunologic relationships between donor hematopoietic cells and the host

2.1.6.2. Indications for autologous and allogeneic stem cell transplantation

2.1.6.3. Basics of the human leukocyte antigen (HLA) system and the principles involved in choosing matched and unmatched stem cell donors

2.1.6.4. Different sources of available stem cells, specifically bone marrow, peripheral blood and cord blood, including methods of cryopreservation

2.1.6.5. Choice and implementation of preparative regimens used in HSCT, including but not limited to the use of radiation therapy

2.1.6.6. Pathogenesis of graft versus host disease (GVHD)

2.1.6.7. Strategies to prevent, diagnose, and manage potential complications of HSCT, including but not limited to sinusoidal obstructive syndrome (SOS), engraftment syndrome, graft rejection, and GVHD

2.1.7. Expert knowledge of supportive care related to the management of Pediatric Hematology/Oncology patients

2.1.7.1. Prevention and treatment of infectious complications

2.1.7.2. Prevention and treatment of chemotherapy-related organ dysfunction

2.1.7.3. Management of pain

2.1.7.4. Management of mucositis

2.1.7.5. Nutritional support

2.1.7.6. Management of constipation

2.1.7.7. Anti-emetic therapy

2.1.7.8. Blood product support

2.1.7.9. Care and use of central venous access devices

2.1.7.10. Psychosocial support

2.1.8. Expert knowledge of long-term followup of patients with Pediatric Hematology/Oncology problems for the purposes of

2.1.8.1. Disease monitoring
2.1.8.2. Detecting late effects of therapy, recognizing the particular risks and needs of children, including but not limited to early mortality, second malignancy, cardiac toxicity, neurocognitive deficits, endocrine dysfunction, and psychosocial challenges

2.1.8.3. Promotion and maintenance of a healthy lifestyle

2.1.9. Palliative care and pain/symptom management as applied to Pediatric Hematology/Oncology

2.1.9.1. Recognition and assessment of patients in need of pain and symptom management, including use of appropriate pain scales

2.1.9.2. Appropriate use of medications and other therapies to provide complex symptom relief for children

2.1.9.3. Recognition and assessment of chronic pain as relevant to Pediatric Hematology/Oncology, including but not limited to sickle cell pain, hemarthroses, and cancer-related pain

2.1.9.4. Community and hospital resources necessary to provide appropriate palliative care services

2.1.9.5. Recognition of the psychosocial needs of the patient and family in the context of palliative care and complex pain management

2.2. Describe the CanMEDS framework of competencies relevant to Pediatric Hematology/Oncology

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. Integrate the available best evidence and best practices to enhance the quality of care and patient safety in their practice

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. Elicit a history that is relevant, concise, and accurate to context and preferences, for the purposes of prevention and health promotion, diagnosis and/or management

3.3. Perform an efficient physical examination, demonstrating sensitivity to the patient’s needs and modifications necessary based on the patient’s age, gender, sexual orientation, and ethnicity

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. Pediatric cancer
3.5.1.1. Plan and coordinate an appropriate diagnostic workup for any new patient with a potential underlying malignancy

3.5.1.2. Diagnose and manage pediatric malignancies, including but not limited to
   3.5.1.2.1. Leukemias and preleukemic disorders
   3.5.1.2.2. Lymphomas
   3.5.1.2.3. CNS tumours
   3.5.1.2.4. Retinoblastoma
   3.5.1.2.5. Wilms tumour
   3.5.1.2.6. Neuroblastoma
   3.5.1.2.7. Hepatoblastoma
   3.5.1.2.8. Ewing sarcoma
   3.5.1.2.9. Osteogenic sarcoma
   3.5.1.2.10. Rhabdomyosarcoma
   3.5.1.2.11. Germ cell tumours

3.5.1.3. Manage a wide variety of pediatric cancer patients receiving medical care, including but not limited to those who are receiving chemotherapy, those who are experiencing toxicities related to treatment, and those who are acutely ill

3.5.1.4. Manage pediatric oncologic emergencies, including but not limited to
   3.5.1.4.1. Fever and neutropenia
   3.5.1.4.2. Tumour lysis syndrome
   3.5.1.4.3. Superior mediastinal syndrome
   3.5.1.4.4. Hyperleukocytosis
   3.5.1.4.5. Spinal cord compression

3.5.1.5. Consult with non-oncologic services as is appropriate for optimal patient care

3.5.2. Non-malignant hematologic diseases
   3.5.2.1. Evaluate a new patient referred for a possible underlying hematologic disorder
   3.5.2.2. Plan and coordinate the necessary confirmatory laboratory investigations
   3.5.2.3. Manage effectively children with acute hematologic disorders, including but not limited to the following emergency conditions
      3.5.2.3.1. Splenic sequestration crisis
3.5.2.3.2. Stroke
3.5.2.3.3. Life-threatening hemorrhage
3.5.2.3.4. Hemolytic crisis
3.5.2.3.5. Pulmonary embolism

3.5.2.4. Provide comprehensive, multidisciplinary care, including prevention and monitoring of complications, for patients with chronic hematologic conditions, including but not limited to sickle cell disease, thalassemia, and bleeding and thrombotic disorders

4. Use preventive and therapeutic interventions effectively

4.1. Implement a management plan in collaboration with a patient and the patient’s family

4.2. Demonstrate appropriate and timely application of preventive and therapeutic interventions relevant to Pediatric Hematology/Oncology, collaborating with other specialty services as is appropriate
   4.2.1. Select chemotherapy and other forms of systemic therapies, and describe the acute and chronic side effects related to the therapies
   4.2.2. Integrate multimodal therapies, including surgery and radiation therapy, for individualized patient care plans
   4.2.3. Manage medical emergencies and complications that may arise as a result of cancer or non-malignant hematological disorders and their treatment
   4.2.4. Provide supportive care, including but not limited to the prevention and management of pain, nausea, vomiting, and infections; the applicability/usefulness of blood components and growth factors; and the use and complications of central venous access devices

4.3. Obtain appropriate informed consent 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 and therapeutic procedures relevant to Pediatric Hematology/Oncology, including but not limited to
   5.1.1. Bone marrow aspiration and biopsy from sites appropriate to the size and clinical status of the child
   5.1.2. Lumbar puncture for diagnostic investigation and/or the administration of intrathecal medication

5.2. Obtain appropriate informed consent for procedures
5.3. Document and disseminate information related to procedures performed and their outcomes

5.4. Ensure adequate followup is arranged for procedures performed

6. **Seek appropriate consultation from other health professionals, recognizing the limits of their own 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 followup care services for a patient and the patient’s family

**Communicator**

**Definition:**

As **Communicators**, Pediatric Hematologists/Oncologists effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter.

**Key and Enabling Competencies: Pediatric Hematologists/Oncologists 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 Pediatric Hematologists/Oncologists, 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

      1.2.1. Communicate effectively with children of all ages, as well as with their families, in order to obtain a meaningful history, conduct a relevant physical examination, and provide the best care available for the disorder for which the consultation was requested

   1.3. Respect patient privacy, confidentiality, and autonomy

   1.4. Listen effectively

   1.5. Be aware of 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 and 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, while respecting individual privacy and confidentiality

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 and encourages discussion and participation in decision-making

3.1.1. Discuss complementary health care practices, their importance to families, and their potential benefits, risks, and limitations

3.1.2. Establish an atmosphere of open communication appropriate to the consultation, and convey interest, sensitivity, empathy, and support, including but not limited to the discussion of poor prognosis and end-of-life issues

3.1.3. Identify and present well-documented assessments and recommendations in oral, written, and/or electronic form, with respect to patient care, education, and expert opinion

3.1.4. Discuss with patients and their families appropriate current information, including benefits and risks, related to choices faced in Pediatric Hematology/Oncology, including but not limited to

3.1.4.1. Participation in clinical trials

3.1.4.2. Genetic testing and genetic counselling

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

4.2. 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 and breaking bad news to families, and demonstrate an understanding of coping mechanisms and supports available to ameliorate distress

5. **Convey effective oral and written information about a medical encounter**

5.1. Maintain clear, accurate, and appropriate records of clinical encounters and plans

5.2. Present verbal reports of clinical encounters and plans

5.3. Present medical information effectively to the public or media about a medical issue

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Collaborator

Definition:

As Collaborators, Pediatric Hematologists/Oncologists effectively work within a health care team to achieve optimal patient care.

Key and Enabling Competencies: Pediatric Hematologists/Oncologists are able to...

1. Participate effectively and appropriately in an interprofessional health care team
   1.1. Describe the subspecialist’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 diverse roles, responsibilities, and competencies of all members of the interprofessional team in relation to their own, and the value of such expertise in the care of children who are ill
   1.4. Work with others to assess, plan, provide, and integrate care for individuals and groups of patients
      1.4.1. Provide consultation with respect to diagnosis and delivery of optimal patient care, education, and medico-legal issues relevant to the care of children with cancer and non-malignant hematologic disorders
      1.4.2. Consult and collaborate with primary care physicians and other health care professionals, including pediatricians and family physicians
      1.4.3. Participate in interdisciplinary team activities within and between hospitals, other health care facilities, and collaborative groups, including but not limited to tumour board meetings
      1.4.4. Develop or contribute to the development of a care plan in collaboration with the members of the interdisciplinary team
   1.5. Work collaboratively in other activities and tasks; examples are research, educational work, program review, and/or administrative responsibilities
   1.6. Participate in interprofessional team meetings
   1.7. Enter into interdependent relationships with other professions for the provision of quality care
   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 with other health professionals effectively 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, Pediatric Hematologists/Oncologists are integral participants in health care organizations, organizing sustainable practices, making decisions concerning the allocation of resources, and contributing to the effectiveness of the health care system.

Key and Enabling Competencies: Pediatric Hematologists/Oncologists are able to...

1. Participate in activities that contribute to the effectiveness of their health care organizations and systems

   1.1. Work collaboratively with others in their organizations and share responsibility for health care delivery in intraprofessional and interprofessional settings

   1.2. Participate in systemic quality process evaluation and improvement, including but not limited to patient safety initiatives

      1.2.1. Demonstrate an understanding of standardization, quality control, quality assurance, and safety as each relates to hematopathology laboratory practices

      1.2.2. Demonstrate knowledge of the definition and role of audits, quality improvement, and risk management; and knowledge of adverse effects/incident reporting and complaint management in a hospital and ambulatory setting

      1.2.3. Demonstrate an understanding of cost/benefit ratios of diagnostic and therapeutic interventions; cost containment; and efficacy, effectiveness, and efficiency as they relate to quality assurance

   1.3. Describe the structure and function of the health care system as it relates to Pediatric Hematology/Oncology, including the roles of physicians

      1.3.1. Demonstrate knowledge of various forms of health care provision applicable to Pediatric Hematology/Oncology, in particular the relative advantages, disadvantages, and impacts on the child and family, including

         1.3.1.1. In-hospital care

         1.3.1.2. Ambulatory care

         1.3.1.3. Outreach/community care
1.3.1.4. Home care
1.3.1.5. Chronic care
1.3.1.6. Rehabilitation care
1.3.1.7. Palliative and hospice care

1.3.2. Demonstrate an understanding of population-based approaches to health care services and their implication for the Pediatric Hematology/Oncology patient population and for the pediatric population at large

1.3.3. Demonstrate an understanding of the social, societal, and governmental aspects of health care provision as applied to the Pediatric Hematology/Oncology patient population

1.3.4. Demonstrate an understanding of human resource planning as it applies to Pediatric Hematology/Oncology

1.4. Describe principles of health care 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. Implement processes to ensure personal practice improvement

2.3. Employ information technology appropriately for patient care

3. Allocate finite health care resources appropriately

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

3.1.1. Demonstrate an understanding of cost and cost-effectiveness of various forms of pediatric care as they apply to Pediatric Hematology/Oncology

3.1.2. Demonstrate an understanding of the use of finite resources, including but not limited to blood products and bone marrow donor sources

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

4. Serve in administration and leadership roles

4.1. Participate effectively in committees and meetings

4.2. Lead or implement change in health care

4.3. Plan relevant elements of health care delivery, such as work schedules
Health Advocate

Definition:

As Health Advocates, Pediatric Hematologists/Oncologists use their expertise and influence responsibly to advance the health and well-being of individual patients, communities, and populations.

Key and Enabling Competencies: Pediatric Hematologists/Oncologists 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
      1.1.1. Demonstrate in-depth knowledge of the health care needs and quality of life issues of children with hematologic/oncologic diseases and/or those having undergone hematopoietic stem cell transplantation
      1.1.2. Identify important determinants of health and health outcomes for children with hematologic/oncologic disease and/or those having undergone a hematopoietic stem cell transplantation
      1.1.3. Recognize that the health care needs of children are different from those of adults and that those needs change throughout the developmental continuum
      1.1.4. Recognize the importance of community services, including but not limited to school, recreation, and appropriate transportation, in the health of a child with a hematologic/oncologic disorder
      1.1.5. Ensure timely and appropriate care for adolescents and young adults with hematologic/oncologic disease as they transition from pediatric to adult health care services
   1.2. Identify opportunities for advocacy, health promotion, and disease prevention with individuals to whom they provide care
   1.3. Demonstrate an appreciation of the possibility of competing interests between individual advocacy issues and the community at large

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
      2.2.1. Demonstrate knowledge of the principles of clinical epidemiology that will permit the analysis of data for advocacy purposes, including competence to recognize, assess, and respond to the psychosocial, economic, societal, and biologic factors influencing the health of the pediatric hematology/oncology population
      2.2.2. Assess the ability of the pediatric hematology/oncology population to access needed services in the health and social support systems
2.3. Demonstrate an appreciation of 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 population, including barriers to access to care and resources

3.2. Identify vulnerable or marginalized populations within those served and respond appropriately

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

4.2.1. Identify the determinants of burden of morbidity and the importance of advocacy for the development of policies that might mitigate that burden

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

4.3.1. Describe how health care governance influences patient care, research, and educational activities at the local, regional, provincial, and national levels

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

4.4.1. Recognize and respond to those issues, settings, circumstances, or situations in which advocacy on behalf of patients, professions, or society is appropriate

4.5. Demonstrate an appreciation of 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, Pediatric Hematologists/Oncologists demonstrate a lifelong commitment to reflective learning and the creation, dissemination, application, and translation of medical knowledge.

**Key and Enabling Competencies: Pediatric Hematologists/Oncologists 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 on learning issues in practice
   1.4. Conduct a personal practice audit
   1.5. Pose an appropriate learning question, recognize and identify gaps in knowledge and expertise around the question, and formulate a plan to address the gap(s)
   1.6. Access and apply information relevant to the clinical practice of pediatric hematology/oncology using the principles of evidence-based medicine
   1.7. Integrate new learning into practice
   1.8. Evaluate the impact of any change in practice
   1.9. Document the learning process
      1.9.1. Attend and document participation in relevant meetings and educational activities

2. **Critically evaluate medical information and its sources 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
      2.2.1. Develop and implement a system to identify and critically review key current literature related to Pediatric Hematology/Oncology
      2.2.2. Demonstrate foundational knowledge of epidemiology and biostatistics, including the design, execution, and evaluation of clinical trials
      2.2.3. Execute a systematic search for evidence and critically evaluate medical literature to optimize problem-solving and decision-making in Pediatric Hematology/Oncology
   2.3. Apply principles of evidence-based medicine to evaluate quality of research publications
   2.4. Integrate critical appraisal conclusions into clinical care
3. **Facilitate the learning of patients, families, students, residents, other health professionals, the public, and others**

   3.1. Describe principles of learning relevant to medical education

   3.2. Identify collaboratively the learning needs and desired learning outcomes of others

      3.2.1. Develop effective educational strategies for trainees, including medical students, health care professionals, patients and family members, and the general public

      3.2.2. Assess accurately the needs of target groups with regard to information on Pediatric Hematology/Oncology

      3.2.3. Provide education for health care professionals and guidance to patients, using current and evolving scientific and technological approaches, on issues related to Pediatric Hematology/Oncology

      3.2.4. Evaluate the effectiveness of educational strategies employed to achieve learning objectives

   3.3. Select effective teaching strategies and content to facilitate others’ learning

   3.4. Deliver effective lectures or presentations

   3.5. Assess and reflect on a teaching encounter

   3.6. Provide constructive feedback to both teacher and students

   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. Demonstrate an understanding of the concepts of clinical research design

   4.7. Provide explanations to patients and families regarding clinical research trials

   4.8. Demonstrate critical appraisal skills

   4.9. Undertake and demonstrate progress of a scholarly project
Professional

Definition:

As Professionals, Pediatric Hematologists/Oncologists 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: Pediatric Hematologists/Oncologists 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

       1.1.1. Demonstrate specific strategies to enhance professional and personal awareness and interrelationships

       1.1.2. Demonstrate adherence to accepted practices of the profession and the local institution

   1.2. Demonstrate a commitment to delivering the highest quality care and maintenance of competence with integrity, honesty, and compassion

       1.2.1. Display attitudes commonly accepted as essential to professionalism and consistent with a consulting Pediatric Hematology/Oncology role

       1.2.2. Recognize personal strengths and weaknesses, including those related to professional competence

   1.3. Recognize and appropriately respond to ethical and legal issues encountered in practice

       1.3.1. Practice medicine in an ethically responsible manner that respects the medical, legal, and professional obligations of belonging to a self-regulating body

       1.3.2. Recognize, analyze, and develop approaches to resolving ethical issues related to Pediatric Hematology/Oncology

       1.3.3. Demonstrate knowledge of the legal and ethical issues related to Pediatric Hematology/Oncology

       1.3.4. Recognize, analyze, and attempt to resolve ethical issues in clinical practice, including but not limited to truth-telling, advance directives, confidentiality, conflict of interest, resource allocation, and research ethics

       1.3.5. Demonstrate an appreciation of ethical dilemmas, including but not limited to withdrawal of curative treatment, end-of-life therapy, and innovative therapies

       1.3.6. Demonstrate an understanding of relevant legislation that relates to the health care system in order to guide their clinical practice

       1.3.6.1. Recognize situations that require legal counsel and consultation

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1.4. Identify, declare, and manage perceived, potential, and actual conflicts of interest
1.5. Recognize the principles and limits of patient privacy and 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 understanding of the professional, legal, and ethical codes of practice
2.2. Fulfil the regulatory and legal obligations required of current practice
   2.2.1. Demonstrate knowledge of liability issues related to Pediatric Hematology/Oncology
   2.2.1.1. Recognize principles of liability
   2.2.1.2. Demonstrate adherence to practice guidelines
2.3. Demonstrate accountability to professional regulatory bodies
2.4. Recognize and respond appropriately 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

The document is to be reviewed by the Specialty Committee in Pediatric Hematology/Oncology by December 31, 2017.

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*Approved – Office of Specialty Education – August 2015*
*Revised – Specialty Committee – June 2016*
*Approved – Office of Specialty Education – November 2016*