

Effective for residents who enter training on or after July 1, 2021.

DEFINITION

Neonatal-Perinatal Medicine is a subspecialty of Pediatrics concerned with the maintenance of health and long-term development of the fetus, newborn, and infant. A Neonatal-Perinatal Medicine subspecialist (Neonatologist) is a Pediatrician who has undergone additional training to develop subspecialty knowledge, skills, and behaviours in the prevention, diagnosis, and management of disorders in this patient population.

NEONATAL-PERINATAL MEDICINE PRACTICE

Neonatologists provide comprehensive care for newborns and infants that are premature and/or critically ill due to conditions that include low birth weight, intrauterine growth restriction, pulmonary hypoplasia, respiratory failure, congenital heart disease, congenital anomalies, perinatal asphyxia, hypoglycemia, shock, jaundice, infections, and other life-limiting conditions.

Neonatologists provide initial and ongoing resuscitation with respiratory and hemodynamic support. They assess, diagnose, and provide initial and definitive management for newborns and infants with complex medical and surgical issues. They manage the transport of newborns and infants who require transfer to a care setting more appropriate to their needs. In some settings, neonatologists provide ongoing management following discharge from the neonatal intensive care unit (NICU) before transitioning care to another physician. Neonatologists also counsel expectant parents following the diagnosis of a fetal anomaly or threatened preterm labour.

The scope of Neonatal-Perinatal Medicine, together with the complex needs of critically ill neonates, delineates the practice location of neonatologists, requiring that they practise in a hospital with immediate access to life-saving equipment, advanced imaging services, and life support technologies and therapies. Neonatal-Perinatal Medicine practice is predominantly in an academic setting within NICUs, and with outreach to other areas of the hospital, including the delivery room and postpartum ward, as well as hospitals outside the academic institution.

Neonatologists consult with medical, surgical, and diagnostic specialists to establish and implement management plans for their patients. The highly specialized care they provide is

delivered by working effectively with an interprofessional team of nurses, respiratory therapists, and other health care professionals, in concert with patients' families¹.

ELIGIBILITY REQUIREMENTS TO BEGIN TRAINING

Royal College certification in Pediatrics

OR

Eligibility for the Royal College certification examination in Pediatrics

OR

Registration in a Royal College-accredited residency program in Pediatrics (see requirements for these qualifications)

A maximum of one year of training may be undertaken during concurrent training for certification in Pediatrics.

ELIGIBILITY REQUIREMENTS FOR EXAMINATION²

All candidates must be Royal College certified in Pediatrics in order to be eligible to write the Royal College examination in Neonatal-Perinatal Medicine.

NEONATAL-PERINATAL MEDICINE COMPETENCIES

Medical Expert

Definition:

As *Medical Experts*, Neonatologists integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional values in their provision of high-quality and safe patient-centred care. Medical Expert is the central physician Role in the CanMEDS Framework and defines the physician's clinical scope of practice.

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

1. Practise medicine within their defined scope of practice and expertise

- 1.1. Demonstrate a commitment to high-quality care of their patients
- 1.2. Integrate the CanMEDS Intrinsic Roles into their practice of Neonatal-Perinatal Medicine
- 1.3. Apply knowledge of the clinical and biomedical sciences relevant to Neonatal-Perinatal Medicine

¹ 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, caregivers, legal guardians, and substitute decision-makers.

² These eligibility requirements do not apply to Subspecialty Examination Affiliate Program (SEAP) candidates. Please contact the Royal College for information about SEAP.

NEONATAL-PERINATAL MEDICINE COMPETENCIES (2021)

- 1.3.1. The antenatal factors relevant to Neonatal-Perinatal Medicine, including
 - 1.3.1.1. Common disorders of pregnancy and conditions that contribute to a high-risk pregnancy
 - 1.3.1.2. Maternal factors influencing neonatal outcome, including maternal disease, medications, surgery, and substance use
 - 1.3.1.3. Effects of environmental and socio-economic factors on the mother and fetus
 - 1.3.1.4. Placental function, including placental circulation, gas exchange, and normal and aberrant growth
 - 1.3.1.5. Normal and aberrant fetal physiology, growth, and development
 - 1.3.1.6. Diagnosis and management of fetal medical and surgical conditions

- 1.3.2. Delivery room practice and resuscitation of newborns, including
 - 1.3.2.1. Physiological and biochemical adaptation to extrauterine life
 - 1.3.2.2. Assessment, resuscitation, and stabilization of healthy and at-risk preterm and term newborns

- 1.3.3. Intensive and convalescent care of newborns and infants, including
 - 1.3.3.1. Normal physiology of the neonatal period, including differences between the term and preterm newborns
 - 1.3.3.2. Growth, development, and nutrition of the normal and abnormal newborn and infant
 - 1.3.3.3. Common medical conditions in the newborn
 - 1.3.3.4. Common surgical conditions in the newborn, including congenital diaphragmatic hernia, gastroschisis, tracheoesophageal fistula, esophageal atresia, and neural tube defects
 - 1.3.3.5. Impact of neonatal physiology on the prescription of medications and other therapies, including assisted ventilatory support, oxygen therapy, and parenteral and enteral nutrition
 - 1.3.3.6. Parental/infant interaction, especially in the high-risk setting

- 1.3.4. Transport medicine aspects of Neonatal-Perinatal Medicine, including
 - 1.3.4.1. Physiological implications of ground and air transport
 - 1.3.4.2. Principles of pre-transport stabilization
 - 1.3.4.3. Principles of in-transport medical care

- 1.3.5. Developmental follow-up aspects of neonatology, including
 - 1.3.5.1. Long-term outcome of infants treated in the neonatal intensive care unit

- 1.3.6. Use of basic clinical epidemiology and biostatistics in the assessment of perinatal, neonatal, and infant outcomes
 - 1.3.7. Principles of neonatal resuscitation
 - 1.3.8. Principles and practise of assisted mechanical ventilation and other methods of respiratory support
 - 1.3.9. Principles and methods of invasive and/or non-invasive monitoring
 - 1.3.9.1. Respiratory status
 - 1.3.9.2. Hemodynamic status
 - 1.3.9.3. Nutritional status
 - 1.3.10. Indications, function, and limitations of biomedical devices used in the care of the infant, including
 - 1.3.10.1. Cardiorespiratory monitors
 - 1.3.10.2. Invasive and non-invasive ventilators
 - 1.3.10.3. Amplitude-integrated electroencephalography (aEEG)
 - 1.3.10.4. Targeted neonatal echocardiography
 - 1.3.10.5. Extracorporeal life support (ECLS)
 - 1.4. Perform appropriately timed clinical assessments with recommendations that are presented in an organized manner
 - 1.4.1. Perform a consultation for the pregnant woman and the newborn, and their families, in response to a request from another health care professional, including a Maternal-Fetal Medicine specialist, family physician, pediatrician, obstetrician, midwife, or other neonatologist
 - 1.5. Carry out professional duties in the face of multiple competing demands
 - 1.6. Recognize and respond to the complexity, uncertainty, and ambiguity inherent in Neonatal-Perinatal Medicine practice
 - 1.6.1. Convey the diagnosis, therapeutic plan, and prognosis to the family and health care team in the context of uncertainty
- 2. Perform a patient-centred clinical assessment and establish a management plan**
- 2.1. Prioritize issues to be addressed in a patient encounter
 - 2.1.1. Recognize, resuscitate, and stabilize patients sustaining, or at risk of, cardiopulmonary arrest or other life-threatening conditions
 - 2.2. Elicit a history, perform a physical exam, select appropriate investigations, and interpret their results for the purpose of diagnosis and management, disease prevention, and health promotion

NEONATAL-PERINATAL MEDICINE COMPETENCIES (2021)

- 2.2.1. Elicit a maternal, perinatal, neonatal, and family history that is relevant, concise, and accurate
 - 2.2.2. Perform a focused physical examination of the newborn and infant that is relevant, accurate, and adapted to the patient's clinical status and gestational age
 - 2.2.3. Assess pain and distress in newborns
 - 2.2.4. Interpret results of invasive and non-invasive monitoring
 - 2.2.4.1. Hemodynamic status, including volume status
 - 2.2.4.2. Respiratory status
 - 2.2.4.3. Neurologic status, including aEEG
 - 2.2.5. Recommend or select medically appropriate investigations of the mother, fetus, or newborn, taking into consideration special circumstances that apply to the newborn
 - 2.2.5.1. Diagnostic imaging
 - 2.2.5.2. Genetic testing
 - 2.2.5.3. Invasive and non-invasive diagnostic tests
 - 2.2.6. Interpret complete blood count results in newborns and infants
 - 2.2.7. Interpret blood gas results in newborns and infants
 - 2.2.8. Interpret common biochemistry results in newborns and infants, including blood glucose, electrolytes, calcium, magnesium, phosphate and liver function and thyroid function tests
 - 2.2.9. Interpret electrocardiograms
 - 2.2.10. Interpret plain radiographs
 - 2.2.11. Interpret the results of other medical imaging examinations
 - 2.2.12. Identify intraventricular hemorrhage and its sequelae on cranial ultrasound
 - 2.2.13. Integrate antenatal and postnatal information into the clinical assessment
- 2.3. Establish goals of care in collaboration with patients' families, which may include slowing disease progression, treating symptoms, achieving cure, improving function, and palliation
 - 2.3.1. Recognize and respond to changes in a patient's clinical status that indicate a need to reassess goals of care
 - 2.3.2. Recognize when ongoing resuscitation efforts are no longer effective and should be discontinued
- 2.4. Establish a patient-centred management plan for the following:

- 2.4.1. Emergency situations that arise in the delivery room, NICU, newborn nursery, and emergency department
- 2.4.2. Acute critical illness of any etiology, including
 - 2.4.2.1. Respiratory distress
 - 2.4.2.2. Shock
 - 2.4.2.3. Single or multiple organ dysfunction
 - 2.4.2.4. Sepsis
- 2.4.3. Perioperative care
- 2.4.4. Continuing and/or convalescent care
- 2.4.5. Pain and symptom control
- 2.4.6. End-of-life care, including withholding and/or withdrawing life-sustaining therapies

3. Plan and perform procedures and therapies for the purpose of assessment and/or management

- 3.1. Determine the most appropriate procedures or therapies
 - 3.1.1. Resuscitation and post-resuscitation stabilization
 - 3.1.2. Vascular access
 - 3.1.3. Respiratory support, including invasive and non-invasive ventilation
 - 3.1.4. Hemodynamic support
 - 3.1.5. Application of medical equipment and monitoring devices, including continuous cardiorespiratory monitoring
 - 3.1.6. Temperature regulation
 - 3.1.7. Nutritional therapy: enteral and parenteral
 - 3.1.8. Pharmacotherapy
 - 3.1.9. Phototherapy
 - 3.1.10. Blood component therapy
 - 3.1.11. Invasive and non-invasive diagnostic procedures
 - 3.1.12. Neonatal transport and pre-transport stabilization
 - 3.1.13. Supportive care
 - 3.1.14. End-of-life care
 - 3.1.15. Perioperative surgical care
- 3.2. Obtain and document informed consent, explaining the risks and benefits of, and the rationale for, a proposed procedure or therapy

- 3.3. Prioritize procedures or therapies, taking into account clinical urgency and available resources
- 3.4. Perform procedures in a skilful and safe manner, adapting to unanticipated findings or changing clinical circumstances
 - 3.4.1. Diagnostic procedures
 - 3.4.1.1. Blood sampling: capillary, venous, arterial, and from indwelling catheter
 - 3.4.1.2. Thoracentesis
 - 3.4.1.3. Pericardiocentesis
 - 3.4.1.4. Paracentesis
 - 3.4.1.5. Lumbar puncture
 - 3.4.1.6. Suprapubic aspiration of the bladder
 - 3.4.1.7. Use of transillumination assessment for
 - 3.4.1.7.1. Identification of a pneumothorax
 - 3.4.1.7.2. Vascular access, including peripheral arterial and venous access
 - 3.4.1.7.3. Identification of a hydrocele
 - 3.4.2. Therapeutic procedures
 - 3.4.2.1. Neonatal resuscitation and post-resuscitative care
 - 3.4.2.1.1. Cardiopulmonary resuscitation, including chest compressions
 - 3.4.2.1.2. Cardioversion and defibrillation
 - 3.4.2.2. Airway maintenance and ventilation
 - 3.4.2.2.1. Mask ventilation, using T-piece or anesthesia bag
 - 3.4.2.2.2. Laryngeal mask airway insertion
 - 3.4.2.2.3. Endotracheal intubation
 - 3.4.2.2.4. Management of the difficult and failed airway
 - 3.4.2.2.5. Airway maintenance, including non-invasive ventilation, continuous positive airway pressure (CPAP), and high flow nasal prong (HFNP)
 - 3.4.2.2.6. Initiation of and weaning from assisted ventilation
 - 3.4.2.2.7. Maintenance of long-term assisted ventilation
 - 3.4.2.2.8. Administration of surfactant
 - 3.4.2.3. Vascular access
 - 3.4.2.3.1. Peripheral intravenous (IV) catheter placement
 - 3.4.2.3.2. Peripheral arterial catheter placement
 - 3.4.2.3.3. Umbilical arterial and venous catheter placement

- 3.4.2.3.4. Intraosseous vascular access
- 3.4.2.3.5. Peripherally inserted central catheter (PICC) placement

- 3.4.2.4. Oro-/nasogastric tube placement
- 3.4.2.5. Urinary catheter placement
- 3.4.2.6. Thoracentesis and chest tube placement
- 3.4.2.7. Pericardiocentesis
- 3.4.2.8. Paracentesis
- 3.4.2.9. Exchange transfusion

- 3.4.3. Recognize and respond to procedural complications

4. Establish plans for ongoing care and, when appropriate, timely consultation

- 4.1. Implement a patient-centred care plan that supports ongoing care, follow-up on investigations, response to treatment, and further consultation
 - 4.1.1. Determine the necessity and timing for referral to other professionals for optimal patient care, including another physician, pharmacist, dietician, physiotherapist, occupational therapist, respiratory therapist, social worker, spiritual care professional, bioethicist, and legal expert
 - 4.1.2. Assess the need and timing of transfer to another level of care
 - 4.1.3. Determine the appropriate medical transport for safe patient transfer to another health care setting
 - 4.1.4. Assess each family's ability to access services in the health and social systems
 - 4.1.5. Arrange optimal follow-up care services for patients and their families upon discharge

5. Actively contribute, as an individual and as a member of a team providing care, to the continuous improvement of health care quality and patient safety

- 5.1. Recognize and respond to harm from health care delivery, including patient safety incidents
- 5.2. Adopt strategies that promote patient safety and address human and system factors

Communicator

Definition:

As *Communicators*, Neonatologists form relationships with patients' families that facilitate the gathering and sharing of essential information for effective health care.

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

1. Establish professional therapeutic relationships with patients' families

- 1.1. Communicate using a patient-centred and family-integrated approach that encourages trust and is characterized by empathy, respect, and compassion
 - 1.1.1. Demonstrate respect and understanding of the family's perspective and concern for the health of the infant and the impact of illness on the family
- 1.2. Optimize the physical environment for patient comfort and safety, and the dignity, privacy, and engagement of the family
- 1.3. Recognize when the perspectives, values, or biases of families, physicians, or other health care professionals may have an impact on the quality of care, and modify the approach to the patient accordingly
 - 1.3.1. Respect diversity and differences, including the impact of parental age, gender, sexual orientation, religion, ethnocultural background, and socioeconomic status on decision-making
 - 1.3.2. Demonstrate respect and understanding of the family's value systems
 - 1.3.3. Work effectively with families with different ethnocultural or language backgrounds
- 1.4. Respond to non-verbal behaviours to enhance communication
- 1.5. Manage disagreements and emotionally charged conversations
 - 1.5.1. Support and counsel families who are experiencing the stress of a high-risk pregnancy or a critically ill infant, or following the death of an infant
- 1.6. Adapt to the unique needs and preferences of each patient and to his or her clinical condition and circumstances

2. Elicit and synthesize accurate and relevant information, incorporating the perspectives of patients' families

- 2.1. Use patient-centred interviewing skills to effectively gather relevant biomedical and psychosocial information
 - 2.1.1. Gather information about the family's perspectives and values for end-of-life care
 - 2.2. Provide a clear structure for and manage the flow of an entire clinical encounter
 - 2.3. Seek and synthesize relevant information from other sources
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- 2.3.1. Gather information about the pregnancy, including maternal perinatal screening and serology, and fetal imaging and testing, when providing care for the newborn
- 2.3.2. Utilize all relevant sources of information, including other physicians, nurses, nurse practitioners, respiratory therapists, occupational and physical therapists, social workers, and midwives involved in the care of the mother, infant, or family

3. Share health care information and plans with patients' families

- 3.1. Share information and explanations that are clear, accurate, and timely, while assessing for understanding
 - 3.1.1. Use language and terminology that facilitates understanding and decision-making
- 3.2. Disclose harmful patient safety incidents to patients' families accurately and appropriately

4. Engage patients' families in developing plans that reflect the patient's health care needs and goals

- 4.1. Facilitate discussions with patients' families in a way that is respectful, non-judgmental, and culturally safe
 - 4.1.1. Facilitate discussions in antenatal and postnatal consultations, family meetings, and follow-up assessments
- 4.2. Assist patients' families to identify, access, and make use of information and communication technologies to support the care of their infants and management of their health
- 4.3. Use communication skills and strategies that help patients' families make informed decisions regarding the patient's health

5. Document and share written and electronic information about the medical encounter to optimize clinical decision-making, patient safety, confidentiality, and privacy

- 5.1. Document clinical encounters in an accurate, complete, timely, and accessible manner, in compliance with regulatory and legal requirements
- 5.2. Communicate effectively using a written health record, electronic medical record, or other digital technology
- 5.3. Share information with patients' families and others in a manner that enhances understanding and that respects patient and family privacy and confidentiality

Collaborator

Definition:

As *Collaborators*, Neonatologists work effectively with other health care professionals to provide safe, high-quality, patient-centred care.

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

1. Work effectively with physicians and other colleagues in the health care professions

- 1.1. Establish and maintain positive relationships with physicians and other colleagues in the health care professions to support relationship-centred collaborative care
 - 1.1.1. Contribute to productive communication and cooperation among colleagues, recognizing the multidisciplinary nature of neonatal-perinatal health care
- 1.2. Negotiate overlapping and shared responsibilities with physicians and other colleagues in the health care professions in episodic and ongoing care
 - 1.2.1. Demonstrate respect and understanding of the roles and responsibilities of other professionals within the neonatal-perinatal health care team, including nurses, nurse practitioners, respiratory therapists, social workers, pharmacists, dietitians, occupational therapists, and physiotherapists
- 1.3. Engage in respectful shared decision-making with physicians and other colleagues in the health care professions
 - 1.3.1. Work effectively as part of an interprofessional patient care team in intensive care and outpatient clinical settings
 - 1.3.2. Work effectively with the resuscitation team, including debriefing, crisis resource management, and closed-loop communication
 - 1.3.3. Provide advice and recommendations to health care professionals seeking expert neonatal-perinatal advice in antepartum settings and in clinical settings without direct access to an NICU
 - 1.3.4. Develop a care plan for the infant, including investigation, treatment, and continuing care, in collaboration with the members of the interprofessional team
 - 1.3.5. Work effectively with community and governmental agencies involved with the infant or family during or after hospitalization

2. Work with physicians and other colleagues in the health care professions to promote understanding, manage differences, and resolve conflicts

- 2.1. Show respect toward collaborators
- 2.2. Implement strategies to promote understanding, manage differences, and resolve conflict in a manner that supports a collaborative culture

3. Hand over the care of a patient to another health care professional to facilitate continuity of safe patient care

- 3.1. Determine when care should be transferred to another physician or health care professional
- 3.2. Demonstrate safe handover of care, using both oral and written communication, during a patient transition to a different health care professional, setting, or stage of care

Leader

Definition:

As *Leaders*, Neonatologists engage with others to contribute to a vision of a high-quality health care system and take responsibility for the delivery of excellent patient care through their activities as clinicians, administrators, scholars, or teachers.

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

1. Contribute to the improvement of health care delivery in teams, organizations, and systems

- 1.1. Apply the science of quality improvement to contribute to improving systems of patient care
 - 1.1.1. Participate in audits and quality improvement initiatives
 - 1.1.2. Identify, analyze, and minimize risk of critical incidents, adverse events, and complications of critical illness
 - 1.1.3. Implement quality improvement activities, including evidence-based practice, best practice guidelines and benchmarking, and change management
 - 1.1.4. Participate in the process of peer review
- 1.2. Contribute to a culture that promotes patient safety
- 1.3. Analyze patient safety incidents to enhance systems of care
 - 1.3.1. Participate in patient safety initiatives, and occurrence/incident reporting
 - 1.3.2. Participate in risk management and complaint management
- 1.4. Use health informatics to improve the quality of patient care and optimize patient safety
 - 1.4.1. Identify and apply perinatal and neonatal databases (local, provincial/territorial, and national) as sources of population data

2. Engage in the stewardship of health care resources

- 2.1. Allocate health care resources for optimal patient care

2.1.1. Assess cost/benefit ratios of diagnostic and therapeutic interventions for cost containment, efficacy, effectiveness, and efficiency

2.2. Apply evidence and management processes to achieve cost-appropriate care

3. Demonstrate leadership in professional practice

3.1. Demonstrate leadership skills to enhance health care

3.1.1. Apply knowledge of the structure and function of the health care system as it relates to Neonatal-Perinatal Medicine

3.1.1.1. Systems of regionalized perinatal and neonatal care, including the levels of maternal and neonatal care and their capabilities

3.1.1.2. Appropriate placement of mothers and infants within a regionalized perinatal and neonatal health care system to ensure optimal care and effective use of health care resources

3.1.1.3. Basic concepts of the physical design and function of the NICU

3.1.1.4. Administrative organization required to operate an NICU

3.1.1.5. NICU staffing requirements, skills, education, and organization

3.1.1.6. NICU equipment requirements

3.1.2. Manage the clinical, academic, and administrative affairs of an NICU

3.1.2.1. Facilitate the clinical care of a patient in NICU

3.1.2.1.1. Triage and prioritize patients for admission to level II and level III units

3.1.2.1.2. Manage safe and timely admission to and discharge from NICU

3.1.2.1.3. Supervise and delegate to other health care professionals according to competence and role

3.1.2.1.4. Facilitate effective multidisciplinary and interprofessional team cooperation

3.1.2.2. Manage NICU resources by applying knowledge of the following:

3.1.2.2.1. Criteria for admission to and discharge from NICU

3.1.2.2.2. Common risk factors for post-NICU readmission

3.1.2.2.3. Published standards of care at the local, national, and international level, including consensus statements, clinical practice guidelines, and care bundles

3.1.2.2.4. Principles of local, provincial/territorial, and national health care legislation applicable to Neonatal-Perinatal Medicine

3.1.3. Facilitate the NICU team's participation in scholarly work

3.2. Facilitate change in health care to enhance services and outcomes

4. Manage career planning, finances, and health human resources in personal practice(s)

4.1. Set priorities and manage time to integrate practice and personal life

4.2. Manage personal professional practices(s) and career

4.2.1. Manage clinical rounds in a timely and effective manner

4.3. Implement processes to ensure personal practice improvement

4.3.1. Implement clinical audits, including mortality reviews and complication rates

Health Advocate

Definition:

As *Health Advocates*, Neonatologists contribute their expertise and influence as they work with communities or patient populations to improve health. They work with those they serve to determine and understand needs, speak on behalf of others when required, and support the mobilization of resources to effect change.

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

1. Respond to an individual patient's health needs by advocating with the family within and beyond the clinical environment

1.1. Work with families to address determinants of health that affect their infants and their access to needed health services or resources

1.1.1. Facilitate access to social services and financial resources necessary for the care of an infant and family before birth, during hospitalization, and after discharge

1.2. Work with families to increase opportunities to adopt healthy behaviours

1.2.1. Promote practices that support optimal infant neurodevelopment and family resilience

1.2.2. Promote and support policies that improve health outcomes for infants, including breastfeeding, cessation of parental smoking, newborn screening, and routine infant immunization

1.3. Incorporate disease prevention, health promotion, and health surveillance into interactions with individual patients and families

2. Respond to the needs of the communities or populations they serve by advocating with them for system-level change in a socially accountable manner

- 2.1. Work with a community or population to identify the determinants of health that affect them
 - 2.1.1. Describe the communities and populations that they serve, identifying risk factors for marginalization and barriers to accessing care and resources that can affect perinatal health and neonatal outcomes
 - 2.1.2. Identify groups at increased risk of adverse pregnancy and neonatal outcomes
 - 2.1.3. Identify health care issues in the general population that are relevant to Neonatal-Perinatal Medicine, including substance use and mental health
 - 2.1.4. Describe the use of population data to identify health concerns, including rates of adolescent pregnancy, low birth weight, substance use, birth defects, and perinatal mortality and morbidity
- 2.2. Improve clinical practice by applying a process of continuous quality improvement to disease prevention, health promotion, and health surveillance activities
- 2.3. Contribute to a process to improve health in the community or population they serve
 - 2.3.1. Describe the role of governmental and non-governmental organizations such as the Canadian Paediatric Society and community and parent advocacy groups in developing health policies and advocating for infants and families
 - 2.3.2. Demonstrate knowledge of policy implementation or change resulting from advocacy by physicians that affected maternal, fetal, and neonatal health, such as folic acid supplementation and incidence of neural tube defects
 - 2.3.3. Describe how public policy impacts on the health of the mother, fetus, or infant, either positively or negatively, including communicable diseases, and tobacco and substance use

Scholar

Definition:

As *Scholars*, Neonatologists demonstrate a lifelong commitment to excellence in practice through continuous learning, and by teaching others, evaluating evidence, and contributing to scholarship.

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

1. Engage in the continuous enhancement of their professional activities through ongoing learning

- 1.1. Develop, implement, monitor, and revise a personal learning plan to enhance professional practice

- 1.2. Identify opportunities for learning and improvement by regularly reflecting on and assessing their performance using various internal and external data sources
- 1.3. Engage in collaborative learning to continuously improve personal practice and contribute to collective improvements in practice

2. Teach students, residents, the public, and other health care professionals

- 2.1. Recognize the influence of role-modelling and the impact of the formal, informal, and hidden curriculum on learners
- 2.2. Promote a safe and respectful learning environment
- 2.3. Ensure patient safety is maintained when learners are involved
 - 2.3.1. Supervise learners to ensure they work within their limits
 - 2.3.2. Balance supervision and graduated responsibility, maintaining patient safety while providing learners the opportunity for autonomy and professional development
- 2.4. Plan and deliver learning activities
- 2.5. Provide feedback to enhance learning and performance
 - 2.5.1. Conduct debriefing sessions as a teaching and reflective tool following difficult resuscitations or adverse outcomes
 - 2.5.2. Assess the knowledge, skills, and competence of junior learners
- 2.6. Assess and evaluate learners, teachers, and programs in an educationally appropriate manner

3. Integrate best available evidence into practice

- 3.1. Recognize practice uncertainty and knowledge gaps in clinical and other professional encounters and generate focused questions that can address them
- 3.2. Identify, select, and navigate pre-appraised resources
- 3.3. Critically evaluate the integrity, reliability, and applicability of health-related research and literature
- 3.4. Integrate evidence into decision-making in their practice
 - 3.4.1. Apply the principles of levels of evidence
 - 3.4.2. Apply evidence for and against specific therapeutic interventions or treatments
 - 3.4.3. Apply integrative literature, including meta-analyses, practice guidelines, decision analyses, and economic analyses

4. Contribute to the creation and dissemination of knowledge and practices applicable to health

- 4.1. Demonstrate an understanding of the scientific principles of research and scholarly inquiry and the role of research evidence in health care
- 4.2. Identify ethical principles for research and incorporate them into obtaining informed consent, considering potential harms and benefits, and considering vulnerable populations
 - 4.2.1. Apply the principles of research ethics, especially in application to infants and pregnancies
 - 4.2.2. Ensure informed consent is obtained for participation in research projects, where applicable
- 4.3. Contribute to the work of a research program
- 4.4. Pose questions amenable to scholarly investigation and select appropriate methods to address them
 - 4.4.1. Conduct scholarly work
- 4.5. Summarize and communicate to professional and lay audiences, including patients' families, the findings of relevant research and scholarly inquiry
 - 4.5.1. Disseminate scholarly work locally, nationally, and/or internationally

Professional

Definition:

As *Professionals*, Neonatologists are committed to the health and well-being of individual patients and society through ethical practice, high personal standards of behaviour, accountability to the profession and society, physician-led regulation, and maintenance of personal health.

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

1. Demonstrate a commitment to patients by applying best practices and adhering to high ethical standards

- 1.1. Exhibit appropriate professional behaviours and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality
 - 1.1.1. Recognize circumstances where personal prejudices or biases may affect behaviour, including cultural, financial, and academic aspects, and respond appropriately
- 1.2. Demonstrate a commitment to excellence in all aspects of practice
 - 1.2.1. Develop and demonstrate use of a framework for implementing published standards of care

- 1.2.2. Demonstrate responsibility for safe patient care, including effective transfer and continuity of care
- 1.2.3. Demonstrate an understanding of the role and responsibilities of the neonatologist at the local, regional, and national levels
- 1.3. Recognize and respond to ethical issues encountered in practice
 - 1.3.1. Identify and appropriately respond to the ethical issues arising in Neonatal-Perinatal Medicine, such as futility of care and de-escalation of care, including withholding and withdrawal of life-sustaining treatment
 - 1.3.2. Develop and demonstrate use of a framework for recognizing and dealing with ethical issues in clinical and/or research practice, including truth-telling, consent, conflict of interest, resource allocation, privacy and confidentiality, and end-of-life-care
- 1.4. Recognize and manage conflicts of interest
- 1.5. Exhibit professional behaviours in the use of technology-enabled communication
- 2. Demonstrate a commitment to society by recognizing and responding to societal expectations in health care**
 - 2.1. Demonstrate accountability to patients, society, and the profession by responding to societal expectations of physicians
 - 2.2. Demonstrate a commitment to patient safety and quality improvement
- 3. Demonstrate a commitment to the profession by adhering to standards and participating in physician-led regulation**
 - 3.1. Fulfil and adhere to professional and ethical codes, standards of practice, and laws governing practice
 - 3.1.1. Incorporate medico-legal considerations in the care of critically ill newborns and infants
 - 3.2. Recognize and respond to unprofessional and unethical behaviours in physicians and other colleagues in the health care professions
 - 3.3. Participate in peer assessment and standard setting
- 4. Demonstrate a commitment to physician health and well-being to foster optimal patient care**
 - 4.1. Exhibit self-awareness and manage influences on personal well-being and professional performance
 - 4.1.1. Develop effective strategies to monitor fatigue, burnout, and psychological distress, and mitigate effects on clinical performance

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- 4.1.2. Maintain capacity for professional clinical performance in challenging situations
- 4.1.3. Apply strategies to mitigate the personal impact of patient safety incidents and adverse outcomes

- 4.2. Manage personal and professional demands for a sustainable practice throughout the physician life cycle
- 4.3. Promote a culture that recognizes, supports, and responds effectively to colleagues in need
 - 4.3.1. Recognize and respond appropriately to impaired performance in self and colleagues

This document is to be reviewed by the Specialty Committee in Neonatal-Perinatal Medicine by December 31, 2021.

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