

Neonatal Intensive Care Unit (NICU) CBME Rotation Objectives **by STAGE and CanMEDS Competency**

TRANSITION TO DISCIPLINE 2-3 BLOCKS	FOUNDATIONS OF DISCIPLINE 6-9 BLOCKS	CORE OF DISCIPLINE 9-12 BLOCKS	TRANSITION TO PRACTICE 1-2 BLOCKS
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Fellows rotate in NICU for 2.5 blocks in TTD stage, 3 blocks in Foundation and 4-5 in Core of discipline. Fellows rotate for 1-2 blocks in NICU during TTP for special training experienced “NICU-junior attending” rotation.

STAGE: TRANSITION TO DISCIPLINE

Duration: 2 blocks (8 weeks in the first 3 months)

EPAs TO BE COMPLETED:

TTD EPA #2: Performing clinical assessments for infants without complex conditions, and developing management plans:

- PART A: clinical assessment (2 observations of achievement)**
- PART B: clinical documentation (2 observations of achievement)**

TTD EPA #3: Providing clinical updates about the condition and management of infants without complex conditions (2 observations of achievement)

Objectives:

MEDICAL EXPERT

- 1.4 Perform appropriately timed clinical assessments with recommendations that are presented in an organized manner
- *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 (SEE EXPANSION AT END OF DOCUMENT)**
- *2.4 Establish a patient-centred management plan for the following (SEE EXPANSION AT END OF DOCUMENT)**

COMMUNICATOR

- 1.1 Communicate using a patient-centred and family-integrated approach that encourages trust and is characterized by empathy, respect, and compassion
- 1.4 Respond to non-verbal behaviors to enhance communication
- 3.1 Share information and explanations that are clear, accurate, and timely, while assessing for understanding

5.1 Document clinical encounters in an accurate, complete, timely, and accessible manner, in compliance with regulatory and legal requirements

PROFESSIONAL

1.2 Demonstrate a commitment to excellence in all aspects of practice

STAGE: FOUNDATION OF DISCIPLINE

Duration: 4 blocks over 9 blocks of time

EPAs Mapped to this Stage: FOD 4, 5, 6, 7, 8, 10

Foundations EPA #5: Assessing infants with complex conditions and developing admission plans
Assessment Plan: 7 observations of achievement.

Foundations EPA #6: Providing ongoing management for patients without complex conditions
Examples of patients without complex conditions include neonates with respiratory distress, severe hypoglycemia, neonatal sepsis, severe hyperbilirubinemia, hypoxic- ischemic encephalopathy without multiorgan injury, seizures, and common surgical disorders.
Assessment Plan: Direct and/or indirect observation. Collect 10 observations of achievement.

Foundations EPA #7: Reaching shared decisions with families regarding non-critical aspects of care.
Examples include discontinuation of apnea monitoring, transfer to level 2 care, and feeding plans.
Assessment Plan: Collect 3 observations of achievement. Direct observation by supervisor, with input from other health care providers and families

Foundations EPA #8: Providing clear and concise handover at transitions of care

Key Features: This EPA focuses on verbal and written communication with other health professionals, including anticipatory guidance, during transitions of care.
Assessment Plan: Collect 6 observations of achievement.

Foundations EPA #10 Documenting clinical encounters. **Examples: admission** histories, consultation reports, progress notes, discharge.

Assessment: Collect 8 observations of achievement.

Objectives:

MEDICAL EXPERT

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 (SEE EXPANSION AT END OF DOCUMENT)**

1.4 Perform appropriately timed clinical assessments with recommendations that are presented in an organized manner

2.1 Prioritize issues to be addressed in a patient encounter

***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 (SEE EXPANSION AT END OF DOCUMENT)**

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

***2.4 Establish a patient-centred management plan for the following (SEE EXPANSION AT END OF DOCUMENT)**

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

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 skillful and safe manner, adapting to unanticipated findings or changing clinical circumstances (SEE EXPANSION AT END OF DOCUMENT)**

4.0 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

5.2 Recognize and respond to harm from health care delivery, including patient safety incidents

COMMUNICATOR

1.3 Optimize the physical environment for patient comfort and safety, and the dignity, privacy, and engagement of the family

1.4 Respond to non-verbal behaviors to enhance communication

1.5 Manage disagreements and emotionally charged conversations

1.6 Adapt to the unique needs and preferences of each patient and to his or her clinical condition and circumstances

2.2 Provide a clear structure for and manage the flow of an entire clinical encounter

3.1 Share information and explanations that are clear, accurate, and timely, while assessing for understanding

4.1 Facilitate discussions with patients' families in a way that is respectful, non-judgmental, and culturally safe

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

5.1 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

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

1.2 Negotiate overlapping and shared responsibilities with physicians and other colleagues in the health care professions in episodic and ongoing care

3.0 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

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

1.3 Analyze patient safety incidents to enhance systems of care

2.0 Engage in the stewardship of health care resources

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

3.0 Demonstrate leadership in professional practice

HEALTH ADVOCATE

- 1.2 Work with families to increase opportunities to adopt healthy behaviours
- 2.1 Work with a community or population to identify the determinants of health that affect them
- 2.3 Contribute to a process to improve health in the community or population they serve

SCHOLAR

- 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

PROFESSIONAL

- 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
- 1.4 Recognize and manage conflicts of interest
- 1.5 Exhibit professional behaviours in the use of technology-enabled communication
- 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
- 3.1 Fulfill and adhere to professional and ethical codes, standards of practice, and laws governing practice
- 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

STAGE: CORE OF DISCIPLINE

Duration: 6 blocks over 10-12 blocks of time

EPAs Mapped to this Stage: COD 4, 5, 6, 7, 8, 9, 10

Core EPA #5: Providing ongoing management for critically ill infants, including extremely preterm, and chronically ill infants with complex conditions

Examples include patients with failure of the respiratory, cardiovascular, and other organ systems, congenital diaphragmatic hernia, complex gastroschisis, tracheoesophageal fistula (TEF), esophageal atresia, neural tube and other neurological malformations, hypoxic-ischemic encephalopathy with multi-organ failure, metabolic conditions, hematologic and oncologic conditions, and other rare genetic or congenital disorders. This EPA also includes providing ongoing assessment and management of specific medical needs such as providing pain, sedation and comfort management, wound assessment, gastrostomy, ostomy and tracheostomy care, and the management of infants that are technology dependent including troubleshooting that equipment.

Assessment Plan: Direct and/or indirect observation by supervisor. Collect 10 observations of achievement.

Core EPA #6: Coordinating transitions in care setting and follow up for patients with complex conditions

Examples: This EPA focuses on the coordination required to provide continuity of care following discharge or transfer for patients with complex medical issues and/or psychosocial social issues. The observation of this EPA must include the incorporation of input from the families and/or other health care professionals involved in these discussions.

Assessment Plan: Direct and/or indirect observation by supervisor with input from family and other health care professional. Collect 2 observations of achievement.

Core EPA #7: Reaching shared decisions with families regarding patients with medical complexity and/or life limiting conditions

Examples: This EPA focuses on communication skills applied in the setting of establishing goals of care and management plans for patients with medical complexity and/or life limiting conditions for whom palliative care and/or organ donation would be an option.

Assessment Plan: Direct observation by supervisor, with input from other health care providers and families. Collect 3 observations of achievement.

Core EPA #8: Leading rounds and coordinating inpatient care

Assessment Plan:

Part A: Medical and team management. Direct observation by neonatologist.
Collect 4 observation over at least 2 weeks.

Part B: Interactions with team. Multiple observers provide feedback individually, which is then collated to one report for Competence Committee review. Role of observer: nurse; nurse practitioner, respiratory therapist; student; resident; physician; physician assistant; other observer
Collect feedback from at least 5 observers, which should represent at least 3 different health professions, on 1 occasion during Core.

Core EPA #9: Identifying, analyzing, and disclosing patient and system-level safety events

Assessment Plan: Direct observation or case review by supervisor. Collect 2 observations of achievement.

Core EPA #10: Identifying learning needs from clinical encounters and addressing gaps in knowledge and skills. Assessment Plan: Review of learning plan by supervisor, mentor, coach or academic advisor.
Collect 3 plans.

Objectives:

MEDICAL EXPERT

- 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 (SEE EXPANSION AT END OF DOCUMENT)**

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

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 (SEE EXPANSION AT END OF DOCUMENT)**

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 (SEE EXPANSION AT END OF DOCUMENT)**

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

***3.1 Determine the most appropriate procedures or therapies (SEE EXPANSION AT END OF DOCUMENT)**

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 skillful and safe manner, adapting to unanticipated findings or changing clinical circumstances**

4.0 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**

5.2 Recognize and respond to harm from health care delivery, including patient safety incidents

COMMUNICATOR

1.1 Communicate using a patient-centred and family-integrated approach that encourages trust and is characterized by empathy, respect, and compassion

1.2 Optimize the physical environment for patient comfort and safety, and the dignity, privacy, and engagement of the family

1.4 Respond to non-verbal behaviors 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

2.2 Provide a clear structure for and manage the flow of an entire clinical encounter

3.1 Share information and explanations that are clear, accurate, and timely, while assessing for understanding

3.2 Disclose harmful patient safety incidents to patients' families accurately and appropriately

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

5.1 Recognize and respond to harm from health care delivery, including patient safety incidents

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

- 1.0 Work effectively with physicians and other colleagues in the health care professions
- 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**
- 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
- 3.0 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

- 1.0 Contribute to the improvement of health care delivery in teams, organizations, and systems
- 1.3 Analyze patient safety incidents to enhance systems of care
- 2.0 Engage in the stewardship of health care resources
 - 2.1 Allocate health care resources for optimal patient care
 - 2.2 Apply evidence and management processes to achieve cost-appropriate care
- 3.0 Demonstrate leadership in professional practice
- 4.0 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

HEALTH ADVOCATE

- 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
- 2.1 Work with a community or population to identify the determinants of health that affect them
- 2.3 Contribute to a process to improve health in the community or population they serve

SCHOLAR

- 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

PROFESSIONAL

- 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
- 1.3 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
- 2.0 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
- 3.0 Demonstrate a commitment to the profession by adhering to standards and participating in physician-led regulation
 - 3.1 Fulfill and adhere to professional and ethical codes, standards of practice, and laws governing practice
 - 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
- 4.0 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
 - 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 sustainable practice throughout the physician life cycle

***EXPANSION**

MEDICAL EXPERT 1.3

- 1.3 Apply knowledge of the clinical and biomedical sciences relevant to Neonatal-Perinatal Medicine
 - 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 practice 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)

MEDICAL EXPERT 2.2

- 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
 - 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

MEDICAL EXPERT 2.4

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

MEDICAL EXPERT 3.1

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

MEDICAL EXPERT 3.4

3.4 Perform procedures in a skillful 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

MEDICAL EXPERT 4.1

- 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

COLLATORATOR 1.3

- 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



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NEONATAL PERINATAL MEDICINE PROGRAM – Room 4F

NICU ORIENTATION PACKAGE

SUMMARY

Fellows will participate in a total of 9 NICU rotations during fellowship in order to learn how to manage infants on the unit (from extreme premature infants to complex care newborns less than 1 year old). This rotation will also include covering psychosocial rounds and family meetings.

CONTACT INFORMATION

Neonatology staff: Ipsita Goswami
Email: goswamii@mcmaster.ca

Administrative assistant: Kelly Binkle

DAILY ACTIVITIES (9AM-5PM)

Main Activities:

- ✓ At the beginning of our rotation, fellows are to identify the staff responsible for their NICU rotation that week and communicate with them in regards to team management, personal objectives and goals.
- ✓ Different resources are available to fellows in regards to different antenatal consultations. See Appendix 1.
- ✓ Handover occurs in the unit between 8 and 9 am. After handover, fellows are to round on their patients and write up their daily orders (infusions need to be re-written daily, and certain medications need to be reordered). See Appendix 3.
- ✓ Rounds usually begin at 10:00 and should not last beyond 12:00. This would include patients in A or B and E. Alternate the days you begin in E pod (for instance, Monday: A pod first, Tuesday: E pod first etc).
- ✓ Once rounds are complete, complete examining your infants and then complete your notes. Often times, the afternoon is booked with family meetings which you can attend and lead.
- ✓ The afternoon is also a good opportunity to organize teaching with fellows based on certain cases seen in the unit.
- ✓ Daily notes are written for all patients. On Wednesday to Friday, a weekly summary is completed. (See Appendix 4).
- ✓ Handover lists are to be updated by the end of the day and handed over to the night team.
- ✓ Handover should take the S-BAR format (See Appendix 5).
- ✓ At the end of each week, fellows are to discuss feedback with their respective staff in response to their personal objectives and goals.

ROTATION SPECIFIC OBJECTIVES

Royal College objectives are available online and are also available on the macneonatal website (see Appendix 2). However, certain medical expert cases are to be covered (either performing a consult or discussed with staff. The following is a logbook for such consultations.

Consultation Type	Type of task (consult, teaching, reading)	Task completed?
Cardiovascular		
Congenital Critical Heart Disease		
Heart Failure		
PDA		
Arrhythmia		
Pulmonary HTN		
Shock		
ECMO		
Respiratory		
Congenital diaphragmatic hernia		
PPHN		
RDS		
Pulmonary hypoplasia		
MAS		
TTN		
BPD		
Tracheostomy		
Neurological		
Seizures		
IVH		
PHH		
Shunt		
Neonatal Abstinence Syndrome		
HIE		
Subgaleal Hemorrhage		
Hematological		
Anemia		
Thrombocytopenia		
Gastrointestinal		
Esophageal Atresia		
Duodenal Atresia		
Anal Atresia		
Abdominal Wall Defects		
Necrotizing enterocolitis		
GERD		
Short Bowel Syndrome		
Pancreatic insufficiency		
Liver Failure		
Cholestasis		
G-tube		
Genito-urinary		

	Hydronephrosis		
	Posterior Urethral Valves		
	Ambiguous Genitalia		
	AKI		
	CKD		
	Dialysis		
Genetic			
	Aneuploidies		
	Hydrops		
	Skeletal Dysplasia		
	Genetic tests		
Infectious disease			
	TORCHES		
	Early onset sepsis		
	Late onset sepsis		
	Meningitis		
Endocrinological			
	Hypoglycemia		
	Hyponatremia		
	Hypothyroidism		
	Adrenal Insufficiency		
Extreme prematurity			
Multiple gestations			
	TTTS/TAPS		
Drug exposures			

CALENDAR (TEMPLATE)

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1					
8:00-9:00	Morning Handover	Morning Handover	Morning Handover	Grand rounds 8:00-9:00	Morning Handover
9:00-10:00		Journal Club	Case based teaching	Morning Handover	MFM rounds
13:00-16:00	Meet with staff for weekly goals			AHD	
Week 2					
8:00-9:00	Morning Handover	Morning Handover	Morning Handover	Grand rounds 8:00-9:00	Morning Handover
9:00-10:00		Journal Club	Case based teaching	Morning Handover	MFM rounds
13:00-16:00	Meet with staff for weekly goals			AHD	
Week 3					
8:00-9:00	Morning Handover	Morning Handover	Morning Handover	Grand rounds 8:00-9:00	Morning Handover
9:00-10:00		Journal Club	Case based teaching	Morning Handover	MFM rounds
13:00-16:00	Meet with staff for weekly goals			AHD	
Week 4					
8:00-9:00	Morning Handover	Morning Handover	Morning Handover	Grand rounds 8:00-9:00	Morning Handover
9:00-10:00		Journal Club	Case based teaching	Morning Handover	MFM rounds
13:00-16:00	Meet with staff for weekly goals			AHD	

APPENDIX 1: RESOURCES FOR ROTATION

Commented [BS1]: Each contact should place resources they would like for fellows to read by the end of rotation

APPENDIX 2: EPA TO ACHIEVE

NICU

TTD02- Performing clinical assessments for infants without complex conditions, and developing management plans (2 Admissions + 2 Documentations)

TTD03- Providing clinical updates about the condition and management of infants without complex conditions (2 Parents update)

FDD04- Performing the foundational procedures of Neonatal Perinatal Medicine (42 Observations)

FDD05- Assessing infants WITHOUT complex conditions and developing admission plans for level 3 NICU care (7 Observations)

FDD06- Providing ongoing management for patients without complex conditions in a level 2 or 3 NICU (10 Observations)

FDD07- Reaching shared decisions with families regarding non-critical aspects of care (3 Observations)

FDD08- Providing clear and concise handover at transitions of care (6 Observations)

FDD10- Documenting clinical encounters (8 Observations)

CDD04- Performing the Core procedures of Neonatal Perinatal Medicine (18 Observations)

CDD05- Providing ongoing management for critically ill infants, including extremely preterm, and chronically ill infants with complex conditions (10 Observations)

CDD06- Coordinating transitions in care setting and follow up for patients with complex conditions (2 Observations)

CDD07- Reaching shared decisions with families regarding patients with medical complexity and/or life limiting conditions (3 Observations)

CDD08- Leading rounds and coordinating inpatient care (4 Observations)

CDD09- Identifying, analyzing, and disclosing patient and system-level safety events (2 Observations)

CDD10- Identifying learning needs from clinical encounters and addressing gaps in knowledge and skills (3 Observations)

TTP01- Managing a tertiary care NICU service (4 Observations OVER 1 WEEK EACH)

L2N (Level 2 Neonatology)

TTD--

CDD06- Coordinating transitions in care setting and follow up for patients with complex conditions (2 Observations)

CDD07- Reaching shared decisions with families regarding patients with medical complexity and/or life limiting conditions (3 Observations)

TTP--

ON-CALL

TTD--

FDD01- Leading the resuscitation and stabilization of moderate preterm, late preterm, and term infants (7 Observations)

FDD02- Providing neonatal-perinatal consultations for patients WITHOUT complex conditions (4 Antenatal and 3 Postnatal)

FDD03- Managing transport for infants WITHOUT complex conditions (10 Observations)

FDD04- Performing the foundational procedures of Neonatal Perinatal Medicine (42 Observations)

FDD05- Assessing infants WITHOUT complex conditions and developing admission plans for level 3 NICU care (7 Observations)

FDD08- Providing clear and concise handover at transitions of care (6 Observations)

FDD09- Supervising and educating other learners (4 Observations)

FDD10- Documenting clinical encounters (8 Observations)

CDD01- Leading the resuscitation and stabilization of critically ill infants, including infants that are extremely preterm and/or complex (12 Observations)

CDD02- Providing antenatal consultations for patients with complex conditions (6 Observations)

CDD03- Managing transport for infants with complex conditions (5 Supervisor Observations, 5 Transport Team Observations)

CDD04- Performing the Core procedures of Neonatal Perinatal Medicine (18 Observations)

CDD07- Reaching shared decisions with families regarding patients with medical complexity and/or life limiting conditions (3 Observations)

CDD09- Identifying, analyzing, and disclosing patient and system-level safety events (2 Observations)

TTP--

APPENDIX 3: HOW TO WRITE DAILY ORDERS

Example of daily orders should include:

- ✓ Vital signs monitor
- ✓ Fluid intake
- ✓ Feeding plan
- ✓ Labs and investigations
- ✓ Medications
- ✓ Infusions

APPENDIX 4: DOCUMENTATION

APPENDIX 5: S-BAR FORMAT FOR HANDOVER

SBAR report to physician about a critical situation

S	<p>Situation</p> <p>I am calling about <patient name and location>. The patient's code status is <code status>. The problem I am calling about is _____. I am afraid the patient is going to arrest.</p> <p>I have just assessed the patient personally:</p> <p>Vital signs are: Blood pressure ____/____ Pulse ____ Respiration ____ and temperature ____</p> <p>I am concerned about the:</p> <p>Blood pressure because it is over 200 or less than 100 or 30 mmHg below usual Pulse because it is over 140 or less than 50 Respiration because it is less than 5 or over 40. Temperature because it is less than 96 or over 104.</p>
B	<p>Background</p> <p>The patient's mental status is: Alert and oriented to person place and time. Confused and cooperative or non-cooperative Agitated or combative Lethargic but conversant and able to swallow Stuporous and not talking clearly and possibly not able to swallow Comatose. Eyes closed. Not responding to stimulation.</p> <p>The skin is: Warm and dry Pale Mottled Diaphoretic Extremities are cold Extremities are warm</p> <p>The patient is not or is on oxygen. The patient has been on ____ (l/min) or (%) oxygen for ____ minutes (hours) The oximeter is reading ____ % The oximeter does not detect a good pulse and is giving erratic readings.</p>
A	<p>Assessment</p> <p>This is what I think the problem is: <say what you think is the problem> The problem seems to be cardiac infection neurologic respiratory ____ I am not sure what the problem is but the patient is deteriorating. The patient seems to be unstable and may get worse, we need to do something.</p>
R	<p>Recommendation</p> <p>I suggest or request that you <say what you would like to see done>. transfer the patient to critical care come to see the patient at this time. Talk to the patient or family about code status. Ask the on-call family practice resident to see the patient now. Ask for a consultant to see the patient now.</p> <p>Are any tests needed: Do you need any tests like CXR, ABG, EKG, CBC, or BMP? Others?</p> <p>If a change in treatment is ordered then ask: How often do you want vital signs? How long to you expect this problem will last? If the patient does not get better when would you want us to call again?</p>