

APRIL 2022
VERSION 1.0

DEFINITION

Pediatric and Perinatal Pathology is the area of enhanced competence within Anatomical Pathology and General Pathology concerned with the diagnosis of diseases of the embryo, fetus, placenta, and neonate (perinatal pathology) and of infants, children, and adolescents (pediatric pathology). Pediatric and Perinatal Pathology encompasses examination of cytology, biopsy, and surgical specimens, as well as of the placenta and products of conception and autopsy of embryos, fetuses, infants, children, and adolescents.

ELIGIBILITY REQUIREMENTS TO BEGIN TRAINING

Royal College certification in Anatomical Pathology or General Pathology or equivalent

OR

Eligibility for the Royal College certification examination in Anatomical Pathology or General Pathology

OR

Registration in a Royal College-accredited residency program in Anatomical Pathology or General Pathology (see requirements for these qualifications)

ELIGIBILITY REQUIREMENTS TO COMPLETE A ROYAL COLLEGE COMPETENCY PORTFOLIO

All trainees must be Royal College certified in their entry route discipline in order to be eligible to complete a Royal College competency portfolio in Pediatric and Perinatal Pathology.

MAJOR TASKS OF PEDIATRIC AND PERINATAL PATHOLOGY

The discipline of Pediatric and Perinatal Pathology includes responsibility for the following:

1. Performance and reporting of perinatal and pediatric autopsies
2. Performance and reporting of intraoperative consultations
3. Performance and reporting of surgical pathology¹ examinations
4. Performance and reporting of placental examinations

¹ Surgical pathology refers to examination of cytology, biopsy, and surgical specimens.

5. Collaboration in multidisciplinary pediatric and perinatal care
6. Advancement of the discipline of Pediatric and Perinatal Pathology through scholarship

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

Medical Expert

Definition:

As *Medical Experts*, physicians 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: Pediatric and Perinatal Pathology diplomates 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 medicine
- 1.3. Apply knowledge of the clinical and biomedical sciences relevant to their discipline
 - 1.3.1. Normal embryonal, fetal, and postnatal anatomic development up to adolescence
 - 1.3.2. Normal macroscopic anatomy at different stages of development of the embryo, fetus, infant, child, and adolescent, and of the placenta
 - 1.3.3. Normal microscopic appearance of tissues at different stages of anatomic development of the embryo, fetus, infant, child, and adolescent, and of the placenta
 - 1.3.4. Pathogenesis of developmental, metabolic, infectious, inflammatory, and neoplastic disorders of the embryo, fetus, infant, child, and adolescent, and of the placenta
 - 1.3.5. Pathogenesis of fetal and maternal complications of pregnancy
 - 1.3.6. Predisposing, prognostic, and predictive factors in neoplastic and non-neoplastic diseases of the fetus, infant, child, and adolescent, and of the placenta
 - 1.3.7. Genetic basis of inherited and acquired conditions of the embryo, fetus, infant, child, and adolescent, and of the placenta
 - 1.3.8. Clinical and pathologic criteria for the diagnosis of malformation syndromes and genetic syndromes of the embryo, fetus, infant, child, and adolescent, and of the placenta
 - 1.3.9. Macroscopic and microscopic pathology of developmental, metabolic, infectious, inflammatory, and neoplastic conditions of the embryo, fetus, infant, child, and adolescent, and of the placenta

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- 1.3.10. Ancillary diagnostic studies, including their indications, use, interpretation, and limitations:
 - 1.3.10.1. Special histochemical stains
 - 1.3.10.2. Immunohistochemistry
 - 1.3.10.3. Immunofluorescence
 - 1.3.10.4. Fluorescent in situ hybridization (FISH)
 - 1.3.10.5. Molecular pathology
 - 1.3.10.6. Cytogenetics
 - 1.3.10.7. Flow cytometry
 - 1.3.10.8. Electron microscopy
 - 1.3.10.9. Microbiology
 - 1.3.10.10. Virology
 - 1.3.10.11. Biochemical investigations
 - 1.3.10.12. Specimen and postmortem diagnostic imaging
 - 1.3.11. Indications for and performance of digital photography, including documentation of autopsy findings
 - 1.3.12. Principles of autopsy of the embryo, fetus, infant, child, and adolescent, including characteristics of cases requiring referral to pathologists with forensic expertise
 - 1.3.13. Principles of document preparation for and medical expert testimony in a medico-legal proceeding
 - 1.3.14. Quality assurance and the role of quality improvement in Pediatric and Perinatal Pathology
- 1.4. Perform timely diagnostic assessments with recommendations that are presented in an organized manner
- 1.4.1. Demonstrate an understanding of the responsibilities associated with consultation, including providing and obtaining second opinions
- 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 medical practice
- 2. Perform a clinicopathologic assessment of a case**
- 2.1. Prioritize issues to be addressed in a diagnostic assessment
 - 2.1.1. Prioritize technical issues, including the pre-analytical, analytical, and post-analytical stages

2.2. Gather information from the clinical assessment and the medical record, select appropriate investigations, and interpret the results for the purpose of diagnosis and management, disease prevention, and health promotion

- 2.2.1. Obtain a relevant clinical history, including a maternal or family history, as appropriate
- 2.2.2. Review and synthesize pertinent prior or concurrent laboratory investigations and medical imaging studies to guide pathology examination
- 2.2.3. Perform macroscopic examination of biopsy and surgical, and placental specimens
- 2.2.4. Formulate differential diagnoses based on patient age and pathology findings
- 2.2.5. Select the most appropriate tests or procedures for diagnosis and case management
- 2.2.6. Select ancillary studies in a resource-effective and ethical manner
- 2.2.7. Provide microscopic interpretation of cytological, biopsy, and surgical specimens
- 2.2.8. Integrate clinical, laboratory, and imaging findings
- 2.2.9. Establish a diagnosis

2.3. Provide diagnostic, prognostic, and predictive information to help clinicians establish goals of care in collaboration with patients and their families², which may include slowing disease progression, treating symptoms, achieving cure, improving function, palliation, and prevention of disease recurrence

2.4. Contribute to a patient-centred management plan

- 2.4.1. Provide expert consultation to other clinicians to guide therapy

3. Plan and perform tests and procedures for the purpose of diagnostic assessment and case management

3.1. Determine the most appropriate tests and procedures

3.2. Ensure appropriate consent has been obtained and documented for autopsies, genetic and other ancillary studies, and research

- 3.2.1. Identify cases in which autopsy consent needs to be amended
- 3.2.2. Determine jurisdiction of the autopsy and, as appropriate, make arrangements for transfer

² 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 their care, including, according to the patient's circumstances, family members, partners, caregivers, legal guardians, and substitute decision-makers

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3.3. Prioritize a procedure or test, taking into account clinical urgency and available resources

3.3.1. Prioritize ancillary studies when specimen adequacy is limited

3.3.2. Use clinical information, imaging, and laboratory findings to prioritize and guide the diagnostic evaluation

3.4. Perform procedures in a skilful and safe manner, adapting to unanticipated findings or changing clinical circumstances

3.4.1. Perform safe and skilful macroscopic examination and dissection of routine and complex surgical specimens, including tumours

3.4.2. Perform tissue sampling for microscopic examination, ancillary studies, and research, taking into account tissue availability and specimen adequacy

3.4.3. Perform intraoperative procedures, including imprint cytology and frozen sections, to guide surgical management, further pathology evaluation, use of, and prioritization of ancillary studies

3.4.4. Plan and perform autopsies and placental examinations adapting to the clinical context, indications, and extent of autopsy consent

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

4.1. Implement an action plan that supports ongoing case management, including follow-up on additional investigations, supplemental reporting, and further consultation as needed

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

5.1.1. Seek resolution relating to specimen misidentification, diagnostic errors, and breaches of consent

5.2. Adopt strategies that promote patient safety and address human and system factors

5.2.1. Apply safe practices in the laboratory, including frozen section and morgue areas, to minimize occupational risk

Communicator

Definition:

As *Communicators*, physicians interact with patients and their families to facilitate the gathering and sharing of essential information for effective health care.

Key and Enabling Competencies: Pediatric and Perinatal Pathology diplomates are able to...

1. Establish professional relationships with patients and their families

- 1.1. Communicate using a patient-centred approach that encourages patient and family trust and autonomy and is characterized by empathy, respect, and compassion
- 1.2. Optimize the physical environment for patient and family comfort, dignity, privacy, engagement, and safety
- 1.3. Recognize when the perspectives, values, or biases of patients, patient's families, physicians, or other health care professionals may have an impact on the quality of care, and modify the approach to the patient accordingly
- 1.4. Adapt to the unique needs and preferences of each patient, their family, and to their clinical condition and circumstances

2. Elicit and synthesize accurate and relevant information

- 2.1. Seek and synthesize relevant information from a variety of sources

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

- 3.1. Share information and explanations that are clear, accurate, and timely, while checking for understanding
 - 3.1.1. Recognize culturally sensitive issues, including respectful care of remains and accommodation of cultural, ethnic, religious, or family-specific concerns
- 3.2. Disclose harmful patient safety incidents accurately and appropriately

4. Document and share written and electronic information about the diagnostic assessment to optimize decision-making, patient safety, confidentiality, and privacy

- 4.1. Document the diagnostic assessment in an accurate, complete, timely, and accessible manner, in compliance with regulatory and legal requirements
 - 4.1.1. Formulate comprehensive and clinically relevant pathology reports issuing recommendations where appropriate
 - 4.1.2. Provide a complete and accurate pathology report that assists in decision making regarding therapy or further clinical management, and provides diagnostic and prognostic information

- 4.1.2.1. Incorporate morphological findings, results of ancillary studies, expert consultations, and where appropriate clinical, imaging, and other laboratory findings.
- 4.1.3. Communicate critical or unexpected results in a clear, concise, and timely manner
- 4.2. Communicate effectively using a written health record, electronic medical record, or other digital technology
- 4.3. Share information with patients and others in a manner that enhances understanding and that respects patient privacy and confidentiality

Collaborator

Definition:

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

Key and Enabling Competencies: Pediatric and Perinatal Pathology diplomates 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
- 1.2. Negotiate overlapping and shared responsibilities with physicians and other colleagues in the health care professions in episodic and ongoing care
 - 1.2.1. Describe the roles and responsibilities of a pediatric and perinatal pathologist to other health care professionals
- 1.3. Engage in respectful shared decision-making with physicians and other colleagues in the health care professions
 - 1.3.1. Respond to requests from other physicians or a medico-legal authority
 - 1.3.2. Provide recommendations for collection, triage, handling, and storage of cytology, biopsy, surgical, and placental specimens
 - 1.3.3. Provide recommendations for perinatal and pediatric autopsies
 - 1.3.4. Review, summarize, present, and discuss relevant pathology findings with clinical and pathology colleagues at clinico-pathologic conferences, rounds, and on-demand case reviews

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 conflicts in a manner that supports a collaborative culture

2.2.1. Facilitate collaboration at intradepartmental consultative reviews and interdisciplinary reviews

3. Work with physicians and other colleagues in the health care professions to effectively enable continuity of case management

3.1. Determine when a case should be transferred to another pathologist with different expertise

3.1.1. Determine when care should be transferred or shared with other pediatric and perinatal pathology specialists or with other laboratory specialists

3.2. Demonstrate safe handover of case management, using both oral and written communication, when requesting an intradepartmental or external consultation or transfer of a case

Leader

Definition:

As *Leaders*, physicians 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: Pediatric and Perinatal Pathology diplomates 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 systems of patient care

1.1.1. Apply a process of continuous quality improvement to ensure delivery of a high quality of care

1.1.2. Develop and update quality assurance documents and processes for the collection, triage, handling, and storage of surgical pathology and placental specimens, and for perinatal and pediatric autopsies

1.2. Contribute to a culture that promotes patient safety

1.3. Analyze patient safety incidents to enhance systems of care

1.4. Use health informatics to improve the quality of patient care and optimize patient safety

2. Engage in the stewardship of health care resources

2.1. Allocate health care resources for optimal patient care

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- 2.1.1. Ensure appropriate use of laboratory resources
- 2.1.2. Recognize the balance of clinical and resource needs in requesting urgent ancillary studies or consultations
- 2.1.3. Allocate ancillary studies in a cost-effective and evidence-based manner

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

3. Demonstrate leadership in health care systems

3.1. Demonstrate leadership skills to enhance health care

- 3.1.1. Apply knowledge of the principles of workload measurement
- 3.1.2. Use staffing resources, instrumentation, and new technologies in an effective, responsible and innovative manner

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

- 3.2.1. Incorporate new technologies and practice improvements that are relevant to and can assist the populations served

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 practice(s) and career

4.3. Implement processes to ensure personal practice improvement

Health Advocate

Definition:

As *Health Advocates*, physicians 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: Pediatric and Perinatal Pathology diplomates are able to...

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

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

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- 1.1.1. Incorporate clinical information with pathologic review to identify potential individual and/or familial risks, including underlying genetic diseases

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. Apply knowledge of the population and communities they serve, and of risk factors or disorders linked to them
- 2.2. Improve clinical practice by applying a process of continuous quality improvement to disease prevention, health promotion, and health surveillance activities
 - 2.2.1. Advocate for effective utilization of laboratory testing that can identify particular disease risk and prognostic and predictive factors
 - 2.2.2. Advocate for the use of perinatal and pediatric pathologists' expertise in review of pediatric and perinatal specimens and autopsies
- 2.3. Contribute to a process to improve health in the community or population
 - 2.3.1. Recognize the importance of systematic examination of perinatal and placental specimens to determine regional risk factors impacting the outcomes of pregnancy

Scholar

Definition:

As *Scholars*, physicians 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: Pediatric and Perinatal Pathology diplomates are able to...

- 1. Engage in the continuous enhancement of their professional activities through ongoing learning**
- 2. Teach students, residents, the public, and other health care professionals**
- 3. Integrate best available evidence into practice**
- 4. Contribute to the creation and dissemination of knowledge and practices applicable to health**

Professional

Definition:

As *Professionals*, physicians 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: Pediatric and Perinatal Pathology diplomates 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. Demonstrate insight into own limitations
- 1.2. Demonstrate a commitment to excellence in all aspects of practice
 - 1.2.1. Complete surgical and autopsy pathology reports in a timely manner
- 1.3. Recognize and respond to ethical issues encountered in practice
- 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. Adhere to standards of practice with regards to retention of patient records and specimens
 - 3.1.2. Comply with current diagnostic standards, specific diagnostic or research protocols, and consent and ethical standards
- 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
- 4.2. 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

REQUIRED TRAINING EXPERIENCES

1. Perform autopsies of embryos, fetuses, neonates, children, and adolescents
2. Perform macroscopic and microscopic examination of placentas
3. Perform macroscopic and microscopic examination of surgical pathology specimens
4. Perform intraoperative consultations for pediatric surgeries
5. Perform or direct triage of fresh specimen tissue in order to provide adequate samples for ancillary studies
6. Request and interpret ancillary studies and results of ancillary studies
7. Prepare written pathology reports
8. Provide expert opinion and advice to pathology colleagues and clinical teams
9. Participate in and present at pathology and multidisciplinary rounds
10. Participate in the education rounds of the pediatric and perinatal pathology service and related clinical disciplines
11. Teach pathology trainees and other learners
12. Participate in quality assurance and improvement activities
13. Participate in scholarly activities related to Pediatric and Perinatal Pathology

RECOMMENDED TRAINING EXPERIENCES

1. Participate in local departmental or interdisciplinary leadership activities
2. Attend forensic autopsies of children performed under the jurisdiction of the medical examiner or coroner
3. Observe non-anatomical pathology laboratory services and clinical services relevant to their future practice, as approved by the AFC director
4. Participate on a committee within a national or international organization that promotes Pediatric and Perinatal Pathology
5. Participate in the analysis of the quality of care for individual patients, including gap analyses and critical incident reviews

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This document is to be reviewed by the AFC Subcommittee in Pediatric and Perinatal Pathology by February 1, 2024

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Approved – Specialty Standards Review Committee – December 2021