General Pathology: Transition to Discipline #1

Establishing skills in microscopy

Key Features:

- This EPA focuses on setting up and using a microscope to identify normal histology, peripheral blood smears and bone marrow (aspirate and trephine biopsy), and recognize adaptive processes such as metaplasia and hyperplasia.
- This includes the use of Kohler illumination, a polarizing lens, and oil lenses, and performing basic microscope maintenance such as changing objectives and light bulbs
- This EPA includes reviewing cases using digital imaging software.

Assessment Plan:

Direct or indirect observation by Core or TTP resident, or supervisor (e.g. slide exam, virtual microscopy)

Use Form 1. Form collects information on

- Type of assessment: direct; indirect
- Organ system or tissue: breast; bone & soft tissue; gynecology; gastrointestinal; genitourinary; head & neck; endocrine; skin; cardiovascular; thoracic; neuropathology; blood, bone marrow, lymph nodes & spleen; placenta

Collect 13 observations of achievement

- At least 1 of each organ system or tissue

Relevant Milestones:

1 **ME 3.4 Perform basic microscope maintenance**
2 **ME 1.3 Apply knowledge of microscope use including Kohler illumination, polarization, and use of oil objectives**
3 **ME 3.4 Use a light microscope to examine slides**
4 **ME 1.3 Apply basic knowledge of normal gross and light microscopic appearance of tissues**
5 **ME 1.3 Apply knowledge of the principles of digital photography**
6 **COL 1.3** Discuss the roles and responsibilities of a general pathologist within the context of tumor board rounds

General Pathology: Transition to Discipline #2

Participating in basic specimen handling

Key Features:

- This EPA focuses on applying the basic knowledge covered in the orientation to the laboratory in order to:
  - match requisition and container and/or specimen
  - systematically verify the adequacy of patient and clinical information (requisition adequacy and completeness such as documentation of ischemic time) to initiate laboratory evaluation of a specimen
  - assess the appropriateness of selected simple surgical specimens for fixation (e.g. gallbladder, simple hysterectomy for fibroids, prolapse, colon for diverticulosis, ischemic small bowel etc.)
  - select and recognize the appropriate fixative type/media/tube type, assess whether the quantity and size of the specimen container is appropriate, and address deficiencies as able
  - match slides, blocks, and requisition
  - assess blood specimens for hemolysis, icterus, lipemia, clotting, and adequate tube filling, and review and assess appropriate tube type
  - review a variety of microbiology specimens for adequacy and/or appropriate collection of media, and match requisition to specimen container.
- The observation of this EPA is divided into two parts: specimen handling; and assessment of knowledge
- The assessment of knowledge will consist of a structured oral or written multiple-choice quiz, designed and administered by the supervising pathologist, on content related to the topic of specimen handling

Assessment Plan:

Part A: Specimen Handling
Direct observation or case review by pathologist, TTP trainee, histotech or pathology assistant

Use form 1. Form collects info on:

- Specimen type: tissue; blood; microbiological; appendix; gallbladder; simple hysterectomy for fibroids or prolapse; colon for diverticulosis; ischemic small bowel; other
- If "other" please specify specimen type: [free text]
- Elaborate on specimen type: [insert brief description]
- Fixative: fresh; formalin; alcohol

Collect 15 observations of achievement

- At least 3 different tissue specimens
- At least 3 blood specimens
- At least 3 microbiology specimens
- At least 1 of each other specimen type

Part B: Assessment of knowledge
Evidence of satisfactory completion of a structured oral or written quiz administered by the supervising pathologist

Use Form 4

Collect 1 observation of achievement

Relevant Milestones:

Part A: Specimen handling

1 **ME 2.2 Identify basic principles of specimen adequacy**
2 **ME 3.3 Recognize and discuss the importance of the triaging and timing of specimen collection**
3 **ME 5.2 Apply safe practices in the laboratory, intraoperative consultation suite, and autopsy suite to minimize occupational risk**
4 **COL 1.2 Discuss trouble-shooting issues with colleagues in the pathology department including MLAs/MLTs**
5 **COL 1.2** Discuss the role and responsibilities of a specialist in General Pathologist
6 **COL 1.2** Describe the roles and scopes of practice of other health care providers related to General Pathology
7 **COL 2.1** Respond to requests and feedback in a respectful and timely manner
8 **L 1.1 Apply knowledge of the principles of quality assurance pertinent to laboratory medicine**
9 **L 1.4** Describe the data available from health information systems to optimize patient care
10 **P 1.1 Complete assigned responsibilities**
11 **P 2.2 Demonstrate a commitment to patient safety and quality improvement through adherence to institutional policies and procedures**

General Pathology: Transition to Discipline #3

Summarizing and presenting relevant clinical information for clinicopathologic correlation

Key Features:

- This EPA focuses on extracting clinical information, including clinical history and relevant laboratory and imaging results from a number of different sources (including electronic), interpreting this information in light of the clinical question, and providing a summary.
- This EPA may be observed in surgical pathology, cytopathology, autopsy pathology, or hematopathology.
- At this stage, this does not include complex cases

Assessment Plan:

Case discussion and/or review of written clinical summary by pathologist or Core or TTP trainee

Use Form 1. Form collects information on:

- Lab discipline: surgical pathology; cytopathology; autopsy pathology; hematopathology

Collect 2 observations of achievement

Relevant Milestones:

1 **ME 1.3** Apply knowledge of normal anatomy, physiology, and biochemistry
2 **ME 1.3** Apply knowledge of principles of cell biology, immunology, genetics, and pathogenic mechanisms, and the changes that occur in disease states
3 **ME 2.2 Gather a relevant clinical history**
4 **COM 2.3 Seek and integrate relevant information from other sources**
5 **ME 2.2 Interpret history and relevant investigations in light of the clinical question**
6 **ME 2.2 Synthesize and organize clinical information for clear and succinct presentation to supervisor**
7 **HA 1.1 Analyze a given patient's needs for health services or resources related to the scope of General Pathology**

General Pathology: Transition to Discipline #4

Creating a personal teaching and learning plan

Key Features:

- This EPA includes creating a logbook and portfolio that will be updated and maintained through all stages of training.
- The specifics of the logbook will be determined by the individual resident and training program. Suggestions for the logbook include the following: date of activity, level of involvement with cases, type of case, diagnosis, discipline, and relevant guidelines/literature (if applicable).
- The portfolio should include a narrative outlining the resident's goals of training for the next period (duration of period and details of goals may be determined by the resident alone or in consultation with their mentor, senior resident, or program director).
- The portfolio may include any additional activities that the resident has accomplished (i.e. workshops, conference attendance, continuing medical education activities, volunteer activity, etc.).
- The logbook and portfolio are to be reviewed by the program director, academic advisor, mentor, and/or Competence Committee.

Assessment Plan:

Resident's submission of teaching and learning plan (portfolio), and logbook reviewed by pathologist, TTP trainee, academic advisor, or mentor

Use form 4

Collect 1 observation of achievement

Relevant Milestones:

1. **S 1.1** Create a learning plan in collaboration with a designated supervisor identifying learning needs related to General Pathology
2. **S 1.1** Describe physicians' obligations for lifelong learning and ongoing enhancement of competence
3. **S 1.1** Use technology to develop, record, monitor, revise, and report on learning in medicine
4. **S 1.1** Demonstrate a structured approach to monitoring progress of learning in the clinical setting
5. **S 3.1** Recognize uncertainty and knowledge gaps in clinical and other professional encounters relevant to General Pathology
6. **L 4.1** Set priorities and manage time to integrate practice and personal life

General Pathology: Foundations #1

Assessing patients and integrating clinical and laboratory information in the evaluation of disease processes

Key Features:

- This EPA ensures the resident establishes the skills and knowledge of clinical medicine in order to effectively function, in later stages, as a pathology consultant for a wide variety of patients and conditions
- This EPA includes performing clinical assessments, including history and physical exam, selecting and interpreting the results of investigations, and collaborating with clinical colleagues to develop a differential diagnosis and treatment or management plan
- It also includes communicating with patients and their families to gather clinical information and convey information about the diagnosis and/or management plan
- This EPA will be observed in the ambulatory or inpatient setting, with adult and pediatric patients, in a range of medical and surgical clinical conditions

Assessment Plan:

Direct observation and/or case review by supervisor

Use Form 1. Form collects information on:

- Type of observation (select all that apply): direct observation of history; direct observation of communication with patients; case discussion or chart review
- Setting: medicine; surgery; oncology; pediatrics; other
- If "other" please indicate setting: [free text]

Collect at least 10 observations of achievement

- At least 2 of each type of observation
- At least 2 each for medicine, surgery, oncology, and pediatrics
- At least 1 assessment from a staff supervisor in each setting

Relevant Milestones:

1 **ME 1.1** Demonstrate compassion for patients
2 **COM 2.1 Use patient-centred interviewing skills**
3 **ME 2.2 Gather a relevant clinical history**
4 **ME 2.2 Perform a physical exam that informs the diagnosis**
5 **ME 2.2 Select and/or interpret investigations**
6 **ME 2.2 Develop a differential diagnosis**
7 **ME 2.2 Synthesize and organize clinical information for clear and succinct presentation to supervisor**
8 **ME 2.4 Identify and/or monitor key clinical features in the implementation of a management plan**
9 **COM 3.1 Convey information to the patient and/or family clearly and compassionately**
10 **COM 3.1 Verify and validate the patient's and/or family's understanding of their care**
11 **COL 1.2** Work effectively as a member of the clinical team
12 **COM 4.1 Document the essential elements of a clinical encounter using a structured approach**
13 **P 1.1 Complete assigned responsibilities**

General Pathology: Foundations #2

Performing basic tasks in autopsy pathology

Key Features:

- This EPA focuses on the basic tasks of an autopsy including reviewing the consent form, reviewing and summarizing the chart, and performing limited basic procedures
- This includes: opening the pulmonary vasculature; opening the aorta, identifying and dissecting the main arterial branches of the aorta; opening the bowel; dissecting the pelvic block (bladder and reproductive organs); obtaining quality photographs as directed; completing required forms for ancillary tests (e.g. microbiology requisitions, biochemistry requisitions etc.).
- This observation of this EPA is divided into two parts: verification of consent and chart review; performing basic tasks related to autopsy
- Performing a complete autopsy is a task of the Core stage

Assessment Plan:

Part A: Verification of consent and chart review
Direct observation by pathologist or TTP trainee

Use form 1.

Collect 2 observations of achievement

Part B: Performing basic tasks related to autopsy
Direct observation by pathologist or TTP trainee

Use form 2. Form tracks information on

- Task (select all that apply): open the pulmonary vasculature; open the aorta, identify and dissect the main arterial branches of the aorta; open the bowel; dissect the pelvic block; obtain quality photographs as directed; complete required forms for ancillary tests; other
- If 'other task' is assessed, please specify: [free text]

Collect 14 observations of achievement

- At least 2 of each task

Relevant Milestones:

Part A: Verification of consent and chart review

1 **ME 1.6** Seek assistance in situations that are complex or new
2 **ME 2.1 Identify and explore clinical issues to be addressed in the pre-analytical, analytical and post-analytical handling of a case**
3 **ME 2.2 Gather a relevant clinical history**
4 **ME 3.2 Describe the provincial and institutional rules governing consent for autopsy**
5 **ME 3.2 Identify the features of an appropriate autopsy consent**
6 **COL 1.3 Communicate with clinical staff regarding issues of consent and clinical questions that need to be addressed**
7 **ME 4.1 Recognize when a case requires involvement of the medical examiner**
8 **ME 2.2 Synthesize and organize clinical information for clear and succinct**

presentation to supervisor

9 **S 3.1** Generate focused questions that address practice uncertainty and knowledge gaps

10 **P 3.1** Describe local regulations regarding the reporting of deaths to the medical examiner or coroner

Part B: Performing basic tasks related to autopsy

1 **ME 5.2 Apply safe practices in the laboratory, intraoperative consultation suite, and autopsy suite to minimize occupational risk**

2 **ME 1.3 Apply knowledge of normal anatomy, physiology, and biochemistry**

3 **ME 1.3** Apply basic knowledge of normal gross and light microscopic appearance of tissues

4 **ME 1.3** Apply knowledge of the principles of embryologic development and common variations of normal development

5 **ME 2.1** Identify and explore clinical issues to be addressed in the pre-analytical, analytical and post-analytical handling of a case

6 **ME 2.2 Perform a pathological examination that is focused and relevant**

1 **ME 3.4 Perform basic procedures in autopsy pathology**

7 **ME 1.6** Seek assistance in situations that are complex or new

8 **ME 3.4 Photograph specimens**

9 **S 1.2** Seek and interpret multiple sources of performance data and feedback, with guidance, to continually improve performance

General Pathology: Foundations #3

Performing gross dissection of simple surgical specimens from accessioning to submission of blocks

Key Features:

- This EPA includes grossing select simple specimens, defined as non-malignant, single organ, routine indications and/or routine surgical specimens.
- Examples include: simple hysterectomy for fibroids, skin ellipses, appendix, gallbladder, reduction mastectomy, colon for diverticulosis, and tissue biopsies.
- This EPA also includes adherence to safety/quality assurance protocols, suggested time limits for grossing, appropriate number of sections to submit, and adherence to existing grossing protocols
- Indirect observation may involve the review of a 'gross description' by a supervisor after completion of grossing, including correlation with sections

Assessment plan:

Direct or indirect observation by pathologist, pathology assistant, or Core or TTP trainee

Use Form 2. Form collects information on:

- Specimen type: [free text]
- Observation: direct; indirect

Collect 10 observations of achievement

- A variety of cases
- At least 5 direct observations
- At least 3 different observers

Relevant Milestones:

1 **ME 5.2 Organize work station to ensure safe practices in the laboratory**
2 **ME 5.2 Adhere to universal precautionary measures to minimize hazardous exposures including potential infectious and chemical agents**
3 **ME 5.2 Use personal protective measures, including gowns, goggles, and slash resistance gloves**
4 **ME 1.3 Apply knowledge of normal anatomy and gross appearances of tissues**
5 **ME 1.3 Apply knowledge of the principles of tissue fixation, decalcification, processing, and the potential impact of improper handling of fresh tissues**
6 **ME 2.2** Gather a relevant clinical history
7 **ME 3.4 Perform appropriate dissection, description, and sampling of surgical specimens for routine and ancillary procedures**
8 **ME 3.4** Photograph specimens
9 **ME 3.4 Work efficiently, ensuring appropriate fixation in a timely manner**
10 **ME 3.4** Seek assistance as needed
11 **COM 4.1 Document using standardized grossing templates and/or descriptions and protocols as much as possible**
12 **L 4.1** Organize work using strategies that address strengths and identify areas to improve in personal effectiveness

General Pathology: Foundations #4

Selecting specimens for ancillary testing

Key Features:

- This EPA focuses on triaging specimens for ancillary studies based on the clinical scenario, and directing preservation and distribution of the tissue for further testing
- This includes handling specimens and submitting tissues for ancillary studies in the appropriate medium, including cytogenetics, molecular studies, in situ hybridization, immunofluorescence, lymphoma protocol, flow cytometry, electron microscopy, and reflexive/reflective lab testing following institutional SOPs
- This EPA includes the identification of sample deficiencies, including sources of pre-analytical errors
- This EPA will be observed at the time of specimen or result receipt
- At this stage, this EPA does not include ancillary test interpretation

Assessment Plan:

Direct observation or case discussion by pathologist, technologist or TTP trainee

Use Form 1. Form collects information on:

- Specimen type: tissue; blood; microbiological sample; other
- Ancillary tests required or anticipated (select all that apply): immunohistochemistry; cytogenetics; molecular; in situ hybridization; immunofluorescence; flow cytometry; electron microscopy
- Lymphoma protocol: yes; no

Collect 6 observations of achievement

- At least 2 other clinical laboratory specimens
- At least 2 flow cytometry
- At least 2 lymphoma protocol
- At least 1 observation by pathologist

Relevant Milestones:

1 **ME 1.4 Recognize urgent problems that may need the involvement of more experienced colleagues and seek their assistance**
2 **ME 1.6** Develop a plan that considers the current complexity, uncertainty, and ambiguity in a clinical situation
3 **ME 3.1 Recognize when a specimen might require ancillary studies**
4 **ME 3.1 Describe the indications, contraindications, risks, and alternatives for a given test**
5 **ME 2.2 Assess specimen adequacy for ancillary testing**
6 **ME 3.3 Prioritize routine and ancillary studies when specimen adequacy is limited**
7 **ME 3.4 Maintain the integrity required for the specific ancillary study (e.g. nucleic acid integrity for molecular testing, cell membrane for flow cytometry, viable cells for cytogenetics, etc.)**
8 **COL 1.3 Consult with clinical colleagues, when appropriate, to ascertain if ancillary studies would be of value**
9 **COL 1.1** Receive and appropriately respond to input from other health care professionals (e.g. pathology assistants, technologists)
10 **L 2.2 Apply evidence and guidelines with respect to resource utilization in common clinical scenarios**

General Pathology: Foundations #5

Generating diagnostically accurate and complete pathology reports for simple surgical pathology cases

Key Features:

- This EPA focuses on providing an interpretation of simple surgical specimens, defined as non-malignant, single organ, routine indication, and/or routine surgical specimens
- Examples include: simple hysterectomy for fibroids, skin ellipses, appendix, gallbladder, reduction mastectomy, colon for diverticulosis, and tissue biopsies.
- This includes developing an approach to microscopic examination of a sample, arriving at the correct diagnosis, providing accurate descriptions, and formulating appropriate reports.

Assessment plan:

Direct observation by supervisor (General or Anatomical Pathologist, or Hematopathologist)

Use Form 1. Form collects information on:

- Organ system or tissue: breast; bone & soft tissue; gynecology; gastrointestinal; genitourinary; head & neck; endocrine; skin; lymph nodes; placenta

Collect 10 observations of achievement

- At least 4 organ systems
- At least 3 observers

Relevant milestones:

1 **ME 1.3** Apply knowledge of the principles of tissue fixation, decalcification, processing, and the potential impact of improper handling of fresh tissues
2 **ME 1.3** Apply knowledge of routine histochemical staining
3 **ME 1.3 Apply basic knowledge of normal gross and light microscopic appearance of tissues**
4 **ME 1.3** Apply knowledge of the principles of and indications for immunohistochemistry and special histochemical stains
5 **ME 2.2** Develop a differential diagnosis
6 **ME 2.2 Perform a pathological examination that is focused and relevant**
7 **ME 2.2** Select and/or interpret investigations
8 **ME 2.2** Synthesize patient information to determine diagnosis
9 **COM 4.1** Document microscopic assessment accurately
10 **ME 3.4 Seek assistance as needed**
11 **ME 4.1 Ensure follow-up on results of ancillary tests, as relevant**
12 **COM 4.1** Document information about patients and their pertinent medical history as it relates to the case
13 **COM 4.1 Generate a clear, concise report that enhances patient management**
14 **COM 4.1** Identify and correct vague or ambiguous documentation
15 **COM 4.1** Integrate information from ancillary studies and other sources into the pathology report if applicable
16 **COL 1.3** Provide timely and necessary written information to colleagues to enable effective relationship-centered care
17 **COM 4.1** Incorporate the data available from health information systems in the formation of a differential diagnosis and final report
18 **L 2.2** Apply evidence and guidelines with respect to resource utilization in common clinical

scenarios

19 **S 1.2** Identify, record, prioritize and address learning needs that arise in daily work, using various strategies (e.g. scanning the literature, or attending formal or informal education sessions)

20 **S 3.1 Recognize uncertainty and knowledge gaps in clinical and other professional encounters relevant to General Pathology**

21 **P 1.1 Complete assigned responsibilities**

22 **P 2.2 Demonstrate a commitment to patient safety and quality improvement through adherence to institutional policies and procedures**

23 **P 4.1** Demonstrate an ability to regulate attention, emotions, thoughts, and behaviours while maintaining capacity to perform professional tasks

General Pathology: Foundations #6

Performing clinical diagnostic procedures

Key Features:

- This EPA focuses on the performance of bone marrow and fine needle aspirate procedures
- This includes obtaining informed consent, correlating diagnostic imaging, and clinical presentations with laboratory findings, and the technical skills of the procedure
- This EPA may be observed in a simulation setting

Assessment Plan:

Direct observation by supervisor

Use form 2. Form collects information on

- Procedure: bone marrow; Fine Needle Aspirate (FNA)
- Specimen type (select all that apply): surgical; cytology; hematopathology; microbiology; general
- Simulation: yes; no

Collect 2 observations of achievement

- At least one of each procedure

Relevant Milestones:

1 **ME 3.1** Determine the safety and appropriateness of the procedure
2 **ME 3.2 Obtain and document informed consent, explaining the risks and rationale for the procedure**
3 **ME 3.4 Demonstrate effective procedure preparation, including patient identification or safety checklist as appropriate**
4 **ME 3.4 Set up and position the patient for the procedure**
5 **ME 3.4** Prepare and cleanse the procedural site
6 **ME 3.4** Maintain universal precautions
7 **ME 3.4 Perform procedures in a skilful and safe manner**
8 **ME 3.4 Seek assistance as needed**
9 **ME 3.4 Document procedures accurately, including adequacy of specimen obtained and the presence/absence of complications**
10 **ME 3.4 Establish and implement a plan for post-procedure care**
11 **ME 3.4** Recognize and manage complications

General Pathology: Core #1

Performing medical autopsies and generating complete and diagnostically accurate reports

Key Features:

- This EPA focuses on hospital autopsy, from receipt of the chart and consent form, to the generation of an accurate, timely and clinically relevant final report.
- This includes performing the external examination, organ evisceration, organ dissection, gross examination including diagnosing any pathology, drafting a preliminary report, ordering ancillary testing when necessary, examining the microscopic slides, and drafting the final opinion and report.
- This also includes modifying standard autopsy procedures as necessary.
- This EPA includes limited autopsies (examples: chest, heart, or brain only) but does NOT include pediatric/fetal/perinatal cases.
- The observation of this EPA is divided into three parts: initial assessment and preliminary report; organ evisceration; interpretation and final report

Assessment Plan:

Part A: Initial assessment and preliminary report
Direct observation by pathologist or TTP resident

Use form 1. Form tracks information on

- Case complexity: complex; routine
- Case details: full; limited or focused autopsy

Collect 6 observations of achievement

- At least 3 routine full autopsies
- At least 3 complex full autopsies
- At least 2 different pathologist observers

Part B: Organ evisceration
Direct observation by pathologist, TTP trainee, pathology assistant, or autopsy technician

Use Form 2.

Collect 1 observation of achievement

Part C: Interpretation and final report
Case review with pathologist

Use form 1. Form tracks information on

- Case complexity: complex; routine
- Case details: full; limited or focused autopsy

Collect 6 observations of achievement

- At least 3 routine full autopsies
- At least 3 complex full autopsies
- At least 2 different pathologist observers

Relevant Milestones:

Part A: Initial assessment and preliminary report

1 **ME 3.2 Ensure autopsy consent has been obtained and documented correctly**
2 **ME 1.3 Apply knowledge of normal anatomy, physiology, and biochemistry**
3 **ME 1.3 Apply knowledge of gross and microscopic appearances of tissues in disease states**
4 **ME 1.3 Apply knowledge of the principles of and indications for ancillary diagnostic techniques**
5 **ME 1.6 Seek assistance in situations that are complex or new**
6 **ME 2.2** Gather a relevant clinical history
7 **ME 2.2** Perform a pathological examination that is focused and relevant
8 **ME 2.2** Select ancillary techniques judiciously in a resource-effective and ethical manner
9 **ME 3.4 Perform a complete autopsy, with appropriate full description and diagnosis at gross and microscopic levels**
10 **ME 5.2 Apply safe practices in the laboratory, intraoperative consultation suite, and autopsy suite to minimize occupational risk**
11 **COL 1.2** Work effectively with laboratory technologists and pathology assistants, directing their assistance
12 **ME 2.2 Interpret the findings of autopsy in the context of the relevant clinical history**
13 **ME 3.4** Document procedures accurately
14 **COM 4.1** Prepare clear, concise, comprehensive, and timely written reports for autopsy consultations

Part B: Organ evisceration

1 **ME 1.3 Apply knowledge of normal anatomy, physiology, and biochemistry**
2 **ME 1.6 Seek assistance in situations that are complex or new**
3 **ME 3.4 Perform organ evisceration**
4 **ME 5.2 Apply safe practices in the laboratory, intraoperative consultation suite, and autopsy suite to minimize occupational risk**
5 **COL 1.2 Work effectively with laboratory technologists and pathology assistants, directing their assistance**
6 **COM 3.2 Convey and document issues arising from a breach in quality or safety of laboratory practice**
7 **L 1.2** Actively encourage all involved in health care, regardless of their role, to report and respond to unsafe situations
8 **S 1.2** Seek and interpret multiple sources of performance data and feedback, with guidance, to continually improve performance

Part C: Investigation, interpretation and final report

1 **ME 1.3** Apply knowledge of principles of cell biology, immunology, genetics, and pathogenic mechanisms, and the changes that occur in disease states
2 **ME 1.3** Apply knowledge of normal gross, light microscopic, and ultrastructural appearance of tissues
3 **ME 1.3 Apply knowledge of gross and microscopic appearances of tissues in disease states**
4 **ME 2.1** Identify and explore clinical issues to be addressed in the pre-analytical, analytical and post-analytical handling of a case
5 **ME 2.2 Perform a gross and microscopic pathological examination that is focused and relevant**
6 **ME 3.4** Utilize other areas of laboratory medicine, including microbiology, for diagnostic purposes
7 **ME 2.2 Interpret the findings of autopsy in the context of the relevant clinical history**
8 **ME 4.1** Determine the need and timing of referral to another specialist and/or second opinion
9 **COM 4.1 Prepare clear, concise, comprehensive, and timely written reports for autopsy consultations**
10 **COM 4.1 Integrate information from ancillary studies and other sources into the pathology report**

COL 1.2 Consult as needed with other health care professionals, including other physicians
P 3.1 Fulfil the requirements of the physician's duty to report
S 3.1 Generate focused questions that address practice uncertainty and knowledge gaps
P 3.3 Prepare an autopsy for presentation at M&M rounds or departmental autopsy rounds

General Pathology: Core #2

Performing routine pediatric and perinatal autopsies

Key Features:

- This EPA focuses on pediatric and perinatal autopsies, from receipt of the chart and consent form, to the generation of an accurate, timely, and clinically relevant final report.
- This includes performing the external examination, organ evisceration, organ dissection, gross examination including diagnosing any pathology, drafting a preliminary report, ordering ancillary testing when necessary, examining the microscopic slides, and drafting the final opinion and report.
- This also includes modifying standard autopsy procedures as necessary.
- This EPA includes using examination and dissection techniques to exclude common congenital abnormalities and applying knowledge of histology associated with normal fetal and childhood development.
- This EPA includes incorporating the examination of the placenta in perinatal cases.
- This EPA excludes brain only autopsies, and death under suspicious circumstances.
- The observation of this EPA is divided into two parts: initial assessment, examination, evisceration and dissection, and preliminary report; interpretation and final report

Assessment Plan:

Part A: Initial assessment, examination and preliminary report
Direct observation by pathologist

Use form 1: Form collects information on

- Type: fetal; neonatal; pediatric
- Age (gestational age or age): [free text]

Collect 3 observations of achievement

- At least 1 case with age >20 weeks gestational age

Part B: Interpretation and final report
Direct observation by pathologist

Use form 1. Form collects information on

- Type: fetal; neonatal; pediatric
- Age (gestational age or age): [free text]

Collect 3 observations of achievement

Relevant Milestones:

Part A: Initial assessment, examination, and preliminary report

1 **ME 2.1** Identify and explore clinical issues to be addressed in the pre-analytical, analytical and post-analytical handling of a case
2 **ME 2.2 Gather a relevant clinical history**
3 **ME 2.2** Perform a pathological examination that is focused and relevant

4 **ME 3.4 Perform a complete pediatric autopsy, with appropriate full description and diagnosis at gross and microscopic levels**
5 **ME 1.3 Apply knowledge of normal gross, light microscopic, and ultrastructural appearance of tissues**
6 **ME 1.3 Apply knowledge of the principles of embryologic development and common variations of normal development**
7 **ME 1.3 Apply knowledge of gross and microscopic appearances of tissues in disease states**
8 **ME 1.3 Apply knowledge of the principles of and indications for ancillary diagnostic techniques**
9 **ME 1.6** Seek assistance in situations that are complex or new
10 **ME 2.2 Select ancillary techniques judiciously in a resource-effective and ethical manner**
11 **ME 5.1** Report patient safety incidents to appropriate institutional representatives
12 **COM 4.1** Prepare clear, concise, comprehensive, and timely written reports for autopsy consultations
13 **COL 2.1** Delegate tasks and responsibilities in an appropriate and respectful manner
14 **HA 1.1 Respond to findings related to inheritable conditions that may be of significance in disease prevention or early detection (e.g. genetic diseases that may affect a sibling)**
15 **S 3.1** Generate focused questions that address practice uncertainty and knowledge gaps
16 **P 1.3** Manage ethical issues encountered in the clinical and academic setting
17 **P 3.1** Describe local regulations regarding the reporting of deaths to the medical examiner or coroner

Part B: Interpretation of ancillary testing and generation of final report
1 **ME 2.2 Perform a gross and microscopic pathological examination that is focused and relevant**
2 **ME 1.3** Apply knowledge of normal gross, light microscopic, and ultrastructural appearance of tissues
3 **ME 1.3 Apply knowledge of the principles of embryologic development and common variations of normal development**
4 **ME 1.3 Apply knowledge of gross and microscopic appearances of tissues in disease states**
5 **ME 2.1** Identify and explore clinical issues to be addressed in the pre-analytical, analytical and post-analytical handling of a case
6 **ME 3.4** Utilize other areas of laboratory medicine, including microbiology, for diagnostic purposes
7 **ME 2.2 Select and/or interpret investigations**
8 **ME 2.2 Interpret the findings of autopsy in the context of the relevant clinical history**
9 **ME 2.2 Establish a diagnosis that takes into account clinical correlations**
10 **COM 4.1 Prepare clear, concise, comprehensive, and timely written reports for autopsy consultations**
11 **COM 4.1 Integrate information from ancillary studies and other sources into the pathology report**
12 **HA 1.2 Alert treating physicians when potentially detectable inherited conditions are encountered (e.g. genetic diseases that may affect a sibling)**
13 **S 3.1** Generate focused questions that address practice uncertainty and knowledge gaps
14 **P 1.1** Manage complex issues while preserving confidentiality
15 **P 3.1** Fulfil the requirements of the physician’s duty to report

General Pathology: Core #3

Performing routine forensic autopsies and generating complete and diagnostically accurate reports

Key Features:

- This EPA focuses on forensic autopsies in the adult and older child with manner of death including non-suspicious injuries, suicide, sudden natural deaths, intoxications, and complications of therapy. This EPA does not include homicide.
- This EPA includes correctly performing the external and internal components of a forensic autopsy. This includes knowledge of injury documentation, description and interpretation, recognition of common forensic artifacts, correct sampling methods for forensic toxicology, and judicious sampling for microscopy.
- This EPA also includes recognizing a case needing forensic autopsy, directing photography and/or taking photographs as appropriate, preparing a forensic autopsy report in the correct format, and certifying cause and manner of death in routine cases.
- The observation of this EPA is divided into 2 parts: pre-autopsy assessment, dissections and examinations; interpretation and final report
- The observation of this EPA does not require that the resident has participated in both aspects of the case (i.e. resident can interpret and report cases for which they were not the original prosector)

Assessment Plan:

Part A: Pre-autopsy assessment, dissections and examinations
Direct observation by forensic pathologist, pathologist, or forensic pathology subspecialty trainee

Use Form 1. Form collects information on

- Manner of death: natural; accidental ; suicide; undetermined
- Special dissections performed: yes; no
- If "yes" specify dissection: [free text]

Collect 6 observations of achievement

- At least 1 of each manner of death: natural, accidental, and suicide
- At least 2 different observers

Part B: Interpretation and final report
Direct observation by forensic pathologist, pathologist, or forensic pathology subspecialty trainee

Use Form 1. Form collects information on

- Manner of death: natural; accident; suicide; undetermined

Collect 6 observations of achievement

- At least 1 of each natural, accident, and suicide
- At least 2 different observers

Relevant Milestones:

Part A: Pre-autopsy assessment, dissections and examinations

1 **ME 3.2** Ensure autopsy consent has been obtained and documented correctly
2 **ME 2.2 Perform a pathological examination that is focused and relevant**
3 **ME 2.2 Recognize common forensic artifacts**
4 **ME 2.2 Select ancillary techniques judiciously in a resource-effective and ethical manner**
5 **ME 3.4 Perform a complete forensic autopsy, including toxicological examination and the submission of specimens to the forensic sciences laboratory**
6 **ME 1.3** Apply knowledge of gross and microscopic appearances of tissues in disease states
7 **ME 1.3** Apply knowledge of the principles of and indications for ancillary diagnostic techniques
8 **ME 1.6 Seek assistance in situations that are complex or new**
9 **ME 2.1** Identify and explore clinical issues to be addressed in the pre-analytical, analytical and post-analytical handling of a case
10 **ME 2.2 Interpret the findings of autopsy in the context of the relevant clinical history**
11 **COL 1.2 Work effectively with laboratory technologists and pathology assistants, directing their assistance**
12 **S 3.1** Generate focused questions that address practice uncertainty and knowledge gaps
13 **P 3.1 Demonstrate understanding of the laws and policies relevant to conducting forensic investigations**
14 **P 3.1** Adhere to requirements related to reportable diseases
15 **P 3.1** Describe local regulations regarding the reporting of deaths to the medical examiner or coroner

Part B: Interpretation and final report

1 **ME 1.3 Apply knowledge of gross and microscopic appearances of tissues in disease states**
2 **ME 2.1** Identify and explore clinical issues to be addressed in the pre-analytical, analytical and post-analytical handling of a case
3 **ME 2.2 Interpret the findings of autopsy in the context of the relevant clinical history**
4 **COM 4.1 Prepare clear, concise, comprehensive, and timely written reports for autopsy consultations**
5 **COM 4.1 Integrate information from ancillary studies and other sources into the pathology report**
6 **S 3.1** Generate focused questions that address practice uncertainty and knowledge gaps
7 **P 2.1** Demonstrate a commitment to the promotion of the public good in health care, including stewardship of resources
8 **P 3.1** Demonstrate understanding of the laws and policies relevant to conducting forensic investigations
9 **P 3.1 Adhere to requirements related to reportable diseases**

General Pathology: Core #4

Performing gross dissection of surgical specimens

Key Features:

- This EPA includes all surgical specimens, both routine and complex
- Routine surgical specimens are defined as oncologic and non-oncologic, single-organ systems (may include lymph nodes), and may pertain to the following systems: breast; bone & soft tissue; cardiovascular; endocrine; gynecology; gastrointestinal; genitourinary; head & neck; lymph nodes or spleen; respiratory; skin
- Complex surgical specimens are defined as oncologic staging surgeries, single organ specimens of complex anatomy, multi organ specimens, specimens for non-routine indications (e.g. prophylactic specimens for BRCA) or other unique situations, including those requiring a contextual awareness of the case. These pertain to the following sites: breast; bone & soft tissue; cardiovascular; gynecology; gastrointestinal; genitourinary; head & neck; lymph nodes or spleen; neuropathology; placenta; respiratory; skin
- The observation of this EPA may be based on direct or indirect observation
- Direct observation is defined as the supervisor observing all or a component of the grossing of a surgical specimen; this may involve the discussion and elaboration of 'an approach' to the surgical specimen between the supervisor and resident, and review of surgical specimens at daily grossing rounds
- Indirect observation includes the review of a 'gross description' by a supervisor after completion of grossing, including correlation with gross photography, specimen mapping, and sections; second review of a surgical specimen with the resident following initial grossing (examples: additional sections); and/or discussion of specific protocols or approaches (e.g. CAP, oncologic) as they pertain to specific organ systems
- The observation of this EPA is divided into two parts: routine specimens; complex specimens

Assessment plan:

Part A: Routine specimens
Direct or indirect observation by staff pathologist, pathology assistant, subspecialty trainee or TTP trainee

Use Form 2. Form collects information on:

- Organ system or tissue: breast; bone & soft tissue; cardiovascular; endocrine; gynecology; gastrointestinal; genitourinary; head & neck; lymph nodes or spleen; respiratory; skin
- Specimen type: [free text]

Collect 50 observations of achievement

- A variety of organ systems
- A variety of specimens
- At least 8 each of breast, gynecology, gastrointestinal, and genitourinary
- At least 10 different observers

Part B: Complex specimens
Direct or indirect observation by staff pathologist with feedback from pathology assistant, subspecialty trainee or TTP trainee

Use Form 2. Form collects information on:
- Type of observation: direct; indirect
- Organ system or tissue: breast; bone & soft tissue; cardiovascular; gynecology; gastrointestinal; genitourinary; head & neck; neuropathology; respiratory; placenta; skin
- Specimen type: [free text]
- Pediatric oncology: yes; no

Collect 100 observations of achievement
- A variety of systems
- A variety of specimens
- At least 15 gastrointestinal (including hepatobiliary/pancreas)
- At least 10 each of gynecology, genitourinary, breast, and placenta
- At least 5 each head and neck, and respiratory
- At least 5 pediatric oncology
- At least 10 different observers

<u>Relevant Milestones:</u>

Part A: Routine Specimens
1 **ME 1.3 Apply knowledge of normal gross examination**
2 **ME 2.2** Perform a pathological examination that is focused and relevant
3 **ME 2.2 Review clinical history, imaging and other relevant data as necessary**
4 **ME 3.4 Perform gross dissection, description, and sampling of surgical specimens, applying meticulous attention to block selection and mapping using diagrams and images and demonstrating awareness of downstream synoptic reporting and staging parameters, and the need to save tissue for research, tissue bank, and other indications, as necessary**
5 **COL 2.1** Delegate tasks and responsibilities in an appropriate and respectful manner
6 **ME 5.2 Organize work station to ensure safe practices in the laboratory**
7 **ME 5.2 Adhere to universal precautions to minimize hazardous exposures including potential infectious and chemical agents**
8 **ME 5.2 Use personal protective measures, including gowns, goggles, and slash resistant gloves**
9 **ME 3.4 Work efficiently, ensuring appropriate fixation in a timely manner**
10 **L 1.1** Participate in quality management, including appropriate use of standardized grossing templates and protocols, and use of judgment when submitting blocks regarding quality and quantity of sections
11 **ME 3.4** Seek assistance as needed
12 **ME 3.4** Take high quality photographs of specimens
13 **ME 2.2 Formulate a differential diagnosis based on the pathological examination**
14 **COM 4.1 Communicate findings in a timely fashion, with appropriate documentation**

Part B: Complex specimens
1 **ME 1.3 Apply knowledge of normal gross examination**
2 **ME 2.2** Perform a pathological examination that is focused and relevant
3 **ME 2.2 Review clinical history, imaging and other relevant data as necessary**
4 **ME 3.4 Perform gross dissection, description, and sampling of surgical specimens, applying meticulous attention to block selection and mapping using diagrams and images and demonstrating awareness of downstream synoptic reporting and staging**

parameters, and the need to save tissue for research, tissue bank, and other indications as necessary

5 **COL 2.1** Delegate tasks and responsibilities in an appropriate and respectful manner

6 **ME 5.2 Apply safe practices in the laboratory, intraoperative consultation suite, and autopsy suite to minimize occupational risk**

7 **L 1.1 Participate in quality management by minimizing cross contamination and using standardized grossing templates and protocols as appropriate**

8 **ME 3.4** Seek assistance as needed

9 **ME 3.4 Take high quality photographs of specimens**

10 **ME 2.2 Formulate a differential diagnosis based on the pathological examination**

11 **COM 4.1 Communicate findings in a timely fashion, with appropriate documentation**

General Pathology: Core #5

Diagnosing routine surgical pathology cases

Key Features:

- This EPA focuses on managing a routine surgical pathology case (e.g. a routine biopsy) from receipt of the hematoxylin and eosin (H&E) stained glass slides, to generation of a report that is ready to be verified by a staff pathologist.
- This EPA includes matching the specimen with the requisition, ensuring that the correct patient material has been received with appropriate and accurate information, and that the processing has rendered the case satisfactory for interpretation (if not, pre-analytical issues that may have arisen should have been brought to the attention of the staff pathologist).
- This EPA includes using the laboratory and hospital information systems to gather relevant history, and correlating relevant clinical history, gross description, medical imaging, laboratory tests, and previous pathology results
- This EPA focuses on generating a differential diagnosis, selecting and interpreting ancillary studies (special/immuno stains, levels, etc.), incorporating results of ancillary studies when appropriate, utilizing synoptic templates when appropriate, appropriately using secondary review/ subspecialty consultation, and preparing an accurate report ready for verification and review by staff pathologist.
- Reviewing the case in a timely fashion, and organization and prioritization of work are additional features; this includes appropriate management of urgent cases, critical values, and reportable diseases.
- This EPA may require communication with clinicians, or other house staff.

Assessment Plan:

Direct and indirect observation with review of resident's submission of report by pathologist or TTP trainee

Use form 1. Form collects information on

- Diagnosis: [free text]
- Organ system or tissue: breast; bone & soft tissue; cardiovascular; endocrine; gastrointestinal; genitourinary; gynecology; head & neck; lymph nodes/spleen; neuropathology; placenta; skin; thoracic
- Pediatric: yes; no

Collect 70 observations of achievement encompassing a wide breadth of presentations

- At least 7 from each of breast, gynecology, gastrointestinal, genitourinary, and skin
- At least 3 from each of the other organ systems
- At least 50 observed by pathologists
- At least 10 different observers

Relevant Milestones:

1 **ME 1.3** Apply knowledge of gross and microscopic appearances of tissues in disease states
2 **ME 1.3** Apply knowledge of the principles of and indications for ancillary diagnostic techniques
3 **ME 2.2 Perform a gross and microscopic pathological examination that is focused and relevant**
4 **ME 1.6** Seek assistance in situations that are complex or new

5 **ME 2.2** Gather a relevant clinical history
6 **ME 2.2 Formulate a differential diagnosis based on the pathological examination**
7 **ME 2.2 Select ancillary techniques judiciously in a resource-effective and ethical manner**
8 **ME 3.4** Use digital microscopy and interpret gross and microscopic digital images, including digitized and scanned slides
9 **ME 2.2 Establish a diagnosis that takes into account clinical correlations**
10 **ME 4.1 Determine the need and timing of referral to another specialist and/or second opinion**
11 **ME 1.4 Complete pathology reports within appropriate turnaround times**
12 **COL 1.3 Convey information from the pathology assessment to clinicians in a manner that enhances patient management**
13 **COM 4.1 Prepare clear, concise, comprehensive, and timely written reports for surgical pathology**
14 **COM 4.1 Integrate information from ancillary studies and other sources into the pathology report**
15 **COM 4.1 Use synoptic and other standardized reporting formats as appropriate**
16 **COL 2.1** Delegate tasks and responsibilities in an appropriate and respectful manner
17 **HA 1.1** Respond to individual patient diagnostic needs and issues as part of patient care
18 **S 3.1** Generate focused questions that address practice uncertainty and knowledge gaps

General Pathology: Core #6

Diagnosing complex surgical pathology cases

Key Features:

- This EPA includes complex pathology reports defined as:
    - Oncologic staging surgeries
    - Needle-core localization surgeries
    - Single organ specimens of complex anatomy
    - Specimens containing multiple organs
    - Non-routine indications or findings
- This EPA includes matching the specimen with the requisition, ensuring that the correct patient material has been received with appropriate and accurate information, and that the processing has rendered the case satisfactory for interpretation (if not, pre-analytical issues that may have arisen should have been brought to the attention of the staff pathologist).
- This EPA includes using the laboratory and hospital information systems to gather relevant history, and correlating relevant clinical history, gross description, medical imaging, laboratory tests, and previous pathology results
- This EPA focuses on generating a differential diagnosis, triaging tissue for ancillary studies, selecting and interpreting ancillary studies, utilizing synoptic templates when appropriate, appropriately using secondary review/ subspecialty consultation, and preparing an accurate report ready for verification and review by staff pathologist.
- Reviewing the case in a timely fashion, and organization and prioritization of work are additional features; this includes appropriate management of urgent cases, critical values, and reportable diseases.
- This EPA may require communication with clinicians, or other house staff.

Assessment plan:

Direct and indirect observation with review of resident's submission of report observation by pathologist or TTP trainee

Use Form 1. Form collects information on:

- Diagnosis: [free text]
- Organ system or tissue: breast; bone & soft tissue; cardiovascular; endocrine; gastrointestinal; genitourinary; gynecology; head & neck; lymph nodes/spleen; neuropathology; placenta; skin; thoracic
- Pediatric: yes; no

Collect 70 observations of achievement encompassing a wide breadth of presentations

- At least 7 from each gynecology, gastrointestinal, genitourinary, breast, and skin
- At least 3 from each of the other organ systems
- A variety of specimens and diagnosis, including malignant and non-malignant, biopsies, and surgical resection
- At least 10 observers

Relevant Milestones:

1 **ME 1.3** Apply knowledge of gross and microscopic appearances of tissues in disease states
2 **ME 1.3** Apply knowledge of the principles of and indications for ancillary diagnostic techniques
3 **ME 2.2 Perform a gross and microscopic pathological examination that is focused and relevant**
4 **ME 1.6** Seek assistance in situations that are complex or new
5 **ME 2.2** Gather a relevant clinical history
6 **ME 2.2 Formulate a differential diagnosis based on the pathological examination**
7 **ME 2.2 Select ancillary techniques judiciously in a resource-effective and ethical manner**
8 **ME 3.4** Use digital microscopy and interpret gross and microscopic digital images, including digitized and scanned slides
9 **ME 2.2 Establish a diagnosis that takes into account clinical correlations**
10 **ME 4.1 Determine the need and timing of referral to another specialist and/or second opinion**
11 **ME 1.4 Complete pathology reports within appropriate turnaround times**
12 **COL 1.3 Convey information from the pathology assessment to clinicians in a manner that enhances patient management**
13 **COM 4.1 Prepare clear, concise, comprehensive, and timely written reports for surgical pathology**
14 **COM 4.1 Integrate information from ancillary studies and other sources into the pathology report**
15 **COM 4.1 Use synoptic and other standardized reporting formats as appropriate**
16 **COL 2.1** Delegate tasks and responsibilities in an appropriate and respectful manner
17 **HA 1.1** Respond to individual patient diagnostic needs and issues as part of patient care
18 **S 3.1** Generate focused questions that address practice uncertainty and knowledge gaps

General Pathology: Core #7

Providing intraoperative consultations

Key Features:

- This EPA focuses on the elements of an intra-operative consultation, from specimen handling to clear and effective communication of results to the clinical team
- This includes reviewing the clinical information, handling and triaging the tissue, preparing and analyzing the various preparations (touch-preparation, frozen section, etc.), providing a clinically relevant interpretation, and conveying the results to the clinical team.
- This EPA includes working within an appropriate turn-around-time
- Examples of requests relevant to this EPA include intraoperative consultations for tumour margins, medical kidney biopsy/assessment, tumour specific protocols, and lymphoma protocol.

Assessment plan:

Direct observation by pathologist

Use Form 1. Form collects information on:

- Tissue type: [free text]
- Indications for procedure: [free text]

Collect 10 observations of achievement

- Variety of tissue types and indications
- At least 3 different observers

Relevant Milestones

1 **ME 1.3** Apply knowledge of indications, contraindications and limitations of frozen sections
2 **COL 1.2** Discuss indications for appropriate use of intra-operative and urgent consultations
3 **ME 2.2 Gather a relevant clinical history**
4 **ME 1.3** Apply knowledge about most appropriate method of intraoperative assessment (gross examination only vs frozen sections vs cytologic examination)
5 **ME 2.2 Assess specimen adequacy in surgical and cytology specimens**
6 **ME 3.4 Select representative tissue from larger specimens for intraoperative consultation and embed appropriately**
7 **ME 3.4 Prepare frozen sections, including imprint cytology specimens when relevant, and review for diagnosis**
8 **ME 5.2 Apply safe practices in the laboratory, intraoperative consultation suite, and autopsy suite to minimize occupational risk**
9 **COL 1.2** Work effectively with laboratory technologists and pathology assistants, directing their assistance
10 **ME 1.3** Apply knowledge of the appearance of normal cells in cytologic preparations
11 **ME 1.3** Apply knowledge of gross and microscopic appearances of tissues in disease states
12 **ME 1.3** Apply knowledge of cytological appearance of cells in disease states
13 **ME 1.3** Apply knowledge of the principles of and indications for ancillary diagnostic techniques
14 **ME 2.2** Formulate a differential diagnosis based on the pathological examination
15 **ME 2.2 Establish a diagnosis that takes into account clinical correlations**
16 **ME 3.4 Establish and implement a plan for post-procedure handling of tissue**
17 **COL 1.2** Interact effectively with surgeons during intraoperative consultations

18 COL 1.3 Convey information from the pathology assessment to clinicians in a manner that enhances patient management

19 COL 1.3 Convey diagnostic uncertainty and discuss deferral of diagnosis when needed

General Pathology: Core #8

Presenting in multi-disciplinary rounds

Key Features:

- This EPA focuses on the pathologist's role within and contributions to the interprofessional team regarding patient care and management
- This includes reviewing and synthesizing case histories, selecting representative sections for presentation, seeking external consultation and consensus in diagnosis when appropriate, and conveying the pathologic findings to the interprofessional teams long with the implications for prognosis and treatment.

Assessment Plan:

Direct observation by supervising pathologist, TTP trainee or other clinicians

Use form 1. Form collects information on:

- Multidisciplinary round specialty: [free text]
- Observer role: pathologist; TTP trainee; other clinician

Collect 5 observations of achievement

- Multidisciplinary rounds of at least 3 different specialties
- At least 2 different observers
- At least 1 pathologist

Relevant Milestones:

1 **ME 1.3** Apply a broad base and depth of knowledge in clinical and biomedical sciences relevant to General Pathology
2 **ME 1.4 Synthesize cases for discussion at multidisciplinary rounds**
3 **ME 2.3** Provide diagnostic and prognostic information to help clinicians establish goals of care
4 **ME 2.2** Select and interpret appropriate investigations based on a differential diagnosis
5 **ME 2.4 Guide therapy decisions with a complete and accurate pathology report**
6 **COL 1.3 Convey information from the pathology assessment to clinicians in a manner that enhances patient management**
7 **S 3.3 Critically evaluate the literature**
8 **S 3.4 Integrate best evidence and clinical expertise into decision-making**
9 **COL 1.3 Support clinical colleagues in the development and implementation of a management plan, as appropriate**
10 **COL 1.3 Contribute effectively at multidisciplinary rounds, presenting and discussing pathology findings**
11 **HA 1.1** Respond to individual patient diagnostic needs and issue as part of patient care

General Pathology: Core #9

Managing microbiological testing relevant to a community setting

Key Features:

- This EPA focuses on the role of the general pathologist in the microbiology lab
- This includes:
    - Overseeing the identification and reporting of antimicrobial susceptibility of common pathogenic microorganisms (bacteria, fungi, viruses, parasites) from routine specimens with emphasis on the clinical-pathological context
    - Advocating for and modelling appropriate laboratory safety practices
    - Acting as an effective consultant for clinical queries regarding specimen collection, test selection, and test interpretation as to the clinical significance of the result
    - Demonstrating awareness of the limits of laboratory reporting, and the role of referral to other testing facilities (e.g. public health laboratory)
    - Adhering to requirements related to reportable infections, and demonstrating awareness of the role of the laboratory in public health and facility infection control efforts
- The observation of this EPA is divided into two parts: laboratory workup; and providing clinical consultation

Assessment Plan:

Part A: Laboratory workup
Direct and indirect observation by supervisor (medical microbiologist, medical microbiology subspecialty trainee, general pathologist, or clinical chemist (for serology, if applicable), infectious disease subspecialty trainee, or TTP trainee) or directly by technologist

Use form 1. Form collects information on:

- Microorganism: bacteriology; virology; parasitology; mycology; serology
- Specimen type: blood; CSF; urine; other body fluids; stool; genital; respiratory; wound/skin swab; surgical/tissue specimen
- Type of activity (select all that apply): specimen workup; antimicrobial sensitivity; performance of gram stain; performance of other procedure; test interpretation; quality control/assurance
- Results: [free text]

Collect 12 observations of achievement

- At least 12 unique microorganisms
- At least 5 bacteriology, with interpretation of antimicrobial sensitivity tests results
- At least 3 interpretations of positive viral serology specimens
- At least 1 viral hepatitis
- At least 2 each of parasitology and mycology
- A variety of specimen types
- At least 5 performances of gram stains with test interpretations
- At least 3 observers

Part B: Providing clinical consultation
Direct observation or case presentation by microbiologist, general pathologist, TTP trainee or ID fellow

Use form 1. Form collects information on:

- Reason for consult: test selection; specimen collection; test interpretation; other

Collect 2 observations of achievement

- At least 2 different reasons for consultation
- At least 2 different observers

Relevant Milestones:

Part A: Laboratory workup

1 **ME 3.3 Triage investigations, taking into account clinical urgency and available resources**
2 **ME 1.3** Apply knowledge of the microscopic appearance and culture characteristics of bacterial organisms, and the use of diagnostic and antimicrobial susceptibility testing
3 **ME 1.3** Apply knowledge of common viral, fungal, and parasitic organisms and the use of serologic and culture investigations for diagnosis
4 **ME 2.2 Perform morphologic assessment of microorganisms**
5 **ME 2.2 Analyze microbiologic data and correlate to clinical information**
6 **ME 2.4 Identify microorganisms, and report antimicrobial susceptibility**
7 **ME 4.1 Determine the need to send out a specimen for further testing**
8 **COM 4.1 Convey critical values or unexpected results in a timely manner**
9 **ME 5.2 Apply safe practices in the laboratory, intraoperative consultation suite, and autopsy suite to minimize occupational risk**
10 **ME 5.1** Adhere to standard operating procedures (SOP)
11 **ME 5.1** Take appropriate actions to address a breach in quality of safety
12 **P 3.1 Adhere to regulations regarding mandatory reporting of communicable disease**

Part B: Providing clinical consultation

1 **ME 2.2 Gather and synthesize patient information to establish the clinical question**
2 **ME 2.2** Develop a differential diagnosis
3 **ME 2.2 Analyze microbiologic data and correlate to clinical information**
4 **COL 1.1** Establish positive relationships with other members of the health care team
5 **COL 1.3 Provide advice to clinical colleagues regarding specimen procurement and handling**
6 **ME 2.4 Provide advice regarding appropriate use of diagnostic testing**
7 **ME 2.4 Provide an interpretation of the clinical significance of test results**
8 **COL 1.3 Support clinical colleagues in the development and implementation of a management plan, as appropriate**
9 **COL 1.3** Communicate effectively with physicians and other colleagues in the health care professions
10 **HA 1.1 Respond to individual patient diagnostic needs and issues as part of patient care**
11 **P 3.1 Adhere to regulations regarding mandatory reporting of communicable disease**

General Pathology: Core #10

Triaging, interpreting, and reporting peripheral blood smears, bone marrows, lymph nodes and other solid tissue specimens for hematologic disease

Key Features:

- This EPA focuses on providing diagnostic reports for a variety of specimens, with integration of clinical, laboratory, and morphologic findings, and timely selection and interpretation of ancillary testing
- Ancillary testing may include high performance liquid chromatography (HPLC), sickle solubility testing, Hb electrophoresis, serum protein electrophoresis, general chemistry testing, immunohistochemistry, flow cytometry, cytogenetics, or molecular studies, as relevant to the case
- This EPA includes recognizing indications for secondary consultation (e.g. specialist referral, consensus rounds) as appropriate
- The observation of this EPA is divided into 3 parts: peripheral smears; bone marrow aspirates and biopsies; lymph nodes, lymphoid associated tissue, and other solid tissues

Assessment Plan:

Part A: Peripheral smears
Direct and/or indirect observation by pathologist, TTP trainee, clinician practicing hematopathology or medical laboratory technologist

Use form 1. Form collects information on:

- Diagnosis: [free text]

Collect 12 observations of achievement

- A variety of diagnoses including critical values
- At least 2 observers, one of which must be a pathologist or clinician practicing hematopathology

Part B: Bone marrow aspirates and biopsies
Direct and/or indirect observation by pathologist, TTP trainee, clinician practicing hematopathology or medical laboratory technologist

Use form 1. Form collects information on:

- Category: non-neoplastic; myeloproliferative; myelodysplastic; lymphoproliferative; other
- Diagnosis: [free text]

Collect 10 observations of achievement

- At least 2 from each category including a mix of diagnoses (max 1 normal)
- At least 2 observers, one of which must be a pathologist

Part C: Lymph nodes, lymphoid associated tissue, and other solid tissues
Direct and/or indirect observation by pathologist, TTP trainee, clinician practicing hematopathology or medical laboratory technologist

Use form 1. Form collects information on:

- Category: reactive/infectious; Hodgkin lymphoma; Non-Hodgkin lymphoma
- Diagnosis: [free text]

Collect 12 observations of achievement

- At least 2 each from category including a mix of diagnoses
- At least 2 observers, one of which must be a pathologist

Relevant Milestones

Part A: Peripheral smears

1 **ME 1.3 Apply a broad base and depth of knowledge in clinical and biomedical sciences relevant to General Pathology**
2 **ME 2.2** Select and/or interpret investigations
3 **ME 2.2 Perform morphologic assessment of peripheral blood smears**
4 **ME 2.2 Formulate a differential diagnosis based on the morphologic assessment**
5 **ME 1.3 Demonstrate an approach to the diagnosis of anemia**
6 **ME 2.2 Establish a diagnosis that takes into account clinical correlation**
7 **ME 3.3** Triage investigations, taking into account clinical urgency and available resources
8 **COL 3. 1** Determine when a case should be transferred to another pathologist with differing expertise
9 **COM 4.1 Formulate comprehensive and clinically meaningful reports**
10 **COL 1.3** Convey information from the diagnostic assessment in a manner that enhances patient care
11 **ME 4.1 Determine the need and timing of referral to another specialist and/or second opinion**
12 **L 2.1** Use clinical judgment to minimize wasteful practices
13 **P 2.2** Demonstrate a commitment to patient safety and quality improvement initiatives

Part B: Bone marrow aspirates and biopsies

1 **ME 1.3 Apply a broad base and depth of knowledge in clinical and biomedical sciences relevant to General Pathology**
2 **ME 2.2 Perform morphological assessment of bone marrow specimens, including differential cell counts**
3 **ME 2.2 Formulate a differential diagnosis based on the morphological assessment**
4 **ME 1.3** Demonstrate an approach to the diagnosis of anemia
5 **ME 2.2** Assess specimen adequacy for ancillary testing
6 **ME 2.2 Select ancillary studies based on an appreciation of the diagnostic possibilities, the clinical context, and the relevance and capabilities of available technologies**
7 **ME 2.2 Interpret the results of flow cytometry**
8 **ME 3.3** Triage investigations, taking into account clinical urgency and available resources
9 **ME 4.1 Determine the need and timing of referral to another specialist and/or second opinion**
10 **ME 2.2 Establish a diagnosis that takes into account clinical correlation**
11 **COM 4.1 Formulate comprehensive and clinically meaningful reports**
12 **COL 1.3** Convey information from the diagnostic assessment in a manner that enhances patient care
13 **L 2.1** Use clinical judgment to minimize wasteful practices
14 **P 2.2** Demonstrate a commitment to patient safety and quality improvement initiatives

Part C: Lymph nodes, lymphoid associated tissue, and other solid tissues

1 **ME 1.3 Apply a broad base and depth of knowledge in clinical and biomedical sciences relevant to General Pathology**
2 **ME 2.2 Perform morphologic assessment of lymph node and lymphoid associated tissue**

3 **ME 2.2** Formulate a differential diagnosis based on the morphologic assessment
4 **ME 2.2 Assess specimen adequacy for ancillary testing**
5 **ME 2.2 Select ancillary studies based on an appreciation of the diagnostic possibilities, the clinical context, and the relevance and capabilities of available technologies**
6 **ME 3.3** Triage investigations, taking into account clinical urgency and available resources
7 **ME 2.2 Establish a diagnosis that takes into account clinical correlation**
8 **ME 4.1 Determine the need and timing of referral to another specialist and/or second opinion**
9 **COM 4.1 Formulate comprehensive and clinically meaningful reports**
10 **COM 4.1 Integrate information from ancillary studies and other sources into the pathology report**
11 **COL 1.3** Convey information from the diagnostic assessment in a manner that enhances patient care
12 **L 2.1** Use clinical judgment to minimize wasteful practices
13 **P 2.2** Demonstrate a commitment to patient safety and quality improvement initiatives

General Pathology: Core #11

Selecting, interpreting and reporting tests for common hemoglobinopathies, enzymopathies, and membranopathies

Key Features:

- This EPA focuses on the laboratory diagnosis of red cell disorders, and includes integration of clinical and laboratory findings, and judicious and timely selection and interpretation of ancillary tests
- Relevant presentations include anemia, microcytosis, hemolysis and abnormal red cell morphology, and relevant diagnoses include thalassemia, sickle cell disease, spherocytosis, and G6PD deficiency
- Ancillary testing may include high performance liquid chromatography (HPLC), sickle solubility testing, Hb electrophoresis, peripheral smear morphology, CBC indices, flow cytometry, or molecular studies as relevant to the case

Assessment Plan:

Direct and/or indirect observation by pathologist, TTP trainee, or clinician practicing hematopathology/transfusion medicine with input from medical laboratory technologist

Use form 1. Form collects information on:

- Category: normal; hemoglobinopathy; enzymopathy; membranopathy
- Diagnosis: [free text]

Collect 5 observations of achievement

- Variety of cases, including a maximum of one normal sample

Relevant Milestones

1 **ME 1.3 Apply a broad base and depth of knowledge in clinical and biomedical sciences relevant to General Pathology**
2 **ME 1.3 Apply knowledge of the principles of test methodology and instrumentation in a hematology laboratory**
3 **ME 2.2 Select and interpret investigations based on a differential diagnosis**
4 **ME 2.2 Select ancillary studies based on an appreciation of the diagnostic possibilities, the clinical context, and the relevance and capabilities of available technologies**
5 **L 2.1 Use clinical judgment to minimize wasteful practices**
6 **ME 3.3** Triage investigations, taking into account clinical urgency and available resources
7 **ME 2.2 Establish a diagnosis that takes into account clinical correlation**
8 **ME 4.1** Determine the need and timing of referral to another specialist and/or second opinion
9 **COM 4.1** Formulate comprehensive and clinically meaningful reports
10 **COL 1.3** Convey information from the diagnostic assessment in a manner that enhances patient care
11 **P 2.2** Demonstrate a commitment to patient safety and quality improvement initiatives

General Pathology: Core #12

Diagnosing and reporting common coagulopathies

Key Features:

- This EPA focuses on selection, interpretation, and reporting of routine and special coagulation tests, and molecular testing as relevant.
- This includes gathering relevant clinical history (including medications) for presentations of bleeding and thrombosis, integrating clinical and laboratory findings, ordering appropriate screening and diagnostic testing, and applying an understanding of testing methodology.
- Diagnoses relevant to this EPA include disorders of platelet function, clotting factors, and blood vessels. Examples include hemophilia A, lupus inhibitor, therapy related/medication related issues, and both congenital and acquired disorders.
- Diagnostic tests relevant to this EPA include PT/INR, aPTT, platelet function tests, quantitative factors assays, qualitative factors assays, morphologic assessment, and molecular studies.

Assessment Plan:

Direct and indirect observation by pathologist, TTP trainee, clinical hematologist practicing hematopathology, or medical laboratory technologists

Use form 1. Form collects information on:

- Presentation: bleeding; thrombosis; drug monitoring; asymptomatic; abnormal lab value
- Category: platelet disorder; factor disorder; vascular disorder; multifactorial
- Diagnosis: [free text]

Collect 10 observations of achievement

- A variety of bleeding and thrombotic disorders
- At least 2 different observers
- At least 5 observations by pathologist or hematologist

Relevant Milestones

1. **ME 2.2 Gather a relevant clinical history**
2. **ME 1.3 Demonstrate an approach to the diagnosis of bleeding and thrombotic disorders**
3. **ME 1.3** Apply a broad base and depth of knowledge in clinical and biomedical sciences relevant to General Pathology
4. **ME 1.3** Apply knowledge of the principles of test methodology and instrumentation in a hematology laboratory
5. **ME 2.2 Select and interpret investigations based on a differential diagnosis**
6. **ME 2.2 Select ancillary studies based on an appreciation of the diagnostic possibilities, the clinical context, and the relevance and capabilities of available technologies**
7. **L 2.1** Use clinical judgment to minimize wasteful practices
8. **ME 3.3** Triage investigations, taking into account clinical urgency and available resources
9. **ME 2.2 Establish a diagnosis that takes into account clinical correlation**
10. **ME 4.1 Determine the need and timing of referral to another specialist and/or second opinion**

11 **COM 4.1** Formulate comprehensive and clinically meaningful reports
12 **COL 1.3** Convey information from the diagnostic assessment in a manner that enhances patient care
13 **COM 4.1 Convey critical values or unexpected results in a timely manner**
14 **P 2.2** Demonstrate a commitment to patient safety and quality improvement initiatives

General Pathology: Core #13

Diagnosing and managing routine clinical and laboratory problems in transfusion medicine

Key Features:

- This EPA focuses on the role of the General Pathologist in relation to Transfusion Medicine
- This includes interpreting laboratory testing, releasing products for transfusion, providing advice to clinicians, and investigating transfusion reactions
- Interpretation of laboratory testing includes forward and reverse typing, antibody screening and identification, ABO discrepancies, and utilizing other relevant clinical and lab data
- Managing the blood product inventory is an important aspect of this EPA, and includes appropriate collection, storage, modification (i.e. washing, irradiation), distribution, and appropriate utilization
- This EPA includes providing advice on transfusion management in a variety of acute and chronic clinical settings. Examples include surgical bleeding, trauma, transfusion-dependent patients, obstetrical bleeding, hemolytic disease of fetus and newborn, disseminated intravascular coagulation (DIC) and/or thrombotic thrombocytopenic purpura TTP, liver failure, and factor deficiency.
- The observation of this EPA is divided into 3 parts: managing the blood inventory; providing clinical consultation to clinicians; and investigating transfusion reactions

Assessment Plan:

Part A: Managing the blood inventory
Direct observation by pathologist, TTP trainee, clinician practicing transfusion medicine, or transfusion medicine technologist, or indirect observation through post-call debriefing by supervisor with input or feedback from technologists

Use form 1. Form collects information on:

- Setting: clinical; simulation
- Inventory: blood component; blood product
- Category (select all that apply): clinical; laboratory; collection; storage; modification; distribution; utilization/stewardship

Collect 5 observations of achievement

- A mix of clinical and laboratory scenarios
- At least 2 observers
- At least 1 pathologist/hematologist

Part B: Providing clinical consultation
Direct observation by pathologist, TTP trainee, clinician practicing transfusion medicine, or transfusion medicine technologist, or indirect observation through post-call debriefing by supervisor with input or feedback from technologists or clinical staff (e.g. RN, physicians)

Use form 1. Form collects information on:

- Setting: clinical; simulation
- Category (select all that apply): surgical indication; medical indication; trauma; platelet disorder; factor disorder; immunomodulation; other

- Diagnosis: [free text]

Collect 5 observations of achievement
- A mix of clinical and laboratory scenarios incorporating both blood components and products
- At least 2 observers
- At least 3 by a pathologist or hematologist

Part C: Investigating transfusion reactions
Direct and/or indirect observation by supervisor

Use form 1. Form collects information on
- Setting: clinical; simulation
- Inventory: blood component; blood product
- Type of transfusion reaction: [free text]

Collect 5 observations of achievement

Relevant Milestones:

Part A: Managing blood inventory

1 **ME 1.3** Apply knowledge of immunohematology, including major blood group systems and the role of the human leukocyte antigen (HLA) system
2 **ME 1.3** Apply knowledge of common problems of blood-banking, including incompatible cross match, auto- and alloimmune antibodies and their differentiation, and neonatal blood banking issues
3 **ME 1.3 Apply knowledge of standards as they apply to the testing and release of blood products**
4 **ME 1.3** Apply knowledge of current Canadian Blood Services (CBS) policies, procedures, and products, including autologous and directed donations
5 **ME 2.2 Gather a relevant clinical history**
6 **ME 2.4 Review and supervise bench level tests, including manual, semi-automated, and automated tests**
7 **ME 2.2 Select and/or interpret investigations**
8 **ME 2.4 Assess transfusion orders in relation to appropriateness, risks, and alternatives to transfusion**
9 **COL 1.3 Work effectively with clinical colleagues to assist in the interpretation of laboratory findings in the clinical context**
10 **ME 2.4 Modify and/or release blood components and products for clinical use**
11 **L 2.1 Use clinical judgment to minimize wasteful practices**

Part B: Providing clinical consultation

1 **ME 2.2 Gather and synthesize patient information to establish the clinical question**
2 **ME 2.2 Select and interpret investigations based on a differential diagnosis**
3 **ME 2.2 Establish a diagnosis that takes into account clinical correlations**
4 **ME 1.3 Apply knowledge of the therapeutic use of blood components**
5 **COL 1.3 Work effectively with clinical colleagues to assist in the interpretation of laboratory findings in the clinical context**
6 **ME 2.4 Assess transfusion orders in relation to appropriateness, risks, and alternatives to transfusion**
7 **COL 1.1** Establish positive relationships with other members of the health care team
8 **COL 1.3 Support clinical colleagues in the development and implementation of a management plan, as appropriate**
9 **HA 1.1** Respond to individual patient diagnostic needs and issues as part of patient care

Part C: Investigating transfusion reactions

1 **ME 1.3** Apply knowledge of the principles of investigation and classification of adverse reactions to blood component therapy
2 **ME 2.2 Gather a relevant clinical history**
3 **ME 2.2 Perform a product review**
4 **COM 2.3 Seek and synthesize relevant information from other sources, including the physician(s) involved**
5 **ME 2.2 Select and/or interpret investigations**
6 **ME 2.2 Determine the classification of the adverse reaction to blood component therapy**
7 **ME 2.4 Establish the probable cause of the adverse reaction to blood component therapy**
8 **ME 5.1 Report the adverse reaction, completing the relevant documentation**
9 **P 3.1** Adhere to regulations governing the safety and surveillance of the blood supply system

General Pathology: Core #14

Selecting, correlating and interpreting common genomic/molecular pathology test results

Key Features:

- This EPA focuses on the role of genomic/molecular pathology studies in general pathology practice, across all its domains
- This EPA includes selecting these ancillary studies, and interpreting the findings in the context of clinical history, specimen type, and other diagnostic results

Assessment Plan:

Direct observation by pathologist, geneticist, TTP trainee, technologist, or clinician

Use Form 1. Form collects information on:

- Activity (select all that apply): test selection; result interpretation
- Specimen type: formalin fixed paraffin embedded (FFPE) tissue; fresh/frozen tissue; blood/bone marrow; other
- Test type/methodology: Polymerase Chain Reaction(PCR); next generation sequencing (NGS); karyotype; fluorescence in situ hybridization (FISH) /chromogenic in situ hybridization (CISH); ploidy
- Case: hematology; microbiology; biochemistry; surgical pathology; other

Collect 25 observations of achievement

- At least 10 cases of test selection, including
    - At least 2 each of FFPE tissue, fresh/frozen tissue and blood/bone marrow tissue
- At least 10 result interpretations, including
    - At least one of PCR, karyotype, FISH/CISH
    - At least 3 of each hematology, microbiology, and biochemistry cases

Relevant Milestones:

1 **ME 1.3** Apply knowledge of the principles of cell biology, immunology, genetics, and pathogenic mechanisms, and the changes that occur in disease states
2 **ME 1.3** Apply knowledge of general concepts related to the human genome, human genes, and inheritance of DNA
3 **ME 1.3 Apply knowledge of general concepts of inherited and somatic disease**
4 **ME 1.3 Apply knowledge of the principles of and indications for ancillary diagnostic techniques**
5 **ME 1.3** Apply knowledge of appropriate sample requirements and handling
6 **ME 2.1 Identify and explore clinical issues to be addressed in the pre-analytical, analytical and post-analytical handling of a case**
7 **ME 2.2 Select additional testing based on an appreciation of the diagnostic possibilities, the clinical context, and the relevance and capabilities of available technologies**
8 **L 2.1 Utilize genetic testing resources effectively to balance costs with potential utility of results**
9 **ME 4.1** Coordinate the use of multiple diagnostic investigations so as to ensure complementarity and efficiency
10 **ME 3.3 Prioritize routine and ancillary investigations when specimen adequacy is**

limited

11 **ME 5.1** Recognize sources of analytical error for various molecular tests

12 **ME 2.2 Interpret molecular diagnostic test results together with available clinical and laboratory data**

13 **COM 4.1 Integrate molecular results into the laboratory report**

14 **HA 1.2** Describe the role of molecular methods used to screen for inherited/familial cancer syndromes

15 **P 1.3** Describe the role and demonstrate an understanding of the ethics of genetic screening in family planning and for hereditary cancers

16 **P 3.1** Ensure compliance with privacy regulations as they apply to the use of genetic information

17 **P 3.1** Recognize the medicolegal implications in the practice of genetics

General Pathology: Core #15

Managing, interpreting and reporting of gynecologic and non-gynecologic cytology specimens

Key Features:

- This EPA focuses on all aspects of the examination of a cytopathological specimen
- This includes applying specimen and requisition adequacy criteria in the decision to accept or reject a cytology specimen, and triaging for ancillary testing in consultation with the clinical team.
- This EPA also includes participation in preparing gynecological and non-gynecological specimens and ensuring the quality of slides generated, including an assessment of stain quality, as well as a complete cytopathological interpretation that reflects relevant clinical features and cytopathologic findings, including ancillary test findings and clinical recommendations, as appropriate.
- The observation of this EPA is divided into 2 parts: specimen adequacy and processing; and interpretation and reporting

Assessment Plan:

Part A: Specimen adequacy and processing
Direct observation and/or case discussion by technologist, pathologist, or TTP trainee

Use Form 1. Form collects information on:

- Observation: direct; indirect
- Specimen type: gynecological; FNA; fluid (pleural, peritoneal, urine, CSF etc.); endoscopic ultrasound (EUS); endobronchial ultrasound (EBUS)

Collect 5 observations of achievement

- At least 3 different specimen types
- At least 2 different observers

Part B: Interpretation and reporting
Case review with pathologist or TTP trainee

Use Form 1. Form collects information on:

- Specimen type: gynecological; FNA; fluid (pleural, peritoneal, urine, CSF etc.); endoscopic ultrasound (EUS); endobronchial ultrasound (EBUS)

Collect 40 observations of achievement

- At least 20 gynecological
- At least 10 FNA (a mix of specimen type including EUS or EBUS)
- At least 10 fluids
- At least 3 different observers

Relevant Milestones:

Part A: Specimen adequacy and processing

1 ME 2.1 Determine if cytology specimens and requisitions meet adequacy criteria
2 ME 2.1 Describe reasons for specimen rejection and the process of rejection

documentation

3 **ME 5.1** Resolve issues related to specimen misidentification
4 **ME 2.1 Identify and explore clinical issues to be addressed in the pre-analytical handling of a cytopathology case**
5 **ME 2.2 Assess specimen adequacy in surgical and cytology specimens**
6 **ME 1.3 Apply knowledge of the principles of and indications for ancillary diagnostic techniques**
7 **ME 3.4 Prepare gynecological and non-gynecological cytology specimens, including staining, cover-slipping, triaging, and storage**
8 **ME 5.2 Apply safe practices in the laboratory, intraoperative consultation suite, and autopsy suite to minimize occupational risk**
9 **COL 1.3** Communicate effectively with physicians and other colleagues in the health care professions
10 **L 2.1** Use clinical judgment to minimize wasteful practices
11 **L 1.1** Participate in quality control, quality assurance, and quality improvement initiatives

Part B: Interpretation and reporting

1 **ME 1.3 Apply knowledge of the appearance of normal cells in cytologic preparations**
2 **ME 1.3 Apply knowledge of cytological appearance of cells in disease states**
3 **ME 1.3** Apply knowledge of the principles of and indications for ancillary diagnostic techniques
4 **ME 2.1 Identify and explore clinical issues to be addressed in the pre-analytical, analytical and post-analytical handling of a case**
5 **ME 2.2** Assess specimen adequacy in surgical and cytology specimens
6 **ME 2.2** Describe common pitfalls in diagnosis of cytopathological specimens
7 **ME 2.2 Establish a diagnosis that takes into account clinical correlations**
8 **ME 4.1 Determine the need and timing of referral to another specialist and/or second opinion**
9 **COM 4.1 Prepare clear, concise, comprehensive, and timely written reports for cytopathology consultations**
10 **COM 4.1 Use standardized terminology for reporting results, as relevant**
11 **COM 4.1** Provide educational notes and recommendations when needed in the report
12 **COM 4.1** Convey critical values or unexpected results in a timely manner
13 **S 3.4 Integrate best evidence and clinical expertise into decision-making**

General Pathology: Core #16

Identifying, investigating and resolving pre-analytical, analytical and post-analytical issues in laboratory medicine

Key Features:

- This EPA focuses on the quality assurance (QA) and quality control (QC) aspects of laboratory management in surgical and clinical pathology
- This includes ongoing routine monitoring such as proficiency testing, retrospective review, analyzer-specific QC metrics, turn-around-times, amended report rates, cyto-histo correlation, pos/neg immunohistochemistry controls and special stains, hemolysis, icterus, and lipemia (HIL) indices, daily analyzer-specific QC including Westgard rules etc., and microbiology specific QC as per test availability (molecular, MALDI-TOF, C&S, etc.).
- It also includes addressing issues that arise, such as trouble-shooting instrument malfunction or error, responding to complaints, and reviewing breaches in laboratory quality or safety.
- It may include communication with clinicians, and/or reporting to patient safety reporting and learning systems, as needed.

Assessment Plan:

Direct and indirect observation by supervisor or TTP trainee

Use Form 1. Form collects information on

- Lab discipline: anatomical pathology; hematopathology; medical microbiology; medical biochemistry
- Trigger for review: routine monitoring; error; complaint; other

Collect 10 observations of achievement

- At least 2 from each lab discipline

Relevant Milestones:

1 **ME 1.3** Apply a broad base and depth of knowledge in clinical and biomedical sciences relevant to General Pathology
2 **L 1.4 Apply knowledge of the metrics and measurement systems used to track quality management and safety activities**
3 **L 1.1 Review quality control data**
4 **L 1.1 Identify when a finding or occurrence requires action to ensure quality of laboratory services**
5 **L 1.4 Identify variation/gaps between actual and targeted performance using thresholds**
6 **COM 4.1** Convey critical values or unexpected results in a timely manner
7 **COM 3.2** Convey and document issues arising from a breach in quality or safety of laboratory practices
8 **L 1.1 Apply knowledge of process improvement methodologies**
9 **L 1.1 Formulate and carry out a plan of action**
10 **S 3.4 Integrate best evidence and clinical expertise into decision-making**
11 **L 1.1** Reassess the results in the context of quality improvement
12 **L 2.1** Use clinical judgment to minimize wasteful practices

P 3.1 Adhere to the relevant codes, policies, standards, and laws governing laboratory practice including accreditation standards, standard operating procedures, and Clinical and Laboratory Standards Institute (CLSI) standards

P 3.3 Participate in intra- and extra-departmental reviews of diagnostic pathology material

General Pathology: Core #17

Participating in the selection and validation of new instrumentation, and evaluation of new tests

Key Features:

- This EPA focuses on the process of selecting and validating new instrumentation
- This includes clinical consultation, methodology comparison, volume and cost comparison, and preparation of a business case and/or request for proposal (RFP)
- It may also include establishing reference ranges, quality control, reports, and laboratory information system integration
- The observation of this EPA is based on the resident's review and synthesis of the work-up and presentation of that information as a part of a business case.

Assessment Plan:

Case discussion with supervisor or lab manager

Use form 1. Form collects information on

- Modality (select all that apply): clinical utility; analytical (total allowable error/precision/reference range, etc); financial; setting up QC; investigating proficiency testing options; other
- If "other" indicate modality: [free text]

Collect 1 observations of achievement

- At least 3 modalities

Relevant Milestones:

1 **ME 1.3** Apply a broad base and depth of knowledge in clinical and biomedical sciences relevant to General Pathology
2 **HA 2.2** Evaluate laboratory practices and test selection to ensure they meet community needs
3 **HA 2.3** Recognize and respond to situations where health advocacy and application of health care resources is required, including the introduction of improved instrumentation and methodologies to augment community health care
4 **L 1.4** Map the flow of information in the delivery of laboratory services to identify opportunities to improve or enhance laboratory practice
5 **ME 1.3 Apply knowledge of method comparison, method validation, and instrument selection**
6 **L 2.2** Determine cost discrepancies between best practice and current practice
7 **L 2.1 Demonstrate knowledge of resource-efficient laboratory equipment selection**
8 **S 3.4 Integrate best evidence and clinical expertise into decision-making**
9 **P 3.1 Adhere to the relevant codes, policies, standards, and laws governing laboratory practice including accreditation standards, standard operating procedures, and Clinical and Laboratory Standards Institute (CLSI) standards**
10 **L 3.1 Provide recommendations regarding equipment selection and purchasing**
11 **L 3.1** Evaluate emerging technologies with a view to the possibility of integration in the laboratory
12 **COL 1.3 Work effectively with individuals responsible for laboratory management and/or hospital administration**

General Pathology: Core #18

Ensuring appropriate use of lab resources and test utilization

Key Features:

- This EPA focuses on active laboratory stewardship, providing services that are clinically appropriate and cost effective
- This includes encouraging best practices, advocating for evidence-based test ordering, promoting cost effective diagnostic strategies, and demonstrating familiarity with commonly employed utilization management techniques.
- Examples relevant to this EPA include deciding on the necessity of after-hours call backs, appropriately choosing ancillary studies, determining appropriate laboratory testing menus (i.e. which tests to offer in house vs refer out), advising clinicians on appropriate testing and actively discouraging/preventing inappropriate utilization.

Assessment Plan:

Direct or indirect observation by supervisor or TTP trainee

Use form 1. Form collects information on:

- Category: clinical consult; simulation; laboratory initiated
- Lab discipline: anatomical pathology; hematopathology; medical microbiology; medical biochemistry
- Specific scenario: [free text]

Collect 5 observations of achievement

- At least 1 from each category
- At least 2 observers, one of which must be a pathologist or laboratory physician

Relevant Milestones:

1 **ME 1.3** Apply a broad base and depth of knowledge in clinical and biomedical sciences relevant to General Pathology
2 **ME 3.1** Integrate all sources of information to develop an investigational plan that is safe, patient-centred, cost effective, and considers the risks and benefits of all approaches
3 **COL 1.3 Provide consultative services to clinical colleagues regarding appropriate investigations**
4 **ME 3.3 Advocate for evidence informed use of investigations with consideration of urgency and available resources**
5 **HA 1.1 Respond to the health needs of individual patients**
6 **L 2.1 Apply practice-based and system-based rules for resource allocation**
7 **L 2.1 Use clinical judgment to minimize wasteful practices**
8 **L 2.2** Optimize practice patterns for cost-effectiveness and cost control
9 **P 2.1** Demonstrate a commitment to the promotion of the public good in health care, including stewardship of resources

General Pathology: Core #19

Providing routine biochemistry clinical consultations

Key Features:

- This EPA focuses on acting as an effective consultant for clinical queries regarding specimen collection, test selection, and test interpretation
- This includes professional and timely communication with other lab staff and the clinical/medical care team, advocating for appropriate utilization of lab tests, and demonstrating medical expert knowledge appropriate to the consultation (testing algorithms, etc).
- The observation of this EPA may be based on direct observation by supervisor or indirect observation by senior lab technologists providing input to the supervisor.

Assessment Plan:

Direct and/or indirect observation by supervisor

Use Form 1. Form collects information on:

- Specimen type: [free text]
- Indication for consultation: [free text]

Collect 3 observations of achievement

- A variety of indications for consultation

Relevant Milestones:

1 **ME 1.3** Apply a broad base and depth of knowledge in clinical and biomedical sciences relevant to General Pathology
2 **ME 2.2 Gather and synthesize patient information to establish the clinical question**
3 **COL 1.1** Establish positive relationships with other members of the health care team
4 **ME 2.4 Provide advice regarding appropriate use of diagnostic testing**
5 **COL 1.3 Provide advice to clinical colleagues regarding specimen procurement and handling**
6 **ME 1.3** Apply knowledge of the availability testing in community or regional hospital laboratories
7 **ME 2.4 Provide an interpretation of the clinical significance of test results**
8 **COL 1.3 Support clinical colleagues in the development and implementation of a management plan, as appropriate**
9 **COL 1.3** Communicate effectively with physicians and other colleagues in the health care professions
10 **HA 1.1 Respond to individual patient diagnostic needs and issues as part of patient care**

General Pathology: Core #20

Interpreting, and reporting biochemistry testing

Key Features:

- This EPA focuses on the role of the General Pathologist in biochemistry diagnostics
- This includes interpreting and reporting individual studies, including serum and urine protein electrophoreses with or without free light chain testing, urine and joint crystal analysis, and other tests requiring pathologist review (e.g. therapeutic drug monitoring and clinical toxicology)
- This EPA also includes understanding and developing reflexive/reflective testing and test pathways

Assessment Plan:

Direct observation of case interpretation and sign-out by pathologist or medical laboratory technician

Use form 1. Form collects information on

- Specimen type: serum protein electrophoresis; urine protein electrophoresis; joint crystal; urine crystal; therapeutic drug monitoring; clinical toxicology; other
- If 'other' indicate specimen type: [free text]
- Diagnosis: [free text]
- Case discussion (e.g. reflexive, reflective): [free text]

Collect 10 observations of achievement

- At least 5 electrophoresis, including at least 3 monoclonal gammopathies
- At least 2 joint aspirates for crystals, including at least 1 positive for uric acid/gout
- At least 1 case discussion about reflective/reflexive testing
- At least 1 case discussion about TDM or clinical toxicology
- At least 6 must be observed by pathologist

Relevant Milestones:

1 **ME 2.2 Interpret protein electrophoresis and immunofixation studies**
2 **ME 2.2 Interpret therapeutic drug monitoring or clinical toxicology studies**
3 **ME 2.2 Perform morphologic assessment of urine and body fluids**
4 **ME 2.2 Establish a diagnosis that takes into account clinical correlations**
5 **ME 5.2 Adhere to quality management processes throughout the pre-analytic, analytic, and post-analytic phases**
6 **COM 4.1 Convey critical values or unexpected results in a timely manner**
7 **ME 1.3 Apply knowledge of reflexive/reflective testing and test pathways**
8 **COL 1.3** Work effectively with clinical colleagues to assist in the interpretation of laboratory findings in the clinical context

General Pathology: Core #21

Providing formal and informal teaching

Key Features:

- This EPA includes both presentations in formal settings and the informal teaching that occurs as part of clinical work and supervision
- Formal presentations may include journal club, half-day presentations, and clinicopathologic correlation rounds, including tumour boards and radiology-pathology correlation rounds
- Teaching in informal settings includes slide review, multihead/consensus rounds, teaching during gross dissection/autopsy and other informal teaching for medical students, junior residents, or laboratory staff/pathology assistants
- The observation of this EPA is divided into two parts: formal teaching; and informal teaching

Assessment Plan:

Part A: Formal teaching
Direct observation by supervisor, with formal (i.e. collated evaluation) or informal feedback from the audience

Use form 1. Form collects information on:

- Topic: [free text]

Collect at least 2 observations of achievement

Part B: Informal teaching
Direct and/or indirect observation by supervisor with input from learners

Use form 1.Collection information on:

- Type of informal teaching session (e.g. slide review, grossing): [free text]
- Topic/diagnosis: [free text]

Collect at least 2 observations of achievement

Relevant Milestones:

Part A: Formal teaching

1 **S 2.4** Identify the learning needs and desired learning outcomes of others
2 **S 2.4 Develop learning objectives for a teaching activity**
3 **S 3.3 Critically evaluate the literature**
4 **S 3.4** Integrate best evidence and clinical expertise
5 **S 2.4 Present the information in an organized manner**
6 **S 2.4 Use audiovisual aids effectively**
7 **S 2.4 Provide adequate time for questions and discussion**

Part B: Informal teaching

1 **S 2.1** Use strategies for deliberate, positive role-modelling
2 **S 2.2 Create a positive learning environment**
3 **S 2.4 Identify the learning needs and desired learning outcomes of others**
4 **S 2.3 Supervise learners to ensure they work within limitations, seeking guidance**

and supervision when needed

5 **S 2.4 Present the information in an organized manner**

6 **S 2.4 Provide adequate time for questions and discussion**

7 **S 2.4 Provide useful, timely, constructive feedback**

8 **P 1.1** Intervene when behaviours toward colleagues and/or learners undermine a respectful environment

General Pathology: Core #22

Conducting scholarly work

Key Features:

- This EPA includes all aspects of performing scholarly work: identification of a question for investigation, literature review, data gathering, data analysis, reflective critique, and dissemination
- The assessment of this EPA is based on the submission of a completed scholarly project, and must also include observation of the presentation of the scholarly work at departmental research day, conference or equivalent
- Publication is not required for EPA achievement
- Individual case reports do not meet the standard of this EPA, however case series are acceptable

Assessment Plan:

Direct and/or indirect observation by supervisor

Use Form 4
Collect one observation of achievement

Relevant Milestones:

1 **L 4.1** Organize work to manage clinical, scholarly and other responsibilities
2 **S 4.4** Identify, consult, and collaborate with content experts and others in the conduct of scholarly work
3 **S 4.4** Generate focused questions for scholarly investigation
4 **S 3.3** Critically evaluate the literature
5 **S 4.5** Summarize the findings of a literature review
6 **S 4.4** Select appropriate methods of addressing a given scholarly question
7 **S 4.2** Identify ethical principles in research
8 **S 4.4** Collect data for a scholarly project
9 **S 4.4** Perform data analysis
10 **S 4.4** Integrate existing literature and findings of data collection
11 **S 4.4** Identify areas for further investigation

General Pathology: TTP 1

Leading and managing the daily operations of the laboratory, including a full workload of cases representing the breadth of practice

Key Features:

- The observation of this EPA is based on a day's work
- This includes the review and sign-out of a full daily workload for a general pathologist, including participation in normal rotation for surgical pathology, cytopathology, and clinical pathology labs
- This EPA includes fair and equal contribution to departmental work including teaching, committee work, and multidisciplinary rounds (e.g. oncology)
- This EPA also includes participation in departmental slide review meetings (e.g. daily/weekly difficult case review with colleagues and handling QA/QC issues)
- The observation of this EPA is divided into two parts: managing the caseload; and supervising the lab

Assessment Plan:

Part A: Managing the caseload
Direct observation and review of reports, internal consultations, and/or case discussion by supervisor

Use form 1. Form collects information on:

- Lab discipline: surgical pathology; cytopathology; autopsy pathology; biochemistry; microbiology; hematopathology; transfusion medicine; hemostasis and coagulation; molecular pathology

Collect 12 observations of achievement

- At least 2 each of surgical pathology, hematopathology, biochemistry, and microbiology
- At least 2 observers from each laboratory domain (i.e. surgical pathology, hematopathology, biochemistry, and microbiology)

Part B: Supervising the lab
Supervisor completes observation form based on input from other observers: pathology assistants, MLAs/MLTs, secretarial/administrative staff, morgue technicians, other residents, and junior learners

Use form 3. Form collects information on:

- Lab discipline: surgical pathology; cytopathology; autopsy pathology; biochemistry; microbiology; hematopathology; transfusion medicine; hemostasis and coagulation; molecular pathology
- Observer role (select all that apply): pathology assistant; MLAs/MLT; secretarial/administrative staff; morgue technician; other resident; junior learner; other

Collect feedback on at least 6 occasions

- At least two each of surgical pathology and hematopathology
- At least one each of biochemistry and microbiology
- At least two observers on each occasion

Relevant Milestones:

Part A: Managing the caseload

1 **ME 1.1** Demonstrate a commitment to high-quality care
2 **ME 1.5 Set priorities, triage, and manage the workload within accepted turnaround times**
3 **L 4.2** Describe the principles of workload measurement within the laboratory
4 **ME 1.5** Carry out professional duties in the face of multiple completing demands
5 **L 2.1** Allocate health care resources for optimal patient care
6 **COL 1.2 Work effectively with other health professionals**
7 **L 3.1 Supervise and provide clinical direction of the laboratory**
8 **ME 5.1** Resolve issues related to a breach in quality or safety of laboratory practices
9 **ME 1.4 Perform timely, accurate diagnostic assessments**
10 **COM 4.1 Formulate comprehensive and clinically meaningful reports**
11 **S 3.4 Integrate best evidence and clinical expertise into decision-making**
12 **ME 1.6 Demonstrate insight into their own limits of expertise and seek consultation as necessary**
13 **P 1.1 Exhibit appropriate professional behaviours**
14 **P 4.3** Provide mentorship to residents and colleagues
15 **P 2.2** Demonstrate a commitment to patient safety and quality improvement initiatives

Part B: Supervising the lab

1 **ME 1.1** Demonstrate a commitment to high-quality care
2 **COL 1.2** Recognize and respect the scope of practice and expertise of other health professionals in the laboratory
3 **L 3.1 Provide guidance and support for questions arising in the laboratory**
4 **COL 1.3 Communicate effectively with other health care professionals**
5 **P 1.1 Exhibit appropriate professional behaviours**
6 **ME 5.2 Adhere to quality management processes throughout the pre-analytic, analytic, and post-analytic phase**
7 **ME 5.2 Apply safe practices in the laboratory, intraoperative consultation suite, and autopsy suite to minimize occupational risk**

General Pathology: TTP #2

Functioning independently on call

Key Features:

- This EPA focuses on being accessible to requests for assistance from clinical and lab colleagues, providing assistance, and ensuring that the request has been addressed, including seeking additional help/guidance when needed, and maintaining a professional manner in all interactions
- This includes considerations of laboratory utilization and resource stewardship
- The observation of this EPA is based on reviewing cases with a supervisor, feedback from those initiating a call or request, as well as personal reflection
- The observation of this EPA is divided into 3 parts: issue/case management; working with the requesting physician/colleague; and the resident's personal reflection

Assessment Plan:

Part A: Issue/case management
Direct observation, case discussion, document review, and/or review of slides by supervisor

Use form 1. Form collects information on

- Lab discipline: anatomical pathology; biochemistry; microbiology; hematopathology
- Issue (i.e. clinical question posed by the health professional): [free text]

Collect 4 observations of achievement

- At least 1 from each discipline

Part B: Working with the requesting physician/colleague
Supervisor completes observation form based on input from health professionals who initiated calls, including clinicians, MLAs/MLTs, pathology assistants, and/or others

Use form 3

Collect at least 1 observation with feedback from at least 4 observers over the TTP stage

Part C: Resident reflection
Resident submits post-analytical reflection on their on-call experience to the rotation supervisor for review

Use form 4

Collect 1 narrative statement for each 1 month of call during TTP stage

Relevant Milestones:

Part A: Issue/case management

1. **ME 2.2 Gather and synthesize patient information to establish the clinical question**
2. **HA 1.1** Respond to individual patient diagnostic needs and issues as part of patient care
3. **S 3.4 Integrate best evidence and clinical expertise into decision-making**
4. **L 3.1 Provide guidance and support for questions arising in the laboratory**
5. **COL 1.3 Support clinical colleagues in the development and implementation of a management plan, as appropriate**
6. **L 2.1 Use clinical judgment to allocate resources, such as investigations, blood products or staffing**
7. **P 1.1 Exhibit appropriate professional behaviours**
8. **ME 1.6 Demonstrate insight into their own limits of expertise and seek consultation as necessary**

Part B: Working with the requesting physician/colleague

1. **COL 2.1 Respond to requests and feedback in a respectful and timely manner**
2. **L 3.1 Provide guidance and support for questions arising in the laboratory**
3. **COL 1.3 Support clinical colleagues in the development and implementation of a management plan, as appropriate**
4. **COL 1.3 Communicate effectively with other health care professionals**
5. **P 1.1 Exhibit appropriate professional behaviours**

Part C: Resident reflection

1. **S 1.2** Identify opportunities for learning and improvement by regularly reflecting on and assessing personal performance using various internal and external data sources
2. **S 1.2** Interpret data on personal performance to identify opportunities for learning and improvement

General Pathology: TTP #3

Leading, implementing and advocating for quality assurance practices

Key Features:

- This EPA focuses on the role General Pathologist as the director providing oversight of the quality of lab services
- This includes quality control and assurance, including process excellence (LEAN, six sigma, etc.), external proficiency testing, and appropriate resource utilization and measurement.
- It also includes adherence to provincial, national, and international standards and guidelines as appropriate and applicable.
- This EPA may be observed in a variety of activities. Examples include review of Levy-Jennings plot, participation in quality control committee, and participation in histo-cytology correlation.

Assessment Plan:

Direct and/or indirect observation by rotation supervisor

Use form 1. Form collects information on

- Lab discipline: anatomical pathology; biochemistry; microbiology; hematopathology
- Description of activity [free text]:

Collect 4 observations of achievement

- At least 1 from each discipline

Relevant Milestones:

1 **P 1.2** Demonstrate a commitment to excellence in all aspects of clinical laboratory practice
2 **ME 1.3** Apply knowledge of the principles of quality assurance pertinent to General Pathology
3 **L 1.4 Apply knowledge of the metrics and measurement systems used to track quality management and safety activities**
4 **L 1.1 Apply knowledge of process improvement methodologies**
5 **L 3.1 Develop and review quality control data, and take action**
6 **S 3.4 Integrate best evidence and clinical expertise into decision-making**
7 **L 1.1 Provide leadership for quality control, quality assurance, and quality improvement initiatives**
8 **COL 1.2 Work effectively with other health care professionals**
9 **P 3.1 Fulfil and adhere to the standards regulating laboratory practice and accreditation**

General Pathology: TTP #4

Developing and implementing a plan for continuing professional development

Key Features:

- This EPA may include a variety of scenarios. Examples include: a plan to act on the performance gaps identified in another EPA; a plan to prepare for fellowship training; a plan to prepare for practice in a specific setting (i.e. community) and/or a setting requiring distinct skills.
- Achievement of this EPA includes providing a) the rationale for a learning plan, b) self-reflection, c) personal needs assessment, d) time management and e) identification of the methods to achieve the personal learning plan such as literature review, clinical training, conference attendance and/or rounds attendance

Assessment Plan:

Supervisor review of resident's submission of a personal learning plan

Use Form 4

Collect 1 observation of achievement

Relevant Milestones:

1 **P 2.1** Demonstrate a commitment to maintaining and enhancing competence
2 **S 1.2** Interpret data on personal performance to identify opportunities for learning and improvement
3 **L 4.2** Examine personal interests and career goals
4 **S 1.1** Define learning needs related to personal practice and/or career goals
5 **S 3.1** Generate focused questions that address practice uncertainty and knowledge gaps
6 **S 1.1** Create a learning plan that is feasible, includes clear deliverables and a plan for monitoring ongoing achievement
7 **S 1.1** Identify resources required to implement a personal learning plan
8 **L 4.2** Adjust educational experiences to gain competencies necessary for future practice