

FREQUENTLY ASKED QUESTIONS – 2019/2020

Hematological Pathology

Specialty/Field Question

1. **A) What are some strengths about your specialty? What draws and keeps people in your specialty?**

Hematological Pathology is a specialty within laboratory medicine that integrates clinical consultation and diagnosis with quality laboratory management and practice. We provide consultations to hematology, oncology, internal medicine, anesthesiology, critical care, surgery, and organ/tissue transplant specialists in the diagnosis and investigation of hematological disorders, coagulation disorders (bleeding and thrombosis), transfusion medicine and blood product utilization, histocompatibility/immunology, and molecular pathology. **In other words, we don't just look at glass slides under the microscope!** We enjoy having a rich variety of clinical encounters with other clinicians and specialists. The resulting breadth and depth of hematopathology practice is the most attractive and exciting aspect of our daily work.

B) What are some common complaints your specialty?

There are not enough of us, so we all have a lot to do! The silver lining though is that there are positions available across the country for graduating residents.

Alumni from the Edmonton program have worked/are working in Victoria, Vancouver, Edmonton, Toronto, Kingston, Ottawa, and Halifax! Some have even pursued additional fellowship training in the U.S. before beginning their staff positions. Instead of having traditional contact with patients through histories and physical exams in the hospital or outpatient clinics, we encounter them through bone marrow biopsies, under the microscope during blood film and bone marrow reporting, and discussions at coagulation and transfusion medicine rounds. Since we do not see or admit patients in the traditional sense, this also means we do not have to worry about things like lack of clinic or operating room time or space, or the lack of hospital beds to admit patients, etc.

2. **Why did you choose your specialty?**

Hematological Pathology is one of the most clinically focused of the lab medicine specialties! In this evolving specialty, we enjoy the daily variety (and surprises) of our in-person or on-the-phone consultations with clinicians and lab technologists, the challenge and visual beauty of diagnostic morphology, the intellectual rewards and problem-solving detective work in coagulation and transfusion medicine, and integrating and applying cutting edge techniques such as flow cytometry, cytogenetics and molecular pathology to arrive at the most appropriate diagnosis and management plan for clinicians and patients.

3. **What types of clinical cases do you commonly see?**

On a typical day we review peripheral blood, bone marrow, lymph nodes and other tissue samples from patients. The range of diagnoses that we make extends from the benign (e.g. iron deficiency to hemoglobinopathy) to the malignant (i.e. leukemia and lymphoma). The patients we encounter span the entire age spectrum and from all clinical services.

We frequently discuss transfusion medicine issues with physicians from all specialties to recommend the appropriate investigations, blood products or advice about the dose or duration of therapy. We are also involved in the investigation and management of transfusion related adverse events.

In the course of the day we may also consult with a hematologist, internist, anesthesiologist, intensivist or surgeon to help them decide on the appropriate coagulation tests to help diagnose and appropriately manage a bleeding, thrombosing, or pre-operative patient, and help the clinical team interpret abnormal test results.

Even though we do not routinely talk to patients or their families, we converse regularly with our team of technologists, clinical colleagues, other pathologists, residents, and students while we oversee the proper daily function and operations in the blood bank and hematology laboratory.

4. Briefly describe a typical day.

Hematological Pathology, like other areas of medicine, is not a 9 to 5 job. Most days we start work around 8 to 9 am. If we are not performing or assisting residents on bone marrow biopsies in the morning, then we start reviewing peripheral smears and bone marrows. Throughout the day, we will also be reviewing and signing out coagulation test results and advising clinicians, technologists, or other pathologists in person or on the phone. We would also interpret molecular tests and antibody and transfusion reaction investigations from the blood bank. We almost always have hematopathology or general pathology residents, hematology fellows, or medical students working with us, so in the afternoons we will gather at the microscope to review and sign out cases together.

Every day is a little different and the variety and surprises are what keep things interesting and exciting in this field. When we are “on service” for new bone marrow cases, we would often go home after 6 pm, particularly if the service is very busy.

All of us have responsibilities outside of signing out cases depending on our individual portfolios in laboratory oversight administration, research or education, or guiding laboratory policy and practice locally and nationally. These responsibilities keep us busy when we are not “on service” for new cases.

5. A) What are the varieties of lifestyles within your field?

Options are academic practice or community-based hospital practice or private laboratory practice. There are a number of hematopathologists in Edmonton who work part time and the majority has families and children. Some spend part of their time doing clinical/translational research. Others work with Canadian Blood Services to oversee the blood collection, processing and testing of donors. Some hematopathologists confine their practice to one or more areas of hematopathology or have a specialty interest in a specific area.

Some examples of affiliated subspecialties in which hematopathologists might work include coagulation, flow cytometry, molecular pathology, histocompatibility/immunology, and transfusion medicine. Lymphoma pathology, pathology informatics, and medical education are also subspecialty areas where hematopathologists are active.

B) Specifically, how able is your specialty to accommodate family life?

The potential for part time work, the relatively regular hours and the opportunity to cover on-call duties from home make hematopathology practice ideal for integrating and balancing our professional, family and personal lives.

C) Range of incomes?

The payment structure varies considerably as does the range of income depending on the province. Some hematopathologists are on salary – paid by a hospital or health region. In some provinces (not including Alberta), there is a fee schedule similar to the schedule of medical benefits used in clinical practice but involving lab testing procedures. Hematopathologists in private practice in these provinces may bill “fee for service” and their income will depend on the volume and complexity of lab testing performed. Some work under a contract for services wherein they are paid by a hospital, health authority or government agency for providing a range of laboratory consulting services.

D) Generally across the country, annual income would vary from a low of ~ \$200,000 to a high of about \$400,000 per year for full time work. On call payment and consulting fees or honoraria for teaching and other services may also be paid in some jurisdictions.

6. How do you see your discipline changing over the next decade?

Laboratory hematology practice, like medical practice in general, is becoming more complex and subspecialized so hematopathologists will need to become increasingly conversant in new diagnostic techniques like molecular pathology and flow cytometric immunophenotyping to complement the traditional morphologic diagnostic approach. Emerging new technologies have led to increased demand for hematopathologist oversight to ensure quality diagnosis and cost-effective practice that integrates a multimodality approach as the specialty moves towards patient centred diagnosis and precision treatment. We are also increasingly involved with information technology and management. ***We need future hematopathologists who can seamlessly combine the scientific know how of the specialty with the interpersonal, communication and teamwork skills inherent for success and productivity in this field to lead the way.***

The increasing quality and decreasing cost of digital imaging techniques are facilitating greater consolidation of expertise in large centers where hematopathologists may be able to provide diagnostic morphologic consultations for distant sites based on digital slide images.

7. A) What are you looking for specifically in an impressive candidate?

- elective experience in hematopathology (preferably local)
- professional and personal maturity
- aptitude for the specialty by demonstrating the ability to learn, understand and apply new knowledge to clinical patient care quickly
- insight and reflective practice, with the ability to adapt to and act on constructive feedback
- excellent oral and written communication skills
- superb interpersonal, collaboration and teamwork skills
- self-motivation and direction for proactive learning; showing initiative to learn and contribute to the program and specialty

B) What can a potential candidate do now in order to be an appealing applicant to your program?

- Do electives in our and/or other hematopathology programs!
- have excellent reference letters from pathologists (including at least one hematopathologist) to highlight the above attributes

8. How is your residency program organized? (i.e. year by year breakdown and schedule of rotations)

In general, the year-to-year rotation schedule is as follows:

- Years 1 & 2: Clinical and laboratory hematology rotations
 - clinical rotations through internal medicine, adult and pediatric hematology/oncology
 - lab rotations through the University of Alberta Hospital and other training sites to develop skills in diagnostic morphology, coagulation and transfusion medicine, flow cytometry, cytogenetics, molecular pathology, and HLA/tissue typing, and also Canadian Blood Services
 - Residents will procure bone marrows on patients and generate peripheral blood smear and bone marrow reports under the direct supervision of faculty
 - elective time is typically allocated in year 2 and 3
 - 6 months of lymphoma pathology in year 2 and 3
 - a 3 week rotation through the bone marrow transplantation service at Calgary's Foothills hospital is mandatory

- Year 3:
 - Up to 4 months may be devoted to an approved scholarly concentration/research project. The objectives are to submit a project proposal and submission for ethics board review if the latter is applicable. The resident is expected to submit a poster and/or abstract to a local, national, or international conference for consideration of presentation or publication
 - There is ample time for other mandatory and elective rotations so the resident may explore and further develop skills in a specific area of lab hematology. This includes traveling to other local programs for more in depth training in one or more subspecialty areas including molecular pathology, HLA typing or lymph node pathology. Electives in other areas such as surgical pathology, medical biochemistry or microbiology may also be undertaken at this stage.

- Year 4
 - This year brings the resident back to the laboratory to consolidate training in basic hematopathology practice. The final year resident is expected to function as junior faculty with increasing independence in diagnosis and test interpretation/consultation in all areas of lab hematology. Responsibility for teaching and supervising junior residents and medical students is a key competency for this final year. Ongoing exposure to community lab hematology is also a regular component of this year. Optional refresher rotations through subspecialty lab areas including lymphoma and molecular pathology are also available. Exposure to laboratory management through involvement in appropriate committees is strongly encouraged for final year residents.

9. What is your residency program's orientation and focus?

Our focus is to train hematopathologists with excellent diagnostic, communication and collaboration skills in all aspects of Hematopathology so that they become successful and productive specialists in a rapidly evolving field.

10. What is the availability of experiences in subspecialty areas during training?

Virtually all areas of subspecialty lab medicine are well established locally and are available for resident rotations. Many of our residents have also chosen to do electives at other institutions as a part of their subspecialty exposure and this is certainly encouraged and supported by the program.

11. Are there sufficient elective opportunities during training to explore your special interests?

Yes! Year 3 of the program is very flexible with a wide array of optional opportunities for immersion. Some of our residents undertake basic research projects during this time, others use this year to consolidate their experience in areas of special interest and still others have pursued further training in education and leadership. The U of A's PGME Policy does not limit resident out-of-province elective time during the course of the 4-year training program, so our residents have been able to experience hematopathology in Vancouver, Regina, Hamilton, Toronto, Ottawa and Halifax! U.S. and international options are also available, if desired.

12. What is the on-call schedule during each year of residency?

During the rotations spent in the laboratory the call schedule is 1 in 3 home call as per PARA guidelines; the home call is taken for up to 7 days (or 8 days if including a long weekend) at a time. Nowadays, many residents and staff choose to do Monday to Thursday call during one week, then on another week do Friday to Sunday call. Call is supervised at all times by an attending hematopathologist, who is always available for discussion and consultation on all cases. PGY-3 residents on their 4 month scholarly concentration/research block are also on the call schedule.

During clinical rotations, on-call responsibilities would depend on the particular clinical service – i.e. during the internal medicine and adult clinical hematology rotations the hemepath resident would be scheduled on call with their peers in internal medicine at a similar stage of training.

There is no on call requirement for the Medical Oncology or Pediatric Hematology/Oncology rotations or for the Calgary BMT rotation.

13. What distinguishes the U of A program from other programs?

Our program has been around for a long time and all our Canadian Medical Graduates have passed their Royal College Examinations on the first attempt. We now have a community of practice across Canada and abroad. We share resources and teachers with other lab medicine and pathology programs as well as adult and pediatric hematology. We are lucky to contribute to the close collaborative relationship with our colleagues in clinical hematology through our weekly joint hematology rounds and our joint academic half day programs on Tuesday afternoons.

Our affiliation with Alberta Health Services and DynaLife Diagnostics Laboratory in the region gives us access to clinical programs in virtually all spheres of medicine and to all of the affiliated teaching hospitals in the region. Our laboratories are internationally accredited and support an enormous volume of diagnostic testing – both routine and esoteric.

Like all residency programs at the U of A, our Hematological Pathology underwent a regular external review by the Royal College of Physicians & Surgeons of Canada in November 2017. Our fully Accredited Program was cited for the following strengths:

1. Dedicated, supportive and well-respected program director responsive to resident concerns.
2. Highly enthusiastic and dedicated teaching staff committed to residency education.
3. Well-organized joint academic halfday program provides opportunity for inter-professional communication and collaboration.

Finally, our small program (generally one - two residents per year) allows for a close working relationship between residents and faculty, which fosters a climate of collaborative learning. There are extensive opportunities for resident involvement in research and in teaching.

14. A) Who can we contact for more information or to set up electives?

Loretta Carroll, Program Coordinator
loretta.carroll@ahs.ca
780 407-2012

The following elective opportunities are available for medical students:

- years 1 & 2 students are offered observerships
- year 3 students are offered a 1 week elective
- year 4 students are offered a 2 week elective

B) Specifically, is there a list of residents whom we can call or email?

Dr. Danielle Meunier (PGY2, Chief Resident)
dmmeunie@ualberta.ca

15. How competitive is it to get in, and then to succeed in your field?

We have up to 2 funded CMG positions through the CaRMS match each year. Occasionally we have been successful at matching up to 2 residents in one year of the program. We generally have between 4 – 8 CaRMS applicants each cycle.

Please refer to the CaRMS website at www.carms.ca for the most up to date information.

Additional program information is available at <https://www.ualberta.ca/laboratory-medicine-and-pathology/programs/postgraduate-medical-education---residency-programs/hematological-pathology>

16. A) Is there active and/or required research in your residency program?

There are a number of clinical and basic researchers within the Department of Lab Med and Pathology. The department also has a very active program in graduate studies with many faculty supervisors. These basic researchers are important collaborators and research supervisors for our residents. A number of courses offered through the Graduate Studies program are also available for interested residents.

Departmental support is available to facilitate residents in attending and/or presenting at meetings.

The annual Lab Medicine and Pathology Department wide education and research day (DRIVE) in April highlights the clinical, educational, and research activities of all staff, residents, and graduate students in Lab Medicine. The two-day program celebrates the scope and extent of activities within the department.

A scholarly/research project is strongly encouraged during the course of residency training and sufficient time is available to fulfill the project work.

B) What role does research play in your career?

Lab Medicine practice, by its nature, involves research related to new test development and validation. Involvement in these types of research endeavors is a usual part of laboratory medicine practice. In addition, extensive opportunities for clinical and outcomes research related to particular diagnostic tests, blood products or blood product manipulations are available. Although I (as the program director) am not heavily involved in research ventures, many of my colleagues collaborate with clinical or lab medicine colleagues and with residents and students in projects, which have resulted in many local and international presentations and publications.

17. What local, national or international conferences would be of benefit to candidates interested in your residency program?

There are many conferences that are specific to one field of practice – such as the AABB meeting which is an international transfusion medicine meeting, held annually in October – or the American Society of Hematology Meeting, held in the United States in December of each year. Other conferences include International Society for Laboratory Hematology (ISLH), International Society on Thrombosis and Hemostasis (ISTH), and many others.

Canadian meetings that may be of interest to Medical Students interested in a career in any area of Lab medicine and Pathology include the Canadian Association of Pathology annual meeting – held in a different Canadian city each year – usually in June or July; or the Canadian Society of Transfusion Medicine (CSTM) meeting – also held in various Canadian cities – usually in April or May.