



McGill

Training Program

Infectious Diseases

RESIDENT MANUAL

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General Information

Mission

Welcome to the Infectious Diseases Residency Training Program.

Our mission is to train residents so they:

- Acquire a working knowledge of the theoretical foundations of our specialty, namely in the sciences of infectious diseases, immunology, pharmacology and epidemiology;
- Provide compassionate patient-centered care while assuming a consultant's role in the diagnosis and management of infectious diseases
- Develop leadership skills that will prepare them for clinical and administrative direction of an infectious diseases service
- Develop lifelong learning skills, effectively teaching others and conducting research in their field of interest.

Throughout the residency training, we emphasize communication, collaboration and professionalism, highlighting knowledge and attitudes relating to gender, culture, and ethnicity that are pertinent to Infectious Diseases.

Program overview

The Adult Infectious Diseases (ID) Training is a two-year program accredited by the Royal College of Physicians and Surgeons of Canada (RCPSC). It involves all McGill teaching sites within the city including the MUHC Royal Victoria Hospital (Glen), Montreal General Hospital, Jewish General Hospital, St Mary's Hospital Centre and Montreal Children's Hospital - providing a rich and diverse experience in Infectious Diseases.

Residents enroll to our training program after having completed 3 years of core Internal Medicine training and begin their training in PGY4. As residents progress in their training, they will have graded responsibilities in preparation for independent practice. Trainees bring diverse experiences and will eventually practice ID in a range of settings; our program provides all trainees with the key competencies required of ID sub-specialists (training requirements will be met by the end of PGY5).

This document outlines the training requirement for the ID training program; a separate document describes the training requirements for the combined Infectious Diseases – Medical Microbiology program.

Training Framework and Template Schedules

We offer a continuum of experiences ranging from basic clinical laboratory through advanced clinical training, research and clinical scholarships. Residents will work closely with ID physicians and Medical Microbiologists whose interests span diverse areas of clinical infectious diseases, medical microbiology, clinical research, and basic research. Clinical and laboratory training will incorporate basic science teaching whenever possible. Academic half-days and inter-hospital ID rounds (IHID) will emphasize biostatistics and critical appraisal as appropriate.

Following the Royal College Competency-Based framework, residents will complete 4 phases of training: Transition to Discipline, Foundations of Discipline, Core of Discipline, and Transition to Practice.

The resident schedule will consist of 13 blocks per year (4-week duration for each block) totaling 24 blocks of training.

The approximate duration of each phase of training for the ID program:

- Transition to Discipline (TTD): 3 blocks
- Foundations of Discipline (FoD): 5-6 blocks
- Core of Discipline (CoD): 10-12 blocks
- Transition to Practice (TTP): 3-4 blocks

TRANSITION TO DISCIPLINE: Duration 3 blocks Level: PGY 4 (P1 – P3)		
Training experiences	ITERS	EPAs
Orientation		
Inpatient ID-1	ID inpatient consultation - junior	ID 1.1; ID 1.2
Inpatient ID-2	ID inpatient consultation - junior	
Bact 1	MM Bact 1; Quiz	MM 1.3, MM 1.4
Amb ID (JGH) -optional for this stage	ID amb	ID 1.1
Longitudinal ID clinic (RVH)	Longitudinal ID (q3 months)	ID 1.1
IHID / AHD	Presenter evaluation	

FOUNDATIONS OF DISCIPLINE (F): 6 blocks Level: PGY 4 (approximately P4 – P9)		
Training experiences	ITERS	EPAs
Inpatient ID-3	ID inpatient consultation - junior	ID 2.1, 2.2
Inpatient ID-4	ID inpatient consultation - junior	ID 2.1, 2.2
Inpatient ID-5	ID inpatient consultation - junior	ID 2.1, 2.2
Pediatric ID (MCH)	Peds ID consultation	ID 2.1, 2.2, 2.3
Bact 2	MM Bact 2; QUIZ	MM 2.1, 2.2, 2.3; MM 2.4
IPC-junior	IPC	MM 2.1
<i>Amb ID (JGH) –optional if already done in TTD</i>	<i>ID amb</i>	
<i>Longitudinal ID clinic</i>	Longitudinal ID (q3 months)	
<i>IHID / AHD</i>	Presenter evaluation	
Friday case rounds	-	ID 2.3
ITE ID	-	-
CORE OF DISCIPLINE (C) : Duration approx 12 blocks Level PGY 4-5 (P10 of PGY4 to P9 of PGY5)		
Training experience	ITERS	EPAs
Trop med	Trop med	ID 3.3; 3.4
CVIS	CVIS	ID 3.3; 3.4; 3.8
Public Health	Pub health	MM 3.11
Inpatient ID-6	ID inpatient consultation junior	ID 3.1; 3.2; 3.7; 3.8
Inpatient ID-7	ID inpatient consultation junior	ID 3.1; 3.2; 3.7; 3.8
Community ID (SMH)	Community ID	ID 3.1; 3.2; 3.7; 3.8
ID-HOT (transp)	ID transplant	ID 3.4, 3.7, 3.8
Pediatric ID (MCH)	Ped ID cons	ID 3.1, 3.2, 3.4, 3.7, 3.8
Bacti 3	MM Bact 3; QUIZ	MM 3.1, 3.2
IPAC senior	IPC	ID 3.5, MM 3.11
Longitudinal ID clinic (RVH)	Longitudinal clinic	ID 3.3; 3.8; 3.10
ASP	ASP	ID 3.6, (MM 3.9)
POCUS for ID (2 weeks) - selective	POCUS for ID	
Research	Research ID-MM	
<i>Elective</i>		
<i>IHID / AHD</i>	ID IHID presenter	ID 3.9
<i>Friday case rounds</i>	-	ID 2.3

TRANSITION TO PRACTICE (TTP): 3 blocks Level: PGY 5 (approximately P10 – P 13)		
Training experiences	ITERS	EPAs
Junior attending	ID Junior attending	ID 4.1
Junior Attending	ID junior attending	ID 4.3
ELECTIVE/research block	ID research	
IHID / AHD	Presenter eval	
Research Day	Jury	
Longitudinal clinic	Longit Clinic	ID 4.2; 4.3

Template schedule:

PGY4	Adult ID consult service*	Amb ID*	Pediatric ID	Trop Med	CVIS	IPC	Bact 1-3	Research / Elective	TOTAL blocks
Number of blocks	4	1	1	1	1	1	3	1	13
	Longitudinal clinic								

PGY5	Adult ID cons service*	Amb ID*	Pediatric ID	Transplant ID (ID HOT)	Junior Attending	IPC	ASP	Pub Health	Research /elective	Total blocks
Number of blocks	3	1	1	1	2	1	1	1	2	13
	Longitudinal clinic									

The Academic ID Division

The Division of Infectious Diseases at McGill University is a vibrant academic unit within the Department of Medicine. We work closely with the Department of Medical Microbiology, and many of our members are co-appointed to this Department.

Our clinical programs encompass all aspects of Infectious Diseases:

- Comprehensive clinical care to inpatients and outpatients
- Infection Prevention and Control
- Antimicrobial Stewardship
- Basic and Clinical research into microbial pathogens and in special hosts (vulnerable and immunocompromised hosts)
- Expertise to remote regions of Quebec and to Low-Resource settings
- Participation in public health policy development at the national and provincial level for Infectious Diseases such as Ebola, vaccine-preventable infections, tuberculosis and sexually transmitted diseases.

Our specific areas of clinical and research expertise include (but are not limited to):

- Infections of the immune-compromised host
- Chronic viral illnesses (CVIS)
- Tropical diseases (JD MacLean Centre for Tropical Diseases)
- Mycobacterial diseases (McGill International TB Centre)
- Fungal infections
- *C. difficile* and other Hospital-Associated infections

Further details on our divisional activities are available at: <https://www.mcgill.ca/infect-diseases/>

For complete faculty listing, please see: <https://www.mcgill.ca/infect-diseases/division>

Training sites and coordinators

Site coordinators are identified for each teaching site (names in bold below). These site coordinators are responsible for the orientation of residents to the rotation and to the site as needed. They additionally serve as point-persons for residents to contact if any concerns arise during the rotation. Site coordinators will receive site-specific rotation evaluations and will be responsible for following up on any systemic issues that require improvement through discussion with the Program Director.

All rotations have rotation coordinators responsible for the goals and objectives of that rotation.

The table below lists the training sites, rotations associated with each site, the site coordinators/head evaluators.

Site	Rotation(s)	Coordinator/Head evaluator
McGill University Health Center	ID consult service	Dr Sapha Barkati
	Bacteriology 1-3	Mr Reggie Bamba
	<i>Mycobacteriology (elective for ID)</i>	<i>Dr Marcel Behr</i>
	<i>Mycology (elective)</i>	<i>Drs Donald Vinh and Matthew Cheng</i>
	Infection Control	Drs Ewa Rajda and Charles Frenette
	Molecular Microbiology (elective)	Drs Raymond Tellier and Jesse Papenburg
	Tropical Medicine, Parasitology	Drs Sapha Barkati and Cedric Yansouni
	Junior attending ID consults	Dr Sapha Barkati
	Transplant ID	Dr Sapha Barkati
	Chronic Viral Illness Service	Dr Nadine Kronfli
	Outpatient ID clinics	Dr Vivian Loo
Jewish General Hospital	Longitudinal clinics	Dr Todd Lee
	Antimicrobial Stewardship	Dr Makeda Semret
	ID consult service and Ambulatory	Dr Ling Kong
	Infection Control	Drs Yves Longtin & Leighanne Parkes
	Antimicrobial Stewardship	Dr Marty Teltsher
	<i>Serology (elective)</i>	<i>Dr Jerry Zaharatos</i>

St Mary's Hospital Centre	Community ID	Dr Tien Nguyen
Montreal Children's Hospital	Pediatric ID consultation	Dr Jesse Papenburg
Departement de Sante Publique (DSP)	Public Health	Dr Paul Leguerrier

The Residency Training Committee (RTC)

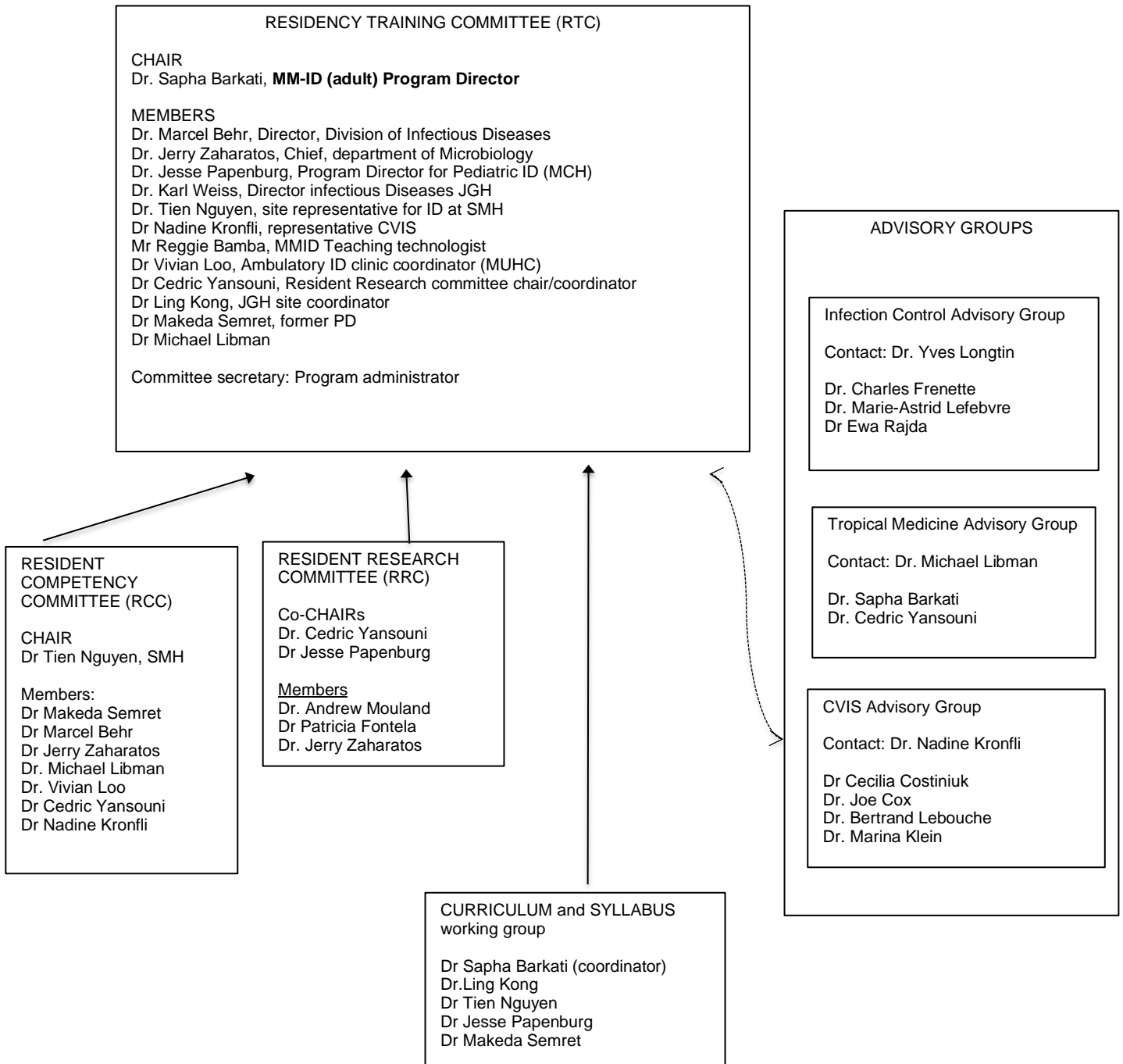
This committee meets at least quarterly and oversees all activities of the combined training program. The RTC is composed of academic attending staff involved in regular supervision of residents, division heads and site coordinators. The program Director chairs the RTC; a resident representative (usually the Chief Resident) or their designate will also sit on the committee. The program administrator attends meetings in a non-voting capacity and serves as the committee secretary.

The core functions of this committee are to:

- Develop and review the training curriculum (in accordance with the accreditation standards of the Royal College), at least every 2 years
- Advise the Program Director on pedagogical issues
- Address residents' pedagogical and training concerns and identify deficiencies in the program or of specific faculty supervisors
- Select candidates for admission to the program
- Approve promotions based on Promotions Committee recommendations
- Select or approve guest speakers for the Academic Half-day
- Approve funds allocation for the purpose of post-graduate education

Organizational Structure

Infectious Diseases and Medical Microbiology



Resident Research

Resident research is a core component of the training program. The Resident Research Subcommittee provides oversight and guidance for resident research activities. This group is composed of 4 active researchers representing both clinical and basic science research, appointed by the Residency Training Committee.

The subcommittee meets at least 4 times per year with all residents.

This committee's core functions are to:

- Guide residents in planning, conducting and disseminating the results of research projects
- Link residents with appropriate supervisors
- Monitor resident research progress and scholarly activities
- Offer scientific critique of current and planned projects
- Ensure resident scholarly activities comply with ethical and moral standards of research
- Advocate on behalf of the residents in the event of conflicts

Terms of reference for this subcommittee and the mechanisms for conflict resolution are described in appendix (Terms of Reference: Resident Research Subcommittee).

Procedures for resident funding requests also outlined in appendix.

Resident Competency

The Competency committee determines whether the residents are promoted to the next stage of training. This committee meets a minimum of twice per year, coinciding with the expected end of each stage of training. This group is composed of a minimum of 4 members (file reviewers), in addition to the committee chair (appointed by the RTC) and the Program Director.

The current chair of this committee is Dr Tien Nguyen.

The core functions of this committee are to:

1. Review the resident evaluations as presented by the file reviewers, and identify residents in academic difficulty
2. Determine the suitability of residents for annual promotion and readiness for Royal College Examinations
3. Serve as an advisory resource to the Program Director for development of supplemental and remedial training as necessary

The terms of reference of this subcommittee are described in appendix (Terms of Reference: Program Competency Sub-Committee)

Academic Activities

Inter-hospital ID (IHID) Rounds: Thursday 8-9 AM, via Zoom

IHID rounds take place weekly, with the exception of July and August.

The chief resident (generally a resident in PGY5) will be responsible for scheduling residents to present during IHID rounds (each resident generally will present on a topic of their choice, about 4 times per year. Residents will conduct appropriate in-depth review of the relevant literature on their topic and present any new data. If presenting an article as a journal club presentation, residents are expected to select an article that addresses a relevant topic and present it both in terms of evidence-based medicine characteristics, and its potential impact on ID practice. Faculty members will provide constructive feedback after each presentation.

Academic Half day: Thursday 9 – 11:00AM; in person or via Zoom

The Academic Half-day takes place weekly, with the exception of July-August when only 5 academic half-days will be held. The half days consist of teaching sessions with faculty on a variety of topics, notably infectious diseases not frequently encountered during consultation service or in ambulatory care; basic science topics and microbiology issues not easily taught in a clinical or laboratory setting. A comprehensive list of topics (syllabus) and a schedule will be provided to the residents at the start of the academic year; updates and changes to the schedule will be communicated by email to all residents and faculty. The residents are encouraged to set learning objectives around the topic, to enable active participation during the teaching session and self-directed learning.

ID Fellows' Retreat

Each year in August, the University of Toronto hosts a weeklong retreat for all Canadian ID trainees. This week consists of daily speakers and small group sessions covering a variety of topics and provides both a foundation in ID and an update on new issues. This week is mandatory for ID fellows. Fellows are excused from clinical service for the week to attend. This week is in lieu of the ID half-days for July and August, and as such, no vacation time or professional leave is required to attend.

Resident Supervision

Residents are always under the guidance and supervision of a supervising faculty.

While on clinical in-patient service, ID residents are expected to take “first call”, however the supervising faculty is always available to review all consultations promptly, while encouraging the resident to develop independence throughout their training.

During night call or weekend calls, the resident is expected to review all consults and questions with the supervisor. Generally clinical duties will be shared with the supervising staff (eg. the resident will see new consults, while the supervisor rounds on previously known patients).

During Microbiology rotations, residents in the combined ID/Med Micro program will be on call one weekend per period (the resident is free to select the weekend they will do call) at the site of their microbiology rotation. In this case, the resident is only responsible for new consultations and will review with the ID staff on service that weekend. Residents who are on call for ID consultation service are not expected to simultaneously be on call for microbiology laboratory issues.

Resident Assessments

Process

Supervisors must make every effort to provide timely ongoing formative feedback to the residents, and in particular to those with identified weaknesses. The final assessment should be discussed in person on the last day of the rotation for all residents. All supervising faculty for rotations will receive evaluation forms to complete through one45, and the head evaluator for each site/rotation will submit the final summative evaluation which will include all the comments of all involved supervisors.

Residents must acknowledge in the Approved Assessment System that they have seen their assessment. The resident may indicate that he/she disagrees with such assessment. Residents should review their assessment in the One45 System in a timely manner to keep track of their personal progress and to tailor their self-learning based on feedback. If the resident does not agree with an assessment, he/she should follow the process outlined in the Appeal's Policy (see below).

The assessment is based on the goals and objectives of the training experience and/or competencies each resident is required to attain at different levels of training (using the specific In – Training Evaluation Reports for each training experience, and/or completion of the Entrustable Professional Activities, EPA). The faculty supervisor is ultimately responsible for determining whether a resident has met the goals and objectives and has demonstrated the required competencies during a rotation taking into account all information obtained via direct and indirect observation of resident performance, and integrated feedback from other individuals (eg. team members, laboratory personnel etc).

Some training experiences are longer than 4 weeks (for example, longitudinal clinic). In such cases, the resident will receive a summative assessment after a maximum of 12 weeks through the One45 System.

Successful completion of a rotation is defined as obtaining a SATISFACTORY or SUPERIOR global assessment.

A SATISFACTORY global assessment means that the overall performance of the resident met the goals and objectives of the rotation and/or that the resident has demonstrated the required competencies.

A SUPERIOR global assessment means that the overall performance of the resident has exceeded the goals and objectives of the rotation and/or the required competencies by a significant margin.

An UNSATISFACTORY or BORDERLINE assessment anywhere on the assessment form indicates that weaknesses have been identified. This means the resident has not met the goals and objectives of the rotation and/or has not demonstrated the required competencies for their level during the rotation.

A BORDERLINE global assessment means that the supervisor(s) identified weaknesses in the resident's performance. When comparing the resident with other residents at the same level of training, the supervisor believes that this resident is weak.

An UNSATISFACTORY global assessment means that the overall performance of the resident or some aspect of that performance was below the minimal standard for a resident at that level of training.

The faculty supervisor must notify a resident with an unsatisfactory or borderline global assessment immediately. Should the resident contest the global assessment, he/she should, after discussing with the supervisor, notify the Program Director to initiate the formal appeal process, described in detail in the McGill Postgraduate Medical Education's policy on Assessments and Promotions:

[pgme_promotions_july_1_2020-approved.pdf \(mcgill.ca\)](#)

[pgme_promotions_july_1_2020-approved.pdf \(mcgill.ca\)](#)

Any appeals to the evaluation must be made within 20 days after the trainee becomes aware of the evaluation.

In the event the Program Director was involved directly in the global assessment being contested, the Director of Infectious Diseases Service or the Program Ombudsman will assume this responsibility.

In-Training Evaluation Reports (ITER) and Entrustable Professional Activities (EPA)

The ITERs and EPAs are among the main modalities for assessing resident performance according to discipline-specific competencies. Residents are evaluated at the end of most training experiences with a rotation specific ITER, an EPA or both, on the one45 computer-based evaluation system. Residents can review their evaluations electronically. Any concerns with the evaluations will be addressed as outlined in the Postgraduate policy on Appeals.

Practice Examinations

Residents are required to write in-training practice examinations (ITE) for ID (generally in the fall), and Medical microbiology (around Feb-March). They are further encouraged to sit for the IDSA Fellows In-Training Examination (American in-training exam) once yearly. These in-training examinations are not used in an evaluative fashion but rather serve to highlight learning needs of the residents; the summary provided can be useful as a review tool.

Faculty and Rotation Evaluations

Residents must complete confidential Rotation Evaluations and Faculty Evaluations using the web-based One-45 evaluation system. When at least 5 evaluations for each faculty member or rotation have been submitted, the results are compiled into a single summary report and are reviewed by the Division Director and used in the University performance evaluations of the faculty. Individual faculty members are supplied with a summary of their evaluations. Each Site Coordinator/Rotation Coordinator receives a similar summary of Rotation Evaluations.

Any specific faculty or rotation problems that require prompt attention must be brought to the attention of the Program Director.

Remediation Process

Weaknesses identified in a resident's performance that did not lead to a borderline or unsatisfactory evaluation are discussed first by the faculty supervisor assessing the resident, and will then be followed up by the program director during the 6-month progress review. A remediation plan will

be developed by the RTC and carried out within a reasonable time-frame (usually one month), after which the Program Director and the faculty supervisor involved in the remediation plan will formally revisit the issue. Successful remediation will reinstitute the resident's regular training schedule. Incomplete remediation may require additional remediation, to be defined by the RTC. Every attempt will be made to provide guidance to the resident to define, address, and remediate problems. The program director may meet with the resident at other times, as necessary.

In the event of a more serious borderline or unsatisfactory evaluation(s) the Program Director and the members of the RTC will organize the standard policies of probation and remediation as per the McGill Policy ([pgme_promotions_july_1_2020-approved.pdf \(mcgill.ca\)](https://www.mcgill.ca/pgme/promotions/july_1_2020-approved.pdf))

Resident Progress Review

Residents are required to meet with the Program Director bi-annually to review progress, career goals and other issues.

The trainee will complete a Self-Assessment Form prior to the Progress Review. These meetings will be documented and will form part of the resident's academic record.

For their Progress Review, residents are encouraged to prepare a brief summary of whether their residency goals and objectives are being met, their professional strengths and weaknesses, the progress made on longitudinal requirements (e.g. research projects and clinics), and an assessment of personal/professional life balance.

Residents are encouraged to organize and document all the components that will form the basis of their 6-month progress review in a Portfolio, which will also serve as a basis for future Royal College Maintenance of Certification documentation. This should include:

- Copy of Assessments (ITERS, teaching evaluations, EPAs, other)
- Reports of in-training examinations (ID in-training exam, IDSA fellows ID examination, Med Micro in-training exam)
- Scholarly activity and professional development (conferences, workshops, abstracts of presentations, certificates of completion of on-line courses, manuscripts, awards, administrative activities)
- Curriculum vitae

Further, the residents should prepare for their progress review using the questions below as a guide to facilitate self-reflection:

Career

- 1) What are my desired professional outcomes over the next six months?
- 2) What significant professional challenges will I likely face over the next six months?
- 3) What is not going well in my training?
- 4) What have I learned about myself while training in IDMM?
- 5) Who am I not working well with and how can I do to improve that relationship?
- 6) What characteristics / behaviors do I admire in my peers and supervisors? What do I not like?
- 7) What do I enjoy most about ID/MM? Is there an area/topic/aspect that I dislike?
- 8) How do I envision my career in five years? (eg. large or small setting? Academic vs community? Will research be an important component of my career? Teaching? Administrative?)
- 9) What skills, knowledge, and experience do I need to achieve my goals?

Personal

- 1) What are the most valuable achievements/goals I attained in the past six months?
- 2) What are my most significant personal goals and challenges for the next six months?
- 3) Can I improve the way I am dealing with the current challenges in my life? If so, how?
- 4) What do I need to keep doing? What would I like to change about myself?
- 5) How am I treating the most important people in my life? How could I treat them better?

Sample Self-evaluation form:

- 1) Is the IDMM residency program meeting your educational needs? Summarize how your residency goals and objectives were met (or not) in the past six months.
- 2) Summarize your professional strengths and weaknesses during the past six months.
- 3) Summarize your progress on the following longitudinal requirements.
 - Research projects
 - Longitudinal clinic
- 4) List your professional goals for the next six months; outline how you will achieve and areas you might need help with
- 5) List your long-term career plans; outline your progress towards them to date, and areas you need help with
- 6) Provide an assessment of your personal and professional life balance over the past six months.

Date:

Resident Signature:

Program Director Signature:

**The resident should bring a completed form at the bi-annual Progress Review; a copy will be kept with the Program director.*

Preparing for microbiology rotations

Rotation Master Schedules may change due to unforeseen circumstance. To ensure that schedule changes do not affect their educational experience, residents should contact the faculty/supervisor assigned to their rotation, by email, at least 7 days before the start of the block.

For general microbiology laboratory rotations at the MUHC (Bacteriology 1-3) the resident should contact the microbiologist listed as MICRO C as well as the assistant Chief micro Technologist Mr Reggie Bamba (reggie.bamba@muhc.mcgill.ca).

Residents who choose subspecialty microbiology blocks as electives should contact the PD and the rotation coordinator (responsible microbiologist) to approve the elective as space and availability are limited.

Resident Wellness

Residents are encouraged to strive for a healthy work-life balance, and to seek support when issues arise. The McGill Post Graduate Medical Education office provides specific sessions on wellbeing and coping strategies for residents. Attendance at these sessions is mandatory for residents and they are released from clinical responsibilities to attend them.

Additionally, all residents have access to services of the McGill WELL (Wellness Enhanced Lifelong Learning) Office, supported by the Assistant Dean for Resident Affairs at McGill.

(information on booking appointments and access to consultants: [Wellness Support | Office of Medical](#)

[Learner Affairs - McGill University](#)) Counseling can be also provided through the McGill Counseling Service, and medical issues can be addressed through McGill Student Health Services.

During individual progress reviews with the program director, residents will be advised of options for dealing with stress.

In the event of conflicts with supervising staff or issues of resident abuse, the residents are encouraged to first discuss their concern with the program director. Should resolution not be possible at this level, or should the conflict involve the program director, the issue should be brought to the divisional Chief and/or the external ombudsman. ([refer to www.mcgill.ca/thewelloffice/](http://www.mcgill.ca/thewelloffice/)).

The External Program Ombudsperson

The role of the External Ombudsperson is to offer confidential, informal and independent information and advice. In addition, the Ombudsperson can intervene in difficult situations or provide referrals for support or counseling as needed. The Ombudsperson acts as an advocate for the Infectious Diseases residents on issues of equity and fairness. All discussions with the Ombudsperson are in confidence; he/she will intervene only if requested, or as required by law.

The Ombudsperson is a member of the Department of Gastroenterology and does not have an administrative role within our Training Program. Dr. Phil Wong is currently the Ombudsperson for the combined ID/MM training program.

Resident Safety

In adherence with the policies of the Postgraduate Medical Education (PGME) Office and the McGill Health Care Facilities, the Medical Microbiology and Infectious Diseases training program recognizes that residents have the right to a safe environment during their residency training. The responsibility for promoting a culture and environment of resident safety rests with the Faculty of Medicine, regional health authorities, health care establishments, clinical departments, and residents themselves. The concept of resident safety includes physical, emotional, and professional security.

The Postgraduate Medical Education (PGME) & McGill Health Care Establishment Resident Health & Safety Policy provides a central faculty mechanism for residents to use when faced with a health and safety issue during their training, which cannot be resolved at the local training site level.

On occasion residents/fellows may be confronted with a situation for which they are not sufficiently trained. It is expected that they, like other physicians, will deal with such situations as practicing professionals to the best of their ability.

KEY RESPONSIBILITIES:

For Residents

- To provide information and communicate safety concerns to the program and to comply with safety policies.
- To undertake appropriate training in laboratory safety and WHMIS in accordance with the requirements of the training program

For the Training Programs

- To act promptly to address identified safety concerns and incidents and to be proactive in providing a safe learning environment.
- To provide specific training in issues related to laboratory safety including but not limited to
 - Biosafety and containment levels,
 - Appropriate laboratory technique for the manipulation and storage of microorganisms
 - Hazardous material storage and handling
 - Management of spills
 - Disposal of microbial and chemical waste

PHYSICAL SAFETY

These policies apply only during residents' activities related to the execution of residency duties:

Residents should familiarize themselves with the location and services offered by the Occupational Health and Safety Office of the health care facility in which they are training. This includes familiarity with policies and procedures for infection control and protocols following exposure to contaminated fluids, needle stick injuries, and reportable infectious diseases.

Residents who are infected by a blood borne pathogen must declare their condition to the Associate Dean's office and to the SERTIH (Service d'Évaluation des Risques de Transmission d'Infections Hématogènes), especially if they may be involved in exposure-prone procedures.

Residents must observe routine practices and additional precautions when indicated including use of a dedicated laboratory coat during microbiology rotations.

Residents must keep their immunizations up to date. Overseas travel immunizations and advice should be sought well in advance when traveling abroad for electives or meetings. Consult the Tropical Medicine Clinic at the RVH other similar facility (fees may apply).

Pregnant residents should be aware of specific risks to themselves and their fetus in the training environment and request accommodations where indicated. Residents should consult the Occupational Health and Safety Office of the health care facility for information.

- Residents should not work alone after hours in health care or academic facilities without adequate support from Security Services.
- Residents should not work alone at after-hours clinics.
- Residents should only telephone patients using caller blocking and should use the health care facility phones and not their personal cellular phone or pda.
- Residents should not be expected to walk alone for any major or unsafe distances at night.
- Residents should not drive home after call if they have not had adequate rest.
- Residents should not assess violent or psychotic patients without the backup of security and an awareness of accessible exits and buzzers.
- The physical space requirements for management of violent patients must be provided where appropriate.
- Site orientations should include a review of local safety procedures.
- Residents going on International Electives should consult the Global Health web site on the following link: [International Electives and Placements | Global Health Programs - McGill University](#)
- In general, the PGME Office will not approve electives in regions for which the Canadian government has issued a Travel Warning.
- Residents should not be on call the day before long distance travel for clinical or other

academic assignments by car. When long distance travel is required in order to begin a new rotation, the resident should request that they not be on call on the last day of the preceding rotation. If this cannot be arranged, then there should be a designated travel day on the first day of the new rotation before the start of any clinical activities.

- Residents must undergo laboratory safety and WHMIS training before beginning all hands-on training in the laboratory.
- Safety concerns within the laboratory should be reported to the Assistant Chief technologist
- Level 3 pathogen work may not be undertaken until appropriate training for the BSL3 facility has been completed.

PSYCHOLOGICAL SAFETY

- When a resident's performance is affected or threatened by poor health or psychological conditions, the resident should be placed on a leave of absence and receive appropriate support. These residents should not return to work until an appropriate assessor has declared them ready to assume all of their resident duties, including call.
- Residents must be aware of the mechanisms and resources in place to manage issues of perceived lack of resident safety, intimidation, harassment and abuse.

PROFESSIONAL SAFETY

- Some physicians may experience conflicts between their ethical or religious beliefs and the training requirements and professional obligations of physicians. Resources should be made available to residents to deal with such conflicts via the PGME Office.
- Programs are bound by FMRQ contract allowances for religious and other statutory holidays.
- The PGME Office and the Training program should promote a culture of safety in which residents are able to report and discuss adverse events, critical incidents, 'near misses', and patient safety concerns without fear of punishment.
- RTC or Promotions Committee members must not divulge information regarding residents. It is the responsibility of the residency Program Director to make the decision and to disclose information regarding residents (e.g. personal information and evaluations) outside of the residency training committee and to do so only when there is reasonable cause. The resident file is confidential.
- Regarding resident files, programs must be aware of and comply with the Freedom of Information and Privacy (FOIP) Act. Programs can obtain guidance about FOIP issues from the McGill Access and Privacy Coordinator. Contact information is found on the McGill Secretariat web site.
- Resident feedback and complaints must be handled in a manner that ensures resident anonymity unless the resident explicitly consents otherwise. However, in the case of a situation that poses a threat to other residents, staff or patients, a Program Director may be obliged to proceed against the complainant's wishes. In that case the Faculty of Medicine's Residency Affairs Office or the main campus Harassment Office or the McGill Ombudsperson should be consulted immediately. Depending on the nature of the complaint, the Collège des médecins du Québec may need to be informed and involved. In general, the Program Director may serve as a resource and advocate for the resident in the complaints process.
- Residents are insured for professional liability by the Association québécoise d'établissements de santé et de services sociaux (AQESSS) automatically when they have a valid training card.

See Appendix for full Safety Policy, references and contact information.

Training Experiences (Rotations)

Adult ID in-patient consultation service

Abbreviation: Adult ID cons service

Overview:

Residents will complete several one-month blocks of Adult ID inpatient consultation service. During these rotations, residents will encounter a wide variety of human illness caused by microorganisms (bacteria, viruses, fungi, parasites, and prions), in the emergency department as well as inpatient wards. The resident will generally function as the most senior trainee in the in-patient ID consultation service.

Residents will take detailed medical histories, perform physical examinations, analyze accumulated data including biochemical, microbiologic, and radiological investigations to generate differential diagnoses and develop management plans for each case. The resident will review each patient they encounter with their supervising attending physician. Residents will review cases seen by junior residents and medical students prior to reviewing with staff, as part of graded responsibility. They will further collaborate with individuals and teams of healthcare professionals in the teaching hospital setting (physicians, nurses, therapists, social workers, and laboratory personnel).

Learning context / Training Site(s)

- Jewish General Hospital
- Royal Victoria Hospital (Glen site, McGill University Health Center)
- Montreal General Hospital (Mountain site, McGill University Health Center)

Although much of the case mix is the same between the various hospitals, residents should recognize and take advantage of these specific educational exposures:

JGH: community and hospital acquired infections, infections in migrants and refugees, tuberculosis

RVH: infectious complications of surgery (cardio-thoracic, urology, hepatobiliary), infections in malignancy, infections in pregnancy/post-partum women,

MGH: orthopedic infections, trauma-associated infections, complications of radiotherapy and oromaxillofacial surgery

Evaluation Modalities

- ITER (ID ADULT ID consultation service))
- The following EPAs can be completed during this rotation, depending on the stage of training:
 - Transition to discipline:
 - ID 1.1: Assessing patients with a confirmed or suspected infectious disease
 - ID 1.2 Recognizing life-, limb-, and/or organ-threatening presentations and initiating management
 - Foundations:
 - ID 2.1: Assessing immunocompetent patients and initiating management for common infections
 - ID 2.2 Providing ongoing care for immunocompetent patients with a common infection
 - ID 2.3 Summarizing and presenting patient information for case conferences
 - Core of discipline:
 - ID 3.1: Assessing inpatients with a complex and/or chronic infectious disease presentation and initiating management

- ID 3.2 Providing ongoing care for inpatients with a complex and/or chronic infectious disease
- ID 3.7 Documenting clinical encounters
- ID 3.8 Leading discussions with patients, families and/or other health care professionals in challenging scenarios
- ID 3.9 Delivering teaching to a variety of audiences, including peers, junior trainees, and/or other health professionals

Recommended resources:

- Textbook of Infectious Diseases (Mandell's Principles and Practice of Infectious Diseases)
- Sanford guide to antimicrobial therapy or other reference for infectious diseases therapeutics
- Recent reviews and other scientific publications based on cases seen during consultation service

Learning objectives

MEDICAL EXPERT

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

- Perform appropriately timed clinical assessments and provide recommendations in an organized manner
- Carry out professional duties in the faces of multiple competing demands
- Recognize and respond to the complexity, uncertainty, and ambiguity inherent in practice
- Apply knowledge of the clinical and biomedical sciences relevant to infectious diseases, specifically those encountered routinely in inpatient consultation service:

- Acute and chronic infectious disease (infectious agents, host immunity, and syndromes)
- Complex or undifferentiated presentations with infection in the differential diagnosis
- Clinical and laboratory approach to diagnosis and management of fever syndromes
- Clinical features and principles of diagnosis and management of sepsis, multiorgan dysfunction syndrome, and post-infectious syndromes including rheumatic fever
- Role of medical imaging in the investigation of infectious diseases and syndromes
- Apply knowledge of antimicrobial agents, including knowledge of toxicities, interactions, and PK-PD for the optimal benefit of patients

2. Perform a patient-centred clinical assessment and establish a management plan

- Prioritize issues to be addressed in a patient encounter
 - Determine and prioritize the questions to be addressed in a consultation
 - Recognize infections that represent a medical emergency and respond appropriately
- Elicit a history that is relevant, concise, and accurate, including
 - Factors that predispose the patient to infectious diseases, including sociodemographics, institutionalization, travel, work, and personal behaviours and exposures
 - Indicators that suggest altered immunity, including family history
 - Indicators that suggest infection with antimicrobial-resistant microorganisms
 - Immunization status
 - Antimicrobial allergy status
 - Factors that impact an individual's access to health care and other resources
- Perform a physical exam relevant to the presentation and suspected predisposing factors and exposures
- Develop a differential diagnosis
 - Propose alternative etiologies for illness mimicking infectious disease
- Select investigations and interpret results, including
 - Microbiological tests most appropriate for the specific infection(s) under consideration
 - Immunological tests
 - Histopathology
 - Medical imaging

3. Plan and provide interventions and therapies for the purpose of management

- Determine the most appropriate procedures or therapies (e.g. antimicrobial agents, antitoxins, immune therapies, source control, prophylaxis, immunization etc.)
- Obtain and document informed consent, explaining the risks and benefits of, and the rationale for, a proposed procedure or therapy
- Prioritize procedures or therapies, taking into account clinical urgency and available resources
- Provide management in a skilful and safe manner, adapting to unanticipated findings or changing clinical circumstances
 - Prescribe antimicrobial agents in a safe and effective manner, considering their positive and negative effects in individual patients and the community in general

- Recommend other interventions to treat or prevent infections and their sequelae
 - Prescribe chemoprophylaxis
 - Apply harm reduction strategies for individuals with increased likelihood of infection
- Implement IPAC to prevent transmission of communicable infectious diseases

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

-Implement a patient-centred care plan that supports ongoing care, follow-up on investigations, response to treatment, and further consultation

- Monitor for, diagnose and treat short- and long-term complications of infections and their treatments, including superinfections
- Prevent, recognize and manage antimicrobial toxicities and drug interactions

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

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

-Adopt strategies that promote patient safety and address human and system factors

- Perform risk assessments to determine need for additional precautions
- Promote hand hygiene and correct use of PPE
- Apply safe practices relevant to specimen collection and handling

COMMUNICATOR

1. Establish professional therapeutic relationships with patients and their families

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

- Demonstrate cultural humility
- Establish trust and rapport with patients and family who are
 - Stigmatized because of their infection or the factors that predispose them to infection
 - Embarrassed by or ashamed of a new diagnosis of an infection that is chronic, potentially stigmatizing, or contagious to others
- Optimize the physical environment for patient comfort, dignity, privacy, engagement, and safety
 - Recognize that patients with an infection may feel vulnerable in terms of confidentiality, privacy, and autonomy
- Recognize when the perspectives, values, or biases of patients, patients' families, physicians, or other health care professionals may have an impact on the quality of care, and modify the approach to the patient accordingly
 - Demonstrate a non-judgmental attitude
- Respond to a patient's non-verbal behaviours to enhance communication
- Manage disagreements and emotionally charged conversations
- Adapt to the unique needs and preferences of each patient and to the patient's clinical condition and circumstances

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

-Use patient-centred interviewing skills to effectively gather relevant biomedical and psychosocial information

-Provide a clear structure for and manage the flow of an entire patient encounter

-Seek and synthesize relevant information from other sources, including the patient's family, with the patient's consent

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

-Share information and explanations that are clear, accurate, and timely, while assessing for patient and family understanding

- Use developmentally appropriate language and avoid medical jargon
- Educate patient and families about the role of appropriate antimicrobial use in contributing to a good therapeutic outcome and decreasing the occurrence of antimicrobial resistance
- Provide information about the legal requirements for physicians to divulge personal patient information, such as a communicable infection
- Provide information about the need for partner notification if there is a risk of transmission

-Disclose harmful patient safety incidents to patients and their families

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

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

-Assist patients and their families to identify, access, and make use of information and communication technologies to support their care and manage their health

-Use communication skills and strategies that help patients and their families make informed decisions regarding their health

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

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

- Prepare well-organized consultation notes, providing clear direction to the referring physicians and other health professionals
- Provide well-organized and legible orders and progress notes in the medical record

-Communicate effectively using a written health record, electronic medical record, or other digital technology

-Share information with patients, families, and others in a manner that enhances understanding and that respects patient privacy and confidentiality

COLLABORATOR

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

-Establish and maintain positive relationships with physicians and other colleagues in the health care professions to support relationship-centred collaborative care

-Engage in respectful shared decision-making with physicians and other colleagues in the health care professions

- Convey information from the clinical assessment in a manner that enhances patient care
- Encourage discussion, questions and interaction relevant to the case
- Synthesize, present and discuss cases effectively at rounds

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

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

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

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

LEADER

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

- Contribute to a culture that promotes patient safety
- Analyze patient safety incidents to enhance systems of care
 - Participate in critical incident and near-miss audit and response activities
- Use health informatics to improve the quality of patient care and optimize patient safety

2. Engage in the stewardship of health care resources

- Allocate health care resources for optimal patient care
- Apply evidence and management processes to achieve cost-appropriate care

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

- Set priorities and manage time to integrate practice and personal life
- Manage personal professional practice(s) and career
- Implement processes to ensure personal practice improvement

HEALTH ADVOCATE

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

- Work with patients and families to address determinants of health that affect them and their access to needed health services or resources
- Work with patients and families to increase opportunities to adopt healthy behaviours
- Incorporate disease prevention, health promotion and health surveillance into interactions with individual patients

SCHOLAR

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

- Develop, implement, monitor, and revise a personal learning plan to enhance professional practice
- Identify opportunities for learning and improvement by regularly reflecting on and assessing their performances using various internal and external data sources
- Engage in collaborative learning to continuously improve personal practice and contribute to collective improvements in practice

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

- Recognize the influence of role modelling and the impact of the formal, informal and hidden curriculum on learners
- Promote a safe and respectful learning environment
- Ensure patient safety is maintained when learners are involved
- Plan and deliver teaching activities
- Provide feedback to enhance learning and performances
- Assess and evaluate learners, teachers, and programs in an educationally appropriate manner

3. **Integrate best available evidence into practice**

- Recognize practice uncertainty and knowledge gaps in clinical and other professional encounters and generate focused questions that can address them
- Identify, select, and navigate pre-appraised resources
- Critically evaluate the integrity, reliability, and applicability of health-related research and literature
- Integrate evidence into decision-making in their practice

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

- Demonstrate an understanding of the scientific principles of research and scholarly inquiry and the role of research evidence in health care
- Identify ethical principles for research and incorporate them into obtaining informed consent, considering potential harms and benefits, and considering vulnerable populations
- Contribute to the work of a research program
- Pose questions amenable to scholarly investigation and select appropriate methods to address them
- Summarize and communicate to professional and lay audiences, including patients and families, the findings of relevant research and scholarly inquiry

PROFESSIONAL

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

- Exhibit appropriate professional behaviours and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality
- Demonstrate a commitment to excellence in all aspects of practice
- Recognize and respond to ethical issues encountered in practice, including
 - Limits of privacy and confidentiality
 - The conflict between individual autonomy and liberty and measures to prevent and control the spread of infection, such as isolation and quarantine
- Recognize and manage conflicts of interest
 - Recognize the potential for conflicts of interest related to interactions with manufacturers or distributors of antimicrobial agents, vaccines, diagnostics, and devices and equipment
- Exhibit professional behaviours in the use of technology-enabled communication

2. Demonstrate a commitment to society by recognizing and responding to societal expectations in health care

- Demonstrate accountability to patients, society, and the profession by responding to societal expectations of physicians
- Demonstrate a commitment to patient safety and quality improvement

3. **Demonstrate a commitment to the profession by adhering to standards and participating in physician-led regulation**

Fulfil and adhere to professional and ethical codes, standards of practice, and laws governing practice
Adhere to requirements for mandatory reporting, including diseases of public health significance and suspected child maltreatment and elder abuse

Recognize and respond to unprofessional and unethical behaviours in physicians and other colleagues in the health care professions

4. **Demonstrate a commitment to physician health and well-being to foster optimal patient care**

Exhibit self-awareness and manage influences on personal well-being and professional performance

Manage personal and professional demands for a sustainable practice throughout the physician life cycle

Promote a culture that recognizes, supports and responds effectively to colleagues in need

Rotation specific objectives

Medical expert

- Elicits a history that is relevant, concise, accurate and appropriate to the patient's problem(s)
- Performs a physical examination that is relevant and detailed
- Selects appropriate investigations, formulates relevant differential diagnoses and develops sound management plan
- Applies microbiological and clinical knowledge correctly towards diagnosis and treatment of infections encountered
- Demonstrates insight into his/her own limitations (including knowledge gaps) and seeks help/advice as needed

Scholar

- Accesses, retrieves, appraises and applies relevant medical and scientific information to clinical cases encountered
- Ensures dedicated time for the teaching of trainees and contributes to teaching of junior residents and students on consultation team

Communicator

- Presents cases in an organized, logical, comprehensive yet concise manner to supervisor
- Provides excellent documentation of clinical assessment, impression and management plan to treating teams
- Communicates with patients and family members in a manner that is understandable, respectful and empathetic

Collaborator

- Consults effectively with other physicians and health care professionals as appropriate
- Accepts and integrates the opinions of treating teams and other team members as appropriate

Leader

- Manages the clinical service efficiently taking into account own learning needs
- Delegates and supervises consultation requests to junior residents and students appropriately
- Utilizes healthcare resources effectively to balance patient care with healthcare stewardship (diagnostic and antimicrobial) considerations

Health Advocate

- Identifies important determinants of health affecting patients, and prioritizes the needs of patients in the decision-making and management process

Professional

- Exhibits appropriate personal and interpersonal professional behaviours at all times
- Demonstrates punctuality and reliability at all times
- Demonstrates integrity, and compassion in providing medical care to patients

Author(s): Dr Makeda Semret, Dr. Ling Yuan Kong

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Longitudinal ID Clinic (MUHC-RVH)

Abbreviation: Long ID Clin - MUHC-RVH

Overview:

Residents will have a longitudinal clinic throughout the entire duration of their training. The longitudinal clinic experience provides an opportunity for trainees to learn all aspects of an infectious diseases' outpatient practice including triaging, providing pertinent and helpful outpatient consultations to referring physicians, attending to patient inquiries, following up on patient tests and procedures, and transitioning care back to the community as appropriate. Residents will assume graded and progressive responsibility when assessing and managing patients referred from the Emergency Department, other specialties, and the community. They will also provide follow-up for selected patients previously followed during inpatient rotations and who require the ongoing care of an Infectious Diseases subspecialist (including those requiring outpatient parenteral antibiotic therapy, OPAT).

Learning context:

Longitudinal clinic is based at the MUHC/RVH site, on Tuesday afternoons. At least one physician will supervise the longitudinal clinic at all times (Dr. Todd Lee, Dr Lorne Schweitzer, Dr Guillaume Butler-Laporte, or Dr Makeda Semret). Senior residents during their PGY-6 year have the option of choosing subspecialty clinics for their longitudinal clinic experience (eg. TB/NTM clinic with Dr Behr; Tropical Medicine with Drs Yansouni, Libman or Barkati; CVIS with Dr Kronfli or Klein; Transplant ID with Drs Cheng or Vinh), for a minimum duration of 3 months per subspecialty clinic.

Evaluation Modalities

- **ITER** Longitudinal ID clinic (Long ID clin MUHC-RVH)
- The following EPAs can be completed in this rotation during the Core of discipline phase of training (Generally PGY 5)
 - **ID 3.3** Providing consultation and ongoing care in the outpatient setting
 - Providing immunization and/or prophylaxis consultations
 - **ID 3.8** Leading discussions with patients, families and/or other health care professionals in challenging scenarios
 - **ID 3.10** Running a clinic.
- The following EPAs can be completed during the Transition to Practice phase of training (Generally late PGY 5 and PGY-6)
 - **ID 4.2** Managing an outpatient practice
 - **ID 4.3** Providing telephone consultation and advice to health care providers.

Rotation-specific objectives

Medical expert

- Elicit a history that is relevant, accurate and concise in the context of the outpatient environment
- Manage complex outpatients (from investigations to treatment plan) who have a variety of infectious diseases issues including special populations
- Properly select patients for outpatient parenteral antibiotic therapy (opat), monitor for side effects, and de-escalate to oral therapy as appropriate

Communicator

- Provide excellent written correspondence to referring physicians, which is both complete and educational.
- Answer outside phone calls about their patients from other physicians or health care practitioners
- Present and discuss case assessments and management plans of patients to supervisor clearly and succinctly

Collaborator

- Work with other health care professionals (doctors, nurses, and pharmacists) in a multidisciplinary fashion to manage their patients during their treatment (particularly opat)
- Function collaboratively as a group practice, adopt a culture of cross-coverage and collaboration when absence is necessary

Leader

- Assist in arranging a functional clinic schedule which allows for timely follow up of patients with active issues, the provision of new consultations, an educational experience, and a valuable service to their hospital and community
- Utilize healthcare resources appropriately and in keeping with evidence-based recommendations
- Supervise junior trainees when appropriate, and provide valuable teaching and feedback

Health advocate

- Connect patients to available resources within the institution or community
- Inform and educate patients on the benefits of vaccination and other prophylactic strategies as appropriate; counsel patients on a variety of topics pertaining to infectious diseases with an emphasis on the appropriate use of antimicrobials and complications thereof
- Identify patients for whom social determinants of health can be addressed to improve care of infectious diseases and involve appropriate resources where available

Scholar

- Integrate new knowledge from the medical literature into their ongoing care of patients with infectious diseases
- Generate new knowledge or facilitate knowledge translation through the preparation of educational case presentations, journal club, and case reports.

Professional

- Demonstrate a positive attitude, display empathy and skill in identifying possibly sensitive issues, respect confidentiality at all times
- Follow-up diligently and systematically on laboratory, radiology and other tests requested for patients
- Demonstrate punctuality and reliability at all times

Author: Dr Todd C. Lee; revised by Dr M. Semret

Date of last revision: June 1, 2024

Date of approval by Residency Training Committee: June 20, 2024

Adult ID consultation service Junior Attending

Abbreviation: ID cons Junior Att

Overview:

Residents will do a minimum of two one-month rotations in the Adult ID inpatient consultation service in the role of Junior Attending, during the Transition to Practice stages of training (middle-end of PGY 5). By this time they will have already completed 6 months of Adult ID in-patient consultation service, basic microbiology (bacteriology 1,2,3) and at least one month of Infection Prevention and Control.

During these blocks, the resident is expected to function at the level of an independent consultant with respect to management, interaction with other health care providers, teaching and patient care, and will have the opportunity to further develop the leader and scholar roles.

During this rotation, while continuing to develop the core competencies of the Infectious Diseases specialty, the resident will actively supervise, teach and evaluate junior trainees on the in-patient consultation team in close consultation with the attending staff. They will independently collaborate with individuals and teams of healthcare professionals in the teaching hospital setting (physicians, nurses, therapists, social workers, and laboratory personnel).

Learning context/Training Site(s)

- Jewish General Hospital
- Royal Victoria Hospital (Glen site, McGill University Health Center)
- Montreal General Hospital (Mountain site, McGill University Health Center)

As this rotation is a natural extension of the Adult Infectious Diseases In-patient Consultation Service rotation, many of the objectives will have already been achieved however objectives specific to this rotation are highlighted.

Evaluation Modalities

- ITER ID Adult ID Consultation Junior Attending
- The following EPAs can be completed during this rotation (Transition to Practice)
 - ID 4.1 Managing an inpatient consultation service
 - ID 4.3 Providing telephone consultation and advice to health care providers

Learning objectives:

MEDICAL EXPERT

General Requirements:

Demonstrate diagnostic and therapeutic skills for ethical and effective patient care.

Access and apply relevant information to clinical practice.

Demonstrate effective consultation services with respect to patient care, education and legal opinions.

Specific Requirements:

Knowledge

- Be able to demonstrate expert knowledge, skills and attitudes on the etiology, epidemiology, pathogenesis, natural history, pathology, clinical features, prevention and management of most infectious diseases, as outlined in the goals and objectives of the Adult ID inpatient consultation service
- Demonstrate expertise in the principles and practice of infection control, including managing nosocomial infections, recognizing outbreaks, implementing infection control interventions
- Provide a well-rounded differential diagnosis to complex problems in which infections may play a role
- Demonstrate expert knowledge in the study of microbes, including understanding of epidemiology and ecology, pathology, virulence factors, life cycles, taxonomy, structure/physiology, pathogenesis of most clinically relevant and commonly encountered micro-organisms
- Understand and utilize microbiological and clinical laboratory testing for common clinical scenarios, including limitations of such testing
- Demonstrate basic knowledge and understanding of Immunology including immunological evaluation of patients with recurrent infections
- Understand and apply the principles and practice of prevention of infection through immunization and chemoprophylaxis.
- Demonstrate expert knowledge of antimicrobial agents and other therapies in infectious diseases

Skills

- Provide expert Infectious Diseases consultation remotely to outside physicians in the service corridor served by our institution, including remote and First Nations communities, emphasizing patient safety, providing practical advice that is appropriate for the clinical setting and considering whether patients may require transfer to a higher-level institution.
- Demonstrate clinical consultation skills and apply knowledge and other relevant information to problem-solving including the introduction of new therapeutic options
- Anticipate short and long-term complications of infectious diseases and establish contingency plans for their treatments.
- Appropriately deliver patient/family education using the above-mentioned knowledge.
- Demonstrate insight into his/her own limitations.

COMMUNICATOR

General Requirements:

- Establish therapeutic relationships with patients/families.

- Establish clear communication within the consultation team
- Role model effective communication to junior trainees in the team

Specific Requirements:

- Formulate impressions and plans that answer the question asked, and that clearly relay the current diagnosis and proposed management, as well as the degree of uncertainty associated with these, if any.
- Role model effective communication to other members of the team
- Demonstrate the skills to impart infectious diseases-related knowledge to patients, colleagues, hospital staff and the general public.
- Gather information about patient's beliefs, concerns and expectations about their illness, in a sensitive and caring manner, and communicate to others involved in the care.
- Succinctly present key information to patients and families in a manner that enables them to be active participants in decision-making related to the infectious diseases affecting them, as well as to other health professionals.
- Know the basic principles that guide the provision of information to the general public and media about issues of local concern. Such issues may apply (but are not limited to) to natural communicable disease outbreaks, potential threats such as bioterrorism, antimicrobial resistance and inappropriate resource utilization.

COLLABORATOR

General Requirements:

Consult effectively with other physicians and health care professionals including laboratory personnel, Infection control practitioners and Public Health personnel.
Contribute effectively to other interdisciplinary team activities.

Specific Requirements:

- Convey relevant content-expertise clearly and decisively to other stakeholders and assist in collective decision-making.
- Accept, consider and respect the opinions of other team members while assuming a decisive role within the team
- Describe how health care governance influences the delivery of infectious diseases-related care, research and educational activities at a local, provincial, regional, and national level.

LEADER

General Requirements:

Utilize resources effectively to balance patient care, learning needs, and outside activities.
Allocate finite health care resources wisely.
Work effectively and efficiently in a health care organization.
Utilize information technology to optimize patient care, life-long learning and other activities.

Specific Requirements:

- Demonstrate an understanding of the structure; financing and operation of the Canadian health care system
- Demonstrate the ability to organize a busy consultation service comprising trainees of various levels such that (i) timely and effective patient care be consistently provided, (ii) appropriate exposure and graded responsibility is available to trainees.
- Prioritize new consultation requests and patient follow up in an organized and safe fashion.
- Access and apply a broad base of information to the care of patients in ambulatory care, hospitals and other health care settings, including knowledge of the most cost-effective laboratory procedures;
- Make and defend clinical decisions and judgments based on sound clinical evidence for the benefits of individual patients and the population served;
- Use information technology as a tool in patient management.

HEALTH ADVOCATE

General Requirements:

Identify the important determinants of health affecting patients.
Contribute effectively to improved health of patients and communities.
Recognize and respond to those issues where advocacy is appropriate.

Specific Requirements:

- Demonstrate knowledge and understanding of determinants of health as these relate to the burden of illness from diseases caused directly or indirectly by micro-organisms
- Identify biologic, psychosocial, cultural, environmental and economic determinants of health and use this information in a management plan; ensuring that the patient accesses the relevant public health and social services required to manage their particular disease(s) (eg. HIV, sexually transmitted diseases, tuberculosis and vaccine-preventable diseases). The Junior Attending will learn to identify areas in which they must advocate for their patients such that they are consistently providing optimal care
- Identify key issues and opportunities to reduce or minimize the morbidity and mortality from infectious diseases in the community.
- Describe how public health-related public policies are developed; identifying current policies that affect health, either positively or negatively, such as childhood and adult immunizations, infection control, and antimicrobial utilization.

SCHOLAR

General Requirements:

Develop, implement and monitor a personal continuing education strategy.
Critically appraise sources of medical information.
Facilitate learning of patients, house staff/students and other health professionals.
Contribute to development of new knowledge.

Specific Requirements:

- Recognize and identify gaps in knowledge and expertise around clinical question and formulate a plan to fill the gap;

- Conduct appropriate literature searches and access the relevant literature, based on identified clinical questions and present findings to the team
- Critically read and analyze identified articles, including identifying their strengths and limitations
- Identify practice areas for research
- Conduct educational sessions for the consultation team, demonstrating an understanding of preferred learning methods when dealing with junior trainees

PROFESSIONAL

General Requirements:

Deliver highest quality care with integrity, honesty and compassion.
Exhibit appropriate personal and interpersonal professional behaviours.
Practice medicine ethically consistent with obligations of a physician.

Specific Requirements:

- Display attitudes commonly accepted as essential to professionalism;
- Advance professional competence
- Evaluate continually own abilities, recognize limitations in professional competence and demonstrate willingness to call upon others with special expertise wherever appropriate
- Strive to resolve conflicts as they arise
- Demonstrate flexibility and a willingness to adjust based on changing circumstance
- Know and understand the professional, legal and ethical codes to which infectious diseases physicians are bound (confidentiality issues, appropriate conduct when interacting with industry including the manufacturers and distributors of antimicrobials and diagnostics products,..)
- Understand and be able to apply relevant legislation that relates to the health care system in order to guide one's clinical practice;
- Recognize, analyze and develop an approach to managing unprofessional behaviours in clinical practice, taking into account local and provincial regulations.

Recommended resources:

Textbooks of Infectious Diseases and Medical Microbiology (e.g. *Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases*; *Koneman's Color Atlas and Textbook of Diagnostic Microbiology*)

Recent reviews and other scientific publications based on cases seen during consultation service, e.g. Obtained through pubmed or Scopus

Sanford guide to antimicrobial therapy or other reference for infectious diseases therapeutics

Rotation-specific objectives:**Medical expert**

- Demonstrates expert knowledge and skills on diagnosis and management of commonly encountered infectious diseases
- Utilizes laboratory tests and other investigations with circumspection
- Makes and defends clinical decisions and judgements based on available evidence, for the benefit of patients and the population
- Demonstrates insight into his/her limitations, including the recognition of complex or unfamiliar clinical syndromes or unexpected clinical evolution of a patient's condition

Scholar

- Identifies knowledge gaps and accesses various reputed sources of medical information targeting knowledge gaps
- Conducts appropriate and useful educational sessions for junior members of the team

Communicator

- Relays current diagnosis and management plans and uncertainty associated with these, in a clear and concise manner to consultation team and treating team in collegial manner
- Models effective communication (written and verbal) to junior members of the team
- Presents key information to patients and their families in a manner that enables them to be active participants in their care

Collaborator

- Assists and facilitates collective decision-making, while assuming a decisive role within the team

Leader

- Organizes consultation service in a manner that balances efficiency, learning needs, and graded responsibility
- Ensures continuity of care for patients including referral to longitudinal clinics with appropriate graded responsibility

Health Advocate

- Identifies important determinants of health affecting patients, and advocates for patients so they receive appropriate care

Professional

- Displays attitudes commonly accepted as essential to professionalism and role models professionalism to junior trainees
- Recognizes and addresses unprofessional behaviours in a courteous and firm manner
- Acknowledges constructive recommendations from attending staff and attempts to integrate these into practice

Author(s): Drs. Cedric Yansouni, Alexander Lawandi, Matthew Oughton, Makeda Semret

- Date of revision: June 13, 2024; Date of approval by Residency Training Committee: June 20, 2024

Community ID consultation service (St Mary's Hospital)

Abbreviation: Com ID Cons - SMH

Overview:

This one-month rotation will occur during the Core of Discipline (COD) stage of training (usually during the PGY-5 year). By this time, the trainee will have already completed several months of Adult ID in-patient consultation services at other sites and some basic microbiology. In a community-based setting, the ID specialist will often have to be involved at a very early stage of a patient's presentation and provide a wide spectrum of clinical care. The ID specialist will be prepared to recognize and initiate investigations for patients with complex multi-system diseases, including acquired immune deficiencies.

Learning context:

Community ID consultation service rotations will take place in a teaching community hospital, generally St Mary's Hospital Centre (SMHC) that is part of the Centre-Intégré Universitaire de Santé et Services Sociaux de l'Ouest de l'Ile de Montreal (CIUSSS-ODIM).

This rotation offers the opportunity of operating in a small team with one attending staff (ID specialist) and a maximum of one other resident (often from family medicine). Residents will organize the clinical consultation service and function independently with respect to clinical assessments, investigations, and interactions with other health care providers (though will not be expected to carry the full responsibility of clinical management).

Unique strengths of SMHC: Community acquired infections in a diverse population; infections in pregnancy and post-partum, infections post surgery (general and orthopedics), infections in oncology.

Evaluation Modalities

- ITER Community ID consults (Com ID Cons – SMH)
- The following EPAs can be completed during this rotation (Core of Discipline)
 - ID 3.1 Assessing inpatients with a complex and/or chronic infectious disease presentation and initiating management
 - ID 3.2 Providing ongoing care for inpatients with a complex and/or chronic infectious disease
 - ID 3.7 Documenting clinical encounters
 - ID 3.8 Leading discussions with patients, families and/or other health care professionals in challenging scenarios

Rotation specific objectives

At the end of this rotation, the resident should be able to:

Medical Expert

- Performs effective consultation based on complete but concise assessment of patients, including eliciting a history that is relevant to the context, focused physical examination that is accurate for the purpose of diagnosis and management
- Develops a differential for complex problems not limited to infectious syndromes
- Demonstrates detailed knowledge on the clinical indications for the use of antimicrobial agents, their mechanisms of actions, resistance mechanisms, toxicities and possible drug interactions

Communicator

- Convey relevant information to patients and other professionals in a manner that is clear, unambiguous and respectful, as well as in a manner that facilitates consistency of messages between the various professionals involved
- Present cases verbally to attending staff in a manner that is clear, concise and organized
- Maintain clear written information for each consultation with clear directions for the referring physician, as well as organized progress notes and legible orders

Collaborator

- Works effectively with other specialists (eg. GPs, radiologists, surgeons etc), to coordinate and optimize patient care
- Interacts effectively with other health care professionals, including laboratory personnel, infection control practitioners and public health personnel

Leader

- Manages time effectively and sets priorities for patient evaluations, timely follow-ups;
- Selects investigations that are ethically appropriate, rational, and adapted to the available resources
- Apply principles of antimicrobial stewardship in daily practice, as a role model for other clinicians

Health Advocate

- Connects patients to available resources within the institution or community taking social determinants of health into consideration
- Counsels patients clearly, with an emphasis on appropriate use of antibiotics, or prevention strategies
- Identifies patients for whom social determinants of health can be addressed to improve care of infectious diseases and involve appropriate resources where available

Scholar

- Appraises and evaluates medical evidence relevant to the practice of ID in community settings, and identifies gaps in knowledge around specific clinical questions
- Synthesizes key clinical recommendations to consulting physicians and other trainees, when educational opportunities arise.

Professional

- Demonstrate a positive attitude, display empathy and skill in identifying possibly sensitive issues, respect confidentiality, and recognize the role of stigma in infectious diseases
- Respond appropriately to medico-legal and ethical questions pertinent to the field of ID, such as: isolation and quarantine, the limits of confidentiality, or individuals possibly putting others at risk of infections through their behaviour

Author(s): Dr. Makeda Semret, revised by Dr Tien Nguyen

Date of last revision: May 31, 2024

Date approved by Residency Training Committee: June 2024

Pediatric ID Consultations (Montreal Children's Hospital)

Abbreviation: Ped ID Cons MUHC-MCH

Overview:

Residents are required to do a total of two rotations (one-month each) in the Paediatric ID inpatient consultation service. It is generally recommended the first of these rotations be completed during the foundations of Discipline (FOD) and the second during the Core of Discipline (COD) stages of training. Residents will encounter a wide variety of human illness caused by microorganisms (bacteria, viruses, fungi, parasites, and prions) in children and will have an opportunity to review syndromes and infections more commonly associated with children.

Learning context:

This rotation will take place at the Montreal Children's Hospital. Trainees will work with Paediatric ID attending staff. Trainees will take detailed medical histories, perform physical examinations, analyze accumulated data including biochemical, microbiologic, and radiological investigations to generate differential diagnoses and develop management plans for each case. The resident will review each patient they encounter with their supervising attending physician. They will also participate in paediatric case rounds, evaluate selected outpatient cases, and other educational activities as these arise. The resident will generally function as the most senior trainee in the Paediatric in-patient ID consultation service and will further collaborate with individuals and teams of healthcare professionals in the hospital (physicians, nurses, therapists, social workers, and laboratory personnel).

Learning resources:

- Feigin and Cherry's Textbook of Infectious Diseases
- Long's Principles and Practice of Pediatric Infectious Diseases
- Sanford Guide to Antimicrobial Therapy or other reference for infectious diseases therapeutics
- Reviews and other scientific publications based on cases seen during consultation service

Evaluation Modalities

- ITER Ped ID cons MUHC-MCH
- The following EPAs can be completed during the FOD stage of training:
 - ID 2.1 Assessing immunocompetent patients and initiating management for common infections
 - ID 2.2 Providing ongoing care for immunocompetent patients with a common infection
 - ID 2.3. Summarizing and presenting case information for case conferences
- The following EPAs can be completed during the COD stage of training
 - ID 3.1. Assessing inpatients with a complex and/or chronic infectious disease presentation and initiating management
 - ID 3.2. Providing ongoing care for inpatients with a complex and/or chronic infectious disease
 - ID 3.4. Providing immunization and/or prophylaxis consultations
 - ID 3.7. Documenting clinical encounters
 - ID 3.8. Leading discussions with patients, families and/or other health care professionals in challenging scenarios

Learning objectives

The trainee is expected to have the appropriate level of knowledge relating to the etiology, epidemiology, pathogenesis, natural history, pathology, clinical and laboratory features, differential diagnosis, prevention and management of acute and chronic infectious diseases in neonates, children and youth. In particular:

- Common pediatric infectious diseases seen in the outpatient population, i.e., viral illnesses, fever without a focus, occult bacteremia, UTIs, otitis media, pharyngitis, sinusitis, adenitis etc.
- Common pediatric infections necessitating hospital admission, i.e. osteomyelitis, septic arthritis, meningitis, pneumonia, empyema, pyelonephritis, cellulites, etc.
- Congenital infections
- Mycobacterial infections in children
- Nosocomial infections
- Human immunodeficiency virus (HIV) infection during pregnancy and its complications, and in children
- Infections in the immunologically compromised host (other than HIV), transplant recipients, congenital immunodeficiency, other acquired deficiencies.
- Infectious diseases in pregnancy, and the neonate.
- Infections in patients admitted to the pediatric and neonatal intensive care units
- Microbiology and clinical laboratory testing as they relate to specimen selecting, collection, transportation and assessment of specimen quality in children; test performance and interpretation as they relate to children and neonates.
- Immunology, particularly principles and practice of immunization techniques together with adverse effects and efficacy of immunizing agents.
- Antimicrobials and other therapies in infectious diseases, as they relate to children and neonates

At the end of this rotation, the resident is expected to:

Medical expert

- Elicits a history that is relevant, concise, accurate and appropriate to the patient's problem(s)
- Performs a physical examination that is relevant, detailed, and appropriate and meets specialty specific standards.
- Selects appropriate investigations, formulates relevant differential and sound management plan
- Applies microbiological and clinical knowledge correctly towards diagnosis and treatment of infections encountered

Scholar

- Accesses, retrieves, appraises and applies relevant scientific information to problem-solving
- Develops, implements and monitors a personal learning plan
- Contributes to teaching of junior residents and students on consultation team

Communicator

- Presents cases in an organized, logical and concise manner
- Documents and shares written and electronic information about the medical encounter to optimize clinical decision-making, patient safety, confidentiality, and privacy.
- Delivers information to patients, their parents and family members in a manner that is understandable, respectful and empathetic

- Communicates differential and management plan to treating team in a manner that facilitates the delivery of consistent messages to patients and their families

Collaborator

- Consults effectively with other physicians and health care professionals including laboratory personnel, infection control practitioners and public health personnel.
- Accepts, considers and respects the opinions of other team members

Leader

- Utilizes healthcare resources effectively to balance patient care and learning needs
- Delegates and supervises consultation requests to junior residents and students appropriately
- Manages the clinical service efficiently taking into account learning needs
- Recognizes own knowledge and practice gaps and seeks supervision appropriately

Health Advocate

- Identifies important determinants of health affecting patients, and responds to those issues as appropriate

Professional

- Delivers highest quality care with integrity, honesty and compassion.
- Always exhibits appropriate personal and interpersonal professional behaviours_

Rotation-specific objectives

Medical expert

- Elicits a history that is relevant, concise, accurate and appropriate to the patient's problem(s)
- Performs a physical examination that is relevant, detailed, and appropriate and meets specialty specific standards.
- Selects appropriate investigations, formulates relevant differential and sound management plan
- Applies microbiological and clinical knowledge correctly towards diagnosis and treatment of infections encountered

Scholar

- Accesses, retrieves, appraises and applies relevant scientific information to problem-solving
- Develops, implements and monitors a personal learning plan
- Contributes to teaching of junior residents and students on consultation team

Communicator

- Presents cases in an organized, logical and concise manner
- Documents and shares written and electronic information about the medical encounter to optimize clinical decision-making, patient safety, confidentiality, and privacy.
- Delivers information to patients, their parents and family members in a manner that is understandable, respectful and empathetic
- Communicates differential and management plan to treating team in a manner that facilitates the delivery of consistent messages to patients and their families

Collaborator

- Consults effectively with other physicians and health care professionals including laboratory personnel, infection control practitioners and public health personnel.
- Accepts, considers and respects the opinions of other team members

Leader

- Utilizes healthcare resources effectively to balance patient care and learning needs
- Delegates and supervises consultation requests to junior residents and students appropriately
- Manages the clinical service efficiently taking into account learning needs
- Recognizes own knowledge and practice gaps and seeks supervision appropriately

Health Advocate

- Identifies important determinants of health affecting patients, and responds to those issues as appropriate

Professional

- Delivers highest quality care with integrity, honesty and compassion.
- Always exhibits appropriate personal and interpersonal professional behaviours

Author: Dr Jane MacDonald; Revised by Dr Jesse Papenburg, Dr Makeda Semret

Date of last revision: June 2, 2024; Date approved by Residency Training Committee: June 2024

ID Antimicrobial Stewardship (MUHC and JGH)

Abbreviation: ID ASP MUHC-JGH

Overview:

This one-month rotation will be completed during the core stage of training (generally during PGY5). While there are elements that can be coordinated with infection control rotations, it is a stand-alone experience.

During this rotation, the resident will familiarize themselves with the concepts and practices of antibiotic stewardship programs and be ready to serve as members of interprofessional stewardship teams in the health care setting, and provide advice to the public on matters related to antimicrobial utilization. Through a combination of active participation in stewardship rounds and other activities, practical exercises, readings, committee meetings, and independent learning. At the end of the rotation, the resident will provide consultation in AMS in response to clinical questions, be ready to serve as members of interprofessional AMS teams in the health care setting and provide advice to the public on matters related to antimicrobial utilization.

Learning context:

The stewardship rotation will occur at the MUHC and/or at the JGH, under the supervision of the ID physicians in charge of antibiotic stewardship at these institutions. Residents will actively participate in stewardship rounds and other activities with clinical pharmacists and physician members of the program, initiate a feasible quality project (eg a limited evaluation of patterns of antimicrobial usage on an inpatient ward with planning of a structured intervention program), attend meetings and engage in independent learning.

Learning resources:

Assigned readings at the beginning of the rotation

Literature searches relevant to the selected quality project

Evaluation Modalities

- ITER Antimicrobial stewardship
- The following EPAs can be completed during the Core of Discipline stage:
 - **EPA ID 3.6 Performing antimicrobial stewardship audit and feedback**
 - **EPA MM 3.9** Providing quality assurance and improvement of medical microbiology practice or services (if applicable)

Rotation specific objectives

Medical expert

- Applies the principles of antimicrobial stewardship when conducting audit-feedback interventions
- Describes the organization, implementation and evaluation of ams programs at the facility level
- Selects and calculates appropriate measures of antimicrobial usage for a unit/ward and interpret trends
- Identifies behavioral and system-based strategies to promote judicious use of antimicrobials

communicator

- Conveys clear feedback to pharmacists and clinicians in various departments, verbally and in written recommendations

Collaborator

- Assists pharmacists effectively while conducting audit/feedback
- Participates in asp rounds and committee meetings
- Addresses challenging situations (eg. Non-adherence to ams suggestions) collaboratively with other health professionals (respecting team ethics, priorities, resource allocation)

leader

- Leads discussions during audit-feedback sessions with pharmacists
- Addresses questions from pharmacists and other professionals promptly and accurately, recognizing own limits
- Identifies possible points of influence within wards/units to support ams interventions or educational activities

Health advocate

- Participate in activities (eg. Educating public) occurring during patient safety week and world antimicrobial awareness week when appropriate (eg. Educating public)

Scholar

- Develops treatment guideline for syndrome or infection, or revises existing guidelines based on critical review of medical literature
- Conducts a quality project related to ams and present results formally to the ams committee, unit or department

Professional

- Demonstrates self-awareness and recognizes one's own differences and limitations that might contribute to inter-professional tension and conflicts
- Addresses elements of conflicts of interest (including intellectual conflicts)
- Demonstrates appropriate flexibility if divergent opinions, acknowledge the possibility of errors

Author(s): Dr. Makeda Semret, Dr Marty Teltscher

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Tropical Medicine (MUHC-RVH)

Abbreviation: ID Trop Med MUHC-RVH

Overview:

This one-month rotation should be completed during the Core stage of Training (PGY4 or PGY5). Residents will encounter a wide variety of human illnesses acquired during travel, and parasitic infections in travelers/immigrants/refugees/migrants. This rotation consists of a mix of ambulatory care evaluations of patients suspected of having a travel-related or parasitic infection, laboratory sessions in parasitology, and small group teaching sessions on relevant tropical/parasitic/travel and migration related diseases.

Learning context:

This rotation takes place at the J.D. MacLean Centre for Tropical Diseases (McGill University Health Centre, Glen site), a world-renowned center of expertise, research, and training in Clinical Tropical Medicine.

During this rotation, the resident will evaluate mainly outpatients during clinic hours (half-days Monday to Friday), with occasional consultations for in-patients or patients in Emergency Department, for pathologies related to travel/tropical medicine and parasitic infections. They will also learn the elements of pre-travel consultation with the travel medicine nurse and will spend approximately 40% of their time in acquisition of knowledge and skills in medical parasitology through lab sessions, lectures and educational reading.

Learning resources:

Relevant chapters in Manson's Tropical diseases
Relevant chapters in Mandell's textbook of Infectious Diseases
Reading material provided at the beginning of the rotation
Lon

Evaluation Modalities

- ITER ID Trop Med MUHC-RVH
- Trop Med Quiz (on the last day of the rotation)
- The following EPAs can be completed during this rotation (Core of Discipline stage of training)
 - ID 3.3 Providing consultation and ongoing care in the outpatient setting
 - ID 3.4 Providing immunization and/or prophylaxis consultations

Rotation specific objectives:

Medical expert

- Performs a consultation effectively focusing on travelers' and migrants' health, tropical and parasitic diseases

- Selects appropriate investigations (including screening of asymptomatic patients), formulates relevant differential and sound management plan
- Applies knowledge in tropical medicine and parasitology correctly towards diagnosis and treatment of cases encountered in clinic
- Utilizes and interprets microbiological and serological laboratory testing for parasitic infections appropriately

Communicator

- Presents cases in an organized, logical and concise manner during review with staff
- Provides a timely, structured and well-documented assessment (consultation letters, progress notes) in written form
- Conveys information to patients in a manner that is understandable, respectful, empathetic and culturally sensitive

Collaborator

- Seeks appropriate and timely consultation with other professionals (including other specialists, laboratory personnel and public health) and recognizes own limits of expertise
- Accepts, considers and respects the opinions of other professionals

Leader

- Manages clinic assessments effectively, prioritizing based on medical emergency and balancing efficiency with learning needs
- Organizes Follow-up of patients and test results autonomously and responsibly
- Performs relevant diagnostic tests in a timely and effective manner

Health Advocate

- Educates and advises patients on the role of prevention (immunization, chemoprophylaxis, precautions for arthropod bite and safe water) and screening recommendations with sensitivity
- Understands and mitigates barriers to accessing appropriate care (including language, social, cultural and legal barriers)

Scholar

- Accesses, retrieves, appraises and applies relevant scientific information
- Contributes knowledge gained from reading to teaching sessions
- Identifies own gaps in knowledge and formulates a plan to address gaps

Professional

- Delivers highest quality care with integrity, honesty and compassion.
- Exhibits appropriate personal and interpersonal professional behaviours at all times
- Demonstrates punctuality, flexibility reliability and the ability to prioritize during in an outpatient setting
- Selects medically appropriate investigational tools in an ethical and cost-effective manner

Authors: Dr Sapha Barkati, Dr Michael Libman; revised by Makeda Semret

Date of last revision: June 13, 2024

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Public Health (Direction de Santé Publique)

Abbreviation: ID Pub Health DSP

Overview:

This 1-month rotation provides an opportunity for trainees to acquire knowledge and skills on protecting the public from infectious threats. Residents will complete this rotation during the Core of Discipline stage of training (generally in PGY-5). At this stage of training, the resident will have had exposure to clinical infectious disease through inpatient consultation services, ambulatory care, and basic microbiology.

While the combined ID-MM trainee will review reference-level tests (advanced microbial identification) and laboratory-focused surveillance during their public health laboratory (LSPQ) rotation later in their training, this rotation is geared towards in-depth understanding of provincial surveillance activities and measures required to prevent and control public health threats, for all residents (including those in ID only track).

Learning context:

The rotation will take place at the Département de Santé Publique (DSP). The main language of instruction during this rotation is French. Residents who opt to do their public health rotation in another province will need approval from the Program Director. Through a combination of small group/interactive teaching sessions with public health experts during the first half of the rotation, and by taking calls for public health (under supervision) during the latter half of the rotation, the trainee will acquire an in-depth understanding of the following services:

- Garde regionale (calls from network 8h30 – 16h30 Monday-Friday)
- Expertise-conseil TB/Infections et interventions dans la communauté
- Expertise-conseil Vaccination/Maladies évitables par la vaccination Intervention préventive auprès des personnes atteintes d'une ITS et auprès de leurs partenaires ^[L][SEP](IPPAP) ^[L][SEP]

The resident might also be called to participate in an outbreak investigation, or in developing investigation tools for specific problems, or to work on a small project (literature review on a topic of public health interest, data analysis, event evaluation, audit or visit of an institution, etc). The trainee will also be encouraged to write up selected cases as appropriate.

Evaluation modalities:

- **ITER:** ID Public health DSP
- **EPA:** the following EPAs can be completed
 - MM 3.1: Providing advice to physicians and other health care professionals about medical microbiology tests and results

Rotation-specific objectives:**Medical Expert – Health Advocate**

- Utilizes tools for guidelines, questionnaires, technical protocols and other documents correctly during on-call requests
- Describes functions and roles of public health (distinguishing between local, national and international), and concepts of health determinants of populations comprehensively
- Interprets data from reportable disease surveillance accurately
- Describes appropriate management of contacts of reportable infectious diseases

Professional

- Behaves with integrity, honesty, courtesy and respect at all times
- Follows ethical norms and demonstrates respect for patient confidentiality

Communicator

- Demonstrates active listening and intelligent participation during small group/teaching sessions
- Poses questions to experts clearly

Collaborator

- Demonstrates willingness and flexibility when working with a diverse group of professionals
- Responds to requests from public/health care professionals promptly, and clearly when on call

Leader

- Manages time and prioritizes tasks effectively, balancing learning needs with duties
- Recognizes own knowledge gaps and seeks help/advice appropriately

Scholar

- Produces comprehensive and clear written reports on results of investigations, audit, special project or other

Author: Dr Paul Le Guerrier, revised by Dr Makeda Semret

Date of last revision: June 14, 2024

Date approved by Residency Training Committee: June 20, 2024

Infection Prevention and Control (IPC)

Abbreviation: IPC

Rotation overview:

Residents will need to complete a minimum of two one-month blocks in the clinical, laboratory and administrative aspects of Infection Prevention and Control (IPC) during their training. The first of these blocks will be completed during the Foundations stage (during PGY4), and the second during the Core stage of training (in PGY5). IPC is also highly integrated into clinical infectious disease and microbiology laboratory rotations and supplemented with participation in a series of infection control tutorials. Research is an integral part of infection control and residents are encouraged to carry out a research project or to consider ideas for a potential research project during this rotation.

Learning context:

The IPC rotation will take place at the MUHC Glen site (1 block), and at the Jewish General hospital (1 block), under the supervision of the Infection Control Medical Directors of each institution. During their rotation, residents will work closely with the microbiologist in charge of IPC as well as the coordinator/manager, and the team of IPC practitioners and will participate in surveillance rounds (at least weekly). They will attend weekly team meetings and monthly IPC committee meetings, enabling them to understand the day-to-day management and decision-making process as issues arise. Residents will respond to IPC questions and provide consultations to the infection control practitioners and others on specific problems as requested by various hospital services during the rotation. Residents are encouraged to carry out a Quality project addressing a current, pertinent infection control problem, proposing solutions and providing a written report. The project may be related to the development of an IPC protocol, an assessment of the cost-effectiveness or efficacy of some established practice, or an outbreak investigation (can be a retrospective investigation of a previous outbreak that has not yet been analyzed, or of a simulated outbreak designed for teaching purposes). It is anticipated that it may not be practical to complete an investigation of an ongoing outbreak during the 4 week rotation, and that this activity may carry over into other rotations).

Evaluation Modalities

- ITER IPC Junior, IPC Senior
- The following EPAs can be completed during the Foundations stage of training
 - MM 2.1 Advising on specimen collection for the diagnosis of common infectious diseases
 - The following EPAs can be completed during the Core of Discipline stage of training
 - ID 3.5 Providing Infection Control consultations
 - MM 3.11 Participating in outbreak management

General objectives:

At the end of this rotation, the resident should be able to:

- Understand the role of the Infectious Diseases physician in Infection Control
- Understand the administrative, organizational and functional aspects of a hospital infection control program and the roles of the various personnel involved
- Understand the principles of infection transmission and their application in the prevention and control of healthcare-associated infections
- Have developed expertise in surveillance of healthcare-associated infections, and be able to investigate outbreaks
- Understand the etiology, pathogenesis, natural history, clinical features, and management of healthcare-associated infections
- Be able to develop educational strategies for hospital personnel

Specific objectives:

MEDICAL EXPERT

(PGY4)

- Have a thorough knowledge of the organization of an infection control program for a health care facility
- Epidemiology and modes of transmission of common infectious agents and the concepts of:
 - Routine Practices and Additional Precautions for prevention of transmission in healthcare settings:
 - Airborne, droplet and contact transmission
 - Respiratory etiquette (hygiene)
 - Role of hand hygiene and methods of hand hygiene, implementation of hand hygiene policies, and monitoring of hand hygiene practices
- Epidemiology, clinical manifestations and management of common healthcare-associated infections and the measures necessary for their prevention and control:
 - Device associated infections (CA-BSI, VAP, CSF shunt infections, CA-UTI)
 - Surgery and other procedure-related infections
 - Viral respiratory tract infections
 - Infectious diarrhea
- Epidemiology of important hospital-associated microorganisms: MRSA, VRE, C. difficile, multi-drug resistant gram negative bacilli, tuberculosis, Aspergillus, Legionella
- Principles involved in prevention of infections with these organisms
- Infection control principles involved in managing patients infected or colonized with multi-drug resistant organisms (MDRO)
- Impact of MDRO in hospital-acquired infections.
- Methods of surveillance for different MDROs

- Interventions used to control MDRO transmission, including indications for and limitation of decolonization
- Epidemiology of infections in special patient populations (e.g. immunocompromised, dialysis, burns, cystic fibrosis, obstetrics, neonatal intensive care, long term care) and methods to reduce infection risk specific to these groups.
- Infection risks, types of infections encountered, management issues and priorities that are specific to pediatric healthcare settings
- Risks of transmission of bloodborne pathogens, including those associated with procedures such as dialysis and endoscopy.

(PGY5)

- Principles and methods of disinfection (also covered during academic half-day):
- Methods of sterilization, and of disinfection (high, intermediate and low level)
- Methods for monitoring of sterilization process
- Indications and limitations of flash sterilization
- Processes of disinfection of endoscopes, including laparoscopes and arthroscopes, and problems and controversies with these processes
- Recommendations for inactivation of the agent of Creutzfeldt-Jacob disease
- Regulations and controversies relating to re-use of single use items
- Post-exposure management of personnel and patients:
- Management of exposures to blood borne pathogens, varicella, measles, pertussis, meningococemia, tuberculosis, necrotizing fasciitis
- Policies for health care workers (pre-employment screening, etc) vaccination policies and other preventative strategies health care workers
- Management of the pregnant health care worker
- Management of exposures to Varicella –Zoster , Measles, tuberculosis, scabies
- Basic epidemiology and principles of biostatistics as applied to infection control
- Surveillance for hospital-associated infections:
- The purpose of surveillance
- Methods of surveillance (active, passive, patient-based, laboratory-based, hospital- wide, targeted etc)
- Various levels of surveillance (local, regional, national, international)
- Standard definitions for healthcare-associated infections (Canadian, Quebec and NHSN)
- Methods for collection of numerators
- Advantages and pitfalls of post-discharge surveillance
- Appropriate denominators for rate calculations and methods of collection of denominator data
- Calculation of meaningful infection rates including risk-adjusted device-related and surgical site infection rates
- Compilation and presentation of surveillance data and how to use this data in the reduction of infection rates

- Appropriate use of published benchmarks.
- Application of basic descriptive statistics and hypothesis testing for the comparison of current rates to previous or benchmark rates
- the use of computer programs for surveillance
- Approach to process surveillance, including:
- Monitoring use of peri-operative antibiotics
- Hand Hygiene audits
- use of intervention bundles which aim to reduce risks of catheter-associated bloodstream infections, catheter associated UTI and ventilator-associated pneumonia.
- The appropriate steps to take when investigating an outbreak and the institution of outbreak control measures and follow-up evaluation
- The role of the microbiology laboratory in infection control, including laboratory methods for phenotype and genotype and other molecular typing of microorganisms and the role of these tests in outbreak investigation.
- Reporting of notifiable diseases and the interaction between hospital infection control and public health.
- Infection Control issues related to emerging pathogens (SARS, MERS, Viral hemorrhagic fevers, pandemic Influenza)

COMMUNICATOR

Through interactions with the infection control team and other healthcare providers the resident should:

- Be able to effectively convey information, both verbal and written, to all healthcare providers about healthcare- associated infections.
- Deliver a clear presentation to concerned individuals about surveillance results or an intervention project related to infection control, effectively summarizing data in tabular and graphic format.
- Demonstrate ability to effectively communicate information to persons with different knowledge backgrounds (e.g. patients, their families, nurses, doctors, administrators, paramedical professionals)
- Understand the importance of transmitting information about adverse events (e.g. infections and outbreaks) to healthcare personnel in a sensitive and nonjudgmental manner and the importance of positive reinforcement when corrective measures are taken
- Be able to communicate with public health authorities, know the process for reporting of notifiable diseases (MADO) and understand the role of public health in surveillance and management of certain infections (including outbreaks)

COLLABORATOR

Through interactions with other healthcare personnel including support staff, demonstrate the ability to:

- Collaborate with and show respect for all personnel involved in patient care, recognizing their respective expertise and role with regard to various aspects of infection prevention

- Maintain confidentiality and professionalism in these interactions
- Participate in inter-professional teams and committees, demonstrating ability to assume a resourceful and decisive role and skills in avoiding and resolving conflicts
- Participate in provincial/federal working groups and surveillance programs

LEADER

- Understand the role of the infectious diseases physician in an infection control program and the pertinent concepts of management in the healthcare setting including:
 - The organization and management structure of a hospital infection control program
 - The supervision of infection control practitioners
 - The mandate of the infection control committee and its chair
 - Priority setting in establishment an infection control program
 - Priority setting for and implementation of an institution-specific surveillance program
 - Organization of the investigation and management of an outbreak of hospital acquired infections
 - How to design, plan and implement a specific measure relevant to the prevention of healthcare associated infections
- Participation in administrative meetings related to infection control within the institution.
- The budgetary and functional implications of infection control interventions, including bed management issues related to isolation practices
- The establishment of pertinent links within the institution and in the community, with microbiology laboratories, research, university, administration, public health

HEALTH ADVOCATE

Through interaction with healthcare personnel including laboratory technologists, managers, nurses, physicians, administrators and others:

- Identify and respond to the demands placed on the infection control program by health care workers, clinicians and administrators
- Be familiar with current issues of patient safety in the context of infection risks
- Actively promote pertinent infection control measures during clinical infectious disease rotations as well as during the infection control rotation and in any other clinical situations.
- Be familiar with and promote the hospital's hand hygiene program.
- Be aware of the importance of antibiotic stewardship in the prevention of development and spread of microbial resistance and promote the judicious use of antibiotics.
- Promote influenza vaccination of healthcare personnel and high-risk patients
- Promote the use of appropriate laboratory testing to identify healthcare-associated infections
- Recognize the role of the Infectious Diseases- Microbiologist specialist as a role model with regard to these issues.

SCHOLAR

- Through self-directed learning, literature review, participation in rounds, seminars, journal clubs and other educational activities:
- Demonstrate ongoing learning by formal presentations and informal discussions at various educational events
- Participate in continuing professional development by attending relevant rounds, teaching sessions, conferences, and other educational activities
- Provide education for other healthcare personnel through both formal and informal teaching sessions
- Participate in research activities as opportunities arise
- Apply knowledge to infection control problems by responding to daily infection control calls during the rotation and answering urgent infection control questions during clinical infectious disease rotations.

PROFESSIONAL

Throughout day-to-day activities the resident:

- Behaves in a responsible manner, is punctual, responds to infection control consultations in a timely fashion, and follows up on relevant issues and meets deadlines.
- Demonstrates integrity, compassion and respect for diversity, including cultural differences in attitudes to infections and prevention that may have an impact on infection control interventions
- Understands medical, legal and professional obligations including reporting of communicable diseases, and disclosure of adverse events
- Understands issues of confidentiality including those related to the dissemination of surveillance data both internally and to external reporting bodies
- Recognizes personal limitations and seeks advice and assistance when appropriate
- Demonstrates appropriate ethical standards and an understanding of ethical issues that may arise when the perceived rights of a patient may be in conflict with the best interests of other patients, the institution or the public, especially around issues of isolation practices.

Recommended resources:

American Academy of Pediatrics Red Book: Report of the Committee on Infectious Diseases (latest edition)

Jarvis WR (ed). Bennett and Brachman's Hospital Infections

Mayhall CG (ed). Hospital Epidemiology and Infection Control

Wenzel RP (ed). Prevention and Control of Nosocomial Infection

Carrico R (ed). APIC Text of Infection Control and Epidemiology, Association for Professionals in Infection Control and Epidemiology

Lautenbach E, Woeltje KF, Malani PN. The Society for Healthcare Epidemiology of America: Practical Healthcare Epidemiology

Journals: Infection Control and Hospital Epidemiology; American Journal of Infection Control; Journal of Hospital Infection;

Canadian Journal of Infection Control.

Websites

Guidelines:

Quebec: <http://www.inspq.qc.ca/domaines/index.asp?Dom=60&Axe=64> Canada: http://www.phac-aspc.gc.ca/dpg_e.html#infection

USA: <http://www.cdc.gov/hai>

UK: http://www.his.org.uk/resource_library.cfm

WHO: http://www.who.int/csr/bioriskreduction/infection_control/

Surveillance:

Quebec: Surveillance Provinciale des Infections Nosocomiales (SPIN):

<http://www.inspq.qc.ca/domaines/index.asp?Dom=60&Axe=64>

Canada : The Canadian Nosocomial Infection Surveillance Program (CNISP) <http://www.phac-aspc.gc.ca/nois-sinp/survprog-eng.php>

USA: The National Healthcare Safety Network (NHSN): <http://www.cdc.gov/nhsn/index.html>

SHEA on line course for Infection Control and Hospital epidemiology

Rotation specific objectives: JUNIOR (Foundations stage of training, PGY4)

Medical Expert:

- Describes the set up and organization of an infection control program for a health care facility
- Describes epidemiology and modes of transmission of common infectious agents (community acquired and hospital acquired), and the measures necessary for their prevention and control in hospital
- Describes components of surveillance programs for hospital-associated infections
- Manages healthcare workers' exposures

Communicator:

- Conveys information to ward teams and IPC team clearly and effectively
- Explains healthcare associated infection risks and occurrence to patients and families in a manner that is sensitive, non-defensive, and intelligible

Collaborator

- Recognizes expertise of all personnel and adopts positive and constructive attitude
- Contributes knowledge and questions in inter-professional teams and committees
- Leader
- Manages time and prioritizes activities, balancing efficiency with learning needs

Health Advocate

- Promotes measures such as Hand hygiene, flu vaccination, and measures known to reduce risk of hospital-associated infections to health care personnel during surveillance rounds
- Describes the use of appropriate laboratory screening/testing to identify healthcare-associated infections

Scholar

- Appraises and reviews relevant sources to respond to questions from IPC practitioners and healthcare personnel as they arise

Professional

- Responds to IPC consultations punctually, meets deadlines and follows-up diligently on relevant issues
- Displays integrity and respect for diversity (including in attitudes to infection prevention)
- Recognizes personal limitations and seeks advice and assistance when appropriate
- Recognizes when perceived rights of patients may be in conflict with the best interests of other patients or the public (eg. issues of isolation practices).

Rotation specific objectives: SENIOR (Core stage of training, PGY5)

Medical Expert:

- Explains the set up and organization of an infection control program for a health care facility
- Applies knowledge in surveillance to calculate rates, compile and present surveillance data on Hospital associated infections
- Manages healthcare workers' exposures
- Describes principles and methods of disinfection and approaches to process surveillance

Communicator:

- Conveys information to IPC and ward teams clearly and effectively
- Delivers a clear presentation about surveillance results or an intervention project related to infection control, effectively summarizing data in tabular and graphic format

Collaborator

- Contributes knowledge and questions in inter-professional teams and committees
- Assumes a resourceful role during routine surveillance, audits or special projects

Leader

- Manages time and prioritizes activities, balancing efficiency with learning needs
- Identifies opportunities for special project, and designs steps to conduct the project

Health Advocate

- Promotes IPC measures known to reduce risk of hospital-associated infections to health care personnel during surveillance rounds
- Resolves conflicts that may arise when the perceived rights of a patient may be in conflict with the best interests of others (eg. issues of isolation)

Scholar

- Appraises and reviews relevant sources to respond to questions from IPC practitioners and healthcare personnel as they arise
- Conducts appropriate review of existing literature related to special project, and presents findings of the research in a rational and comprehensive manner

Professional

- Demonstrates professional attitude and behaviour at all times
- Displays integrity, compassion and respect for diversity

Authors: Drs Charles Frenette, Makeda Semret, Yves Longtin, Marie-Astrid Lefebvre, Trong Tien Nguyen

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Infectious Diseases - Chronic Viral Illnesses (CVIS) MUHC-RVH

Abbreviation: ID CVIS MUHC-RVH

Overview:

This one-month rotation should be completed during the Core of Discipline stage of training (PGY-4 or PGY-5). Residents will be actively involved in the care of people living with a variety of chronic viral illnesses. Although most patients seen during this rotation will be infected with HIV (PLWH), residents will also be exposed to patients with other chronic viral illnesses such as Hepatitis C, Hepatitis B and Human Papillomavirus.

Learning context:

Residents will see patients in the CVIS clinic of the Royal Victoria Hospital (RVH)—Glen Site for both scheduled visits as well as on a “walk-in” basis, under close supervision of attending clinic staff. In addition, residents will evaluate patients with potential chronic viral illnesses presenting to the Emergency Rooms of the MUHC including the RVH—Glen Site, Montreal General Hospital and Montreal Neurological Institute. They will also perform follow-up assessments on in-patients at these sites with the CVIS staff on call. Residents will have the opportunity to work with HIV specialists with a wide variety of backgrounds including Infectious Diseases, Internal Medicine, Family Medicine, Geriatrics, Immunology and Hematology. In addition, residents will be able to work closely with HIV-specialized nurses, pharmacists, social workers, psychologists, psychiatrists, nutritionists, and outreach workers. They will be exposed to clinical research conducted in the outpatient setting. Learning will be supplemented with small group teaching sessions during their rotation and during academic half-days. Residents are also encouraged to attend the CVIS noon rounds given by both local and invited speakers held every Wednesday on a variety of topics related to HIV and Hepatitis clinical care.

Evaluation Modalities

- ITER ID CVIS MUHC-RVH
- The following EPAs can be completed during this rotation (Core of Discipline)
 - EPA ID 3.3 Providing consultation and ongoing care in the outpatient setting.
 - EPA ID 3.4: Providing immunization and/or prophylaxis consultations.
 - EPA ID 3.8: Leading discussions with patients, families and/or other health care professionals in challenging scenarios

Rotation-specific objectives

At the end of this rotation, the resident should be able to:

MEDICAL EXPERT

- Performs a consultation and effectively manages issues related to People living with HIV (PLWH) and other chronic viral illnesses
- Selects appropriate investigations (including screening of asymptomatic patients, and drug resistance testing), formulates relevant differential and sound management plan
- Applies knowledge in natural history, pathogenesis and clinical manifestations correctly towards diagnosis and treatment of opportunistic infections encountered during the rotation
- Utilizes and interprets laboratory testing for chronic viral infections appropriately
- Applies knowledge of antiviral medications to select most appropriate treatment regimens and recognizes complications associated with each

COMMUNICATOR

- Utilizes appropriate and sensitive interviewing techniques when exploring issues that might be sensitive (eg sexual practices, illegal drug-use, history of trauma/violence)
- Presents cases in an organized, logical and concise manner during review with supervising staff
- Conveys effective oral and written information (consultation letters, progress notes) about a medical encounter with rationale for management plans
- Obtains informed consent and assent, such as for HIV testing and immunizations

COLLABORATOR

- Seeks appropriate consultation with other professionals (including social workers, psychologist, and others) to resolve medical and other dilemmas, and recognizes own limits of expertise
- Interacts with staff with an open and constructive attitude

LEADER

- Sets priorities and manages time well, balancing learning needs and clinic efficiency
- Demonstrates cost-appropriate utilization of laboratory and diagnostic testing
- Participates in the planning of relevant elements of health care delivery, including patient follow-ups, laboratory tests follow-ups and confirmation, clinic schedules

HEALTH ADVOCATE

- Demonstrates ability to effectively counsel a patient with regards to benefits of antiretrovirals, health promotion and disease prevention strategies

- Evaluates patient's ability to access various services in the health and social systems and advocates on behalf of them (eg. to obtain affordable medication, community organizations, and legal aid)

SCHOLAR

- Identifies a relevant personal learning project
- Addresses clinical questions through a critical appraisal of available evidence
- Provide an effective, well considered and researched presentation at CVIS MD case rounds

PROFESSIONAL

- Exhibit appropriate professional behaviors, including respecting confidentiality but recognizing the principles and limits of patient confidentiality as defined by practice standards and the law
- Demonstrates respect for diversity and difference, including impact of gender, sexual orientation, religion and cultural beliefs in decision making

Authors Dr Cecilia Costiniuk, Dr Marina Klein

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Ambulatory ID clinic (JGH)

Abbreviation: ID Amb clinic-JGH

Overview

This one month block can be done at any time during Transition to Discipline, Foundations or Core of Discipline stages of training. Trainees will see a variety of ambulatory patients with infectious diseases, in a high-volume setting. The focus of this rotation will be on the outpatient diagnosis and management of sexually transmitted infections (STI), as well as a variety of infections of mild-moderate severity (skin and soft tissue, respiratory, urinary, and other systems).

Learning context:

This rotation will take place at the Jewish General Hospital Infectious Diseases clinic, a high-volume “walk-in” clinic. Residents will participate in the daily activities of the morning clinic under the supervision of the attending ID staff; afternoons will be spent in other ambulatory clinics including OPAT, tuberculosis clinic, chronic viral hepatitis clinic and HIV clinics. The rotation ensures a rich clinical exposure and the opportunity to work with many of the JGH attending staff, clinical associates, and administrative staff. Residents can hone their clinical acumen and learn to expedite quality care for infectious diseases cases. Trainees will also have the option to prepare a presentation at the end of their block for ID division members on a topic relating to STI and/or ambulatory care.

Evaluation Modalities

- ITER ID Ambulatory Clinic JGH
- The following EPAs can be completed depending on the stage of training:

During Transition to Discipline:

- ID 1.1: assessing patients with confirmed or suspected infectious disease

During Foundations:

- ID 2.1 Assessing immunocompetent patients and initiating management for common infections
- ID 2.2 Providing ongoing care for immunocompetent patients with a common infection

General objectives

MEDICAL EXPERT

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

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

-Recognize and respond to the complexity, uncertainty, and ambiguity inherent in practice

-Apply knowledge of the clinical and biomedical sciences relevant to infectious diseases in the outpatient setting

Infectious agents applicable to outpatient practice

- Taxonomy, structure, life cycle, virulence factors, pathogenesis and antimicrobial susceptibility of microorganisms that cause human disease, in particular infectious diseases encountered in the outpatient setting

Clinical microbiology

- Specimen selection, collection, transportation for the diagnosis of common outpatient infections, including culture, molecular, and serologic techniques
- Principles of performance and interpretation of these tests, including their performance characteristics, advantages and pitfalls
- Characteristics of serologic diagnostics such as prozone effect, Hook effect, window periods, cross-reactivity, false-positivity and false-negativity
- Characteristics of screening tests for latent tuberculosis, including factors of cross-reactivity with prior BCG vaccine and patient characteristics associated with false-negative tests

Acute and chronic infectious diseases

- Etiology, epidemiology, prevention, pathology, pathogenesis, natural history, clinical features, and management of common outpatient infections, in particular:
 - Sexually transmitted infections
 - Common organ-based infection and syndromes (e.g. genitourinary, skin and soft tissue)
 - Tuberculosis
 - Chronic viral infections (e.g. HIV, viral hepatitis)
 - Infectious diseases in special hosts or populations (e.g. travellers, immigrants, immunocompromised hosts, pregnant patients)

Complex or undifferentiated presentations with infection in the differential diagnosis

- Clinical and laboratory approach to diagnosis and management of fever syndromes such as acute febrile illness, fever and skin eruption etc.

Immunization

- Provide vaccination counselling, especially to vulnerable populations, the asplenic host or host awaiting splenectomy, and other immunomodulated or immunocompromised hosts.

Antimicrobial agents and other treatments

- Expertise with antimicrobial regimens available to ambulatory patients, and prescribing therapy with precepts of antimicrobial stewardship in mind
- Familiarity with current recommendations for the treatment of latent and active tuberculosis infections
- Familiarity with current HIV and chronic viral hepatitis treatment regimens

2. **Perform a patient-centred clinical assessment and establish a management plan**

-Prioritize issues to be addressed in an outpatient encounter

- Consultations accounting for limitation of time, material and human resources and space
- Recognize infections that represent a medical emergency inappropriate for the outpatient setting and respond appropriately

-Elicit a history that is relevant, concise, and accurate, including careful consideration for exposures and predisposing factors

-Perform a focused physical examination, including proficiency in genitourinary/pelvic examinations where appropriate, with appropriate communication/consent obtention, draping and technique

-Develop a differential diagnosis, including alternative etiologies for illness mimicking infectious disease

-Select investigations and interpret results, considering appropriateness, resources, utility and cost

3. **Plan and provide interventions and therapies for the purpose of management**

-Determine the most appropriate procedures or therapies (e.g. antimicrobial agents, source control, prophylaxis, immunization etc.)

-Prioritize procedures or therapies, taking into account clinical urgency and available resources

-Provide management in a skilful and safe manner, adapting to unanticipated findings or changing clinical circumstances

- Prescribe antimicrobial agents in a safe and effective manner, considering their positive and negative effects in individual patients and the community in general
- Recommend other interventions to treat or prevent infections and their sequelae

- Prescribe chemoprophylaxis
- Apply harm reduction strategies for individuals with increased likelihood of infection (e.g. behavioural counselling, vaccination, PREP, prophylaxis measures)
- Implement IPAC to prevent transmission of communicable infectious diseases appropriate for the ambulatory setting, including use of masks, PPE, isolation of suspicious cases of communicable disease, hand hygiene, and protective coverings, cleaning and disinfection of the examining rooms

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

-Implement a patient-centred care plan that supports ongoing care, follow-up on investigations, response to treatment, and further consultation; in particular:

- Evaluation of a resolving acute or chronic infectious disease and assess for type and duration of appropriate outpatient parenteral antibiotic therapy, followed by plans for appropriate oral step-down and treatment end points. The trainee should also identify the financial and social repercussions of prescribing OPAT. Pharmacologic and pharmacokinetic limitations of therapy should also be considered when evaluating an OPAT patient.
- Identify cases where antimicrobial resistance requires adaptation of treatment, or altered follow up, to assure a favourable outcome (e.g. resistant gonococcal infection, MDR-TB, ESBL type UTIs, HIV virologic failure due to mutation)

COMMUNICATOR

1. **Establish professional therapeutic relationships with patients and their families**

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

- Demonstrate cultural humility, with respect for patients' cultural, religious and social backgrounds
- Respect diversity and difference, including but not limited to, the impact of gender, sexual orientation, religion and cultural beliefs in decision making
- Establish trust and rapport with patients and family who are
 - Stigmatized because of their infection or the factors that predispose them to infection
 - Embarrassed by or ashamed of a new diagnosis of an infection that is chronic, potentially stigmatizing, or contagious to others
- Optimize the physical environment for patient comfort, dignity, privacy, engagement, and safety
 - Recognize that patients with an infection may feel vulnerable in terms of confidentiality, privacy, and autonomy
- Recognize when the perspectives, values, or biases of patients, patients' families, physicians, or other health care professionals may have an impact on the quality of care, and modify the approach to the patient accordingly
 - Demonstrate a non-judgmental attitude
- Respond to a patient's non-verbal behaviours to enhance communication
- Manage disagreements and emotionally charged conversations

- Adapt to the unique needs and preferences of each patient and to the patient's clinical condition and circumstances

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

-Use patient-centred interviewing skills to effectively gather relevant biomedical and psychosocial information

- Use appropriate and sensitive interviewing techniques when exploring issues that might be sensitive to patients, such as sexual practices, drug-use practices and history of trauma or violence
- Have the patience, understanding, and appropriate terminology, to assess patients whose mother-tongue is other than French or English. Seek out resources to help facilitate effective communication with the patient (i.e. family member, friend, translator).

-Provide a clear structure for and manage the flow of an entire outpatient encounter

- Facilitate while welcoming input and discussion from all stakeholders.

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

-Share information and explanations that are clear, accurate, and timely, while assessing for patient and family understanding

- While respecting patient preference, autonomy, privacy, and confidentiality, discuss with family members, significant-others, partners, or friends, about the medical situation the patient is facing.
- Use developmentally appropriate language and avoid medical jargon
- Educate patient and families about the role of appropriate antimicrobial use in contributing to a good therapeutic outcome and decreasing the occurrence of antimicrobial resistance
- Provide information about the legal requirements for physicians to divulge personal patient information, such as a communicable infection
- Provide information about the need for partner notification if there is a risk of transmission
- Demonstrate the ability to obtain informed consent for investigations and therapeutic modalities.

-Disclose harmful patient safety incidents to patients and their families

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

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

-Assist patients and their families to identify, access, and make use of information and communication technologies to support their care and manage their health

-Use communication skills and strategies that help patients and their families make informed decisions regarding their health

- Demonstrate the ability to counsel a patient with regards to benefits of antimicrobial, anti-tuberculous therapy and antiretroviral therapy
- Discuss initiation of antiretroviral therapy and potential adverse effects
- Develop a technique to manage patients that do not adhere to prescribed regimens (including anti-TB medication, HIV treatment, other antimicrobials, or vaccines).
- Develop a method to disclose an unfavourable diagnosis and/or prognosis in a truthful, sensitive and caring manner.
- Engage the reluctant, ambivalent or hostile patient through discussion and other strategies.

5. Document and share written and electronic information about the medical encounter

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

- Prepare well-organized consultation notes, providing rationale for plans, and clear direction to the referring physicians and other health professionals
- Provide well-organized and legible orders and progress notes in the medical record

-Communicate effectively using a written health record, electronic medical record, or other digital technology

COLLABORATOR

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

-Establish and maintain positive relationships with physicians and other colleagues in the health care professions and engage in respectful shared decision-making, including:

- Function as a specialist in infectious diseases and provide clear expert recommendations to referring physicians.
- Establish a plan that incorporates and defines the roles of the variety of health care professionals (e.g. other trainees, physicians, nurses, laboratory technologists, para-medical staff, and pharmacists) that need to come together to provide the patient with the best possible care.
- Work effectively as a member of the clinic team which involves attending physicians and administrative staff
- Effective communication with diagnostic laboratories.

LEADER

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

-Contribute to a culture that promotes patient safety

- Describe the “walk-in” clinic model and where its place may lay in an overburdened health care system
- Demonstrate awareness of the principles and practice of continuous quality improvement in health care

2. **Engage in the stewardship of healthcare resources**

-Allocate health care resources for optimal patient care

- Identify patients that should be seen in priority in the clinic setting (e.g. pregnant patients, patients that are unwell)
- Consider assisting in establishing protocols, algorithms, or clinical pathways for patient referral, and/or patient management. Consider evidence-based cost-effectiveness or cost-analysis when formulating investigative and therapeutic plans
- Champion guidelines-based and evidence-based ID practice (e.g. for vaccines, Lyme disease)

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

-Set priorities and manage time to integrate practice and personal life; manage personal schedule and consider how that impacts on activities in the clinic.

HEALTH ADVOCATE

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

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

- Determine a patient’s ability to access various services in the health and social systems
- Recognize the accessibility offered to all in the community by having a walk-in infectious diseases clinic that can manage STIs and most common ambulatory ID issues
- Identify vulnerable or marginalized populations at risk for STIs, TB, HIV, HCV, and HBV, and respond appropriately
- Identify opportunities for advocacy, and health promotion and disease prevention with individuals to whom they provide care
- Advocate on behalf of the patient in the community or in the health care team, including but not limited to supporting the individual’s efforts to obtain affordable medication, legal assistance, and housing, through referrals to social services and assistance from industry partners

-Work with patients and families to increase opportunities to adopt healthy behaviours

-Incorporate disease prevention, health promotion and health surveillance into interactions with individual patients

- Apply available knowledge regarding health promotion and disease prevention within all patients, especially the vulnerable or marginalized populations (e.g. vaccination, safe-sex practices, drug cessation programs)

SCHOLAR

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

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

- Demonstrate self-directed and independent learning skills that can be implemented as lifelong learning strategies.

-Identify opportunities for learning and improvement by regularly reflecting on and assessing their performances using various internal and external data sources

- Do supplemental reading around cases encountered.
- Recognize and correct deficits in knowledge through targeted learning

2. Integrate best available evidence into practice

-Recognize practice uncertainty and knowledge gaps in clinical and other professional encounters and generate focused questions that can address them

-Identify, select and navigate pre-appraised resources

-Critically evaluate the integrity, reliability, and applicability of health-related research and literature to address a clinical question

-Integrate evidence into decision-making in their practice

- Option to present a brief topic on STIs and/or ambulatory care in infectious diseases. This topic should be discussed with one of the attending staff in the ID clinic

PROFESSIONAL

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

-Exhibit appropriate professional behaviours and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality

- Demonstrate timeliness, punctuality, and attendance at all meetings, teaching sessions and clinics – including coordination of personal schedule and leaves with the clinic administration.

-Demonstrate a commitment to excellence in all aspects of practice

-Recognize and respond to ethical issues encountered in practice, including

- Limits of privacy and confidentiality
 - The conflict between individual autonomy and liberty and measures to prevent and control the spread of infection, such as isolation and quarantine
 - Knowledge of cases that require notification to Public Health authorities
- Recognize and manage conflicts of interest
- Recognize the potential for conflicts of interest related to interactions with manufacturers or distributors of antimicrobial agents, vaccines, diagnostics, and devices and equipment
- Exhibit professional behaviours in the use of technology-enabled communication

2. Demonstrate a commitment to the profession by adhering to standards and participation in physician-led regulation

- Fulfil and adhere to professional and ethical codes, standards of practice, and laws governing practice
- Maintain professional relationships with patients
 - Adhere to requirements for mandatory reporting, including disease of public health significance
- Recognize and respond to unprofessional and unethical behaviours in physicians and other colleagues in the health care professions

Recommended resources:

Canadian Guidelines on Sexually Transmitted Infections
(<https://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health-sexually-transmitted-infections/canadian-guidelines.html>)
UpToDate (<https://www.uptodate.com>)
Textbooks of Infectious Diseases and Medical Microbiology
Sanford guide to antimicrobial therapy or other reference for infectious diseases therapeutics
Reviews and other scientific publications based on cases seen

Rotation-specific objectives

MEDICAL EXPERT

- Provides patient-centered infectious diseases care, with compassion and with consideration for vulnerable patients and minority groups
- Performs consultations effectively balancing clinic efficiency, material and human resources and learning needs
- Demonstrates consideration for exposures and predisposing factors, and suggests appropriate investigative and therapeutic plans (considering appropriateness, resources, pertinence and cost)
- Performs focussed physical examination, including proficiency in genitourinary examinations where appropriate (appropriate communication, draping, and technique are expected).
- Manages type and duration of outpatient therapy appropriately

COMMUNICATOR

- Conveys effective oral and written information about a medical encounter
- Deals with patients with patience and understanding; seeks resources to help facilitate effective communication when there is a language barrier
- Utilizes appropriate and sensitive interviewing techniques when exploring issues that might be sensitive to patients, such as sexual practices, illegal drug-use practices and history of trauma or violence

COLLABORATOR

- Provides clear expert recommendations to referring physicians.
- Works effectively as a member of the clinic team which involves attending physicians and administrative staff

LEADER

- Identifies patients that should be seen in priority in the clinic setting (e.g. pregnant patients, patients that are unwell)
- Manages own personal schedule with consideration for the impact it might have on clinic activities.
- Considers evidence-based cost-effectiveness or cost-analysis when formulating investigative and therapeutic plans.
- Champions guidelines-based and evidence-based ID practice (e.g. for vaccines, Lyme disease)

HEALTH ADVOCATE

- Counsils patients on risk avoidance and preventative strategies when appropriate (e.g. behavioural counselling, vaccination)
- Identifies vulnerable patients and advocates for them taking into account their ability to access various services in the health and social systems

SCHOLAR

- Recognizes and corrects own knowledge gaps through self-directed and independent learning.
- Critically appraises retrieved evidence in order to address a clinical question
- Presents (optional) a brief researched topic on STIs and/or ambulatory care in infectious diseases (after previous agreement with the attending staff in the ID clinic)

PROFESSIONAL

- Demonstrates timeliness, punctuality

- Exhibits professional behaviors at all times (honesty, integrity, commitment, compassion, respect, appreciation of diversity, and altruism)
- Recognizes the principles and limits of patient confidentiality as defined by professional practice standards and the law

Authors: Dr Marty Teltscher, Dr Karl Weiss, Dr. Ling Yuan Kong (revised by Dr Makeda Semret)

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Introduction to the Laboratory/Bacteriology 1

Abbreviation: MM Bacti 1 MUHC/RVH

Overview:

This rotation is the very first introduction of the resident to the clinical microbiology laboratory, and will generally be completed during the Transition to Discipline stage of training (early PGY4). The resident will have an opportunity to get acquainted with the overall structure and organization of the microbiology laboratory, receive training in laboratory safety, be introduced to bacterial identification methods, and familiarize themselves with 2 major groups of bacteria, aerobic Gram-positive cocci and aerobic Gram-positive rods.

Learning context:

This introductory rotation will take place at the clinical microbiology laboratory of the MUHC (Glen site, E05). Residents will meet daily with Teaching Assistant Chief Technologist of Microbiology, as well as the attending microbiologist (staff on Micro C schedule) at the beginning of each rotation and on a regular basis throughout the rotation, to participate in specific formal teaching sessions as arranged with their supervisor. The residents will have access to teaching materials and are expected to read the relevant sections in reference microbiology textbooks. A schedule for this rotation will be provided on the first day. (See example schedule at end of section).

Residents will acquire knowledge through the following strategies:

- Supervised work with Assistant chief technologist on the appropriate microbiology benches (Throat, vaginal, pus, sterile body fluids, MRSA and VRE). This is done by working on the patient specimens in parallel with the working benches and comparing the final results.
- Correlation of microbiology laboratory results with patients' clinical presentation.
- Supervised work on the identification of unknown organisms, and review of the process with the teaching technologist or attending microbiologist
- Review of the laboratory procedures manual and relevant texts, including articles from peer-reviewed microbiology journals
- Review of process, characteristics, and test performance of several biochemical testing used in the identification of targeted organism groups.
- Creation of "flow charts" to aid in the identification of targeted organism groups

Evaluation modalities

- **ITER** MM Lab Bact 1: based on feedback from the teaching technologist and attending microbiologists supervising during each week (Micro C schedule) and their performance on quizzes during the rotations. The midway feedback will be provided by the Assistant chief technologist (teaching technologist), and the final evaluation will be presented to the trainee at the end of their rotation by the medical microbiologist supervising during the 4th week of the rotation.

The trainee should complete the following EPAs during this rotation:

- MM 1.3 Participating in the pre-analytic assessment of specimens

- MM 1.4 Performing gram stains
- *Optional:*
 - MM 2.2 Interpreting and reporting Gram stains of clinical specimens and culture isolates
 - MM 2.3 Identifying and reporting common organisms recovered on culture
 - MM 2.4. Performing, interpreting, and reporting antimicrobial susceptibility testing of common bacterial pathogens

Learning objectives

MEDICAL EXPERT

- Describe the major components of safety in the laboratory, including the Canadian Biosafety Manual and the components of the Workplace Hazardous Materials Information System (WHMIS), specifically:
 - Principles of standard precautions, proper clothing and personal protective equipment in the lab,
 - MSDS information for products used in the laboratory, handling and storing hazardous products in the lab, handling and disposing of sharps, laboratory waste, procedures for spills,
 - Principles of bio-containment levels, and QC procedures for these devices and principles for certification, proper use, cleaning and disinfection.
 - Transportation of Dangerous Goods (TDG) requirements
 - Principles and regulations for bio-security, and procedures related to agents possibly related to bioterrorism
 - Procedures recommended for prophylaxis, screening, and empiric treatment of laboratory-acquired infections
- Describe the taxonomy, epidemiology, life cycle and pathology of aerobic Gram positive cocci and Gram positive bacilli
- Demonstrate basic microscopy including staining skills, basic microscope structure, Köhler illumination, and fluorescent staining.
- Describe common culture media used in the microbiology laboratory, and different incubation conditions and methods of achieving such conditions.
- Describe different bacterial colonial morphologies and colonial characteristics (e.g. color, smell, pitting the agar, ... etc)
- Demonstrate different methods used for bacterial identification (manual biochemical testing, semi-automated, automated).
- Describe common laboratory culture media and basic identification methods for aerobic gram positive organisms
- Be familiar with the Standard Operating Procedure (SOP) manuals pertaining to specific biochemical testing, Gram-positive identification, and bench processing.
- Describe the growth requirements for Gram-positive cocci in a clinical microbiology laboratory, including routine, selective and differential media, temperature, humidity, and oxygen concentration
- Develop diagnostic algorithms for the routine isolation and identification of medically important Gram-positive cocci from specimens in a clinical microbiology laboratory. These algorithms should include microscopic examination of stained specimens, observation of growth requirements and colonial morphology, detection and confirmation methods for the following aerobic gram positive cocci:
 - Beta-hemolytic streptococci* (*S. pyogenes*, *S. agalactiae*, *S. dysagalactiae*, *S. anginosus* group, including Lancefield classification), *Streptococcus pneumoniae* and other alpha-hemolytic *Streptococci*, *Enterococcus sp*,

Staphylococcus sp, Stomatococcus sp, Rothia mucilaginosa, Micrococcus sp, Leuconostoc sp, Aerococcus sp, and Pediococcus sp.

- Familiarize themselves with the basic categories of pathogenic aerobic Gram-positive rods.
- Develop basic diagnostic algorithms for the identification of the following common aerobic Gram positive rod species:
Bacillus sp, Listeria sp, Erysipelothrix sp, Lactobacillus sp, Corynebacterium sp., Arcanobacterium sp., Rothia sp., Nocardia sp., Actinomyces sp.
- Understand the basics of different methods of antimicrobial susceptibility testing including manual (KB) and automated (Vitek 2) testing of targeted organisms.

COMMUNICATOR

- Develop a working relationship and understand the role that each member of the microbiology laboratory plays in the healthcare system
- Describe what a “critical result” is and ways of transmitting this result to health care providers.

COLLABORATOR

- Demonstrate an ability to learn from laboratory technologists and other professionals involved in patient care
- Describe the medical microbiologists’ roles and responsibilities to the other professions
- Describe the roles and responsibilities of laboratory technologists, infection prevention and control practitioners, and public health officials within the health care team

LEADER

- Organize teaching sessions with the teaching technologist and attending microbiologist ahead of time
- Prepare teaching sessions ahead of time, and arrive to sessions with questions and a summary of reading
- Recognize the importance of appropriate laboratory testing (laboratory stewardship)

HEALTH ADVOCATE

- Identify the role of laboratories in maintaining and promoting health and health equity for patients and communities
- Identify potential safety issues in the microbiology laboratory, and develop response to incidents

SCHOLAR

- Reflect on personal performance and identify areas for improvement, integrating feedback from teaching technologist and attending staff supervisors
- Integrate learning from this rotation with reviews of literature, interhospital infectious diseases/medical microbiology rounds, online courses, and relevant conferences
- Recognize practice uncertainty and knowledge gaps in areas of bacterial identification, and changes in bacterial taxonomy over time
- Reflect on common clinical problems presented to the medical microbiologist by trying to respond to daily questions and issues identified by the technologists

PROFESSIONAL

- Demonstrate honesty, integrity, commitment, compassion and respect at all times
- Exhibit safe laboratory practices at all times in the laboratory
- Maintain confidentiality of laboratory information
- Handle specimens and laboratory equipment with care and respect

Recommended Reading

- Reading provided by teaching assistant
- Relevant Chapters in Textbook of Medical Microbiology (ASM Manual of Clinical Microbiology, Koneman's Color Atlas and Textbook of Diagnostic Microbiology, Murray's Medical Microbiology, or other)
- Microbiology laboratory standards developed by the Clinical and Laboratory Standards Institute (CLSI).

Appendix: Intro 1 Template:

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
WEEK #1 AM	Introduction to lab and staff Safety Rules & Regulation Fire Exit, shower/eye wash Sterilization	PTS-->Reception Processing, Types of specimens, Media, gram stain, QC	Basic Biochemicals & QC Cyr; Cat; Oxy; Sa/aurex ;spot ind; B-Lactamase; Tube/TSI/BE/NAACL ... etc	Academic 1/2 day	Microscope Kohler Phase Contrast Dark field Wet mounts Blood Cult slides
PM	Safety and WHMIS (Power Point)	Urines, throat, Pus, sputum, stool, SBF	Working on specimens (KB bioch etc)	Finalized specimens	
WEEK #2	GPC (Cat +) Staph & Micrococcus Unknowns KB procedure and QC	BIOCH/VITEK UNKNOWN(S(contd)) Blood Bench & ID /SBF Bench(protocols)	AUTOMATION Vitek2; Bacti-Alert MANIPULATION+ QC KB/D-Test /s.aureus	Academic 1/2 day Unknowns finalize	Working on Identification chart Quiz on GPC cat+ & answer key
WEEK #3	GPC (cat-) Strep Gr A,B Viridans Enterococcus, S.anginosus, pneumo Stomatococcus, Leuconostoc etc Blood Bench	Unknowns(cont) Blood Bench ->gram stain and put up media+KB API/Vitek, throat bench	Finalize Unknowns + Blood QC S.pneumo	Academic 1/2 day	Quiz on GPC cat-& answer key. Working on identification chart
WEEK #4	GPR Non-spore forming and spore forming & Coryne. Arcano, Abiotrophia, Nocardia, Lactobacillus, Bacillus cereus and sp, Listeria Unknowns	Bench Throat ,pus deep and superficial Unknowns	Throats & Pus Sup. Unknowns Review	Academic 1/2 day	Quiz on GPR & Answer Key Finalize identification charts
Documents	Staphylococci (CSMLS Canadian Society for Medical Laboratory Science)				
	Streptococci (CSMLS Canadian Society for Medical Laboratory Science)				
	M58 CLSI Methods for the Identification of Cultured Microorganisms; MALDI-TOF MS				
	Miscellaneous Gram Positive Rods (CSMLS Canadian Society for Medical Laboratory				

Rotation-specific objectives**Medical Expert**

- Applies safety procedures consistently
- Performs and correctly interprets laboratory identification tests for aerobic Gram-positive organisms

Communicator

- Listens attentively and participates effectively during teaching sessions, and seeks clarifications as needed

Collaborator

- Demonstrates flexibility and motivation while working with technologist and supervising microbiologist

Leader

- Manages time effectively and completes all tasks in a timely manner

Health Advocate

- Describes safety regulations and guidelines clearly and comprehensively

Scholar

- Organizes own teaching sessions and arrives well-prepared (with questions and summary of readings)

Professional

- Engages with laboratory personnel and supervising microbiologist(s) in a respectful and courteous manner throughout the rotation

Authors: Micheline Parent, Dr Mohammad Alghounaim, Dr Makeda Semret (revised by Dr Jesse Papenburg)

Date of revision: June 13, 2024

Date approved by the Residency Training Committee: June 20, 2024

Laboratory Bacteriology 2

Abbreviation: MM Lab Bacti 2-RVH

Overview:

This rotation follows the Bacteriology 1 rotation and occurs during the Foundations of discipline stage of training (in PGY4). It provides an opportunity for residents to gain a deeper understanding of the overall structure and workflow in the microbiology laboratory and familiarize themselves with a very large group of clinically important bacteria, the *Enterobacteriaceae*.

Learning context:

This rotation will take place at the clinical microbiology laboratory of the MUHC (Glen site). Residents will meet daily with Teaching Assistant Chief Technologist of Microbiology, as well as the attending microbiologist (staff on Micro C schedule) at the beginning of each rotation and on a regular basis throughout the rotation, to participate in specific formal structured teaching sessions as arranged with their supervisor. The residents will have access to learning resources and are expected to read the relevant sections in reference microbiology textbooks. A schedule is provided on the first day of the rotation (example in Appendix).

Residents will acquire knowledge through the following strategies:

- Supervised work with Assistant chief technologist on the appropriate microbiology benches (in order to maximize exposure to common *Enterobacteriaceae*, residents will work on the urine, stool, pus, and resp benches). This is done by working on the patients' specimens in parallel with the working benches and comparing final results.
- Supervised work on the identification of unknown organisms, and review of the process with the teaching technologist. The level of supervision is appropriate to the resident's level of training (generally residents at early stage of microbiology training for this rotation).
- Review of the laboratory procedures manual and relevant texts, including articles from peer-reviewed microbiology journals, with the technologist and the attending microbiologist.
- Review the process, characteristics, and test performance of several biochemical testing used in the identification of targeted organism groups.
- Creation of "flow charts" to aid in the identification of *Enterobacteriaceae*.

Evaluation Modalities

- ITER MM Bacti 2: This will be based on feedback from the teaching technologist and attending microbiologists supervising each week (Micro C staff schedule), as well as on their performance on quizzes during the rotations. The teaching technologist will provide midway feedback..
- The trainee should complete the following EPAs (Foundations of discipline)



- MM 2.2 Interpreting and reporting Gram stains of clinical specimens and culture isolates
- MM 2.3 Identifying and reporting common organisms recovered on culture
- MM 2.4. Performing, interpreting, and reporting antimicrobial susceptibility testing of common bacterial pathogens

Learning objectives

MEDICAL EXPERT

- Demonstrate a good understanding of common laboratory culture media and methods (conventional biochemical, semi-automated and automated) commonly used for identification of Gram negative bacilli
- Describe rationale behind the use of selective and differential media in the isolation of clinically relevant *Enterobacteriaceae* (eg. Stool bench; Urine bench)
- Describe the taxonomy, epidemiology, life cycle and pathology of *Enterobacteriaceae*
- Describe, perform and interpret basic laboratory identification for *Enterobacteriaceae*
- Demonstrate ability to work unsupervised on a bench, and perform the steps required to identify “unknowns”
- Develop identification algorithms for the routine isolation and identification of medically important *Enterobacteriaceae*. These algorithms should include microscopic examination of stained specimens, observation of growth requirements and colonial morphology, detection and confirmation methods.
- Be familiar with the Standard Operating Procedure (SOP) manuals pertaining to specific biochemical testing, Gram-negative rods identification, and bench processing.
- Understand the basics of different methods of antimicrobial susceptibility testing including manual (KB) and automated (Vitek 2) testing of *Enterobacteriaceae*.

COMMUNICATOR

- Effectively present relevant medical and laboratory information to the different technologists working in parallel on the same clinical specimens
- Articulate questions and provide relevant and concise answers to questions posed during teaching sessions with the teaching technologist and attending microbiologist

COLLABORATOR

- Demonstrate an ability to learn from laboratory technologists and other professionals involved in patient care
- Describe the medical microbiologists’ roles and responsibilities to the other professions

- Describe the roles and responsibilities of laboratory technologists, infection prevention and control practitioners, and public health officials within the health care team

LEADER

- Organize teaching sessions with the teaching technologist and attending microbiologist ahead of time
- Prepare teaching sessions ahead of time, and arrive to sessions with questions and a summary of reading
- Recognize the importance of appropriate laboratory testing (laboratory stewardship) for Enterobacteriaceae

HEALTH ADVOCATE

- Identify the role of laboratories in maintaining and promoting health and health equity for patients and communities
- Identify potential safety issues in the microbiology laboratory, and develop response to incidents

SCHOLAR

- Reflect on personal performance and identify areas for improvement, integrating feedback from teaching technologist and attending staff supervisors
- Integrate learning from this rotation with reviews of literature, interhospital infectious diseases/medical microbiology rounds, online courses, and relevant conferences
- Recognize practice uncertainty and knowledge gaps in areas of identification of Enterobacteriaceae, and changes in bacterial taxonomy over time
- Reflect on common clinical problems presented to the medical microbiologist by trying to respond to daily questions and issues identified by the technologists

PROFESSIONAL

- Demonstrate honesty, integrity, commitment, compassion and respect at all times
- Exhibit safe laboratory practices at all times in the laboratory
- Maintain confidentiality of laboratory information
- Handle specimens and laboratory equipment with care and respect

Rotation-specific objectives:**Medical Expert**

- Describes rationale behind media selection, processing and workflow of urine and stool benches clearly and comprehensively
- Performs and accurately interprets laboratory identification tests for Enterobacteriaceae
- Develops own identification chart for enterobacteriaceae

Communicator

- Listens attentively and participates effectively in teaching sessions and seeks clarification as needed

Collaborator

- Demonstrates flexibility, punctuality and motivation when working with teaching technologist and microbiology supervisor

Leader

- Manages time effectively and completes all tasks in a timely manner
- Reviews standard operating procedures for identification of enterobacteriaceae for clinical pertinence and cost-effectiveness

Health Advocate

- Discusses relevance of testing and identification of enterobacteriaceae in different clinical and epidemiological contexts, including implementation of rational laboratory testing (laboratory stewardship) and public health relevance of identification of certain organisms

Scholar

- Organizes own teaching sessions, and arrives well-prepared with questions and summary of readings

Professional

- Engages with laboratory personnel and supervising microbiologist(s) in a respectful and courteous manner throughout the rotation
- Follows strict safety guidelines while working in the laboratory at all times

Recommended Reading

- Reading material provided by Teaching Laboratory technologist

- Relevant Chapters in Textbook of Medical Microbiology (ASM Manual of Clinical Microbiology, Koneman's Color Atlas and Textbook of Diagnostic Microbiology, Murray's Medical Microbiology, or other)
- Microbiology laboratory standards developed by the Clinical and Laboratory Standards Institute (CLSI).

Appendix: Template Intro 2

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
WEEK #1	Unknowns (12 Enterob and Multiresistants) Pus Deep&Super Bench.Set up Bioch and Vitek and KB	Unknowns contd Pus bench	Unknowns contd Pus bench	Academic 1/2 day Old and new pus	Finalize unknowns Quiz
WEEK #2	Unknowns (12 Lact neg enterobacteriaceae) Resp.Bench	Unknowns contd Resp bench	Unknowns contd Resp bench	Academic 1/2 day	Finalize unknowns Quiz
WEEK #3	Unknowns (stool pathogens) Urine bench	Unknowns contd Urine bench	Unknowns cont'd Urine bench	Academic 1/2 day Urine bench	Finalize unknowns Urines to finalize
WEEK #4	Multiresistant Enterobacteriaceae Discuss INSPQ document 2022	MHT TIC KPC plates Stool bench	MHT Stool bench	Academic 1/2 day	Finalize stool bench
GNR multiresistants (lecture document INSPQ 2022) : Mesures de prevention et de controle de la transmission dans les milieux de soins aigus au Quebec CSMLS Learning Course ENTEROBACTERIACEAE					

Authors: Micheline Parent, Dr Mohammad Alghounaim, Dr Makeda Semret; revised by Dr Jesse Papenburg

Date of revision: June 13, 2024

Date approved by the Residency Training Committee: June 20, 2024

Rotation overview:

Laboratory Bacteriology 3 (MUHC-RVH)

Abbreviation: MM Lab Bacti 3

Overview:

This 1-month rotation follows the Intro 1 and 2 rotations and should be completed within the Foundations or Core of Discipline stages of Training (generally during PGY4) It provides an opportunity for residents to gain a thorough understanding of the overall structure and workflow in the microbiology laboratory. During this rotation residents will familiarize themselves with pseudomonas species, other glucose non-fermenting gram-negative bacteria, as well fastidious bacteria such as those in the HACEK group.

Learning context:

This rotation will take place at the clinical microbiology laboratory of the MUHC (Glen site). Residents will meet daily with Teaching Assistant Chief Technologist of Microbiology, as well as the attending microbiologist (staff on Micro C schedule) at the beginning of each rotation and on a regular basis throughout the rotation, to participate in specific formal structured teaching sessions as arranged with their supervisor. The residents will have access to learning resources and are expected to read the relevant sections in reference microbiology textbooks.

Residents will acquire knowledge through the following strategies:

- Supervised work with Assistant chief technologist on the appropriate microbiology benches (in order to maximize exposure to pseudomonas and non-fermenters, residents will work on the Resp/sputum bench and particularly focus on specimens from cystic fibrosis cases). This is done by working on the patients' specimens in parallel with the working bench and comparing final results.
- Unsupervised work on the identification of unknown organisms, and review of the process with the teaching technologist
- Review of the laboratory procedures manual and relevant texts, including articles from peer-reviewed microbiology journals, with the technologist and the attending microbiologist
- Creation of "flow charts" to aid in the identification of non-fermenters, and for fastidious organisms in the HACEK group

Evaluation modalities

- **ITER Lab Bacti 3:** the in-training evaluation report will be based on feedback from the teaching technologist and attending microbiologists supervising during each week (Micro C), as well as on their performance on quizzes during the rotations. The Assistant chief technologist (teaching technologist) will provide the mid-way feedback.
- The trainee should complete the following EPAs
 - MM 2.2 Interpreting and reporting Gram stains of clinical specimens and culture isolates
 - MM 2.3 Identifying and reporting common organisms recovered on culture

- MM 2.4. Performing, interpreting, and reporting antimicrobial susceptibility testing of common bacterial pathogens
- Optional:
 - MM 3.1: Providing advice to physicians and other health care professionals about medical microbiology tests and results
 - MM 3.2: Identifying and reporting organisms

Learning objectives

MEDICAL EXPERT

By the end of this rotation, the resident should be able to:

- Demonstrate a thorough understanding of common laboratory culture media and methods (conventional biochemical, semi-automated and automated) commonly used for identification of non-fermenter gram-negative bacilli
- Perform and interpret gram-stains for respiratory specimens, and describe rationale behind qualitative grading of respiratory specimens
- Describe rationale behind the use of selective and differential media in the respiratory bench
- Describe the taxonomy, epidemiology, life cycle and pathology of Non-fermenting gram-negative bacilli, both in “normal” hosts and in “special hosts” (eg. Cystic fibrosis, patients on mechanical ventilation, immunocompromised, etc)
- Describe, perform and interpret basic laboratory identification for Non-fermenting gram negative bacilli and fastidious organisms
- Describe the taxonomy, epidemiology, colonial morphology, and biochemical identification testing of *Neisseria* sp.
- Be familiar with the “genital bench” and Kopeloff gram staining.
- Develop own flow chart for identification of common non-fermenters
- Demonstrate ability to work unsupervised on a bench, and perform the steps required to identify “unknowns”
- Understand the basics of different methods of antimicrobial susceptibility testing including manual (KB) and automated (Vitek 2) testing of targeted organisms.
- Be familiar with the Standard Operating Procedure (SOP) manuals pertaining to specific biochemical testing, Gram-negative rods identification, and bench processing.

COMMUNICATOR

Through interactions with laboratory staff and other healthcare providers, the resident should be able to:

- Explain clinical relevance of identifying non-fermenters in special specimens (eg. Cystic fibrosis) to clinicians and technologists

- Respond to questions from clinicians and laboratory staff regarding reporting of results of sputum samples, (rejection criteria, use of novel taxonomy, etc)

COLLABORATOR

Through interactions with laboratory staff and the attending microbiologist, the resident should be able to:

- Demonstrate an ability to learn from laboratory technologists and other professionals involved in patient care
- Develop a good working relationship with laboratory staff and other healthcare providers, and understand the role that each plays in the healthcare system

LEADER

During this rotation, through participation in teaching sessions, independent review of teaching materials and basic bench work, the resident will:

- Organize teaching sessions with the teaching technologist and attending microbiologist ahead of time
- Prepare teaching sessions ahead of time, and arrive to sessions with questions and a summary of reading
- Develop an approach to troubleshoot and resolve test nonconformity and discrepant results.

HEALTH ADVOCATE

Through interaction with laboratory technologists, managers, microbiologists and other healthcare providers, the resident should be able to:

- Identify the role of laboratories in maintaining and promoting health and health equity for patients and communities
- Identify potential safety issues during processing of sputum specimens, and list organisms (among this group of gram-negative non-fermenters) that require notification to public health

SCHOLAR

Through self-directed learning and interactions with attending staff, the resident should be able to:

- Reflect on standard operating procedures (SOP) for identification of non-fermenters and fastidious organisms, and identify areas for improvement
- Integrate learning from this rotation with reviews of literature, interhospital infectious diseases/medical microbiology rounds, online courses (e.g. CDC train), and relevant conferences
- Recognize practice uncertainty and knowledge gaps in areas of bacterial identification for fastidious organisms, Gram-negative non-fermenters, and changes in bacterial taxonomy over time

- Describe basic concepts of quality control measures and implementation of quality assurance for non-fermenters and fastidious organisms

PROFESSIONAL

Throughout their day-to-day activities in the microbiology laboratory and during all teaching sessions, the resident will:

- Demonstrate honesty, integrity, commitment, compassion and respect at all times
 - Exhibit safe laboratory practices at all times in the laboratory
- Maintain confidentiality of laboratory information
- Handle specimens and laboratory equipment with care and respect

Rotation-specific objectives

Medical Expert

- Describes rationale behind media selection, processing and workflow of respiratory (sputum, BAL, trach, Cystic Fibrosis) benches, clearly and comprehensively
- Performs and accurately interprets laboratory identification tests for non-fermenters
- Develops own identification chart for non-fermenters

Communicator

- Initiates discussions during teaching sessions and seeks clarification as needed
- Participates actively and discusses clinical relevance of non-fermenters during culture reviews with teaching technologist(s)

Collaborator

- Demonstrates flexibility, punctuality and interest when working with teaching technologist and microbiology supervisor
- Responds to questions from laboratory staff on limitations and clinical pertinence of conventional testing methods for non-fermenters in a thoughtful manner

Leader

- Initiates discussions on appropriate level of laboratory work-up for respiratory specimens for different clinical scenarios
- Understands basic concepts of quality control measures and implementation of quality assurance for non-fermenters.
- Follows strict safety guidelines while working in the laboratory at all times.

Health Advocate

- Identifies infections due to non-fermenters that might pose public health risks and possible methods of reporting to clinician and to public health
- Discusses relevance of testing and identification of non-fermenters in different populations and epidemiological contexts (eg: COPD, CF, bronchiectasis, ..)

Scholar

- Organizes own teaching sessions, arrives well-prepared with questions and summary of readings

Professional

- Engages with laboratory personnel and supervising microbiologist(s) in a respectful and courteous manner throughout the rotation

Recommended Reading

- Learning material provided by Teaching technologist
- Relevant Chapters in Textbook of Medical Microbiology (ASM Manual of Clinical Microbiology, Koneman's Color Atlas and Textbook of Diagnostic Microbiology, Murray's Medical Microbiology, or other)
- Microbiology laboratory standards developed by the Clinical and Laboratory Standards Institute (CLSI).

Appendix: template Intro 3

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
WEEK #1	Working on Resp pathogens & Fastidious GNR (8 Unknowns) Resp bench reading and screening sputum gram stain	Cont. Unknowns & Resp Bench	Cont.Unknowns & Resp Bench	Academic 1/2 day	Quiz and finalize unknowns
WEEK #2	Bench: Cystic Fibrosis/Resp New specimens . (8 Unknowns (Non Fermenter to identify(Bioch.Vitek and MS)	Cont Unknowns Resp bench	Cont Unknowns Resp bench	Academic 1/2 day Resp bench	Finalize unknowns
WEEK #3	Unknowns 9 (Non fermenter and Neisseria sp)	Cont unknowns Genital bench	Cont unknowns Genital bench	Academic 1/2 day Genital bench	Finalize unknowns
WEEK #4	KPC screening Bench Pus sup Blood & SBF bench	Cont unknowns Blood & SBF bench	Cont unknowns Blood & SBF bench	Academic 1/2 day Blood & SBF bench	Finalize flow charts Quiz
Documents	CSMLS FASTIDIOUS GRAM NEGATIVE BACILLI IDENTIFICATION OF PSEUDOMONAS SP AND OTHER Non-Glucose Fermenter (UK Standards Microbiology)				

Authors: Dr Earl Rubin, Dr Tien Nguyen, Micheline Parent, Dr Mohammad Alghounaim, Dr Makeda Semret

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ID Point of Care Ultrasound (RVH)

Abbreviation: ID POCUS

Overview:

This 2-week rotation is optional for learners wishing to gain knowledge, experience, and confidence to use POCUS as an enhancement of their physical exam when assessing patients with infectious or tropical pathologies.

Learning context:

This rotation is supervised by Dr Cedric Yansouni, and is offered every 2 years, at the RVH site. A detailed curriculum is available in Appendix.

Evaluation modality:

-ITER: ID POCUS

Rotation-specific objectives:*Medical Expert*

- Obtains correct views (probe settings, position) for priority POCUS exams
- Demonstrates the expected POCUS features of the key infection syndromes.
- Interprets findings within the context of patient's presentation and suspected findings
- Recognizes limits of their expertise and of the diagnostic modality

Professional

- Understands and respects infection control and safe-for-devices decontamination/disinfection procedures
- Documents images and other data in compliance with established standard procedures
- Respects patient consent and patient confidentiality throughout process of performing POCUS and storing images

Collaborator

- Works effectively with peers, faculty, and other professionals (eg. radiology) to optimize decision making

Scholar

- Identifies opportunities for learning and improvement by regularly reviewing various internal and external data sources
- Recognizes practice uncertainty and knowledge gaps in POCUS and generates focused questions to address them

APPENDIX 1: Terms of Reference Residency Training Committee

Infectious Diseases and Medical Microbiology
Residency Training Committee (RTC)

Preamble:

A combined RTC meets for the (Adult) Infectious Diseases and Medical Microbiology programs, though issues specific to each of the programs are dealt with separately in the context of these meetings (with members recusing themselves from the discussion as necessary). The mandate, composition, and frequency of meetings for this committee are defined below.

Mandate:

The core roles of the RTC are as follows:

1. Develop, review, and approve the training curriculum in accordance with the accreditation standards by the Royal College of Physicians of Canada
2. Serve as advisory resources to the Program Director (PD) on specific issues such as:
 - Structuring of core lectures,
 - Elective rotations,
 - Resident schedules,
 - Format of research exposure and training.
3. Address residents' pedagogical/training concerns and concerns on the learning environment
4. Identify and correct deficiencies in the program or of specific rotations
5. Selection of candidates for admission to the program (based on recommendations from ad-hoc admissions subcommittee)
6. Identify and address weaknesses in resident performance (based on recommendations from Program Competence Committee – PCC)
7. Approve resident promotions based on recommendations from PCC
8. Selection of guest speakers for the Academic Half-day
9. The solicitation and distribution of funds for the purpose of post-graduate education

Composition:

The Program Director chairs the RTC for Adult Infectious Diseases and Medical Microbiology.

The committee is composed of:

the ID Division Director (university chair),

ID division directors for each training site,

Director of Microbiology laboratories for the McGill network of hospitals,

At least one former Program Director,

Chair of the Program Competency Committee (PCC),

Program Director for Pediatric Infectious Diseases,
Chair of the Residency Research Committee
An elected resident representative (usually the Chief Resident or their designate)
The teaching technologist
Major rotation coordinators and in-training examination coordinators can be additional members.

The program administrator will attend meetings in a non-voting capacity and serves as the committee secretary.

Frequency of meetings:

The committee will meet at least quarterly. Additional meetings may be arranged at the request of the PD or the Department Chairs.

Approved by RTC: 2018 October 18

APPENDIX 2: Terms of Reference for Program Competence Subcommittee

Preamble:

This committee, formerly known as the Resident Assessment and Promotions Committee, is a subcommittee of the Resident Training Committee (RTC) whose mandate, composition, and frequency of meetings are defined below.

Mandate:

The core roles of the Competency Committee are as follows:

1. Review the resident evaluations as presented by the Program Director
2. Determine the suitability of residents for annual promotion and readiness for sitting the Royal College Examinations
3. Identify residents in academic difficulty
4. Serve as an advisory resource to the Program Directors (PD) for assessing the need for and development of supplemental and remedial training as necessary
5. Receive and review request for appeals of evaluations

Composition:

The committee will be composed of academic attending staff involved in regular supervision of residents in training. A minimum of 4 members in addition to the committee chair and Program Director will be drawn from members of the RTC. The RTC will elect a Chair, and appoint members for terms of 5 years. The program administrator will attend meetings in a non-voting capacity and will keep the minutes.

Frequency of meetings:

The committee will meet at least semiannually. Extra sessions may be arranged at the request of the PD or in the event of a resident appeal.

Confidentiality:

Subject matter discussed at the committee meetings is highly confidential and should not be disclosed to individuals outside the committee. All decisions of the committee regarding resident promotions will be communicated to the resident by the Program Director.

Approved by RTC: 2018 October 18

APPENDIX 3: Terms of Reference for Resident Research Subcommittee

Preamble:

This committee is a subcommittee of the Resident Training Committee (RTC) whose mandate, composition, mechanism for conflict resolution, and frequency of meetings are defined below.

Mandate:

The core roles of the Resident Research Subcommittee are as follows:

1. Monitor resident research and scholarly activities during the course of their training. Only residents in the McGill Infectious Diseases and/or Medical Microbiology training programs are included in this mandate.
2. Link residents with appropriate supervisors
3. Track resident progress on scholarly projects, and maintain a record of their progress using the research tracking form
4. Advocate for residents in the event of conflicts
5. Ensure resident scholarly activities comply with ethical and moral standards of research
6. Offer scientific critique of current and planned projects
7. Guide residents in the acquisition of basic skills in the planning, conducting and disseminating the results of research projects.

Composition:

This committee will consist of four active researchers, ideally representing both clinical and basic science research, appointed by the RTC. The chair of this subcommittee will be selected from the members and need not be one of the PDs. In this event, the chair will report back to the relevant PD after each meeting. The Chair is appointed by the RTC for a term of three years. The appointment of a new Chair after two terms is preferred.

Frequency of meetings:

The committee will meet quarterly. Extra sessions may be arranged at the request of the PD or the Chair of the committee.

Expectations of Residents:

Attendance of all meetings by the residents of McGill's ID/MM program is mandatory, unless there are extenuating circumstances. Attendance by the residents in more than 50% of the meetings is required for consideration of successful completion of this aspect of their residency and will be incorporated in their overall evaluation.

During the meetings, residents will provide an update on their research in a formal presentation, including the development of a slide deck.

Participation by the residents at the annual ID/MM Resident Research day is mandatory. Residents will also be invited to participate in the annual Department of Medicine Research Day, via presentation of their work (e.g. poster presentation).

Expectations of the Chair of the sub-committee:

The Chair must attend and supervise all meetings.

The Chair will coordinate with the PD the upcoming academic year's schedule of sub-committee meetings.

The Chair will oversee and finalize the minutes of the meetings, to be submitted to the PD and RTC.

The Chair will oversee the application of residents for ID/MM resident research funds (see document "Procedure for ID Divisional funding of ID Fellow Research Projects" below).

The Chair will act as mediator, in the event of issues arising between residents and supervisors (see below).

Mechanism for conflict resolution:

In the event that a concern or conflict is identified, the research committee may act as an advocate for the resident. Under these conditions the following steps should be followed:

1. The resident should be encouraged to communicate directly with the supervisor to resolve the issue.
2. If the resident is unable or uncomfortable dealing with the issue alone, then the committee chair may represent the committee and contact the supervisor directly. This communication, and the supervisor response should occur within a reasonable (< 1 month) delay.
3. If a successful resolution cannot be achieved, or if the chair deems it necessary, the supervisor may be invited to attend the Program Competence Committee and discuss the issue.
4. Failure of a supervisor to meet any of the committee's requests as detailed above are grounds for removal of the resident from the project.

Confidentiality:

Subject matter discussed at the committee meetings is highly confidential and should not be disclosed to individuals outside the committee except through the channels detailed above.

Reviewer: Dr. Don Vinh, 2018 June 13

Approved by RTC: 2018 June 7

APPENDIX 4: Resident Safety Policy

In adherence with the policies of the Postgraduate Medical Education (PGME) Office and the McGill Health Care Facilities, the Medical Microbiology and Infectious Diseases training program recognizes that residents have the right to a safe environment during their residency training. The responsibility for promoting a culture and environment of resident safety rests with the Faculty of Medicine, regional health authorities, health care establishments, clinical departments, and residents themselves. The concept of resident safety includes physical, emotional, and professional security.

The Postgraduate Medical Education (PGME) & McGill Health Care Establishment Resident Health & Safety Policy provides a central faculty mechanism for residents to use when faced with a health and safety issue during their training which cannot be resolved at the local training site level.

On occasion residents/fellows may be confronted with a situation for which they are not sufficiently trained. It is expected that they, like other physicians, will deal with such situations as practicing professionals to the best of their ability.

KEY RESPONSIBILITIES:

For Residents

- To provide information and communicate safety concerns to the program and to comply with safety policies.
- To undertake appropriate training in laboratory safety and WHMIS in accordance with the requirements of the training program
- To understand the role of laboratory safety in laboratory management

For the Training Programs

- To act promptly to address identified safety concerns and incidents and to be proactive in providing a safe learning environment.
- To provide specific training in issues related to laboratory safety including but not limited to
 - Biosafety and containment levels,
 - Appropriate laboratory technique for the manipulation and storage of microorganisms
 - Hazardous material storage and handling
 - Management of spill
 - Disposal of microbial and chemical waste

PHYSICAL SAFETY

These policies apply only during residents' activities that are related to the execution of residency duties:

- Residents should familiarize themselves with the location and services offered by the Occupational Health and Safety Office of the health care facility in which they are training. This includes familiarity with policies and procedures for infection control and protocols following exposure to contaminated fluids, needle stick injuries, and reportable infectious diseases.
 - Residents who are infected by a blood borne pathogen must declare their condition to the Associate Dean's office and to the SERTIH (Service d'Évaluation des Risques de Transmission d'Infections Hématogènes), especially if they may be involved in exposure-prone procedures.
 - Residents must observe routine practices and additional precautions when indicated including use of a dedicated laboratory coat during microbiology rotations.
 - Residents must keep their immunizations up to date. Overseas travel immunizations and advice should be sought well in advance when traveling abroad for electives or meetings. Consult the Tropical Medicine Clinic at the RVH or other similar facility (fees may apply).
 - Pregnant residents should be aware of specific risks to themselves and their fetus in the training environment and request accommodations where indicated. Residents should consult the Occupational Health and Safety Office of the health care facility for information.
 - Residents should not work alone after hours in health care or academic facilities without adequate support from Security Services.
 - Residents should not work alone at after-hours clinics.
 - Residents should only telephone patients using caller blocking and should use the health care facility phones and not their personal cellular phone or pda.
 - Residents should not be expected to walk alone for any major or unsafe distances at night.
 - Residents should not drive home after call if they have not had adequate rest.
 - Residents should not assess violent or psychotic patients without the backup of security and an awareness of accessible exits and buzzers.
 - The physical space requirements for management of violent patients must be provided where appropriate.
 - Site orientations should include a review of local safety procedures.
 - Residents going on International Electives should consult the Global Health web site on the following link:
<http://www.mcgill.ca/globalhealth/students/internationalelectives>.
<http://www.mcgill.ca/globalhealth/internationalelectives/>
- In general, the PGME Office will not approve electives in regions for which the Canadian government has issued a Travel Warning.
- Residents should not be on call the day before long distance travel for

clinical or other academic assignments by car. When long distance travel is required in order to begin a new rotation, the resident should request that they not be on call on the last day of the preceding rotation. If this cannot be arranged, then there should be a designated travel day on the first day of the new rotation before the start of any clinical activities.

- Residents must undergo laboratory safety and WHMIS training before beginning all hands-on training in the laboratory.
- Safety concerns within the laboratory should be reported to the Assistant Chief technologist
- Level 3 pathogen work may not be undertaken until appropriate training for the BSL3 facility has been completed.

PSYCHOLOGICAL SAFETY

- When a resident's performance is affected or threatened by poor health or psychological conditions, the resident should be placed on a leave of absence and receive appropriate support. These residents should not return to work until an appropriate assessor has declared them ready to assume all of their resident duties, including call.
- Residents must be aware of the mechanisms and resources in place to manage issues of perceived lack of resident safety, intimidation, harassment and abuse.

PROFESSIONAL SAFETY

- Some physicians may experience conflicts between their ethical or religious beliefs and the training requirements and professional obligations of physicians. Resources should be made available to residents to deal with such conflicts via the PGME Office.
- Programs are bound by FMRQ contract allowances for religious and other statutory holidays.
- The PGME Office and the Training program should promote a culture of safety in which residents are able to report and discuss adverse events, critical incidents, 'near misses', and patient safety concerns without fear of punishment.
- Residency training committee members must not divulge information regarding residents. It is the responsibility of the residency Program Director to make the decision and to disclose information regarding residents (e.g. personal information and evaluations) outside of the residency training committee and to do so only when there is reasonable cause. The resident file is confidential.
- Regarding resident files, programs must be aware of and comply with the Freedom of Information and Privacy (FOIP) Act. Programs can obtain guidance about FOIP issues from the McGill Access and Privacy

Coordinator. Contact information is found on the McGill Secretariat web site.

- Resident feedback and complaints must be handled in a manner that ensures resident anonymity unless the resident explicitly consents otherwise. However, in the case of a complaint that must be dealt with due to its severity or threat to other residents, staff or patients, a Program Director may be obliged to proceed, against the complainant's wishes. In that case the Faculty of Medicine's Residency Affairs Office or the main campus Harassment Office or the McGill Ombudsperson should be consulted immediately. Depending on the nature of the complaint, the Collège des médecins du Québec may need to be informed and involved. In general, the Program Director may serve as a resource and advocate for the resident in the complaints process.
- Residents are insured for professional liability by the Association québécoise d'établissements de santé et de services sociaux (AQESSS) automatically when they have a valid training card.

CROSS-REFERENCES TO RELATED POLICIES:

FMRQ Collective Agreement (Health Care Facility

Safety Policies): <http://www.fmrq.qc.ca/en/working-conditions/collective-agreement>

Health Care Facility Workplace Hazardous Material Information System WHMIS

McGill Wellness Enhanced Lifelong Learning Office (The WELL Office):

<https://www.mcgill.ca/>

[thewelloffice](#)

McGill University Code of Student Conduct:

https://www.mcgill.ca/secretariat/files/secretariat/code_-_student_-_conduct-discipline-procedures_april_2013_final_revised_3.pdf

McGill University Faculty Code of Conduct:

https://www.mcgill.ca/ugme/files/ugme/code_of_conduct_may2013.pdf

CONTACT INFORMATION:

FMRQ: <http://www.fmrq.qc.ca> (514) 282-0256

MUHC Workplace Health and Safety:

<https://muhc.ca/student-orientation/page/module-2-workplace-health-and-safety>

JGH Workplace Health and Safety: [514 340 8222](tel:5143408222) ext 5115

McGill Ombudsperson: <https://www.mcgill.ca/ombudsperson> (514) 398-7059

Programme d'aide aux médecins du Québec: <http://www.pamq.org> (514) 397-0888 or (800) 387-4166 For resources on environmental, climate, health, and safety information in many countries: Public Health Agency of Canada: <http://www.phac-aspc.gc.ca/tmp-pmv/index-eng.php>

Another resource for up-to-date health and safety information abroad: Centers for Disease Control and Prevention: <http://wwwnc.cdc.gov/travel/default.aspx>.

McGill Wellness Enhanced Lifelong Learning Office (The WELL Office):

<https://www.mcgill.ca/>

thewelloffice

APPENDIX 5: Annual Leaves

Please refer to FMRQ agreement [link](#) for number of days allocated for each leave

Leaves which do not need to be reported to PGME and do not extend training:

- Conference leave: Article 13.02
- Study leave: Article 13.05
- Statutory holidays: Article 23
- Compassionate leave: Article 24
- Annual vacation: Article 25
- Sick leave, unpaid leave, maternity and paternity leave if 13 days or less in duration

Leaves which need to be reported to PGME and which extend training:

- Unpaid leave (LOA) if 14 days or greater (Maximum duration 12 months). PGME office needs a personal statement from the trainee requesting the leave along with the Program Director's approval. All unpaid leaves need to be approved by the Associate Dean. Article 24
- Sick leave if 14 days or greater. A medical note indicating a start and end date is required to go on sick leave. If the medical note does not indicate an end date, another medical note indicating the return to work date is required in order to resume training. Article 28
- Maternity leave if 14 days or greater (20 weeks plus a maximum of 2 years unpaid leave) is recorded once the program coordinator confirms the start date. Article 26
- Paternity leave if 14 days or greater (5 days paid, plus 5 weeks unpaid paternity leave and a maximum of 2 years unpaid leave) is recorded once the program coordinator confirms the start date. Article 26

Program-specific requirements:

- For Period 7, residents on ID consult rotations are entitled to either Christmas/New Year leave (5 days off including statutory days). They are expected to work during the subsequent statutory days. Eg. If resident takes Christmas leave, they do not have to work during Christmas Eve and Christmas stat days. However, they are expected to work during New Year's Eve and New Year's stat days, vice versa.

APPENDIX 6: POCUS curriculum (elective)

Point-of-care Ultrasound (POCUS) skills for tropical medicine and infectious diseases:
 Q-2-yearly 2-week Rotation for subspecialty fellows

McGill University training programme in Infectious Diseases and Medical Microbiology

Authors	<ul style="list-style-type: none"> Cedric Yansouni – ID Division POCUS Lead
With input from the following colleagues on current and previous versions of this document	<ul style="list-style-type: none"> Daniel Boleslavsky – Tropical Medicine Fellow 2022-2023 Michael Libman and Sapha Barkati (Trop Med) Makeda Semret (Adult ID-MM programme Director) Jesse Papenburg (Pediatric ID-MM programme Director) Luke Harrison (ID-MM Chief resident 2022-2023) Eric Sigman and/or Nick Schermer (ED Ultrasound Directors) Alex Lawandi (ID/ICU ultrasound trained) Dev Jayaraman (ICU ultrasound educator) Francesca Tamarozzi DVM MD MSc PhD (WHO Informal Working Group on Echinococcosis [WHO-IWGE] & Department of Infectious and Tropical Diseases and Microbiology, IRCCS Sacro Cuore Don Calabria Hospital, Verona, Italy)
Approved by	McGill Adult IDMM Residency Training Committee
Date	2024-Mar-28
Version	2.0 This is an update of the version 1.0 approved 2022-Dec-14

Attending ID staff POCUS resources	Cedric Yansouni (Trop Med) Sapha Barkati (Trop Med) Alex Lawandi (ID-Critical Care)
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Rationale:

Point-of-care ultrasonography (POCUS) is defined as the acquisition, interpretation, and immediate clinical integration of ultrasonographic imaging performed by a treating clinician at the patient's bedside rather than by a radiologist or cardiologist. POCUS has been widely implemented at MUHC as a standard of care for inpatient units as a means of increasing safety, improving resource utilization, and enhancing the physical examination by allowing to correlate findings directly with clinical history, signs, and symptoms. POCUS is not as widely available for our increasingly complex outpatient clinic population, whose indications for POCUS differ from those of inpatients, and for which MUHC medical subspecialty trainees have no access to longitudinal acquisition of ultrasound skills. Although several short courses are available, short-term training without access to continued practice is subject to the Dunning-Kruger effect, such that trainees become either over-confident or needlessly discouraged, without acquiring true competencies that accrue from use of a new skill over time. The present curriculum aims to assist ID-MM and Tropical Medicine Clinical Fellows acquiring skills, with the downstream goal of informing the expert management of complex infectious diseases patients.

Relevance to subspecialty clinical training:

Point-of-care ultrasound (POCUS) is recognized as having increasing relevance to several outpatient applications, and its use has become standard of care in many settings. Indications for which POCUS has been found to be useful vary by specialty. For **Infectious Diseases**, the usefulness of POCUS in bacterial infections includes assessing for a drainable collection in skin and soft tissue infections, objectifying synovitis in septic arthritis suspects, visualising periosteal abnormalities in long-bone osteomyelitis, and identifying findings of pneumonia or pleural effusions. **Tropical Medicine-specific applications** include rapid screening for the presence of echinococcal liver cysts (rule-in/out presence of lesion) or liver abscess in amebiasis suspects, follow-up of patients on treatment (follow-up staging), ruling-in abnormalities of the liver and bladder in people who screen positive for *Schistosoma* exposure according to accepted WHO criteria for clinicians, and ruling-in infection with adult lymphatic filariae among referrals with unilateral lymphedema. Among febrile returning travellers (the most important clinical group seen at the TDC), the objectification of splenomegaly is very useful for narrowing the differential diagnosis and facilitating clinical decisions at the bedside. A commitment from MUHC to developing POCUS expertise emphasizes the ID/MM training programme's excellence. In addition, POCUS exposure and training is a significant asset for the accredited 12-month Clinical Tropical Diseases fellowship at McGill.

Scope of skills targeted by the POCUS curriculum

The present curriculum aims to help trainees start the process of acquiring the ability to answer focused clinical yes/no questions with the use of POCUS. **The curriculum should not be misunderstood as representing training in diagnostic radiology, which is vastly beyond its scope.** Rather, the first objectives targeted for achievement by all residents are knowledge of when US may extend the physical exam to enhance clinical care with specific targeted questions. Trainees should also become proficient in acquiring the views required to make basic assessments.

Rotation learning objectives

For each of the priority exam types, learners should achieve.

- i. familiarity with how to obtain and identify correct views of adequate quality (probe settings, position, landmarks)
- ii. knowledge of the expected POCUS features of the key clinical syndromes
- iii. fluid POCUS workflow in a clinical environment, including infection control and device-friendly decontamination/disinfection of equipment.
- iv. understanding the limits of their POCUS skills as they progress

Educational pillars of the ID/Trop Med-focused curriculum

a. Basic ultrasound concepts

It is expected that basic ultrasound concepts underlying clinical use and the basic operation of equipment will have been covered in previous levels of training. This may not be the case for fellows coming from other programmes and will be dealt with in an individualised manner as required.

b. Workflow, infection control and device-friendly decontamination/disinfection of equipment

Clinical Tropical Medicine fellows/ Infectious Diseases residents will learn the following concepts:

- Which products are effective for surface decontamination and disinfection of ultrasound equipment, according to the type of probe, and type of procedure performed.
- Which products can be safely used without damaging the ultrasound equipment.
- How to safely perform POCUS while respecting infection control procedures. This includes the ultrasound device itself, the smartphone or tablet used to visualize images, and any other equipment required for the exam in question.

c. Data security and patient confidentiality

When using the Butterfly IQ+, fellows will interface using either a supplied tablet or their own smartphone. The images obtained are not stored locally and cannot be transmitted with identifying data or metadata. The Butterfly Cloud meets data security requirements (see “access to ultrasound equipment section).

When using a POCUS device at MUHC other than a Butterfly IQ/IQ+, images will be stored on that device as defined by department responsible for it (eg ED, or ICU).

Clinical fellows will understand the basic requirements for data security and patient confidentiality when using POCUS.

d. Priority clinical exams: General Infectious Diseases

Exam or System	Learning objectives: (i) familiarity with <u>how to obtain the correct views (probe settings, position) and (ii) knowledge of the <i>expected POCUS features</i> of the following syndromes should be achieved.</u>	Target (n) normal exams*	Target (n) abnormal exams*
Skin and Soft Tissue	Normal skin and subcutaneous structures Cellulitis Skin abscesses Necrotizing fasciitis Presence of foreign body	20	10
Pulmonary	Normal lungs (Sonographic A-lines) Pleural effusion Interstitial disease (Sonographic B-lines) Consolidation Pneumothorax	20	10
FASH	Competently obtain the views outlined in the “Focused assessment with sonography for HIV-TB” exam, which recapitulates the views of the FAST exam, with some additional easily-learned views for periaortic nodes. This will address the intra-abdominal priority exams below.	n/a	n/a
Spleen	Normal spleen size Normal spleen echotexture Normal spleen contour Splenomegaly Peri splenic fluid	20	10
Liver	Visualising normal liver Normal liver echotexture Visualizing focal liver abnormalities Visualizing ascites (Morrison pouch) Presence of pericardial effusion from the subxiphoid view through the left liver lobe	20	10
Urinary tract	Normal kidney Hydronephrosis Bladder Perinephric fluid	20	10
Musculoskeletal	Normal bones Normal joints Abnormal joint fluid Bony cortex disruption (eg Long-bone osteomyelitis)	20	10

* exams over the course of training programme (24-36 mths)

** In addition to the learning objectives outlined above, trainees are encouraged to select a one or two types of exams in which to become skilled at image interpretation over the course of their fellowship. Divisional POCUS leads can assist in connecting trainees with appropriate content experts.

e. Priority clinical exams: Tropical Medicine-specific applications

Exam or System	Learning objectives: (i) familiarity with <u>how to obtain the correct views (probe settings, position) and (ii) knowledge of the <i>expected POCUS features</i> of the following syndromes should be achieved.</u>	Target (n) normal*	Target (n) abnormal*
Cystic echinococcosis (WHO staging)	Rapid screening for the presence of echinococcal liver cysts (rule-in/out presence of lesion) Initial and follow-up staging according to WHO guidelines Visualizing gallbladder [to distinguish it from hydatid cyst]	n/a	All cases seen at MUHC
Schistosomiasis (WHO assessment)	Ruling-in abnormalities of the liver and bladder in people who screen positive for <i>Schistosoma</i> exposure	n/a	All cases seen at MUHC
Cysticercosis	Ruling-in cysticercosis as the cause of subcutaneous swelling	n/a	All cases seen at MUHC
Lymphatic filariasis	Ruling-in presence of adult lymphatic filariae among referrals with unilateral lymphedema (“filarial dance sign”)	n/a	All cases seen at MUHC
Myiasis	Visualizing subcutaneous larvae to confirm myiasis diagnosis and completeness of resection* [In a furuncle, a botfly larva appears on ultrasound as a hyperechoic line with posterior shadowing and no abscess cavity. Body segmentations may be visible. Movement may be detected for live larvae. Color Doppler may define intralarva fluid transport]	n/a	All cases seen at MUHC

* exams over the course of training programme (12-24 mths)

**** In addition to the learning objectives outlined above, trainees are encouraged to select a one or two types of exams in which to become skilled at image interpretation over the course of their fellowship.** Divisional POCUS leads can assist in connecting trainees with appropriate content experts.

Examples of finding to be elicited with selected tropical clinical diseases or syndromes:

Fever in the returning traveller	Splenomegaly may narrow ddx
Dengue	Pleural effusion evaluation in fever in traveller with suspected severe dengue
TB pericarditis	Visualizing pericardial effusion in suspected TB patients
Chagas cardiomyopathy	Visualizing cardiomyopathy in suspected Chagas disease (by appropriately trained operator)
Amoebic liver abscess	Visualizing liver abscess in suspected patient

f. Optional exams not considered to be core items

Exam or System	Learning objectives: (i) familiarity with <u>how to obtain the correct views</u> (probe settings, position) and (ii) <u>knowledge of the expected POCUS features</u> of the following syndromes should be achieved.	Target (n) normal*	Target (n) abnormal*
Volume status	Assessment of the IVC for inferring volume status	n/a	n/a
Heart	Estimating EF Pericardial effusion and tamponade Gross vegetations visualisation	n/a	n/a
FAST	Competently perform the “focused assessment with sonography for trauma”	n/a	n/a
FASH	In addition to obtaining good views, competently interpret the “focused assessment with sonography for HIV-TB” exam, which recapitulates the views of the FAST exam, with some additional easily-learned views for periaortic nodes.	n/a	n/a
Liver	In addition to the minimal requirements above, Visualizing gallbladder [pathologic features] Visualising common bile duct, portal vein and hepatic artery	n/a	n/a

* exams over the course of training programme (12-24 mths)

Learning format of the 2-week POCUS rotation

The 2-week POCUS rotation will comprise a mix of

- Morning plenary sessions, didactic lectures, and bedside teaching;
- Afternoon self-directed image acquisition time;
- Daily reviews of clinical images obtained by learners from patients with known imaging findings

Self-directed scanning

a. Ascertainment of cases

- Patients with relevant findings will be identified by asking ID attendings on ID-HOT, ID-COOL, ID-AMBULATORY, ID-MGH, and ID-JGH clinical services for target patients.
- Patients seen by other services with formal exams demonstrating a relevant finding could also be approached.

b. Record keeping and supervision

- Patient MRN can be included in the Butterfly cloud (servers protected, located in Canada), but we will avoid nominal data to be conservative. Access will be limited to clinical staff and trainees only.
- The butterfly cloud effectively serves as a log of exams performed and can be searched by the operator, type of exam, and other features.
- Trainees would be responsible for keeping their own log of patients seen and exams performed at specified intervals. This information can be abstracted from the Butterfly cloud so would not have to be recorded in real time (see Appendix)
 - Basic variables such as MRN, exam performed, findings observed, and any supporting clinical data would be indicated in the notes of the exam on the Butterfly Cloud.
 - Trainees would simply be responsible for keeping record of exams and having an designated POCUS-lead member(s) in the division approve it at specified intervals.
- If POCUS findings are considered in clinical decisions, they should be indicated in the medical record if appropriate (in the same manner as a physical finding), after discussion with the responsible clinical ID physician if they agree.

Available support for POCUS use after the 2-week rotation

The aim of the 2-week rotation is for learners to gain knowledge, experience, and confidence to use POCUS as an enhancement of their physical exam when assessing patients with infectious or tropical pathologies.

Following their 2-week rotation, with access to POCUS devices as described below, subspecialty fellows will have the option of obtaining POCUS images on the Butterfly cloud. Upon request, there is the option of organizing review rounds to provide educational feedback on ongoing POCUS activities:

- The goal of POCUS feedback is purely formative and is not to be considered in promotions or resident evaluations. No One45 forms will be used for this activity.
- Ad-hoc rounds can be held with residents to evaluate the following features of the exams trainees have performed in the interval:

- Indication for the exam
 - Quality and pertinence of the views obtained
 - Presence of additional views if they are indicated to assess a particular finding
 - Description of the findings
 - Impression of how findings are supported or not by concomitant clinical data, and which infectious diagnoses might be probable
 - NOTE: *official radiology result of a similar exam within a pertinent timeframe may be used to adjudicate the radiological diagnosis, but not the quality of the views obtained by the trainee.*
- People present at these rounds would be
 - ID attending or senior Fellow with an interest in POCUS,
 - At least one designated POCUS-lead member of the ID division or senior Fellow with an interest in POCUS
 - Periodic input from at least one content expert on the type of exam being presented (eg Resp, Radiology, ED, ICU)
 - Rounds may be organized thematically around certain types of exams, according to the availability of content experts.

Access to ultrasound equipment

Clinical Fellows will have access to one of several ultrasound platforms during their training:

- Three Butterfly IQ+ have been purchased by the Centre for Tropical Diseases (1 in Sept 2022 + 2 in March 2024) with adapters for compatible mobile devices that use EITHER lightning or USB-C connectors.
 - Each Trainee has their own username and access to the MUHC group Butterfly EDUCATIONAL-account, courtesy the MUHC Emergency Department.
 - Images collected using this device are automatically uploaded to a password-protected TCP-IP compliant cloud on Canadian servers.
 - Learners can log relevant details of the exam in the notes of the cloud via the app downloaded on their personal device. Alternatively, the program may provide a tablet to be used as the interface if using own devices proves problematic for any reason.
 - **During the 2-week rotation, available devices will be made available to the trainees (eg if 4 devices are available, trainees can use them in pairs).**
 - **Outside the 2-week rotation, learners still have access to at least 3 butterfly IQ+ devices. PRIORITY for accessing the devices unit will be determined according to training program policies, with input from the Centre for Tropical Diseases.**
- A number of POCUS devices are also available in the ED, ICU, and medicine wards, for use with permission of attending staff when clinically indicated.
 - Connectivity is limited for these devices and their use is primarily intended for practice obtaining images.

Developing an ID-POCUS Image Bank

The butterfly cloud effectively serves as a log of exams performed and can be searched by the operator, type of exam, and other features. Using this resource, selected de-identified images from remarkable studies can be downloaded in a curated library or document.

About the Centre for Tropical Diseases

The J.D. MacLean Centre for Tropical Diseases at McGill University is a world-renowned centre of expertise and training in Clinical Tropical Medicine, and is the largest of its kind in North America.

The Centre provides training in clinical tropical medicine for medical learners at all levels of training (including clerkship students after IIM Medicine or Pediatrics), clinical and laboratory parasitology, and diagnostics development for all types of settings. Elective rotations in Tropical Medicine are extremely popular and typically booked over one year in advance. In addition to trainee elective rotations, Tropical Medicine is a mandatory rotation for ID/MM fellows from McGill, University of Montreal, and University of Sherbrooke; as well as for Dermatology residents from McGill and University of Montreal. The total number of trainees who rotate through the Centre is about 30 per year (x 1 month). Beyond clinical rotations, the Centre for Tropical Diseases has developed a McGill-approved 12-month Fellowship in Clinical Tropical Medicine. (1 per year x 12 month). Education of trainees in our subspecialty is a top priority at the TDC, and the Centre boasts a dedicated Director of Education, Dr. Sapha Barkati, and a designated POCUS director for the Tropical Medicine and Infectious Diseases training programmes, Dr Cedric Yansouni.

About the Infectious Diseases Outpatient Clinics

McGill University offers a 3-year combined specialty residency training program in Infectious Diseases and Medical Microbiology. For all rotations we accept Infectious Diseases and Medical Microbiology (ID/MM) residents from McGill and other universities; medical and occasionally surgical residents; and clerkship students (all three services). The total number of trainees who attend Infectious Diseases clinics is approx. 5 residents x 12 months per year.

Appendix: Format of personal exam summary log for trainees

Residents keep their own log to record number of exams by end of training, data abstracted from the Butterfly cloud account

Trainee Name:

Reference dates of this log (start – end):
--

Exam or System*	Learning objectives: (i) familiarity with <u>how to obtain the correct views</u> (probe settings, position) and (ii) <u>knowledge of the expected POCUS features</u> of the following syndromes should be achieved.	Number (n) normal exams*	Number (n) abnormal exams*
Skin and Soft Tissue	Normal skin and subcutaneous structures Cellulitis Skin abscesses Necrotizing fasciitis Presence of foreign body		
Pulmonary	Normal lungs (Sonographic A-lines) Pleural effusion Interstitial disease (Sonographic B-lines) Consolidation Pneumothorax		
Musculoskeletal	Normal bones		



	Normal joints Abnormal joint fluid Bony cortex disruption (eg Long-bone osteomyelitis)		
Spleen	Normal spleen size Normal spleen echotexture Normal spleen contour Splenomegaly Peri splenic fluid		
Liver	Visualising normal liver Normal liver echotexture Visualizing focal liver abnormalities Visualizing ascites		
Urinary tract	Normal kidney Hydronephrosis Jet visualisation Bladder		
Cystic echinococcosis (WHO staging)	Rapid screening for the presence of Echinococcal liver cysts (rule-in/out presence of lesion) Initial and follow-up staging according to WHO guidelines		
Schistosomiasis (WHO assessment)	Ruling-in abnormalities of the liver and bladder in people who screen positive for <i>Schistosoma</i> exposure		
Cysticercosis	Ruling-in cysticercosis as the cause of subcutaneous swelling		
Lymphatic filariasis	Ruling-in adult lymphatic macro-filaremia among referrals with unilateral lymphedema (“dancing filaria sign”)		
Myiasis	Visualizing subcutaneous larvae to confirm myiasis diagnosis and completeness of resection		
FASH exams	Competently obtain the views outlined in the “Focused assessment with sonography for HIV-TB” exam.		
Other			

APPENDIX 7: Procedure for ID Divisional funding of ID Fellow Research Projects

Background: Infectious Diseases fellows often have research interests that do not fit under the budget of local Principal Investigators or their current research funding. For the purposes of funding these small projects, funds from the ID Division Staff Contributions may be available to cover reasonable research projects and expenses.

Proposal: The ID Fellow and their supervisor must submit a 2 page (maximum) research proposal, to be approved by the Chair of the Resident Research Committee (Dr. Don Vinh at the writing of this protocol). This proposal must contain the following:

- (1) A brief summary of the current literature in the area (not to exceed one paragraph);
- (2) The central hypothesis for the research project;
- (3) A detailed methodology;
- (4) Itemized budget with justification. The requested amount cannot exceed CAD\$2500.
- (5) Any figures, tables, or graphs, and accompanying legend/caption, deemed relevant to the proposal needs to be included within the 2 page maximum limit.
- (6) Relevant references must be included, but do not count as part of the 2 page limit.

Format: Proposals need to be in Times New Roman, font size 12, single spaced, with page margins of 2.5 cm.

Eligibility: The Division will accept proposals from Fellows actively in training at the McGill University Health Centre whose PIs are members of the Adult Division of Infectious Diseases.

Review Process: The Chair of the Research Committee will evaluate proposals for rationale and feasibility every 4 months (approximately January, April and August of each year). Proposals approved by the Chair will then be submitted to the Chief of the Division of Infectious Diseases for assessment of the budget and proposal.

Proposals can be modified based upon suggestions by the Research Chair and resubmitted for consideration, or summarily rejected, at which point no further drafts will be considered.

The Chief of the Division maintains the right to reject proposals that have been forwarded to them by the Chair of the Research Committee, including if the budget is deemed inappropriate. Under these circumstances, the Chief of the Division may suggest modifications to the protocol and budget, or reject the submission and no further consideration will be given to the project.

Limitations: Over the lifetime of their training program (2-3 years), the ID Fellows can only be funded for one (1) such project by the Division of Infectious Diseases. The Principal Investigator supervising the ID fellow must not hold research grants that could be used to fund this project. The maximum allowable funded by the Division is CAD\$2500. Any presentation or publication of work derived this funding will acknowledge the support from the "MUHC Division of Infectious Diseases Resident Research Fund".

Reimbursement of research expenses: In the event that an application is selected for funding, the trainee and supervisor are requested to keep invoices for expenses directly

related to the proposed project, up to the maximal allowable amount of \$2500. These invoices must be submitted to the Chair of the RRC at the completion of the trainee's work and will be required to enable the Division to transfer the funds to the respective ID Staff's cost centre.

Protocol drafted by Alexander Lawandi, Revised by Don Vinh
Approved by RTC June 20, 2024