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Mission

Welcome to the Combined Infectious Diseases and Medical Microbiology Residency Training Program.

Our mission is to train residents to:

- Become competent experts capable of providing compassionate patient-centered care while assuming a consultant’s role in the diagnosis and management of infectious diseases
- Develop leadership skills that will enable clinical and administrative direction of a microbiology laboratory
- Acquire a working knowledge of the theoretical foundations of our specialty, namely in the sciences of microbiology, immunology, pharmacology and epidemiology;
- Develop lifelong learning skills, effectively teaching others and conducting research in their field of interest.

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

Program overview

The Adult Infectious Diseases (ID) and Medical Microbiology (MM) Combined Training is a three-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 and Medical Microbiology.

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 are given increasing responsibilities in preparation for independent practice. Trainees bring diverse experiences and will eventually practice ID and MM in a range of settings; our program provides all trainees with the key competencies required of ID subspecialists (training requirements will be met by the end of PGY5), and MM (requirements will be met by the end of PGY6).

This document outlines the training requirement for the combined ID - MM training program; a separate document describes the training requirements for the Infectious Diseases program.
Training Framework

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. Basic science teaching is incorporated whenever possible into laboratory and clinical training. Biostatistics and critical appraisal are emphasized throughout the teaching program particularly during Inter Hospital ID rounds (IHID) and Academic Half-days.

The 3 years of training are divided into 13 blocks (rotations) each. The first 2 years of training (PGY4 and PGY5) will include mandatory inpatient ID service (Adult ID, Pediatric ID, ID in community hospital setting, and ID in the role of Junior Attending), longitudinal (ambulatory) ID care, Basic Microbiology, Infection Prevention and Control, Antimicrobial Stewardship, Chronic Viral Illnesses, Tropical Medicine and Public Health. The last year of training (PGY6) will be mostly spent consolidating laboratory knowledge and skills, and residents will have the opportunity to complete scholarly projects (research or quality improvement projects).

An example outlining the 3-year training schedule is shown below:

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Consultation service in-patient</th>
<th>Infection</th>
<th>ASP</th>
<th>Basic Micro</th>
<th>Tropical Medicine</th>
<th>Chronic Viral service (CVIS)</th>
<th>Electives/ Selectives</th>
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<td>Year 2</td>
<td>Consultation service in-patient</td>
<td>Community</td>
<td>Infection</td>
<td>Ambulatory</td>
<td>Public</td>
<td>Lab</td>
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<td>Year 3</td>
<td>Consultation service in-patient</td>
<td>Mol Micro</td>
<td>AST</td>
<td>Consolidation</td>
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Our 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
Training Program
Infectious Diseases ∙ Medical Microbiology

- 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 ensure residents are getting at least the minimal amount of required teaching and act 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 specific goals and objectives for each rotation are described in detail in later sections.

The table below lists the training sites, rotations associated with each site, the site coordinators and the rotation coordinators.

Date of last revision: October 21, 2018
Training Program
Infectious Diseases ∙ Medical Microbiology

The Residency Training Committee (RTC)

This committee, which meets at least quarterly, 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 committee is chaired by the Program Director. An elected 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

Site | Rotation(s) | Coordinator
--- | --- | ---
McGill University Health Centre (RVH and MGH) | ID consult service | Dr Makeda Semret*
Bacteriology 1-4 | Mme Micheline Parent*
Mycobacteriology | Dr Marcel Behr *
Mycology | Dr Don Sheppard*
Infection Control | Dr Charles Frenette
Molecular Microbiology | Dr Jesse Papenburg
Tropical Medicine, Parasitology | Dr Michael Libman*
Chronic Viral Illness Service | Dr Nadine Kronfli*
Outpatient ID clinics | Dr Vivian Loo*
Longitudinal clinics | Dr Todd Lee
Antimicrobial Stewardship | Dr Makeda Semret

Jewish General Hospital | ID consult service and Ambulatory Infection Control | Dr Karl Weiss*
Antimicrobial Stewardship | Dr Yves Longtin
Laboratory Management/Quality | Dr Marty Teltsher

Lachine General Hospital | Community ID | Dr Cecilia Costiniuk*

St Mary’s Hospital Centre | Community ID | Dr Tien Nguyen*

Montreal Children’s Hospital | Pediatric ID consultation | Dr Jane MacDonald*
Virology

Departement de Sante Publique (DSP) | Public Health | Dr Paul Leguerrier

LSPQ | Reference Laboratory | Dr Karine Thivierge

* Member of the Residency Training Committee
Organizational Structure
Infectious Diseases and Medical Microbiology

RESIDENCY TRAINING COMMITTEE (RTC)
CHAIR
Dr. Makeda Semret, MM-ID (adult) Program Director

MEMBERS
Dr. Marcel Behr, Director, Division of Infectious Diseases
Dr. Jerry Zaharatos, Chief, department of Microbiology
Dr. Jane MacDonald, Program Director for Pediatric ID (MCH)
Dr. Karl Weiss, Director infectious Diseases JGH
Dr. Tien Nguyen, site representative for ID at SMH
Dr. Cecilia Costiniuk, Lachine site representative and CVIS
Dr Nadine Kronfli, representative CVIS and in-training ID exam
Ms. Micheline Parent, MMID Teaching technologist
Dr Vivian Loo, Ambulatory ID clinic coordinator (MUHC)
Dr Don Vinh, Resident Research committee chair/coordinator
Dr Michael Libman, Director Tropical Diseases Centre
Dr Don Sheppard, Director McGill Interdisciplinary Initiative (MI4)
Chief resident, ID-MM

Committee secretary: Ms Cher Tieng Ting, Program administrator

RESIDENT RESEARCH COMMITTEE (RRC)
CHAIR
Dr. Don Vinh, MUHC

Members
Dr. Marcel Behr
Dr. Jesse Papenburg
Dr. Jerry Zaharatos

CURRICULUM and SYLLABUS working group
Dr Makeda Semret (coordinator)
Dr. Marty Telfscher
Dr Tien Nguyen
Dr Cedric Yansouni
Dr Sapha Barkati
Dr Jerry Zaharatos
Dr Nadine Kronfli
Dr Vivian Loo

ADVISORY GROUPS

Infection Control Advisory Group
Contact: Dr. Charles Frenette
Dr. Yves Longtin
Dr. Marie-Astrid Lefebvre
Dr Ewa Rajda

Tropical Medicine Advisory Group
Contact: Dr. Michael Libman
Dr. Sapha Barkati
Dr. Cedric Yansouni

CVIS Advisory Group
Contact: Dr. Nadine Kronfli
Dr Cecilia Costiniuk
Dr. Joe Cox
Dr. Bertrand Lebouche
Dr. Marina Klein
Dr. Jerry Zaharatos (JGH HIV service)
Resident Research

Resident research is a core component of the training program, and is coordinated by the Resident Research Subcommittee. This group is composed of 4 active researchers representing both clinical and basic science research, appointed by the Residency Training Committee. The current chair/coordinator for the research subcommittee is Dr Don Vinh. 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).

Resident Competency

Competency and annual promotions are determined by the Competency subcommittee, which meets a minimum of twice per year. This group is composed of a minimum of 4 members, 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 Program Director 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, MUHC Glen site E05 conference room

IHID rounds take place weekly, with the exception of July and August. These rounds alternate in format between one-hour presentations (by either faculty or residents) on a topic of their choice, journal club, or case rounds. The chief resident for (generally a resident in PGY5) will be responsible for scheduling residents to present during IHID rounds (each resident generally will present once a month). Residents presenting are expected to have reviewed the relevant literature on their topic and present any new data. When presenting a journal review, 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 have independently read the paper before rounds, and are expected to contribute to the discussion and provide constructive feedback. For case rounds, the site coordinators will assign faculty to present selected cases for discussion.

Academic Half day (Thursday 9 – 11:00AM; Glen E5 conference room)

The Infectious Diseases/Med Micro Half-day takes place weekly with the exception of July and August. 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, 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 (e.g. 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, which are reviewed 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

The faculty supervisor responsible for the rotation performs and completes resident assessments via McGill’s one45 system, within 2 weeks of the rotation. Supervisors must make every effort to provide timely ongoing formative feedback (at a minimum, midway through the rotation) to all 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.

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.

A resident will receive a global assessment at the end of each rotation submitted by the faculty supervisor responsible for the resident during the rotation. If more than one faculty member is involved in the supervision of a resident during a rotation, for example during in-patient ID Consultation service, the last faculty supervisor working with the resident will be responsible for submitting a summative assessment, which must reflect the opinions of all the supervisors involved.

The assessment is based on the goals and objectives of the rotation and/or competencies each resident is required to attain at different levels of training (using the specific In – Training Evaluation Reports for each rotation). 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).

The resident bears some personal responsibility for ensuring that the rotation assessments are submitted in a timely fashion:

- In order for a resident to obtain a rotation assessment from the One45 System, he/she must submit an assessment of the supervisor(s) and of the rotation.
- If the assessment is not available within two weeks of the end of the rotation, the resident is encouraged to report this to the Program Director’s office. If the resident does not agree with an assessment, he/she should follow the process outlined in the Appeal’s Policy (see below).

Some rotations may be longer than 4 weeks (for example, longitudinal clinic rotations). In such cases, the resident must receive a summative assessment after a maximum of 12 weeks and this must be submitted 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:
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)**

The ITER is the main modality of assessing resident knowledge and observed performance according to CanMEDS competencies. Residents are evaluated at the end of each Rotation with a rotation specific ITER that encompasses all of the CanMEDS domains, and available on the one45 computer-based evaluation system. Residents can review their ITERs 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 twice yearly: ID (generally in November), medical microbiology (around Feb-March), and 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.

**Final In-Training Evaluation Report**

At the end of training, a final evaluation form (FITER) is prepared by the Program Director, with assistance from the Competency Committee. The FITER is forwarded to the Royal College.

**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, which will be defined by the RTC.

Every attempt is 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: https://mcgill.ca/pgme/files/pgme/pgme_promotions_july_1_2018_approved__0.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 are documented with minutes and 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, FITERs)
- 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 met 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 you 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

Though faculty and resident schedules are generally finalized at the start of the academic year, schedules can change. To ensure that schedule changes do not affect their educational experience, residents should contact the staff 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, consolidation), the resident should contact the microbiologist listed as MICRO C as well as the assistant Chief micro Technologist Ms Micheline Parent (micheline.parent@muhc.mcgill.ca)
For speciality blocks (eg Mycobacteriology, Mycology, etc), the resident should contact the rotation coordinator (responsible microbiologist).

For microbiology rotations at the JGH, the resident must contact the following individuals:
- ID bench technologist (currently Ms. Mina Patel) and/or Micro coordinator – Ms. Melissa Tomkinson 514-340-8222 x5164
- Email the microbiologist scheduled to be signing reports on the first Monday of the rotation (or the rotation coordinator for special projects)

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. 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, then the issue is brought to the divisional Chief and/or the external ombudsman. (refer to 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.
- 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 spills
- 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 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 website on the following link:
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.

See Appendix for full Safety Policy, references and contact information.
Rotation Specific Goals and Objectives
# Master list of Goals and Objectives

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Adult ID Consultation service

McGill University

Postgraduate Training program in Infectious Diseases

Rotation Goals and Objectives

McGill University Health Centre (MUHC) and Jewish General Hospital

GENERAL INFORMATION

Rotation overview:

Residents are expected to do 6 rotations in the Adult ID inpatient consultation service, throughout the course of training (4 rotations as PGY4, 2 as PGY5). An additional 2 months in the role of Junior Attending will be done towards the end of PGY 5 (this is described in a separate goals and objectives). 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 medical, surgical, and obstetrical 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 in order 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 further be asked to 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)

Unique strengths of each training site

Although much of the case mix is the same between the various hospitals, residents should recognize the specific strengths of each of the individual centres and take advantage of these specific educational exposures as outlined below:
- JGH: Community acquired infections, Infections in pregnancy and post-partum women
- MUHC: Solid organ and stem cell transplantation Infections in pregnancy and post-partum women, central nervous system infections and complications of cardiovascular surgery
- MGH: Orthopedic infections, trauma associated infections, complications of radiotherapy and oromaxillofacial surgery

**Rotation specific objectives**

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

**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 (PGY4)**

Aetiology, epidemiology, pathogenesis, natural history, pathology, clinical features, prevention and management of:

- Acute and chronic infectious diseases
- Mycobacterial infections
- Sexually transmitted diseases
- Infections in immigrants/refugees and travellers
- Nosocomial infections
- Human immunodeficiency virus (HIV) infection and its complications
- Infections in the immunologically compromised host (other than HIV), transplant recipients, congenital immunodeficiency, other acquired deficiencies
- Specific to certain sites, infectious diseases in pregnancy and post-partum
- Infections in surgical and gynecologic patients
- Skin and soft tissue infections
- Specific to certain site infections occurring after burns and extensive trauma
- Infections occurring as a result of emerging pathogens and bioterrorism
- Viral hepatitis

Clinical and laboratory approach and differential diagnosis of complex problems in which infections may play a role, such as:
Fever of unknown origin.
Acute rapidly progressive illness and sepsis, systemic inflammatory response syndrome and multiple organ dysfunction syndromes.
Pulmonary infiltrates of uncertain etiology
Post-operative fever
Recurrent/relapsing infections/fever

The study of microbes to include:
An understanding of epidemiology and ecology, pathology, virulence factors, life cycles, taxonomy, structure/physiology, pathogenesis
Proteinaceous infectious particles

Microbiology and clinical laboratory testing as they relate to the following:
Specimen selecting, collection, transportation and assessment of specimen quality
Interpretation of basic microbiology test results

Immunology, including:
Details of innate and adaptive immunity
Pathogenic mechanisms by which immune responses facilitate or prevent disease
Principles and practice of immunization techniques together with adverse effects and efficacy of immunizing agents
Immunological evaluation of patients with recurrent infections
Understanding the spectrum of infectious diseases associated with classical and molecularly-targeted iatrogenic immunosuppression (e.g. stem cell transplant; solid organ transplant; "biologics") and relative risks during immune reconstitution

Antimicrobial agents and other therapies in infectious diseases:
Classification
Spectrum of activity
Pharmacokinetics and pharmacodynamics in the normal and abnormal host
Mechanism of action
Mechanism of resistance
Toxicity and drug interactions
Clinical indications and use
Principles of pharmacoconomics

History of microbiology and infectious diseases with awareness of major changes that have occurred in disease epidemiology and pathogenesis over time.

Skills
• Elicit a history that is relevant, concise, accurate and appropriate to the patient's problem(s), including the relevant epidemiologic and travel history related to particular infectious diseases.
• Perform a physical examination that is relevant, detailed, appropriate and meets specialty specific standards.
• Select medically appropriate investigational tools, including microbiologic tests, in a cost-effective, ethical and useful manner.
• Retrieve and implement the information necessary to provide health care services to patients.
• Access, retrieve, appraise and apply relevant information of all kinds to problem-solving and introduce new therapeutic options to the clinical practice of infectious diseases.
• Anticipate short and long-term complications of infectious diseases and 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.
- Obtain and synthesize relevant history from patients/families/caregivers.
- Listen effectively.
- The resident must be able to discuss appropriate information with patients/families and the health care team.

Specific Requirements:

- Demonstrate the skills to impart infectious diseases-related knowledge to patients, colleagues, hospital staff and the general public.
- Establish relationship with the patient that should be characterized by understanding, trust, respect, empathy and confidentiality.
- Be able to gather information about a particular infectious disease affecting a patient and to obtain information about the patient's beliefs, concerns and expectations about their illness, in a sensitive and caring manner. These should be considered within the context of the influence of age, gender, ethnic, cultural and socio-economic status and spiritual values. Where ever appropriate critical information in the above categories must be communicated to others who are involved in the care of the patient.
- Be able to 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.
- Be aware of the potential for “mixed messages” to be delivered to patients and their families, particularly as this relates to choosing diagnostic procedures, antimicrobial agents and duration of antimicrobial therapy. They must communicate with other health professionals in a manner that facilitates the delivery of consistent messages to the patients and their families.
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 interdisciplinary team activities.

Specific Requirements:
- Understands the role and functions of an infectious diseases specialist in the hospital
- Be aware of pivotal role of other health care providers in facilitating the activities of infectious diseases specialists (including, but not limited to those performing surgical and radiological diagnostic procedures for microbiological examination).
- Demonstrate the ability to accept, consider and respect the opinions of other team members.
- Be able to 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.
- Be capable of assuming a decisive role while functioning as a member of a multidisciplinary team.

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:
- Practice and time management skills including punctuality, prioritization and triage (PGY4).
- Demonstrate knowledge of effective functioning in the health care organizations at local region and national level, and different ways of delivering care to patients in different settings (e.g., outpatient parenteral antibiotic therapy and directly observed therapy) (PGY4)
- Use information technology as a tool in patient management.
- Make and defend clinical decisions and judgments based on sound clinical evidence for the benefits of individual patients and the population served (PGY5).
- Demonstrate an understanding of the structure; financing and operation of the Canadian health care system (PGY5).
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:

- Identifying the most important determinants of health as these relate to the burden of illness from diseases caused directly or indirectly by microorganisms (PGY4)
- Identifying current public health policies that affect health either positively or negatively, such as childhood immunizations, infection control, and antimicrobial utilization (PGY5)
- Use information on biologic, psychosocial, cultural, environmental and economic determinants of health in a management plan (eg: ensuring that patients access the relevant public health and social services required to manage their particular disease(s), such as HIV, sexually transmitted diseases, tuberculosis and vaccine-preventable diseases) (PGY5)
- Identify patient groups that are at risk of infectious diseases and their consequences to appropriately target primary and secondary preventive strategies (HIV, sexually transmitted diseases, tuberculosis and vaccine-preventable diseases) (PGY5)

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:

- Pose a clinical infectious disease question (PGY4)
- Formulate a plan to fill own knowledge gaps (eg: conduct an appropriate literature search, assimilate and appraise the literature, consult others, develop a system to store and retrieve literature) (PGY4)
- Recognize and identify broad gaps in knowledge and expertise around practice areas, and identify areas for research (PGY5)

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;
- Use appropriate strategies to maintain and advance professional competence;
- Evaluate continually one's own abilities, knowledge and skills and know own limitations of professional competence;
- Adopt specific strategies to heighten personal and professional awareness and explore and resolve interpersonal difficulties in professional relationships;
- Strive consciously to balance personal and professional roles and responsibilities and to demonstrate ways of attempting to resolve conflicts and role strain;
- Demonstrate flexibility and a willingness to adjust to changing circumstances.
- Know and understand the professional, legal and ethical codes to which infectious diseases physicians are bound (including confidentiality issues that are critical to the proper practice of infectious disease such as disclosure of HIV); maintain appropriate boundaries when interacting with industry.
- Recognize, analyze and attempt to resolve in clinical practice ethical issues such as honesty, reliability, informed consent, advanced directives, confidentiality, end-of-life care, conflict of interest, resource allocation, research ethics, etc.;
- 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 know how to deal with unprofessional behaviours in clinical practice, considering local and provincial regulations.

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

Trainee Assessment:

The attending ID physician on service during the last week of the rotation will provide the assessment using the in-training evaluation report (ITER – ID Adult ID consultation service), based on feedback from all attending staff who worked with the resident during the course of that rotation.

Author(s): Dr. Matthew Oughton, Dr Makeda Semret
Date of last revision: October 17, 2018
Date of approval by Residency Training Committee: October 18, 2018

*ITER ID Adult ID consultation service*

**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.
• Rationally 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

Scholar
• Accesses, retrieves, appraises and applies relevant scientific information to problem-solving
• Anticipates short and long-term complications of infectious diseases and establishes a plan for their treatments
• 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 and concise manner
• Delivers information to patients and family members in a manner that is understandable, respectful and empathetic
• Communicates differential and management plan to treating team and other allied health care professional 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 nursing personnel, pharmacy personnel, laboratory personnel, infection control practitioners and public health personnel.
• Accepts, considers and respects the opinions of other team members
• Demonstrates insight into his/her own limitations and seeks help/advice as needed

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
• Ensures graded degrees of responsibility in clinical decision-making, including the development of autonomy for Junior Attending Adult ID Consultation
• 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
• Prioritizes the needs of patients and associated caretakers in the decision-making and management processes
Training Program
Infectious Diseases ∙ Medical Microbiology

Professional

- Delivers highest quality care with integrity, honesty and compassion.
- Exhibits appropriate personal and interpersonal professional behaviours at all times
Junior Attending Adult ID consultation service

McGill University

Postgraduate Training program in Infectious Diseases

Rotation Goals and Objectives

McGill University Health Centre (MUHC) and Jewish General Hospital

GENERAL INFORMATION

Rotation overview:

Residents are expected to do 2 one-month rotations in the Adult ID inpatient consultation service in the role of Junior Attending, towards the end of their PGY5 year. 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 rotations, the resident will be 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.

Unique strengths of each training site
Although much of the case mix is the same between the various hospitals, residents should recognize the specific strengths of each of the individual centres and take advantage of these specific educational exposures as outlined below:
Training Program
Infectious Diseases ∙ Medical Microbiology

- JGH: Community acquired infections, Infections in pregnancy and post-partum women
- RVH (Glen): Solid organ and stem cell transplantation, post surgical infections
- MGH: Orthopedic infections, trauma associated infections

**Rotation specific objectives**

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

**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 Indigenous 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 disease-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 microorganisms
• 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

Trainee Assessment:
The attending ID physician on service during the last week of the rotation will provide the assessment using the in-training evaluation report (ITER – ID Junior Attending Adult ID consultation service), based on feedback from all staff on service during that rotation.
ITER Infectious Diseases_ Junior Attending Adult ID consultation service

Medical expert

- Demonstrates expert knowledge and skills on diagnosis and management of commonly encountered infectious diseases
- Provides a well rounded differential diagnosis to complex problems
- Utilizes laboratory tests and other investigations with circumspection
- Provides appropriate and practical advice to outside physicians emphasizing safety
- 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 practice areas for research and formulates a plan to address gaps
- Be familiar and be able to access various reputed sources of medical information targeting the gap in knowledge
- 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
- Recognizes when governance in health care influences delivery of care
- Recognizes gaps in delivery of care and seeks solutions to fill those gaps

Leader

- Organizes consultation service in a manner that balances efficiency, learning needs, and graded responsibility
- Utilizes healthcare resources in a manner that balances quality patient care, learning needs and cost considerations
- Recognizes gaps in delivery of care and seeks solutions to fill those gaps
- Makes and defends clinical decisions and judgements based on available evidence, for the benefits of patients and the population
- Demonstrates insight into own knowledge and practice gaps and seeks supervision appropriately

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
- Exhibits appropriate personal and interpersonal professional behaviours at all times
- Recognizes and addresses unprofessional behaviours (from other members of the team) in a courteous and firm manner
- Acknowledges constructive recommendations from attending staff and attempts to integrate these into practice

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Community Adult ID consultation service

McGill University

Postgraduate Training program in Infectious Diseases

Rotation Goals and Objectives

St Mary’s Hospital Centre

GENERAL INFORMATION

Rotation overview:

This one-month rotation will be done during the PGY-5 year. By this time the trainee will have already completed several months of Adult ID in-patient consultation services at the other sites, 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 in this setting has to additionally be prepared to recognize and initiate investigations for patients with complex multi-system diseases, including congenital and 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-integre universitaire de santé Ouest de l’île (CIUSSS-ODIM). Residents may also choose to do their rotation at Lachine Hospital or Lakeshore General Hospital.

These rotations offer the opportunity of operating as a junior faculty in small teams with one attending staff (ID specialist) and a maximum of one other resident (often from family medicine). During this rotation, which is generally done during the PGY-5 year, residents are expected to organize the clinical consultation service and to function independently with respect to clinical assessments, investigations, and interactions with other health care providers. However, they will not be expected to carry the full responsibility of clinical management.

Unique strengths of each site
- SMH: community acquired infections, infections in pregnancy and post-partum, diverse population (immigrants and elderly patients)
- Lakeshore: community acquired infections, nosocomial infections, suburban population
- Lachine: community acquired infections, complications of bariatric surgery, long term care and low income suburban population
Rotation specific objectives

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

MEDICAL EXPERT

- Perform effective consultations through well documented assessments, clear and rational recommendations in both written and verbal form to the treating team requesting the consultation
- Prioritize professional duties and activities when faced with multiple consultations and other questions, such as receiving calls from non-hospital-based community physicians; in particular he/she will need to demonstrate flexibility and team-work
- Provide compassionate and patient-centred care at all times
- Demonstrate expertise in questions not directly related to patient care but of relevance to the field of ID, such as infection prevention and control and antimicrobial stewardship

To maintain clinical knowledge, skills and attitudes appropriate to ID, the resident is expected to:

- Apply knowledge on the etiology, epidemiology, natural history, prevention and management of commonly seen community-acquired and healthcare-associated infections, including those occurring in special hosts (immune compromised, pregnant, post-operative, IV drug users), immigrants and travelers
- Develop a differential for complex problems not limited to infectious syndromes
- Recognize and describe the principles of management for sepsis, SIRS and MOF syndrome
- Demonstrate detailed knowledge on the clinical indications for the use of antimicrobial agents, their mechanisms of actions, resistance mechanisms, toxicities and possible drug interactions

As a significant proportion of consultations will originate from the Emergency department and will not have been reviewed by any specialist, the resident is expected to:

- Perform a complete but concise and pertinent 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

To demonstrate effective preventive and therapeutic interventions, the resident is expected to:

- Implement a rational management plan in collaboration with the treating team and the patient
- Apply appropriate preventive interventions when indicated such as timely institution of post-exposure prophylaxis

To demonstrate proficiency in procedural skills, the resident is expected to:

- Obtain microbiological specimens such as nasopharyngeal and throat swabs, superficial swabs from wounds and skin lesions, needle aspirates from subcutaneous abscesses when indicated
- Perform and interpret a gram stain

Recognizing the limits of his/her expertise, the resident is expected to:

- Demonstrate insight into their limits, and recommend timely consultation with other professionals when appropriate and with the purpose of optimizing patient care

COMMUNICATOR

Date of last revision: October 21, 2018
Communication skills are essential for the functioning of the Infectious Diseases specialist, and are necessary for obtaining information from, and conveying information to patients and their families, as well as for communicating with treating teams and/or the consulting physicians. ID specialists should recognize that being a good communicator is an essential function of being a physician and understand that effective patient-physician communication can foster patient satisfaction and compliance as well as influence the manifestations and outcome of a patient's illness. Furthermore, these abilities are critical in eliciting patients' beliefs, concerns, and expectations about their illnesses, and for assessing key factors impacting on patients' health.

To develop rapport and establish an effective therapeutic relationship with patients, the resident is expected to:

- Recognize the importance of good communication skills, demonstrate a positive attitude, display empathy and skill in identifying possibly sensitive issues
- Respect confidentiality, recognizing the role of stigma in infectious diseases
- Counsel and support patients with newly diagnosed infections
- 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
- Maintain clear oral and written information for each consultation with clear directions for the referring physician, as well as organized progress notes and legible orders (written as “ID suggestions”)
- Present cases verbally to attending staff in a manner that is clear, concise and organized

**COLLABORATOR**

Specialists work in partnerships with others who are appropriately involved in the care of individuals or specific groups of patients. It is therefore essential for the infectious diseases specialist to be able to collaborate effectively with patients and a multidisciplinary team of expert health professionals for provision of optimal patient care, education, and research.

To participate effectively in an inter-professional health care team, the resident is expected to:

- Recognize and respect the roles, responsibilities and competencies of other health professionals (ex: interventional radiology and surgery who may be involved in obtaining specimens for microbiological diagnosis, other professionals such as pharmacists, laboratory technologists and others)
- Work effectively with other physicians and health care professionals including laboratory personnel, Infection control practitioners and Public Health personnel whose expertise may be invaluable for the optimal care of patients afflicted with infectious diseases
- Respect team ethics including confidentiality and resource allocation
- Demonstrate the ability to assume a decisive role while functioning as a member of a multidisciplinary team

**LEADER**

Specialists function as leaders and managers when they make everyday practice decisions involving resources, co-workers, task, policies, and their personal lives. In community settings
where the number of specialists might be limited, the ID specialists often play a very prominent role in the settings of individual patient care and overall hospital organization.

To participate in activities that contribute to the effectiveness of the system, the resident is expected to:

- Work collaboratively with infection prevention and control (to advise on patients potentially exposed to infectious agents in hospital) and with occupational health to advise on employees possibly exposed to infectious agents
- Participate in audits or patient safety initiatives if such opportunities arise
- Manage priorities to balance the needs of the consultation service, other training requirements such as longitudinal clinics, research project, vacations/personal time effectively
- Demonstrate awareness of the various modes of delivering care to patients (including OPAT through medical day, CLSC liaison, DOT via pharmacies, etc.)
- Recognize the importance of rational utilization of healthcare resources through discussions of the implications of infection control screening
- Demonstrate a basic understanding of the cost-effectiveness of laboratory tests and procedures and how to apply this knowledge towards cost-appropriate clinical care
- Select investigations that are ethically appropriate, rational, and adapted to the available resources

**HEALTH ADVOCATE**

ID specialists recognize advocacy as an essential and fundamental component of health promotion that occurs at the level of the individual patient, the practice population, and the broader community. During this rotation, the residents will be exposed mostly to community-acquired infections reflecting the socio-economic health determinants of the communities that are served by these institutions.

To respond to individual patient health needs and issues, the resident is expected to:

- Identify determinants of health (biologic, psychosocial, cultural, environmental and economic) for individual patients, as these relate to the burden of illness from diseases caused directly or indirectly by micro-organisms, and use this knowledge to adapt their management plans; for example, in cases of HIV, sexually transmitted diseases, tuberculosis and vaccine-preventable diseases
- Apply their knowledge regarding health promotion and disease prevention within vulnerable populations and immigrants (counselling for recent immigrants and refugees on vaccination, screening and prophylaxis for latent infections, etc)

**SCHOLAR**

ID specialists engage in a lifelong pursuit of mastery of their field; they recognize the need to commit to reflective learning, the creation and the dissemination of ID knowledge.

The resident is expected to:

- Critically appraise and evaluate medical evidence relevant to the practice of ID in community settings, and identify gaps in knowledge around specific clinical questions
Facilitate the learning of patients, students and residents in other specialties (particularly family medicine) and other health professionals by identifying their learning needs and desired outcomes, and demonstrating an effective teaching session

Provide effective feedback on knowledge and skills to junior learners on the consult service, if any

PROFESSIONAL

ID specialists are committed to the highest standards of excellence in clinical care and ethical conduct, and to continually perfecting mastery of their discipline.

The resident is expected to:

- Deliver highest quality care with integrity, honesty, appreciation of diversity and compassion, and demonstrate self-awareness through understanding own beliefs and values as they relate to the practice of ID
- Respond appropriately to ethical questions pertinent to the field of ID such as isolation and quarantine, or individuals possibly putting others at risk of infections through their behaviour
- Recognize the principles and the limits of confidentiality; in particular, in situations which require the physician to divulge personal information (e.g. public health notification of communicable diseases)
- Maintain impeccable professional relationships with patients and professionals
- Demonstrate tolerance and flexibility for the inevitable uncertainty of medicine, and a willingness to adapt to changing situations
- Demonstrate a commitment to society through identifying reporting requirements for communicable diseases, and specifically the obligations of ID specialists including public health legislation pertaining to reportable infections

Author(s): Dr. Makeda Semret
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ITER Infectious Diseases_Community ID Consult Service rotation

**Medical Expert**
- Performs effective consultations through well documented assessments, clear and rational recommendations in both written and verbal form
- Demonstrates expertise in answering questions relevant to the field of ID beyond patient care, such as infection prevention and control and antimicrobial stewardship
- 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
- Performs and interprets a Gram stain as needed

**Communicator**
- Conveys 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
- Provides clear oral and written information for each consultation with clear directions for the referring physician, as well as organized progress notes and legible orders
- Presents cases verbally to attending staff in a manner that is clear, concise and organized

**Collaborator**
- Recognizes and respects the roles, responsibilities and competencies of other health professionals
- Interacts effectively with other physicians and health care professionals including laboratory personnel, infection control practitioners and public health personnel
- Respects team ethics including punctuality and confidentiality
- Assumes decisive role within consultation team

**Leader**
- Manages time and priorities to balance demands of consultation service, other training requirements such as longitudinal clinics, study, research project, vacations/personal time
- Demonstrates awareness of rational utilization of healthcare resources including laboratory tests, and applies this knowledge towards cost-appropriate clinical care
- Works collaboratively with infection prevention and control (to advise on patients potentially exposed to infectious agents in hospital) and with occupational health to advise on employees possibly exposed to infectious agents

**Health Advocate**
Training Program
Infectious Diseases ∙ Medical Microbiology

- Identifies determinants of health (biologic, psychosocial, cultural, environmental and economic) for individual patients as these relate to the burden of illness from diseases caused by micro-organisms, and uses this knowledge to adapt their management plans
- Applies knowledge regarding health promotion and disease prevention within vulnerable populations, immigrant population and other special groups

Scholar

- Appraises and evaluates medical evidence relevant to the practice of ID in community settings, and identifies gaps in knowledge around specific clinical questions
- Provides effective feedback on knowledge and skills to junior learners on the consult service, if any

Professional

- Delivers highest quality care with integrity, honesty, appreciation of diversity and compassion
- Identifies and appropriately responds to questions on reporting of communicable diseases, and to ethical questions pertinent to the field of ID
- Maintains impeccable professional relationships with patients and professionals
- Demonstrates tolerance and flexibility for the inevitable uncertainty of medicine, and adaptability to changing situations
Paediatric ID consultation service

McGill University

Postgraduate Training program in Infectious Diseases

Rotation Goals and Objectives

Montreal Children’s Hospital

GENERAL INFORMATION

Rotation overview:

Residents are expected to do 2 one-month rotations in the Paediatric ID inpatient consultation service, throughout the PGY4 and PGY5 years. During these rotations, 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, one of only 2 referral hospitals devoted to paediatric care in the province of Quebec. Trainees will be working closely with and supervised by Paediatric ID attending staff. Trainees will take detailed medical histories, perform physical examinations, analyze accumulated data including biochemical, microbiologic, and radiological investigations in order 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).

Rotation specific objectives

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

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**

- The trainee is expected to have the appropriate level of knowledge relating to the etiology, epidemiology, pathogenesis, natural history, pathology, clinical features, prevention and management of the following acute and chronic infectious diseases:
  - 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
  - Sexually transmitted diseases in children/adolescents
  - Infections in immigrants/refugees and travelers
  - 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 the neonate.
  - Infections in surgical patients.
  - Infections in patients admitted to the pediatric and neonatal intensive care units.
  - Skin and soft tissue infections.
  - Infections occurring after burns and extensive trauma.
  - Infections occurring as a result of emerging pathogens and bioterrorism.
  - Viral hepatitis.
  - Zoonoses.

- Clinical and laboratory approach and differential diagnosis of complex problems in which infections may play a role, such as:
  - Fever of unknown origin.
  - Acute rapidly progressive illness perhaps due to sepsis from an undefined site; sepsis, systemic inflammatory response syndrome and multiple organ dysfunction syndrome.
  - Pulmonary infiltrates of uncertain etiology.
  - Post-operative fever.
  - Recurrent/relapsing infections/fever.

- The study of microbes (including an understanding of pathology, virulence factors, life cycles, taxonomy, structure/physiology, pathogenesis; proteinaceous infectious particles
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.

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

SKILLS

- Elicit a history that is relevant, concise, accurate and appropriate to the patient’s problem(s), including the relevant epidemiologic, family, and travel history related to particular infectious diseases.
- Perform a physical examination that is relevant and appropriate.
- Select medically appropriate investigate tools, including microbiologic tests, in a cost-effective, ethical and useful manner.
- Retrieve and implement the information necessary to provide health care services to patients.
- Access, retrieve, appraise and apply relevant information of all kinds to problem-solving and introduce new therapeutic options to the clinical practice of infectious diseases.
- Anticipate short and long-term complications of infectious diseases and their treatments.
- Appropriately deliver patient/family education using the above-mentioned knowledge.
- Demonstrate insight into his/her own limitations.

COMMUNICATOR

Communication skills are essential for the functioning of the Infectious Diseases specialist, particularly in Pediatric ID where effective communication with the child’s parents and other family members is often crucial for obtaining information and ensuring a therapeutic alliance. Furthermore, these abilities are critical in eliciting patients’ families beliefs, concerns, and expectations and for assessing key factors impacting on patients’ health.

General Requirements:

- Establish therapeutic relationships with patients/families.
- Obtain and synthesize relevant history from patients/families/caregivers.
- Listen effectively.
The resident must be able to discuss appropriate information with patients/families and the health care team.

Specific Requirements

- Demonstrate the skills to impart infectious diseases-related knowledge to patients, colleagues, hospital staff and the general public.
- Establish relationship with the patient and family (specifically parents) that should be characterized by understanding, trust, respect, empathy and confidentiality.
- Be able to gather information about a particular infectious disease affecting a patient and to obtain information about the patient's beliefs, concerns and expectations about their illness, in a sensitive and caring manner. These should be considered within the context of the influence of age, gender, ethnic, cultural and socio-economic status and spiritual values. Wherever appropriate critical information in the above categories must be communicated to others who are involved in the care of the patient.
- Be able to 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 afflicting them.
- Be aware of the potential for “mixed messages” to be delivered to patients and their families, particularly as this relates to choosing diagnostic procedures, antimicrobial agents and duration of antimicrobial therapy. They must communicate with other health professionals in a manner that facilitates the delivery of consistent messages to the patients and their families.

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 interdisciplinary team activities.

Specific Requirements:

- Understands the role and functions of a Pediatric Infectious Diseases specialist in the hospital
- Be aware of pivotal role of other health care providers in facilitating the activities of infectious diseases specialists (including, but not limited to those performing surgical and radiological diagnostic procedures for microbiological examination).
- Demonstrate the ability to accept, consider and respect the opinions of other team members.
- Be able to 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.
• Be capable of assuming a decisive role while functioning as a member of a multidisciplinary team.

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:

• Practice and time management skills including punctuality, prioritization and triage (PGY4).
• Demonstrate knowledge of effective functioning in the health care organizations at local region and national level, and different ways of delivering care to patients in different settings (eg outpatient parenteral antibiotic therapy and directly observed therapy) (PGY4)
• Use information technology as a tool in patient management.
• Make and defend clinical decisions and judgments based on sound clinical evidence for the benefits of individual patients and the population served (PGY5);
• Demonstrate an understanding of the structure; financing and operation of the Canadian health care system (PGY5).

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:

• Identifying the most important determinants of health in patients, as these relate to the burden of illness from diseases caused directly or indirectly by microorganisms (PGY4)
• Identifying current public health policies that affect health either positively or negatively, such as childhood immunizations, infection control, and antimicrobial utilization (PGY5)
• Use information on biologic, psychosocial, cultural, environmental and economic determinants of health in a management plan (eg: ensuring that patients access the relevant public health and social services required to manage their particular disease(s), (PGY5)
• Identify patient groups that are at risk of infectious diseases and their consequences to appropriately target primary and secondary preventive strategies (patients from vulnerable groups, Indigenous, refugees or recent immigrants, etc) (PGY5)
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:
- Pose a clinical infectious disease question (PGY4)
- Formulate a plan to fill own knowledge gaps (eg: conduct an appropriate literature search, assimilate and appraise the literature, consult others, develop a system to store and retrieve literature) (PGY4)
- Recognize and identify broad gaps in knowledge and expertise around practice areas, and identify areas for research (PGY5)

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;
- Use appropriate strategies to maintain and advance professional competence;
- Evaluate continually one's own abilities, knowledge and skills and know own limitations of professional competence
- Adopt specific strategies to heighten personal and professional awareness and explore and resolve interpersonal difficulties in professional relationships;
- Strive consciously to balance personal and professional roles and responsibilities and to demonstrate ways of attempting to resolve conflicts and role strain;
- Demonstrate flexibility and a willingness to adjust to changing circumstances.
- Know and understand the professional, legal and ethical codes to which infectious diseases physicians are bound (including confidentiality issues that are critical to the proper practice of infectious disease); maintain appropriate boundaries when interacting with industry.
- Recognize, analyze and attempt to resolve in clinical practice ethical issues such as honesty, reliability, informed consent, advanced directives, confidentiality, end-of-life care, conflict of interest, resource allocation, research ethics, etc.;
- 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 know how to deal with unprofessional behaviours in clinical practice, considering local and provincial regulations.
Recommended resources:
- Feigin and Cherry’s textbook of Infectious Diseases
- Reviews and other scientific publications based on cases seen during consultation service
- Sanford guide to antimicrobial therapy or other reference for infectious diseases therapeutics

Trainee Assessment:

The attending Paediatric ID physician on service during the last week of the rotation will provide the assessment using the in-training evaluation report (ITER – Pediatric ID consultation service), based on feedback from all attending staff who worked with the resident during the course of that rotation.

Author: Dr Jane MacDonald, Dr Makeda Semret
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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
- Anticipates short and long-term complications of infectious diseases and their treatments
- Contributes to teaching of junior residents and students on consultation team

Communicator

- Presents cases in an organized, logical and concise manner
- 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
- Demonstrates insight into his/her own limitations and seeks help/advice as needed

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.
- Exhibits appropriate personal and interpersonal professional behaviours at all times
Longitudinal Clinic

McGill University

Postgraduate Training Program in Infectious Diseases

Rotation Goals and Objectives

McGill University Hospital Centre – Outpatient clinic

GENERAL INFORMATION

Rotation overview:

During this longitudinal rotation done throughout training, residents will be exposed to an outpatient clinical infectious diseases (including HIV) practice. They will assess, treat and follow new patients who are referred from the Emergency department, other specialties, and the community. They will also provide follow up care for patients they have seen on their inpatient rotations who require the ongoing care of an Infectious Diseases or HIV subspecialist, including those who are being followed for outpatient parenteral antibiotic therapy (OPAT). This experience provides an opportunity for trainees to learn all aspects of outpatient care including triaging, providing consultations, providing longer-term follow up when needed, attending to patient inquiries, following up on patient tests and procedures required, and transitioning care back to the community as appropriate.

Learning context:

This rotation takes place throughout their training and is provided at the MUHC - Royal Victoria Hospital (Glen site) on Tuesday afternoons. It is currently supervised by one of three physicians: Dr. Lee (lead, general ID), Dr. Behr (mycobacteriology) and Dr. Sheppard (mycology). Dr. Costiniuk (CVIS) can also provide supervision of a longitudinal clinic (HIV).

Rotation-specific objectives

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

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 (pregnancy, immunosuppression, people living with HIV and other vulnerable populations)
- Properly select patients for outpatient parenteral antibiotic therapy (OPAT), monitor for side effects, and know when oral therapies would be appropriate
Training Program
Infectious Diseases ∙ Medical Microbiology

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
- Counsel patients on a variety of topics pertaining to infectious diseases with an emphasis on the appropriate use of antibiotics and HIV antiretrovirals and the management of complications thereof.

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 with each other and their attendings

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
- Describe principals of physician remuneration and required record keeping within our healthcare system
- 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
- 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 and case reports.

PROFESSIONAL

- Create a clinic culture of cross-coverage when absence is necessary
• Systematically follow up on laboratory, radiology and other tests which they have ordered for their patients

**Recommended learning resources:**
- Textbook of Infectious Diseases (eg. Mandell’s Principles and Practice of Infectious diseases)
- Scientific literature based on cases encountered

**Trainee Assessment:**

The attending ID physician supervising the longitudinal clinic will provide an assessment every 3 months, using the in-training evaluation report (ITER – ID Longitudinal clinics).

**Author:** Dr Todd C. Lee
**Date of last revision:** October 17, 2018
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ITER ID – Longitudinal Clinic

MEDICAL EXPERT

- Elicits relevant, accurate and concise histories and focused physical examination
- Selects patients for outpatient care and therapy appropriately, and manages complex infectious diseases issues in outpatients effectively (e.g., OPAT, HIV antiretrovirals)
- Develops approach to following-up responsibly on laboratory, radiology and other tests ordered for their patients in an outpatient setting
- Recognizes own limits and seeks advice/help appropriately

COMMUNICATOR

- Provides complete and educational written correspondence to referring physicians
- Answers outside phone calls from other physicians or health care practitioners clearly and with courtesy
- Counsels patients clearly, with an emphasis on appropriate use of antibiotics and the management of complications

COLLABORATOR

- Interacts effectively with clinic staff, other doctors, nurses, and pharmacists to manage their patients during their treatment (particularly OPAT)
- Recognizes and respects roles of each professional in the clinic setting

LEADER

- Manages time effectively and sets priorities for patient evaluations, timely follow-ups;
- Balances service to the hospital, clinic efficiency and learning needs effectively
- Utilizes healthcare resources appropriately and in keeping with evidence-based recommendations
- Supervises junior trainees and provides valuable teaching and feedback
- Assists in arranging a functional clinic schedule

HEALTH ADVOCATE

- Connects patients to available resources within the institution or community
- Informs and educates patients on the benefits of vaccination and other prophylactic strategies as appropriate
Training Program
Infectious Diseases ∙ Medical Microbiology

- Identifies patients for whom social determinants of health can be addressed to improve care of infectious diseases and involve appropriate resources where available

SCHOLAR

- Integrates new knowledge from the medical literature into their ongoing care of patients with infectious diseases
- Facilitates knowledge translation through the preparation of educational case presentations and case reports.

PROFESSIONAL

- Demonstrates professional attitude and behaviour to patients and colleagues at all times
- Demonstrates flexibility and willingness to adjust based on changing circumstance (eg. Culture of cross-coverage when absence is necessary)

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Antimicrobial Stewardship

McGill University

Postgraduate Training program in Infectious Diseases

Rotation Goals and Objectives

McGill University Health Centre (MUHC) and Jewish General Hospital (JGH)

GENERAL INFORMATION

Rotation overview:

This one-month rotation should be done during PGY5. While there are elements that can be coordinated with infection control rotations, it is offered as a stand-alone experience. The objectives refer to activities that may take place during the rotation or through other activities such as the academic half-day.

During the antimicrobial stewardship rotation, the resident-trainee will familiarize themselves with concepts and practices of antibiotic stewardship. Through practical exercises, readings, meetings with attending staff and pharmacists, stewardship committee meetings, and independent learning the resident-trainee will start to master the basics of antimicrobial stewardship.

Learning context:

The stewardship rotation will be held at the MUHC or at the JGH and will be supervised by the ID physicians in charge of antibiotic stewardship at that institution. In order to put their teachings into practice the resident will be encouraged to participate in stewardship committee meetings longitudinally, and will therefore be assigned to one base hospital. Further, they will also be encouraged to initiate a stewardship project. Examples of this type of project include initiating a surveillance program of antibiotic usage on an inpatient ward/unit, identifying the main problems in antibiotic use on that unit, and planning a structured multidisciplinary intervention program to improve its use.

Rotation specific objectives

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

MEDICAL EXPERT

- Describe the expected antimicrobial susceptibility of common bacterial pathogens, and understand current concepts of antimicrobial resistance development and transmission
- Demonstrate knowledge of the classification, pharmacokinetics and pharmacodynamics of antimicrobial agents
- Demonstrate knowledge of the clinical indications for, and contraindications to the use of antimicrobial agents
• Appreciate the economic implications of antimicrobial use, and be familiar with the quantitative and qualitative methods to follow antibiotic use
• Demonstrate the ability to select, calculate, interpret and report appropriate measures of antimicrobial usage
• Describe the epidemiology of antimicrobial resistance including contributing factors and surveillance tools
• Demonstrate knowledge of the implications of antimicrobial resistance at the patient level, the hospital level and the community level
• Discuss strategies to promote rational use of antimicrobials at the institutional level, and understand benefits associated with stewardship programs, and discuss their implementation

COMMUNICATOR

• Recognize that good verbal and written communication is an essential skill in effective stewardship interventions
• Demonstrate a positive, respectful and non-judgmental attitude towards other health professionals (eg: physicians whose practices are being audited or analysed by the stewardship program)
• Convey clear information to staff in various departments (residents, attending staff, pharmacists, nursing, administrators) and be able to explain principles of rational use using current available guidelines for antimicrobial therapy of specific infectious diseases
• Address challenging situations (such as non-compliance to ASP suggestions) effectively through respectful dialogue and through presentation of evidence-based data
• Understand the need to develop a shared plan for stewardship, and identify the various health professionals needed for “buy-in” of such programs (physicians, pharmacists, nurses, administrators)

COLLABORATOR

• Participate effectively and appropriately in ASP rounds and meetings with pharmacy, Infection control, microbiology and ID
• Work actively within the ASP team to improve antibiotic use in specific departments and wards, through the use of audit and feedback/education
• Participate in educational activities/programs for professionals and in the development of written protocols or therapeutic guidelines for the institution
• Demonstrate collaborative relationships and recognize differences with other health professionals, respecting team ethics, resource allocation and professionalism
• Demonstrate leadership in ASP team as appropriate
• Recognize that ASP activities and policies can be a source of conflict between the stewardship service and other physicians, including ID colleagues, and employ strategies to minimize or resolve these conflicts through collaborative negotiations
• Demonstrate collegiality in efforts to educate peers and other professionals in antimicrobial prescription practices
• Demonstrate self-awareness and recognize one’s own differences and limitations that might contribute to inter-professional tension and conflicts

LEADER

• Work collaboratively to implement rational antimicrobial utilization strategies in selected units/wards/departments or throughout the institution
• Participate effectively in antimicrobial stewardship/P&T committees and partake in audits related to antimicrobial use in collaboration with ASP team
• Recognize the ID physician’s role in ASP implementation and management including financial process and advocacy for increased resources when appropriate
• Recognize the importance of rational allocation of resources in health care, balancing cost-effectiveness of certain antimicrobials and optimal health care
• Participate effectively in committees and meetings on pharmacy/therapeutics, antibiotic stewardship, and infection control

HEALTH ADVOCATE

• Identify determinants of health particular to individual patients that might impact stewardship interventions (dialysis patients, morbidly obese patients, pediatric patients, pregnancy, allergies, special hosts)
• Identify opportunities for advocacy on rational use of antibiotics (e.g. educating community groups on limiting antibiotics for URTIs, acute diarrhea)
• Recognize the complications and risks associated with antibiotic misuse on an individual, institutional, and community level
• Understand the factors (policies, regulations, practices, behaviors) involved in misuse of antibiotic at the local level and at the international/global level and the scope of antimicrobial resistance locally, nationally and internationally
• Identify points of influence/contacts within the system (administrators, communication experts, etc.) who have the ability to effect impactful change on antibiotic utilization
• When appropriate, participate in activities occurring during patient safety week and world antimicrobial awareness week (November).

SCHOLAR

• Critically evaluate medical literature and evidence relating to impact of different stewardship strategies, and present the result of his search/study in a formal presentation (to the committee, unit or department)
• Integrate critical conclusions into ASP practice
• Facilitate the learning of other health professionals by identifying their learning needs, and demonstrating effective lecture or presentation
• Contribute to writing institutional protocol, guideline or conducting specific audit/feedback collaboratively
• Be knowledgeable of regional and pertinent international ASP guidelines.
PROFESSIONAL

The resident is expected to:

- Demonstrate self-awareness of limitations of ability and knowledge, and request assistance when appropriate and necessary
- Conduct themselves in a professional manner at all times demonstrating consideration for the benefit of the health system and its stakeholders and how the ASP practice and policies impacts upon them
- Address element of conflicts of interest, which in stewardship can involve interaction between pharmaceutical industry and physicians, administrators, and/or pharmacists
- Demonstrate appropriate flexibility and willingness to be open to divergent opinions and acknowledge the possibility of errors and takes the measures to address them.
- Demonstrate knowledge of, assuring implementation of, and compliance with the required operating procedures (ROPs) of Accreditation Canada with respect to antimicrobial stewardship
- Be responsive to health care professionals and stakeholders that request assistance.

Author(s): Dr. Makeda Semret, Dr Marty Teltscher
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ITER ID Antimicrobial Stewardship (ASP)

Medical Expert
- Describes expected antimicrobial susceptibilities of common bacterial pathogens and antimicrobial resistance development and transmission
- Demonstrates knowledge of the classification, pharmacokinetics, and pharmacodynamics of antimicrobial agents
- Describes quantitative and qualitative methods to follow antibiotic use and measures of antimicrobial usage
- Describes common strategies to promote and implement rational use of antimicrobials at the institutional level

Communicator
- Conveys clear information to staff in various departments and explains principles of rational use using current available guidelines for antimicrobial therapy of specific infectious diseases
- Produces clear (verbal and in writing) recommendations during audit-feedback sessions
- Addresses challenging situations effectively through respectful dialogue and through presentation of evidence-based data

Collaborator
- Participates effectively and appropriately in ASP rounds and meetings
- Works actively with the ASP team to improve antibiotic use through the use of audit and feedback/education
- Participates in educational activities/programs for professionals and in the development of written protocols or therapeutic guidelines for the institution
- Demonstrates collegiality in efforts to educate peers and other professionals in antimicrobial prescription practices

Leader
- Manages time and prioritizes efficiently during audit-feedback sessions, balancing workload with learning needs
- Participates effectively in antimicrobial stewardship/P&T committee meetings
- Recognizes that ASP activities and policies can be a source of conflict between the stewardship service and other physicians, and develops strategies to minimize or resolve these conflicts through discussions
- Demonstrates self-awareness and recognizes own limitations that might contribute to tension and conflicts
Health Advocate

- Describes factors involved in misuse of antibiotic at the local/global level and identifies determinants of health particular to groups of patients that might impact stewardship interventions
- Identifies opportunities for advocacy on rational use of antibiotics
- Recognizes points of influence and important contacts who have the ability to effect impactful change on antibiotic utilization

Scholar

- Integrates knowledge from medical literature and evidence relating to impact of different stewardship strategies into ASP practice
- Facilitates the learning of other health professionals by identifying their learning needs, and demonstrating effective lecture or presentation
- Contributes to writing institutional protocol, treatment guidelines or conducting specific audit/feedback collaboratively

Professional

- Conducts themselves in a professional manner at all times demonstrating consideration for the benefit of the health system and its stakeholders and how the ASP practice and policies impacts upon them
- Addresses element of conflicts of interest, which in stewardship can involve interaction between pharmaceutical industry and physicians, administrators, and/or pharmacists
- Demonstrates appropriate flexibility and willingness to be open to divergent opinions, acknowledge the possibility of errors and takes measures to address them
- Demonstrates knowledge of, assuring implementation of, and compliance with the required operating procedures (ROPs) of Accreditation Canada with respect to antimicrobial stewardship
- Responds effectively to health care professionals and stakeholders requesting assistance.
Tropical Diseases

McGill University

Postgraduate Training program in Infectious Diseases

Rotation Goals and Objectives

JD MacLean Centre for Tropical Diseases, McGill University Health Centre (MUHC)

GENERAL INFORMATION

Rotation overview:

This one-month rotation can be done at any time during the PGY4 or PGY5 years. During this rotation 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-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 centre of expertise, research, and training in Clinical Tropical Medicine, and the largest of its kind in North America.

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 and tropical medicine. They will also learn the elements of pre-travel consultation with the travel medicine nurse (currently Karine Chagnon), and will spend approximately 40% of their time in acquisition of knowledge and skills in medical parasitology through lab sessions (supervised by the coordinator in parasitology, currently Lyne Cedilotte), lectures and educational reading.

The trainees will receive a teaching schedule at the beginning of the rotation, and will meet with the attending Tropical medicine specialists and parasitologists (Dr Sapha Barkati, Dr Michael Libman, Dr Cédric Yansouni, Dr. Makeda Semret) for teaching sessions. Residents are expected to remain on site throughout the day unless other activities are prescribed by their residency program. They should be available and actively participate in consultations in tropical diseases in the emergency department and on the wards under the supervision of attending staff on call in tropical diseases. The resident will also, during the rotation, visit the National Center for Parasitology (NRCP) with the laboratory director (Currently Dr Momar Ndao).

Rotation specific objectives

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

KNOWLEDGE

- Perform a consultation effectively focusing on travellers health, migrants health, tropical and parasitic diseases as requested by another health care professional and provide a well-documented assessment and recommendations in written and/or verbal form.
- Demonstrate the ability to prioritize professional duties when faced with multiple patients and problems related to tropical medicine.
- Recognize and prioritize rapidly progressive, life threatening and or highly transmissible tropical diseases such as (but not limited to): Malaria, Enteric fever, Dengue and other hemorrhagic fevers (e.g. Yellow fever, Ebola, Lassa fever, Crimean-Congo hemorrhagic fever), Leptospirosis, Rickettsiosis, Severe acute respiratory infection (e.g. Influenza, MERS-CoV, pneumonic plague), Measles, Pulmonary tuberculosis
- Demonstrate a clinical and laboratory approach to screening asymptomatic travellers and migrants
- Demonstrate a clinical and laboratory approach and elaborate a differential diagnosis for patients returning from travel, or an immigrant, presenting with:
  - Fever (acute, intermittent, persistent)
  - Diarrhea (acute or chronic)
  - Eosinophilia
  - Rash
- Elaborate a differential diagnosis of fever in returning traveller with respect to clinical picture, epidemiological aspects and incubation period
- Describe the etiology, epidemiology, pathogenesis, natural history, clinical features, prevention and management of tropical diseases:
  - Dermatological diseases of tropical origin such as but not restricted to:
    - Leprosy (*Mycobacterium leprae*)
    - Cutaneous larva migrans
    - Leishmaniasis
    - Myasis
    - Aquatic injuries
    - Cercarial dermatitis
    - Insect bites
    - Envenomations
    - Superficial mycoses
- Malaria, rickettiosis, leptospirosis, enteric fevers, tuberculosis, atypical mycobacteria, arbovirosis, viral hemorrhagic fever
- Describe the epidemiology, pathogenesis, life cycle, incubation and prepatent period, natural history, clinical features, prevention and management of parasitic diseases
- Intestinal Parasites
  - Protozoa: *Entamoeba histolytica*, *Blastocystis hominis*, *Giardia* spp., *Dientamoeba fragilis*, *Balantidium* coli, *Cryptosporidium* spp., *Cyclospora cayetanensis*, *Cystoisospora belli* etc.
- Blood and tissue
Training Program
Infectious Diseases ∙ Medical Microbiology

- Nematodes: Filaria, Trichinella spp., Toxocara spp., Anisakis spp., P. decipiens
- Cestodes: Taenia solium, Echinococcus granulosus

- Free living amoeba
  - Acanthamoeba spp.
  - Balamuthia mandrillaris
  - Naegleria fowleri
  - Sappinia spp.

- Arthropods as ectoparasites
  - Cimex lectularis, Cimex hemipterus (Bed bugs)
  - Sarcoptes scabei (scabies)
  - Pediculus humanus (pediculosis)
  - Pthirus pubis (pthiriasis)

- Recognize the importance of arthropod vectors in transmission of tropical diseases and describe the strategies to prevent those infections
  - Anopheles spp.: Plasmodium spp.
  - Aedes spp.: Dengue, Chikungunya, Zika, Yellow fever
  - Fleas: Rickettsia typhi, Yersinia pestis
  - Lice: Borrelia recurrentis, Rickettsia prowasekii, Bartonella quintana
  - Sandflies: Leishmaniasis, Oroya fever
  - Simulium spp.: Onchocerca volvulus
  - Chrysops spp. Loa Loa
  - Glossina spp.: African trypanosomiasis
  - Triatome vectors: American trypanosomiasis
  - Ticks: Borrelia burgdorferi, Rickettsia rickettsii, Babesia spp., Ehrlichia spp., Anaplasma phagocytophilum, Francisella tularensis, Tick-borne encephalitis, Colorado ick fever
  - Trombiculid mites: Orientia tsutsugamushi (scrub typhus)

- Demonstrate effective use of available resources (Web resources, softwares, textbooks) to help with the epidemiology and differential diagnosis of fever in returning traveler
- Demonstrate a clinical approach to patient presenting with delusional infestation

- Antiparasitic agents
  - Demonstrate knowledge of antiparasitic agents in terms of the following:
    - classification
    - spectrum of activity
    - pharmacokinetics and pharmacodynamics in the normal and abnormal host
    - mechanism of action
    - mechanism of resistance
    - toxicity and drug interactions
    - clinical indications and use

- Prevention
Training Program
Infectious Diseases ∙ Medical Microbiology

- Understand and apply the principles and practice of prevention of tropical diseases through immunization and chemoprophylaxis. This should include the indications, contraindications, efficacy, effectiveness, and adverse effects of:
  - passive and active immunization
  - chemoprophylaxis
  - environmental and behaviour factors

- **Medical microbiology and clinical laboratory testing**
  - Understand and be able to utilize and interpret microbiological and clinical laboratory testing as they relate to the following:
    - Parasitic serologies
    - Rapid diagnostic tests for malaria
    - Conservation and fixation of stool specimens
    - Principles of thin smears and thick smears for diagnosing malaria
    - Staining: Giemsa, iron-hematoxylin and Kinyoun stains, combined hematoxylin staining and Kinyoun stain
    - Culture techniques: *Strongyloides stercoralis*, *Acanthamoeba* spp.
    - Technique for concentration of stool and blood parasites
    - Molecular techniques for detection of stool parasites
    - Tuberculin skin test (TST)

**SKILLS**
**Perform a complete and appropriate assessment of a patient**
- Elicit a history that is relevant, concise, accurate and appropriate to the patient's problem(s), including
  - The relevant epidemiologic (region visited, dates of visit)
  - Complete travel history or migration route
  - Reason for travel (Tourism, work, Visiting friends and relatives, missionary work…)
  - Activities and exposures related to particular tropical and parasitic diseases including
    - Fresh water exposure, walking barefoot
    - Visiting caves
    - Animal exposures
    - Sexual and recreational drugs
    - Food and beverage
    - Geographic distributions of tropical and parasitic diseases
    - Immunization status and chemoprophylaxis
  - Describe the potential infectious and non-infectious risk associated with travel in specific population
    - Pediatric travellers
    - Older travellers
    - Immunocompromised travellers
    - Pregnant female
    - Expatriates
    - Travellers visiting friends and relatives (VFR)
- Perform a physical examination that is relevant, detailed, and appropriate and meets specialty specific standards.
- Select medically appropriate investigational tools, including microbiologic tests, in a cost-effective, ethical and useful manner
Use investigational tools appropriately with respect to incubation and prepatent period, country/region visited, clinical presentation

Use preventive and therapeutic interventions effectively
- Educate travellers and migrants and their families on the important role of immunization, malaria chemoprophylaxis, arthropod bites precautions and safe water and food intake
- Demonstrate effective, appropriate, and timely application of preventive and therapeutic interventions
- Identify travellers for whom malaria chemoprophylaxis is recommended
- Evaluate and manage individual who have been exposed to animal bites/scratches for risk of rabies, Herpes B virus, tetanus, wound infections
- Identify the travel vaccines indicated according to region/country visited, epidemiology, host immune status and contraindication
- Ensure appropriate informed consent is obtained for investigations and therapies

Demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic
- Demonstrate effective, appropriate, and timely performance of diagnostic procedures relevant to Infectious Diseases
- Perform and interpret a tuberculin skin test
- Perform scraping and aspirate of ulcers to diagnose cutaneous leishmaniasis
- Perform skin snips for the diagnosis of *Onchocerca volvulus*
- Perform slit-skin smear for leprosy
- Ensure appropriate informed consent is obtained for procedures
- Document and disseminate information related to procedures performed and their outcomes and arrange appropriate follow-up

- Seek appropriate and timely consultation from other health professionals, recognizing the limits of their own expertise
- Demonstrate insight into their own limits of expertise
- Demonstrate effective, appropriate, and timely consultation of another health professional such as a pre-travel consultation as needed for optimal patient care

COMMUNICATOR

General Requirements:
- Establish therapeutic relationships with patients/families
- Obtain and synthesize relevant history from patients/families/caregivers
- Discuss appropriate information with patients/families and the health care team
- Be aware of the resources and issues related to communicating with new immigrants and refugees, and overcoming language and cultural barriers to effective communication

Specific Requirements:
- Demonstrate the skills to impart tropical, travel medicine and parasitic diseases-related knowledge to patients, colleagues, hospital staff and the general public
Establish relationship with the patient that should be characterized by understanding, trust, respect, empathy and confidentiality

Be able to gather information about a particular tropical or parasitic disease affecting a patient and to obtain information about the patient's beliefs, concerns and expectations about their illness, in a sensitive and caring manner. These should be considered within the context of the influence of age, gender, ethnic, cultural and socio-economic status and spiritual values. Where ever appropriate critical information in the above categories must be communicated to others who are involved in the care of the patient

Be able to 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

Be aware of the potential for mixed messages to be delivered to patients and their families, particularly as this relates to choice of diagnostic procedures, antimicrobial agents and duration of antimicrobial therapy. They must communicate with other health professionals in a manner that facilitates the delivery of consistent messages to the patients and their families

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, Infections with an important impact in travellers (e.g. malaria, Zika, Ebola)

**COLLABORATOR**

- Be aware of pivotal role of other health care providers in facilitating the activities of Tropical Medicine specialists (including those performing surgical and radiological diagnostic procedures)
- Participate effectively and appropriately in an interdisciplinary environment
- Work with other care givers to provide timely, effective clinical care
- Recognize the tropical diseases reportable to public health and communicate in a timely fashion the information required
- In the setting of individual patient care, be capable of assuming a decisive role while functioning as a member of a multidisciplinary team

**LEADER**

- Work effectively and efficiently to prioritize rapidly progressive, life threatening and or highly transmissible tropical diseases
- 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 such as web resource and software as a tool in the management of tropical diseases

**HEALTH ADVOCATE**
Training Program
Infectious Diseases ∙ Medical Microbiology

- Identifying the most important determinants of health as these relate to the burden of illness from diseases caused directly or indirectly by microorganisms in travelers/migrants/immigrants (example alcohol consumption, smoking, drugs unlawful sexual practices, exposure to pathogens and their vectors, travel and vaccination status)
- In partnership with the patient, apply preventive and screening recommendations and other recognized measures, taking into account the habits, life/work context, diseases, immune status and exposures (for example: screening for STIs/HPV/latent tuberculosis, immunization, antibiotics or antivirals recommended for chemoprophylaxis after exposure to potentially contaminated biological fluids

SCHOLAR

- Recognize and identify gaps in knowledge and expertise around a clinical question in tropical medicine or parasitology, and formulate a plan to fill the gap
- Demonstrate a commitment to continuous learning through preparing for and leading the discussion in the teaching sessions in tropical medicine, travel medicine and parasitology

PROFESSIONAL

- Display attitudes commonly accepted as essential to professionalism;
- Use appropriate strategies to maintain and advance professional competence;
- Evaluate continually one's own abilities, knowledge and skills and know own limitations of professional competence
- Adopt specific strategies to heighten personal and professional awareness and explore and resolve interpersonal difficulties in professional relationships;
- Strive consciously to balance personal and professional roles and responsibilities and to demonstrate ways of attempting to resolve conflicts and role strain;
- Demonstrate flexibility and a willingness to adjust to changing circumstances.
- Understand issues related to patients who are not residents of Canada, who may not be insured for medical services, or whose residency status may not be documented
- Know and understand the professional, legal and ethical codes to which infectious diseases physicians are bound (including confidentiality issues that are critical to the proper practice of infectious disease); maintain appropriate boundaries when interacting with industry.
- Recognize, analyze and to attempt to resolve in clinical practice ethical issues such as honesty, reliability, informed consent, advanced directives, confidentiality, end-of-life care, conflict of interest, resource allocation, research ethics, etc.;
- 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 know how to deal with unprofessional behaviours in clinical practice, considering local and provincial regulations.

Recommended resources:
- Reading material provided at the start of the rotation
Training Program
Infectious Diseases · Medical Microbiology

- Textbook of Tropical Diseases (Manson’s, Guerrant, or other)

Trainee Assessment:

The attending ID physician on service during the last week of the rotation will provide the assessment using the in-training evaluation report (ITER – ID Tropical Diseases rotation), based on feedback from all attending staff who worked with the resident during the course of that rotation.

Authors: Dr Sapha Barkati, Dr Michael Libman

Date of last revision: October 14, 2018
Date approval by Residency Training Committee: October 18, 2018
ITER ID Tropical Diseases rotation

Medical expert
- Elicits a history that is relevant, concise, accurate and appropriate to Tropical diseases and 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 knowledge in tropical medicine and parasitology correctly towards diagnosis and treatment of cases encountered

Scholar
- Accesses, retrieves, appraises and applies relevant scientific information
- Contributes knowledge gained from reading to teaching sessions
- Anticipates short and long-term complications of tropical diseases and their treatments

Communicator
- Presents cases in an organized, logical and concise manner during review with staff
- Conveys information to patients in a manner that is understandable, respectful and empathetic
- Provides clear and well structured consultation letters to referring physicians

Collaborator
- Consults effectively with other physicians and health care professionals including laboratory and public health personnel.
- Accepts, considers and respects the opinions of other professionals
- Demonstrates insight into his/her own limitations and seeks help/advice as needed

Leader
- Manages clinic assessments effectively, balancing efficiency with learning needs
- Organizes Follow-up of patients and test results autonomously and responsibly
- 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.
- Exhibits appropriate personal and interpersonal professional behaviours at all times
PUBLIC HEALTH INSTITUTE (MONTREAL – DSP)

McGill University

Postgraduate Training Program in Medical Microbiology

Rotation Goals and Objectives

Montreal Department of Public Health (DSP)

GENERAL INFORMATION

Rotation overview:

This 1-month rotation provides an opportunity for trainees to acquire knowledge and skills on protecting the public from infectious threats. While the trainee will review reference-level tests (advanced microbial identification) and laboratory-focused surveillance during their public health laboratory (LSPQ) rotation, this rotation is geared towards in-depth understanding of provincial surveillance activities and measures required to prevent and control public health threats. The rotation will take place during PGY5 or early PGY6. By this time the trainee will have had exposure to clinical infectious disease through inpatient consultation services, ambulatory care, and basic microbiology.

Learning context:

The rotation will take place at the Département de Santé Publique (DSP). The main language of instruction during this rotation is French. 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 (IPPAP)

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.

Learning objectives:

The rotation specific objectives are outlined in the appended document. (Author: Dr Paul Le Guerrier, November 2016)

Trainee Assessment:
The Public health expert physician coordinating the rotation will evaluate the resident using the in-training evaluation Report (ITER – Public Health).

Author: Dr Paul Le Guerrier, Dr Makeda Semret

**Date of last revision:** October 15, 2018

**Date approved by Residency Training Committee:** October 18, 2018
Description du stage d’introduction de santé publique en prévention et contrôle des maladies infectieuses

Paul Le Guerrier
Novembre 2016

Clientèle :
- Résidents R1 de santé publique et médecine préventive.
- Externes (4e année).
- Résidents en médecine familiale
- Résident en microbiologie médicale et infectiologie ou infectiologie
- Tout autre type de résident

Durée : quatre semaines, 20 jours ouvrables

Objectifs du stage
L’objectif principal du stage vise l’acquisition de compétences de premier niveau concernant la protection de la population contre des menaces infectieuses.

Déroulement du stage
L’étudiant rencontrera plusieurs professionnels durant la première moitié de son stage pour prendre connaissance des diverses problématiques infectieuses pouvant menacer la santé de la population.

Par la suite, il effectuera des gardes de jour :
1. Garde régionale (prendre les appels du réseau de 8 h 30 à 16 h 30 les jours ouvrables);
2. Expertise-conseil TB/Infections et interventions dans la communauté
3. Expertise-conseil Vaccination/Maladies évitables par la vaccination
4. Intervention préventive auprès des personnes atteintes d’une ITS et auprès de leurs partenaires (IPPAP)

Il pourrait aussi, selon le contexte, participer à l’investigation d’une écllosion, aux enquêtes d’agrégats inusités, à l’élaboration d’outils d’enquête ou d’information pour les partenaires ou la population. Parfois, il aura l’occasion de travailler sur un mini projet de quelques jours (revue de la littérature sur un sujet d’importance pour la santé de la population, effectuer une analyse des données concernant une situation problématique, évaluer un événement, participer à un audit ou une visite d’un établissement, etc.). Finalement, il pourra également travailler sur des cas problèmes rencontrés lors des gardes qui ont été rédigés sous forme de questions / réponses permettant à l’étudiant d’assimiler des notions de bases, de
comprendre les enjeux de santé publique liés à une maladie infectieuse particulière et de découvrir les interventions requises pour la prévenir et la contrôler.

**Attendu**
Idéalement, une participation d’au moins 15 des 20 jours du stage

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**Savoirs que les résidents/externes pourront développer, perfectionner, maîtriser**

**Pour tout type de résident ou d’externe**

- **Concepts de santé publique et de protection**
  - Définir la santé publique.
  - Démontrer une compréhension des concepts suivants : état de santé des populations, inégalités en matière de santé, déterminants individuels de la santé et de la maladie, déterminants populationnels de la santé et de la maladie, protection de la santé;
  - Démontrer une compréhension de l’histoire, des structures et des interactions de la santé publique et des services de santé à l’échelle locale, provinciale, nationale et internationale.
  - Expliquer l’approche et la pratique actuelle de la santé publique et décrire ses domaines et ses nombreuses fonctions.
  - Énumérer quelques-uns des dilemmes éthiques soulevés par la protection en santé publique.
o Décrire la fonction protection de santé publique, appliquée aux maladies infectieuses au Québec ainsi que les rôles et responsabilités des acteurs.
  o Décrire les étapes utilisées pour gérer une menace biologique.
  o Maîtriser les bases de l’épidémiologie des maladies infectieuses.
    o Expliquer les étapes d’une enquête épidémiologique s’appliquant aux éclosions.

  x Enquêtes épidémiologiques
    o Décrire les responsabilités du Directeur de santé publique, principalement pour l’aspect protection (déclaration, signalement, MCI, MADO, MATO, obligations et pouvoirs du

  o Connaître le fonctionnement du secteur Prévention et contrôle des maladies infectieuses de la direction de santé publique de la région de Montréal et celle de l’équipe IIC.
  o Comprendre comment se fait une enquête épidémiologique.

  o Connaître les rôles et responsabilités des divers intervenants (ADI, infirmières/infirmiers, médecins, coordonnateur et responsable médical de l’équipe, responsable du secteur et responsable médical du secteur).
  o Savoir bien naviguer dans le sous-répertoire Outils EIS pour trouver questionnaires, lignes directrices, protocole fiche technique et autres documents nécessaires pour effectuer les enquêtes lors de la garde.
  o Connaître les exigences légales et administratives pour bien gérer un dossier MADO.
    o Savoir utiliser le DCIMI et les fiches d’appels pour consigner les données de l’enquête aux dossiers papier et électroniques.

  x Surveillance
    o Distinguer entre vigie sanitaire, vigie internationale et surveillance.

  o Connaître le processus de déclaration des MADO.
    o Connaître l’utilisation des données de surveillance des MADO.
    o Connaître le processus de surveillance pré-diagnostique.
      o Expliquer en ses propres mots l’utilisation des résultats de surveillance pré-diagnostique.

  x Connaître l’épidémiologie, le tableau clinique, le diagnostic, le traitement et les mesures de prévention pour les contacts des maladies infectieuses suivantes :
    o Les infections invasives à streptocoque du groupe A;
    o Le Neisseria meningitidis;
    o Morsures animales et rage;
    o Approches face aux zoonoses (VNO, maladie de Lyme, Zika);
    o Approches face aux enquêtes de TIA-GE
    o La légionellose;
    o Les infections respiratoires (principalement la grippe);
    o La prévention et le contrôle des infections nosocomiales;
Training Program
Infectious Diseases ∙ Medical Microbiology

- La tuberculose.
- ITSS et VIH/SIDA;
- Discuter des enjeux liés à la toxicomanie à Montréal et décrire les mesures de réduction des méfaits sur lesquelles interviennent l’équipe ITSSS.
- Connaître l’approche de santé publique face à la prophylaxie post-exposition et aux interventions préventives auprès des personnes atteintes (d’une ITSS) et de leurs partenaires (IPPAP).
- Vaccination/MEV :
  - Comprendre les bases de la vaccination;
  - Connaître les différents programmes de vaccination en vigueur au Québec; o Savoir utiliser le PIQ pour répondre à des questions de gardes;
  - L’approche face à une MEV.
- Faire un résumé du programme SERTIH.
- Connaître l’approche de santé publique face aux infections en émergence, aux MRSI et à la MVE (Ebola).

Pour les résidents en médecine familiale

- Notions de base en
  - Santé au travail
  - Santé environnementale
  - Prévention des traumatismes o Enquête de MADOs chimique o Tout-petits et jeunes
  - Santé maternelle
  - Surveillance de la population [déterminants de la santé, indicateurs socio-sanitaires, inégalités de santé, dépistage].

Compétences essentielles requises pour la gestion d’une MADO
Pour tout type de résident ou d’externe

EXPERT

En tant qu’experts médicaux, les médecins assument tous les rôles CanMEDS et s’appuient sur leur savoir médical, leurs compétences cliniques et leurs attitudes professionnelles pour dispenser des soins sécuritaires et de grande qualité centrés sur les besoins du patient. Pivot du référentiel CanMEDS, le rôle d’expert médical définit le champ de pratique clinique des médecins.

Les catégories suivantes réfèrent aux compétences essentielles requises pour la gestion d’une MADO, d’un signalement, ou d’une MCI (collecte, réalisation d’enquêtes, évaluation, analyses, formulation de recommandations et mise en application des recommandations). À la fin de leur stage, les étudiants devraient être en mesure de gérer les situations professionnelles décrites dans cette section.
**Expert médical**

**Compétences à acquérir chez les résidents ou externes faisant un stage d’introduction en protection, volet maladies infectieuses**

<table>
<thead>
<tr>
<th>Situations professionnelles</th>
<th>Savoir</th>
<th>Savoir-faire</th>
<th>Savoir-être</th>
</tr>
</thead>
</table>
| **Tous les résidents ou externes** | Notions 101 de MADO, MCI et signalement  
Loi sur la santé publique  
Notion de menace à la santé de la population  
Principes de surveillance et de vigie sanitaire  
Responsabilités légales du directeur de santé publique  
Interpréter tests de laboratoire de microbiologie et autres  
Effectuer une évaluation de risque ou une évaluation de la menace  
Identifier les enjeux de santé publique | Rechercher les informations pertinentes à une déclaration ou à un signalement  
Analyser le cas selon les critères de la définition nosologique  
Obtenir ou échanger des informations confidentielles pour évaluer la menace  
Interroger la banque locale de MADO (DCIMI)  
Déterminer la menace/le risque | Répondre avec professionnalisme rapidement et efficacement à l’attribution d’un dossier ou d’un appel du réseau  
Prudence et diligence  
Esprit d’analyse  
Rigueur scientifique  
Éthique  
Jugement clinique  
Aptitude à travailler de façon consciencieuse et méthodique |
| **Valider une déclaration de MADO, de MCI ou tout signalement et effectuer une analyse du potentiel de la menace** | Réaliser l’enquête épidémiologique  
Connaissances microbiologiques, cliniques et épidémiologiques de la maladie  
Connaître les clients et leurs | Rechercher l’information relative à la maladie et aux modes de transmission de l’agent pathogène  
Valider l’information reçue  
Savoir rédiger une fiche d’appel ou un questionnaire d’enquête  
Déterminer le risque de transmission entre | Respect de la confidentialité  
Diplomatie  
Entregent  
Persévérance  
Impartialité  
Curiosité intellectuelle |
| **Réaliser l’enquête épidémiologique** | | | |

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Date of last revision: October 21, 2018
| Porter un jugement et intervenir à la suite d’une menace confirmée | spécificités/population à risque | personne, le risque d’éclosion ou sources communes probables  
Appliquer les normes de confidentialité et d’échange d’information  
Appliquer les règles de tenue de dossier à la DSP | Écoute  
Empathie |
|---|---|---|---|
| **Porter un jugement et intervenir à la suite d’une menace confirmée** | Connaître les mesures de prévention et de contrôle applicable pour la maladie  
Connaître les partenaires et acteurs du réseau de la santé (leur rôle et responsabilité). Connaître les responsabilités légales du directeur régional de santé publique et du directeur national de santé publique | Identifier les sources d’informations permettant de bien comprendre la menace  
Évaluer le niveau de risque à la santé afin d’identifier les interventions appropriées  
Identifier les enjeux éthiques possibles  
Prendre une décision éclairée en tenant compte de l’information disponible.  
Aptitude de synthétiser l’information pour la présenter au médecin superviseur  
Adapter l’intervention et l’approche selon la clientèle  
Recommander la mise en place de mesures de prévention et de contrôle appropriées  
Établir des ententes de services avec le réseau.  
APTitudes de communication  
APTitudes à travailler en équipe et en interdisciplinarité  
COMMuniquer /présenter un cas de façon efficace et rigoureuse | Professionnalisme  
Jugement clinique  
Autonomie  
Respect de la confidentialité Diplomatie  
Efficacité  
Assurance |
| **Transmettre des recommandations de santé publique ou des consignes de vigie, de surveillance et d’intervention aux différents partenaires concernés** | Méthodes de rédaction et de publications (synthétique, scientifique)  
Responsabilités des partenaires et diverses organisations | Savoir rédiger des textes  
Travailler en interdisciplinarité  
Communiquer avec des partenaires et établir des ententes  
Identifier des stratégies de communication efficaces  
Participer à la rédaction d’un appel à la vigilance | Jugement critique  
Ouverture  
Efficacité  
Rigueur |
<table>
<thead>
<tr>
<th>Training Program</th>
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</thead>
<tbody>
<tr>
<td>Infectious Diseases ∙ Medical Microbiology</td>
</tr>
</tbody>
</table>

| Participer à l'élaboration de document visant à informer la population sur les risques ou les moyens de protection lors de menace à la santé | Principes de littératie  
Stratégies et techniques de communication  
Milieux, leur spécificité, leur langage  
Notions de marketing et d'acceptabilité sociale  
Théorie du changement | Esprit de synthèse et capacité de communication à des professionnels  
Rédiger des notes de suivi adéquates (dossier papier ou DCIMI) |
|---|---|---|
| Offrir une expertise-conseil en protection populationnelle / maladies infectieuses aux professionnels du réseau (TB / IIC / Rage / Vaccination) | Notion de menace à la santé  
de la population  
Connaissances microbiologiques, cliniques et épidémiologiques de plusieurs maladies.  
Connaître les bases immunologiques et les principes de la vaccination  
Connaissance du réseau et le rôle de nos partenaires  
Immunologie et vaccination  
Mesures de prévention et contrôle des maladies infectieuses | Déterminer le problème / la menace et les livrables attendus  
Identifier les sources d’informations permettant de bien comprendre la menace  
Capacité de réfléchir à la problématique soulevée par l’appel ou le problème de santé publique  
Aptitude de synthétiser l’information pour la présenter au médecin superviseur  
Formuler des recommandations qui tiennent la route (raisonnables, applicables, justes, efficaces)  
Saisir des notes définition du problème / recommandations / suivi sur une fiche d’appel | Respect de la confidentialité  
Diplomatie  
Impartialité  
Écoute  
Empathie  
Autonomie pour trouver des pistes de solutions - Jugement clinique |
| **Participer à la gestion d'une éclosion dans la communauté (si cela est possible durant le mois)** | **Notions de base en épidémiologie de terrain :**  
Investigation d'éclosion, analyse descriptive et préliminaire des données  
Vigie et veille sanitaire  
Savoir construire un questionnaire d’enquête  
Connaître les façons d’obtenir les informations requises  
Connaître les différentes études épidémiologiques applicables à un contexte de terrain  
Notions de base en biostatistiques  
Notions de base sur les biais  
Rôle et responsabilités des organisations partenaires  
Notion d’appel à la vigilance et d’alerte  
Enjeux organisationnels  
Milieux d’interventions | **Interpréter les données épidémiologiques ou de vigie et les résultats de laboratoire**  
Mener une entrevue téléphonique ou en personne avec doigté.  
Synthétiser l’information avec un logiciel (Excel, Word, Epi Info, etc.)  
Produire des Line-list, des tableaux et des figures.  
Analyser les données pour évaluer la menace ou la source d’infection, identifier les personnes à risques  
Capacité d’analyse et de synthèse  
Identifier et par la suite, appliquer les mesures de prévention et de contrôle appropriées pour la situation  
Adapter l’intervention en fonction de la situation (appel, lettre, intervenir sur place, conférence téléphonique, etc.) | **Gérer le stress**  
Gérer efficacement son temps  
Disponibilité  
Être rigoureux  
Respect de la confidentialité  
Diplomatie  
Entregent  
Persévérance  
Impartialité  
Curiosité intellectuelle  
Écoute  
Empathie  
Travail d’équipe  
Judgement clinique /populationnel |
### Situations professionnelles supplémentaires pour le résident en microbiologie médicale et infectiologie

(Projets spéciaux de quelques jours, une semaine)

<table>
<thead>
<tr>
<th>Savoir</th>
<th>Savoir-faire</th>
<th>Savoir-être</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fournir une expertise-conseil à la DSP, au réseau de la santé publique et à ses partenaires (en lien avec un enjeu de santé publique majeur en maladies infectieuses ou dans la prévention et le contrôle des infections en établissements)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsabilités légales des organisations / établissements de santé</td>
<td>Analyser une situation à la suite d’une demande du milieu (recherche documentaire, recherche de données, analyses épidémio-logiques de base)</td>
<td>Écoute</td>
</tr>
<tr>
<td>Rôle du CINQ et de la table régionale de concertation en infections nosocomiales</td>
<td>Bonne maîtrise des logiciels d’analyse de données</td>
<td>Rigueur</td>
</tr>
<tr>
<td>Principes avancés en prévention et contrôle des infections en établissements</td>
<td>Émettre des recommandations de santé publique, des consignes de vigie, de surveillance ou d’intervention</td>
<td>Sens critique</td>
</tr>
<tr>
<td>Connaissances avancées en MI</td>
<td>Ajuster les interventions en fonction du risque, du milieu et des intervenants</td>
<td>Leadership</td>
</tr>
<tr>
<td>Facteurs de risques</td>
<td>Répondre aux demandes de façon adaptée</td>
<td>Autonomie</td>
</tr>
<tr>
<td>Stratégies de prévention et de protection</td>
<td>Présentation claire</td>
<td>Capacité d’analyse et de synthèse</td>
</tr>
<tr>
<td>Principes de gestion de la menace ou du risque</td>
<td>Rédaction de rapport rigoureux, clair et concis</td>
<td>Jugement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sens de l’organisation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capacité à s’adapter</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aptitude en communication</td>
</tr>
</tbody>
</table>
Compétences à acquérir chez les résidents R4-5 en santé publique et médecine préventive faisant de la garde R en maladies Infectieuses

En plus de celle décrite pour les résidents R1

<table>
<thead>
<tr>
<th>Situations professionnelles</th>
<th>Savoir</th>
<th>Savoir-faire</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Prendre en charge l'enquête d’une menace et coordonner les actions visant le contrôle d’une élosion dans la collectivité ou dans un milieu (ex. : garderie, établissement de soins, restaurant)</td>
<td>Loi sur la quarantaine RSI de l’OMS Rôle et responsabilité des organisations et des partenaires Épidémiologie appliquée, notions avancées d'investigation d'éclissions et connaissances des différentes études/méthode d'enquête (cohort, cas-témoin, transversale) Méthodologie de Vigie Principes de communication en situation d’urgence Enjeux organisationnels et financiers Connaissances des milieux d’intervention</td>
<td>Interpréter les données épidémiologiques et de laboratoire Adapter l’intervention en fonction de la situation et du milieu Animer une équipe d’investigation et de gestion d'élosion Organiser les services en contexte (vaccination PE, dépistage, etc.) Si plus d’une région impliquée, mettre en œuvre des mécanismes de concertation et de coordination des partenaires Saisir efficacement les données d’une enquête Concevoir des outils de gestion de l’élosion au besoin (line-list, tableaux, outil de saisie de donnée, graphique, courbe épi, etc.) Analyser les données Rédiger des outils d’information visant la mise en place des mesures recommandées Rédiger un rapport d’investigation d’élosion Capacité à travailler en interdisciplinarité Assurer les suivis nécessaires</td>
<td>Maîtrise de soi/gestion du stress Professionnalisme Disponibilité Sens de l’observation Autonomie Leadership Travail en équipe/coopération Rigueur Capacité d’analyse et synthèse Jugement Sens de l’organisation Respect de la confidentialité</td>
</tr>
<tr>
<td>Coordonner la mise en application des mesures de prévention et de contrôle des infections dans différents contextes (événements de masse, situations d’urgence, menace importante à la santé de la population)</td>
<td>Rôle et responsabilités de SP et des partenaires en situation d’urgence Modalité de coordination des interventions en mesures d’urgence et de la sécurité civile Gestion du risque Stratégies d’interventions efficaces et sécuritaires auprès de diverses clientèles</td>
<td>Évaluer les risques pour la santé de la population en tenant compte des différents contextes Collaborer avec la sécurité civile, les autorités de quarantaine, le MSSS, le SPVM pour la gestion d’un sinistre ayant un impact sur la santé publique Travailler en partenariat Concilier l’expertise afin d’éméter des recommandations consensuelles Intégration et analyse des données Capable de bien communiquer les informations requises selon la clientèle Planifier des interventions appropriées (ex. quarantaine) Participant à la priorisation des interventions, des ressources et des étapes de déploiement pour une intervention d’urgence Bonne maîtrise des logiciels d’analyse de données Adapter les outils selon le contexte Effectuer une communication du risque adéquate Participant à l’évaluation du déroulement des événements</td>
<td>Gestion du stress Autonomie, Leadership Jugement, Sens de l’observation Sens de l’organisation</td>
</tr>
<tr>
<td>Prendre en charge / Coordonner les recommandations de santé publique ou les consignes de vigie, de surveillance et d'intervention aux différents partenaires concernés à la suite d'une intervention</td>
<td>Méthode de rédaction et de publications synthétiques  Communication des risques  Notions de littératie  Technologie de l’information et de la communication  Notions d’organisation de sites web pour le réseau de la santé  Milieux et leurs spécificités  Élaborer un appel à la vigilance</td>
<td>Élaborer des produits pour diffusion (articles, appel à la vigilance, avis de santé publique, état de situation)  Déterminer les meilleurs moyens de transmission de l’information selon le type de recommandation (en collaboration avec l’équipe des communications)  Travailler en interdisciplinarité et intersectorialité  Créer des alliances  Établir des partenariats  Utiliser des stratégies de communication efficaces  Littéracie  Marketing social</td>
<td>Esprit de synthèse  Jugement critique  Ouverture  Créativité  Éthique  Respect  Persévérance  Entregent /charisme</td>
</tr>
</tbody>
</table>
Autres compétences CanMEDS transversales

PROFESSIONNEL
En tant que professionnels, les médecins ont le devoir de promouvoir et de protéger la santé et le bien-être d’autrui, tant sur le plan individuel que collectif. Ils doivent exercer leur profession selon les normes médicales actuelles, en respectant les codes de conduite quant aux comportements qui sont exigés d’eux, tout en étant responsables envers la profession et la société. De plus, les médecins contribuent à l’autoréglementation de la profession et voient au maintien de leur santé.

Les médecins jouent un rôle essentiel dans la société en tant que professionnels responsables de la prestation de soins. Leur travail requiert la maîtrise de l’art, de la science et de l’exercice de la médecine. L’identité professionnelle du médecin est un élément fondamental de ce rôle. En effet, ce rôle de professionnel reflète les attentes de la société envers la profession, y compris la compétence clinique, l’engagement envers le maintien de la compétence, la promotion de l’intérêt public, le respect des normes éthiques, et des valeurs telles l’intégrité, l’honnêteté, l’altruisme, l’humilité, le respect de la diversité et la transparence relativement aux éventuels conflits d’intérêts. On admet généralement que, pour optimiser les soins aux patients, les médecins doivent veiller à leur propre santé et bien-être qu’à ceux de leurs collègues. Le professionnalisme des médecins constitue la base du contrat social entre la société et la profession médicale. En retour, la société reconnaît aux médecins le privilège de l’autoréglementation de leur profession, pourvu qu’ils restent redevables envers la société, la profession et eux-mêmes.

COMMUNICATEUR
En tant que communicateurs, les médecins développent des relations professionnelles avec le patient, sa famille et ses proches aidants ce qui permet l’échange d’informations essentielles à la prestation de soins de qualité.

Par la création d’une relation professionnelle centrée sur les besoins du patient, sa famille et ses proches aidants et d’une écoute active, les médecins sont capables d’identifier et analyser les symptômes qu’il présente. Ils exploitent la perspective du patient, ce qui inclut ses craintes et perceptions au sujet de la maladie, les répercussions sur sa vie et ses attentes quant à la qualité des soins prodigués par les professionnels de la santé. Ces informations permettront de mieux saisir le contexte du patient, y compris ses antécédents personnels et familiaux, son mode de vie, ses conditions de vie et son statut socioéconomique, son milieu de travail ou scolaire ainsi que d’autres facteurs psychologiques et sociaux pertinents. Une décision partagée représente l’élément clé de l’approche centrée sur les besoins du patient : celle-ci consiste à élaborer un plan de soins en collaboration avec le patient, en abordant ses problèmes médicaux et ses objectifs de santé tout en tenant compte de ses besoins, de ses valeurs et de ses préférences. Ce plan doit être appuyé par des données probantes provenant de la littérature et des lignes de pratiques reconnues.
La portée du rôle de communicateur se limite maintenant exclusivement à l’interaction entre le médecin et le patient, y compris ses proches. La communication avec d’autres collègues des professions de la santé est désormais couverte de façon explicite dans le rôle de collaborateur. On met l’accent sur une communication thérapeutique axée sur le patient.

COLLABORATEUR

En tant que collaborateurs, les médecins travaillent efficacement avec d’autres professionnels de la santé pour prodiguer des soins sécuritaires et de grande qualité centrés sur les besoins du patient.

La collaboration requiert des liens qui s’appuient sur la confiance, le respect et une prise de décision partagée mettant à contribution une diversité de personnes possédant des habiletés complémentaires et œuvrant dans l’ensemble des milieux du continuum des soins. Ceci ne peut se réaliser sans le partage des connaissances, des perspectives et des responsabilités, et la volonté d’apprendre ensemble. Au préalable, la collaboration nécessite une compréhension du rôle de chacun, la poursuite des mêmes buts et la gestion des divergences.

LEADER

En tant que leaders, les médecins veillent à assurer l’excellence des soins, à titre de cliniciens, d’administrateurs, d’érudits ou d’enseignants et contribuent ainsi, avec d’autres intervenants, à l’évolution d’un système de santé de grande qualité.

Le rôle de leader du référentiel CanMEDS décrit l’intervention du médecin dans la prise de décision partagée quant au fonctionnement et à l’évolution continue du système de soins de santé. La société s’attend à ce que les médecins exercent un leadership de collaboration et un rôle de gestion au sein du système de santé. Sur le plan systémique, les médecins contribuent à l’évolution et à la prestation de soins de santé constamment améliorés, et incitent d’autres intervenants à travailler vers cet objectif commun. Les médecins maintiennent un équilibre entre leur vie personnelle et leurs responsabilités cliniques, administratives, de recherche et d’enseignement. Ils agissent à la fois comme cliniciens, comme professionnels au sein d’équipes et comme leaders au sein du système de santé à l’échelle locale, régionale, nationale et mondiale.
PRÔNTEUR DE LA SANTÉ
En tant que promoteurs de la santé, les médecins mettent à profit leur expertise et leur influence en œuvrant avec des collectivités ou des populations de patients en vue d’améliorer la santé. Ils collaborent avec ceux qu’ils servent afin d’établir et de comprendre leurs besoins, d’être si nécessaire leur porte-parole, et de soutenir l’allocation des ressources permettant de procéder à un changement.

Les médecins reconnaissent leur responsabilité sociale. Ils doivent participer aux efforts d’amélioration de la santé et du bien-être des patients, des collectivités et des populations qu’ils servent. Ils possèdent un savoir médical et des habiletés qui leur procurent une perspective spécifique et unique. Les médecins ont également un accès privilégié au vécu et à l’expérience des patients au regard de la maladie et du système de santé. L’amélioration de la santé ne se limite pas à atténuer l’impact des maladies ou de traumatismes, mais comprend également la prévention de la maladie ainsi que la promotion et le maintien de la santé. L’amélioration de la santé englobe aussi l’équité en santé, afin de permettre aux individus et populations d’atteindre leur plein potentiel sur le plan de la santé sans être pénalisés notamment par leur race, leur apparence ethnique, leur religion, leur sexe, leur orientation sexuelle, leur âge, leur classe sociale, leur statut économique ou leur niveau de scolarisation.

Les médecins tirent parti de leur statut et de leur rôle au sein du système de santé, afin de soutenir les patients dans leur trajet de soins et de les épauler dans leurs démarches pour qu’ils aient accès aux ressources appropriées en temps voulu. Ils s’efforcent d’améliorer la qualité de leur pratique clinique et des organisations avec lesquelles ils transigent, afin de répondre aux besoins en santé des patients, des collectivités et des populations qu’ils servent. Ils favorisent le maintien en santé des collectivités et des populations en influençant ou en offrant leur appui à ceux qui influencent le système de santé, tant à l’intérieur qu’à l’extérieur des milieux cliniques.

ÉRUDIT
En tant qu’érudits, les médecins font preuve d’un engagement constant envers l’excellence dans la pratique médicale par un processus de formation continue, en enseignant à des tiers, en évaluant les données probantes et en contribuant à l’avancement de la science.

Les médecins acquièrent des habiletés en matière d’érudition afin d’améliorer leur pratique et la prestation de soins. Ils visent l’excellence en misant sur une évaluation continue des processus et des résultats de leur travail quotidien, en partageant et en comparant leurs travaux avec d’autres, et en sollicitant activement une rétroaction dans un souci de qualité et de sécurité des patients. À l’aide de multiples moyens d’apprentissage, ils s’efforcent de répondre aux besoins du patient, sa famille et ses proches aidants*, ainsi que de la société.

Les médecins s’appliquent à maitriser leur domaine d’expertise et à partager leur savoir. En tant que tenants d’un processus de formation continue, ils adoptent une démarche planifiée d’apprentissage afin de s’améliorer dans chaque rôle CanMEDS. Ils reconnaissent la nécessité d’apprendre continuellement et de devenir des modèles pour leurs pairs et autres professionnels à cet égard. En tant qu’enseignants, ils
Les médecins savent trouver des données probantes pertinentes, les évaluer au moyen de critères précis et les appliquer dans leurs activités d’érudition et leur pratique. Par leur participation à une prise de décision partagée et fondée sur des données probantes, ils reconnaissent l’existence d’incertitude dans l’exercice de leurs fonctions médicales et formulent des questions de recherche pour combler les lacunes dans les connaissances. Grâce à leurs habiletés à naviguer dans les sources d’information, ils repèrent des synthèses sur les données probantes liées à ces questions et prennent des décisions cliniques qui s’appuient sur des faits tout en tenant compte des valeurs et des préférences du patient, sa famille et ses proches aidants.

Enfin, le médecin contribue à l’application, à la diffusion, à la création et à l’essor de connaissances et de pratiques nouvelles dans le domaine de la santé et des soins de santé.

**Références**


Institut national de santé publique du Québec (INSPQ 2014). Référentiel de compétences en maladies infectieuses (ébauche du 19 juin 2014), Québec, Institut national de santé publique du Québec, 22 pages (non publié).


Infection Prevention and Control

McGill University

Postgraduate Training program in Infectious Diseases

Rotation Goals and Objectives,

McGill University Health Centre, Jewish General Hospital

GENERAL INFORMATION

Rotation overview:

Residents will need to complete a minimum of 2 one-month rotations in the clinical, laboratory and administrative aspects of infection prevention and control (IPC). This may be taken as a single 2-month block, or divided into 2 one-month rotations; residents are encouraged to do one month during PGY4 and one during PGY 5 years. Infection control training is also 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. Teaching will be supplemented in a series of small group tutorials (incorporated into the weekly academic half-days).

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 infection control team meetings and monthly infection control committee meetings, enabling them to understand the day-to-day management and decision-making process as issues arise. Residents will be expected to respond to infection control questions and provide consultations to the infection control practitioner and others on specific problems as requested by various hospital services during the rotation. This may involve carrying an infection control pager on specific occasions. Residents will be encouraged to carry out a project addressing a current, pertinent infection control problem, proposing solutions and providing a written report. The project may be related to: an infection control consultation from a specific hospital professional or area, the development of an infection control protocol for an issue where need has been identified but a protocol has not yet been written or is out-of-date, assessment of the cost-effectiveness or efficacy of some established practice, or an outbreak investigation (can be a retrospective investigation of a previous outbreak which 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).

Rotation specific objectives
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.
Training Program
Infectious Diseases ∙ Medical Microbiology

(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, meningococcemia, 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)
Training Program  
Infectious Diseases - Medical Microbiology  

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

- Develop a working relationship with and understand the role that each plays in the transmission and prevention of healthcare-associated infections.
- 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.
- Understand the need to communicate information about healthcare-associated infection risks and occurrences to patients and to their families in a sensitive and non-defensive manner.
- 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 in 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.
Training Program
Infectious Diseases • Medical Microbiology

- 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 on-going 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.
Training Program
Infectious Diseases - Medical Microbiology

- 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:

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:
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:
SHEA on line course for Infection Control and Hospital epidemiology

Trainee Assessment:

The Infection Control Medical Director supervising the rotation will provide the assessment using the in-training evaluation report (ITER - ID Infection Prevention and Control), based on
feedback from IPC coordinator and IPC practitioners. The following elements will be taken into consideration: attendance and participation at meetings and rounds (PGY4 and 5); ability to respond to IPC questions adequately as these arise (PGY4 and 5); participation in surveillance activities (PGY4 and 5); completion of an assigned IPC project (PGY5); ability to perform or describe outbreak investigation and submit a report (PGY5)

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ITER – Infectious Diseases_ Infection Control rotation

Medical Expert:
• Describes the set up and organization of an infection control program for a health care facility (PGY4)
• 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 (PGY4)
• Describes components of surveillance programs for hospital-associated infections (PGY4)
• Manages healthcare workers’ exposures (PGY4)
• Describes principles and methods of disinfection (PGY5)
• Applies knowledge in surveillance to calculate rates, compile and present surveillance data (PGY5)
• Describes approaches to process surveillance (PGY5)

Communicator:
• Conveys information to ward teams and IPC team clearly and effectively (PGY4)
• Explains healthcare associated infection risks and occurrence to patients and families in a manner that is sensitive, non-defensive, and intelligible (PGY4)
• Delivers a clear presentation about surveillance results or an intervention project related to infection control, effectively summarizing data intabular and graphic format (PGY5).

Collaborator
• Recognizes expertise of all personnel and adopts positive constructive attitude at all times (PGY4)
• Contributes knowledge and questions in inter-professional teams and committees (PGY4)
• Assumes a resourceful role during routine surveillance, audits or special projects (PGY5)
• Leader
• Manages time and prioritizes activities, balancing efficiency with learning needs (PGY4)
• Identifies opportunities for special project, and designs steps to conduct the project (PGY5)
• Implements special project and presents results to relevant stakeholders (PGY5)

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 (PGY4)
• Describes the use of appropriate laboratory screening/testing to identify healthcare-associated infections (PGY4)

Scholar
• Appraises and reviews relevant sources to respond to questions from IPC practitioners and healthcare personnel as they arise (PGY4)
Training Program
Infectious Diseases - Medical Microbiology

- Conducts appropriate review of existing literature related to special project, and presents findings of the research in a rational and comprehensive manner (PGY5)

Professional
- 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.
- Displays integrity, compassion and respect for diversity (including cultural differences in attitudes to infections and prevention that may have an impact on infection control interventions)
- Recognizes personal limitations and seeks advice and assistance when appropriate
- Recognizes 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.

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Chronic Viral Illness Services (CVIS)

McGill University

Postgraduate Training Program in Infectious Diseases

Rotation Goals and Objectives

McGill University Hospital Centre - CVIS Clinic

GENERAL INFORMATION

Rotation overview:

During this one-month rotation, residents will be actively involved in the care of people living with a variety of chronic viral illnesses. This rotation can be done during PGY4 or PGY5. Although the majority of 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.
At the end of this rotation, the resident should be able to:

**MEDICAL EXPERT**

- Describe the epidemiology of HIV infection world-wide as well as within Canada, Quebec and Montreal
- Understand the risk factors and modes for HIV acquisition
- Describe the pathogenesis of HIV infection and the clinical and laboratory manifestations during acute HIV infection
- Describe the 10-year natural history of HIV infection if antiretroviral therapy is not initiated
- Appropriately order and interpret diagnostic tests for HIV
- Recognize the clinical presentations of common opportunistic infections in PLWH and understand their management/prevention (Pneumocystis pneumonia, Toxoplasmosis, Cytomegalovirus etc.)
- Describe the 6 classes of antiretroviral medications and their mechanisms of action as they relate to the HIV life cycle
- Identify indications for antiretroviral therapy and the factors to consider when choosing a regimen tailored to an individual, according to their disease stage and prior treatment history
- Understand the toxicities associated with various classes of antiretrovirals
- Demonstrate an understanding of common drug-antiretroviral interactions
- Evaluate the risk of HIV acquisition, indications for prophylaxis (HIV Pre-Exposure Prophylaxis (PrEP) and Post-Exposure Prophylaxis (PEP)) as well as institute appropriate follow-up following HIV exposures
- Demonstrate an understanding for management of the serodiscordant couple
- Demonstrate a knowledge of the other common sexually transmitted infections (STIs) for which screening should be routinely performed (chlamydia, gonorrhea, syphilis, Hepatitis C, Hepatitis B)
- Understand the role of Therapeutic Drug Monitoring in clinical management of PLWH
- Understand the risks of developing antiretroviral resistance and methods for testing for antiretroviral resistance
- Demonstrate a general approach to management of patient with virologic failure
- Understand the risk of perinatal transmission of HIV and the management of pregnant women infected with HIV in order to reduce the risk of perinatal HIV transmission
- Evaluate patients with viral hepatitis co-infection and formulate a diagnostic and treatment approach for their HCV and/or HBV infections
- Appreciate non-infectious complications of HIV and comorbidities associated with aging (cardiovascular disease, hepatitis steatosis, renal insufficiency, osteopenia/osteoporosis, chronic lung disease, cancers); understand recommendations for screening and risk stratification specific to PLWH
- Recognize the role of vaccinations for PLWH

**COMMUNICATOR**

- Utilize 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
- Identify and explore problems to be addressed from a patient encounter effectively, including the patient’s context, responses, concerns, and preferences.
McGill
Training Program
Infectious Diseases - Medical Microbiology

- Respect diversity and difference, including but not limited to, the impact of gender, sexual orientation, religion and cultural beliefs in decision making
- Demonstrate the ability to counsel a patient with regards to benefits of antiretroviral therapy
- Initiation of antiretroviral therapy and mitigation of adverse effects
- Adherence problems
- Disclosure of HIV infection in a serodiscordant relationship
- Convey effective oral and written information about a medical encounter by maintaining clear, concise, accurate, and appropriate records of clinical encounters with rationale for plans
- Respect patient confidentiality, privacy and autonomy and recognize that patients with an infectious disease may feel vulnerable in terms of confidentiality, privacy, and autonomy
- Communicate with patients in those situations where the physician is required by law to divulge personal patient information such as a communicable infection
- Demonstrate the ability to obtain informed consent and assent, such as for HIV testing and giving immunizations

COLLABORATOR

- Work with a variety of health care professionals (e.g. other trainees, physicians, nurses, pharmacists, social workers) to help solve various individual patient problems (medical dilemmas, drug access issues, immigration difficulties etc.)
- Understand community resources available to PLWH

LEADER

- Work collaboratively with others on issues such as:
  - occupational health issues related to HIV and Hepatitis B and C exposures
  - Immunization recommendations and strategies
- Set priorities and manage time and work efficiently
- Prioritize in-patient consults to see the most ill patients first
- Participate in systemic quality process evaluation and improvement, such as patient safety initiatives (ex. drugs and therapeutics committees)
- Demonstrate awareness of the principles and practice of continuous quality improvement in health care
- Recognize and respond to misconceptions that people may have about vaccine effectiveness and safety
- Demonstrate cost-appropriate utilization of laboratory and diagnostic testing
- Participate in the planning of relevant elements of health care delivery, including clinic schedules

HEALTH ADVOCATE

- Identify vulnerable or marginalized populations, including but not limited to immigrants and others at risk for HIV, and respond appropriately

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Training Program  
Infectious Diseases - Medical Microbiology

- Understand the effect of HIV on different patient populations (women, men, immigrants, ethnic minorities, individuals with hepatitis co-infection and persons who use intravenous drugs)
- Determine a patient’s ability to access various services in the health and social systems
- Advocate on behalf of the patient in the community or on 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, community organizations, and legal aid
- Apply available knowledge regarding health promotion and disease prevention within vulnerable or marginalized populations, including but not limited to street clinics, needle exchanges, and safer sex programs
- Appreciate the role of research in the management of HIV (i.e. enabling access to HIV medications and free test services for individuals without status; early access to new effective medications)

SCHOLAR

- Formulate relevant personal learning projects
- Recognize and correct deficits in knowledge through targeted learning
- Critically appraise retrieved evidence in order to address a clinical question
- Integrate critical appraisal conclusions into clinical care
- Provide an effective presentation at CVIS MD case rounds

PROFESSIONAL

- Exhibit appropriate professional behaviors in practice, including honesty, integrity, commitment, compassion, respect, an appreciation of diversity, and altruism
- Recognize the principles and limits of patient confidentiality as defined by professional practice standards and the law, which include:
  - Confidentiality issues that are critical to the proper practice of Infectious Diseases (including HIV disclosure)
  - Communicate with patients, as appropriate, those situations where the physician may be required by law to divulge personal patient information such as a communicable infection

Learning resources:
- Reading material provided during rotation

Trainee Assessment:

The ID physician in charge of coordinating the rotation will provide the assessment using the in-training evaluation report (ITER – ID CVIS rotation), based on feedback from all staff who worked with the resident during the rotation.
Authors Dr Cecilia Costiniuk, Dr Marina Klein
Date of last revision: October 17, 2018
Date approved by Residency Training Committee: October 18, 2018
MEDICAL EXPERT

- Describes the epidemiology, modes of transmission, pathogenesis, clinical manifestations and natural history of HIV
- Selects and interprets laboratory tests for chronic viral infections
- Recognizes and manages issues related to people living with HIV (PLWH) including opportunistic infections and care of the pregnant HIV patient
- Describes the 6 classes of antiretroviral medications, mechanisms of action, toxicities, antiretroviral resistance and methods for testing for antiretroviral resistance
- Evaluates patients with viral hepatitis co-infection and formulate a diagnostic and treatment approach for their HCV and/or HBV infections
- Describes non-infectious complications of HIV and comorbidities associated with aging (cardiovascular disease, hepatitis steatosis, renal insufficiency, etc)

COMMUNICATOR

- Utilizes appropriate and sensitive interviewing techniques when exploring issues that might be sensitive (e.g., sexual practices, illegal drug use, history of trauma/violence)
- Demonstrates ability to counsel a patient with regards to benefits of ARV
- Conveys effective oral and written information about a medical encounter with rationale for plans
- Demonstrates the ability to obtain informed consent and assent, such as for HIV testing and giving immunizations

COLLABORATOR

- Interacts with other professionals in CVIS with a positive and constructive attitude, to resolve medical dilemmas, drug access issues, immigration difficulties, etc.
- Inquires about community resources available to PLWH

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

- Identifies vulnerable or marginalized populations at risk for chronic infections and responds appropriately
- Evaluates patient’s ability to access various services in the health and social systems and advocates on behalf of them (e.g., supporting the individual’s efforts to obtain
Training Program
Infectious Diseases · Medical Microbiology

affordable medication, legal assistance and others through referrals to social services, community organizations, and legal aid)

- Applies knowledge regarding health promotion and disease prevention within vulnerable or marginalized populations (e.g., needle exchanges, and safer sex programs)

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, at all times
- Demonstrates respect for diversity and difference, including impact of gender, sexual orientation, religion and cultural beliefs in decision making
- Recognizes the principles and limits of patient confidentiality as defined by professional practice standards and the law

Date last revision: October 17, 2018
Date approved by RTC: October 18, 2018
Ambulatory Clinic

McGill University

Postgraduate Training Program in Infectious Diseases

Rotation Goals and Objectives

CIUSSS-CO-Montreal – Jewish General Hospital

GENERAL INFORMATION

Rotation overview:

During this one-month rotation, trainees will have the opportunity to 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 number of infections considered of mild-moderate severity (skin and soft tissue, respiratory, urinary, and other infections).

Learning context

This rotation will be done 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; the afternoons will be spent in other ambulatory clinics including OPAT, tuberculosis clinic, chronic viral hepatitis clinic and HIV clinics at this hospital. The rotation ensures a very rich clinical exposure and the opportunity to work with all of the JGH attending staff, clinical associates, and administrative staff. Residents have the opportunity to hone their clinical acumen and learn to expedite quality care for infectious diseases cases. Trainees will also prepare a presentation at the end of their block for ID division members on a topic relating to STI and/or ambulatory care.

Rotation-specific objectives

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

MEDICAL EXPERT

- Practice infectious diseases accounting for ethical concerns arising in patient care – in particular consideration of confidentiality and obtaining informed consent for investigations and /or therapies when appropriate.
- Always consider how best to provide patient centered practice and compassionate care.
- Identification and provision of appropriate care for vulnerable patients and minority groups.
- Have a refined clinical approach to presentation of infectious diseases, including but not limited to STIs, tuberculosis infection, chronic viral illness, and infectious diseases requiring out-patient follow up.
Perform consultations effectively accounting for limitation of time, material resources and space, and human resources. A timely, complete, and precise history should be taken. A careful consideration for exposures and predisposing factors should be demonstrated.

Perform a focussed physical examination, including proficiency in genitourinary examinations where appropriate. The appropriate communication, draping, and technique are expected.

Outlining of appropriate investigative and therapeutic plans considering appropriateness, resources, utility, and cost.

Describe the microbiology, epidemiology, and pathogenesis of bacterial, viral, fungal, mycobacterial, and parasitic pathogens that cause sexually transmitted disease, as well as commonly encountered community acquired infections, and infectious diseases occurring in special hosts and populations (i.e. travellers, immigrants, immunocompromised hosts, oncology patients, pregnant women, etc).

Demonstrate the ability to differentiate between infectious disease syndromes and non-infectious disease syndromes that mimic them.

Demonstrate and discuss appropriate collection and transport of specimens. Discuss available culture, serologic, and molecular techniques available for screening and diagnosis, including their operating characteristics, advantages, and pit-falls.

Discuss serologic diagnostics in terms of types of tests available as well as limitations such as: prozone effect, Hook effect, window periods, cross-reactivity, false-positivity, and false-negativity.

Demonstrate the ability to evaluate a resolving infectious disease condition and/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.

Demonstrate expertise with antimicrobial regimens available to ambulatory patients, and prescribing therapy with precepts of antimicrobial stewardship in mind.

Demonstrate familiarity with current recommendations for the treatment of latent and active TB infections.

Demonstrate familiarity with current cARV regimens, nucleoside/nucleotide analog inhibitors, and DAAs.

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).

Identify cases and situations where there is an opportunity to help implement risk avoidance (e.g. behavioural counselling, vaccination), and mitigate further disease (e.g. PrEP, secondary prophylaxis of cellulitis, secondary prophylaxis of rheumatic fever).

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

Adequately screen a patient for latent tuberculosis and evaluate for cross reactivity of screening tests with prior BCG vaccine, and identify patients that may be anergic or provide falsely negative tests.

Institute appropriate infection control measures in the ambulatory clinic setting. This includes appropriate uses of masks, PPE, appropriate isolation of suspicious cases of communicable disease, hand hygiene, and protective coverings, cleaning and disinfection of the examining rooms.

Demonstrate knowledge of cases that require notification to Public Health authorities.
Facilitate a structured clinical encounter, welcoming input and discussion from all stakeholders.

Convey effective oral and written information about a medical encounter by maintaining clear, concise, accurate, and appropriate records of clinical encounters with rationale for plans.

Demonstrate respect for patients, their families, and their cultural, religious, and social backgrounds.

Have the patience, understanding, and appropriate terminology, to deal with patients whose mother-tongue is other than French or English. Seek out resources to help facilitate effective communication between the resident and the patient (i.e. family member, friend, translator).

Utilize 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.

Identify and explore problems to be addressed from a patient encounter effectively, including the patient’s context, responses, concerns, and preferences.

Respect diversity and difference, including but not limited to, the impact of gender, sexual orientation, religion and cultural beliefs in decision making.

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 deal with patients that do not adhere to prescribed regimens (including anti-TB medication, cARV, other anti-microbials, or vaccines).

Develop a method to disclose an unfavourable diagnosis and/or prognosis in a truthful, sensitive and caring manner.

Where necessary, and while respecting patient preference, autonomy, privacy, and confidentiality when the resident can, discuss with family members, significant-others, partners, or friends, about the medical situation the patient is facing.

Respect patient confidentiality, privacy and autonomy and recognize that patients with an infectious disease may feel vulnerable in these respects and stigmatized.

Communicate with patients in those situations where the physician is required by law to divulge personal patient information such as a communicable infection.

Discuss the patient’s responsibility to disclose to others that they have acquired or carry a communicable infectious disease.

Engage the reluctant, ambivalent or hostile patient through discussion and other strategies.

Demonstrate the ability to obtain informed consent for investigations and therapeutic modalities.

Communicate effectively with diagnostic laboratories.

COLLABORATOR

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.

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LEADER

- Describe the “walk-in” clinic model and where it’s place may lay in an overburdened health care system
- 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.
- Demonstrate awareness of the principles and practice of continuous quality improvement in health care
- Actively manage their personal schedule and consider how that impacts on activities in the clinic.
- 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)

HEALTH ADVOCATE

- 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
- Determine a patient’s ability to access various services in the health and social systems
- Advocate on behalf of the patient in the community or on 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
- 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

- Demonstrate self-directed and independent learning.
- Demonstrate learning skills that can be implemented as life long learning strategies.
- Do supplemental reading around cases that they have encountered.
- Recognize and correct deficits in knowledge through targeted learning
- Critically appraise retrieved evidence in order to address a clinical question
- Integrate critical appraisal conclusions into clinical care
Training Program
Infectious Diseases - Medical Microbiology

- Present a brief researched 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

- Demonstrate dedication to the highest quality and ethical standards
- Maintain professional relationships with patients
- Demonstrate timeliness, punctuality, and attendance at all meetings, teaching sessions and clinics – including coordination of the resident’s schedule and leaves with the clinic administration.
- Exhibit appropriate professional behaviors in practice, including honesty, integrity, commitment, compassion, respect, an appreciation of diversity, and altruism
- Recognize the principles and limits of patient confidentiality as defined by professional practice standards and the law, which include:
  - Confidentiality issues that are critical to the proper practice of Infectious Diseases
  - Communicate with patients those situations where the physician may be required by law to divulge personal patient information, such as a communicable infection
  - Appropriate disclosure and public health notification

Recommended resources:
- Textbooks of Infectious Diseases and medical Microbiology
- Reviews and other scientific publications based on cases seen during consultation service
- Sanford guide to antimicrobial therapy or other reference for infectious diseases therapeutics

Trainee Assessment:

The ID physician in charge of coordinating this rotation will provide the assessment using the in-training evaluation report (ITER – ID Ambulatory clinic), based on feedback from all other staff who worked with the resident during that rotation.

Authors: Dr Marty Teltscher & Dr Karl Weiss
Date of last revision: October 14, 2018
Date of approval by Residency Training Committee: October 18, 2018
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 focused 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

- Facilitates a structured clinical encounter, welcoming input and discussion from all stakeholders.
- Conveys effective oral and written information about a medical encounter by maintaining clear, concise, accurate, and appropriate records of clinical encounters with rationale for plans
- 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.
Training Program
Infectious Diseases • Medical Microbiology

- Champions guidelines-based and evidence-based ID practice (e.g. for vaccines, Lyme disease)

HEALTH ADVOCATE

- Councils patients on risk avoidance and preventative strategies when appropriate (e.g. behavioural counselling, vaccination)
- Identifies vulnerable patients and takes into account their ability to access various services in the health and social systems
- Advocates on behalf of the patient obtain affordable medication, legal assistance, and housing, through referrals to social services and assistance from industry partners

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 dedication to the highest quality and ethical standards
- 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
Introduction to the Laboratory/Bacteriology 1

McGill University

Postgraduate Training Program in Infectious Diseases and Medical Microbiology

Rotation Goals and Objectives

Microbiology Laboratory, Glen Site, McGill University Hospital Center (MUHC)

GENERAL INFORMATION

Rotation overview:

This rotation (referred to as Intro 1) is the very first introduction of the resident to the clinical microbiology laboratory. This rotation should be completed within the first 6 months of training. It provides an opportunity for residents to get acquainted with the overall structure and organization of the microbiology laboratory (namely the distribution of activities by “benches”), receive training in laboratory safety, introduced to bacterial identification methods, and familiarize themselves with 2 major groups of bacteria, Gram-positive cocci and 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 be provided teaching materials, and are expected to read the relevant sections in reference microbiology textbooks. A scheduling template for this rotation is provided as an appendix.

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.

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MEDICAL EXPERT

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

- 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 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 gram positive cocci:
  - Beta-hemolytic streptococci (S. pyogenes, S. agalactiae, S. dysagalactiae, S. anginosus group, including Lancefield classification), Streptococcus pneumonia and other alpha-hemolytic Streptococci, Enterococcus sp, Staphylococcus sp, Stomatococcus sp, Rothia mucilaginosa, Micrococcus sp, Leuconostoc sp, Aerococcus sp, and Pediococcus sp.
Training Program
Infectious Diseases - Medical Microbiology

- 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

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

- Develop a working relationship and understand the role that each member of the microbiology laboratory plays in the healthcare system
- Convey relevant medical and laboratory information at plate rounds and during daily culture reviews with teaching technologist
- 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
- Understand and familiarize self with different communications tools used in the microbiology laboratory, including the Laboratory Information System (LIS).
- Describe what a “critical result” is and ways of transmitting this result to health care providers.

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 working relationship with laboratory staff and other healthcare providers, and understand the role that each plays in the healthcare system
- 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

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

- Effectively manage his/her time to complete all assigned tasks in a timely manner
- 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

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**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 demands placed on the microbiology laboratory by clinicians and administrators
- Recognize the importance of appropriate laboratory testing (laboratory stewardship)
- Identify potential safety issues in the microbiology laboratory, and develop response to incidents

**SCHOLAR**

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

- 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 (e.g. CDC train), 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**

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
- Demonstrate appropriate ethical standards and respond to ethical issues as they arise
- Exhibit safe laboratory practices at all times in the laboratory
- Maintain confidentiality of laboratory information
- Handle specimens and laboratory equipment with care and respect

**Trainee Assessment**

The trainee will be assessed by the laboratory technologists as well as by the medical microbiologists during their rotation. The in-training evaluation report will be based on feedback from the teaching technologist and attending microbiologists supervising during each week (Micro C rotation schedule), as well as on their performance on quizzes during the rotations. The midway feedback will be provided by the Assistant chief technologist (teaching
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).

Authors: Micheline Parent, Dr Mohammad Alghounaim, Dr Makeda Semret
Date of revision: October 17, 2018
Date approved by the Residency Training Committee: October 18, 2018
# Training Program

**Infectious Diseases - Medical Microbiology**

## Appendix: Intro 1 Template:

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<thead>
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<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td><strong>WEEK #1</strong> AM</td>
<td>Introduction to lab and staff Safety Rules &amp; Regulation Fire Exit, shower/eye wash Sterilization</td>
<td>PTS--&gt;Reception Processing, Types of specimens, Media, Gram stain, QC</td>
<td>Basic Biochemicals &amp; QC Pyr; Cat; Oxy; Sa/aurex ;spot ind; B-Lactamase; Tube/TSI/BE/N ACL … etc</td>
<td>Academic 1/2 day</td>
<td>Microscope Kohler Phase Contrast Dark field Wet field Blood mounts Blood mounts slides</td>
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<tr>
<td></td>
<td>Safety and WHMIS (Power Point)</td>
<td>Urines, throat, Pu, sputum, stool, SBF</td>
<td>Working on specimens (KB bioch etc)</td>
<td>Finalized specimens</td>
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<tr>
<td><strong>WEEK #2</strong> BIOCH/VITEK BIOCH/VITEK UNKNOWNS(c ontd)</td>
<td>Blood Bench &amp;ID /SBF Bench(protocols)</td>
<td>AUTOMATION Vitek2; Bacti-Alert MANIPULATIO N+ QC KB/D-Test /s.aureus</td>
<td>Academic 1/2 day</td>
<td>Working on Identification chart</td>
<td>Quiz on GPC cat+ &amp; answer key</td>
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<tr>
<td></td>
<td>GPC ( Cat +) Staph &amp; Micrococcus Unknowns KB procedure and QC</td>
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<tr>
<td><strong>WEEK #3</strong> Unknowns(contin)</td>
<td>Blood Bench - &gt;gram stain and put up media+KB API/Vitek,throat bench</td>
<td>Finalize Unknowns + Blood QC S.pneumo</td>
<td>Academic 1/2 day</td>
<td>Quiz on GPC cat-&amp; answer key.</td>
<td>Working on identification chart</td>
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<td>GPC (cat-) Strep Gr A,B Viridans Enterococcus ,S.anginosus, pneumo Stomatococcus,L euconostoc etc Blood Bench</td>
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<tr>
<td><strong>WEEK #4</strong> Bench Throat ,pus deep and superficial Unknowns</td>
<td>Throats &amp; Pus Sup. Unknowns Review</td>
<td>Academic 1/2 day</td>
<td>Quiz on GPR &amp; Answer Key</td>
<td>Finalize identification charts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPR Non-spore forming and spore forming &amp; Coryne.Arcano, Abiotrophia,Nocardia ,Lactobacillus,Bacillus cereus and sp, Listeria Unknowns</td>
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</table>

**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 Science)
Training Program
Infectious Diseases · Medical Microbiology
ITER - (Med Micro) for intro/Bacteriology 1 Rotation

Medical Expert
- Applies safety procedures consistently
- Describes safety regulations and guidelines clearly and comprehensively
- Explains taxonomy, epidemiology and virulence factors of Gram positive organisms in a clear and precise manner
- Performs and correctly interprets laboratory identification tests for Gram Positive organisms
- Follows strict safety guidelines while working in the laboratory at all times.

Communicator
- Listens attentively during teaching sessions, and seeks clarifications as needed
- Discusses clinical relevance of gram positive infections during plate rounds and daily culture reviews with teaching technologist

Collaborator
- Demonstrates flexibility and motivation while working with technologist and supervising microbiologist
- Responds to requests for clinical information from technologists promptly and courteously

Leader
- Manages time effectively and completes all tasks in a timely manner
- Reviews standard operating procedures for identification of gram positive organisms for clinical pertinence and cost-effectiveness
- Understands basic concepts of quality control measures and implementation of quality assurance for gram positive organisms

Health Advocate
- Discusses relevance of testing and identification of gram positive organisms in different clinical and epidemiological contexts, including implementation of rational laboratory testing (laboratory stewardship)
- Recognizes which Gram positive infections require reporting to public health and describes measures to prevent transmission to the public

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
- Responds to questions from clinicians and other health care professionals in a manner that is helpful and mindful of own limitations
Bacteriology 2
McGill University
Postgraduate Training Program in Infectious Diseases/Microbiology
Rotation Goals and Objectives

Microbiology Laboratory, Glen Site, McGill University Hospital Center (MUHC)

GENERAL INFORMATION

Rotation overview:

This rotation (referred to as Intro 2) follows the Intro 1 rotation, and should be completed within the first 8 months of training. It provides an opportunity for residents to gain a deeper understanding of the overall structure and work flow in the microbiology laboratory, and familiarize themselves with a very large group of clinically important bacteria, the Enterobacteriacea.

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 be provided teaching materials, and are expected to read the relevant sections in reference microbiology textbooks. A template schedule is provided 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 Enterobacteriacea, 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.
Learning objectives

MEDICAL EXPERT

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

- 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 Enterobacteriacea (eg. Stool bench; Urine bench)
- Describe the taxonomy, epidemiology, life cycle and pathology of Enterobacteriacea
- Describe, perform and interpret basic laboratory identification for Enterobacteriacea
- Demonstrate ability to work unsupervised on a bench, and perform the steps required to identify “unkn0wns”
- Develop identification algorithms for the routine isolation and identification of medically important Enterobacteriacea. 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 Enterobacteriacea.

COMMUNICATOR

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

- Convey relevant medical and laboratory information at plate rounds and during daily culture reviews with teaching technologist
- 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

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 working relationship with laboratory staff and other healthcare providers, and understand the role that each plays in the healthcare system

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Training Program
Infectious Diseases - Medical Microbiology

- 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

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

- Effectively manage his/her time to complete all assigned tasks in a timely manner
- 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
- Familiarize him/herself with aspects of lab management and quality assurance by participating in management meetings

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 demands placed on the microbiology laboratory by clinicians and administrators
- Describe the importance of appropriate laboratory testing (laboratory stewardship)
- Identify potential safety issues in the microbiology laboratory, and develop response to incidents

SCHOLAR

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

- 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 (e.g. CDC train), 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

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
- Demonstrate appropriate ethical standards and respond to ethical issues as they arise
Training Program
Infectious Diseases - Medical Microbiology

- Exhibit safe laboratory practices at all times in the laboratory
- Maintain confidentiality of laboratory information
- Handle specimens and laboratory equipment with care and respect

Trainee Assessment

The trainee will be assessed by the laboratory technologists as well as by the medical microbiologists during their rotation. The in-training evaluation report will be based on feedback from the teaching technologist and attending microbiologists supervising during each week (Micro C rotation schedule), as well as on 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 but the medical microbiologist supervising during the 4th week of the rotation.

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).

Authors: Micheline Parent, Dr Mohammad Alghounaim, Dr Makeda Semret
Date of revision: October 17, 2018
Date approved by the Residency Training Committee: October 18, 2018
# Training Program
**Infectious Diseases - Medical Microbiology**

**Appendix: Template Intro 2**

<table>
<thead>
<tr>
<th></th>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
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<tbody>
<tr>
<td>WEEK 1</td>
<td>Unknowns (12 Enterob and Multiresistants)</td>
<td>Unknowns contd Pus bench</td>
<td>Unknowns contd Pus bench</td>
<td>Academic 1/2 day Old and new pus</td>
<td>Finalize unknowns</td>
</tr>
<tr>
<td></td>
<td>Pus Deep &amp; Super Bench. Set up Bioch and Vitek and KB</td>
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<td></td>
<td>Quiz</td>
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<tr>
<td>WEEK 2</td>
<td>Unknowns (12 Lact neg enterobacteriacea)</td>
<td>Unknowns contd Resp bench</td>
<td>Unknowns contd Resp bench</td>
<td>Academic 1/2 day</td>
<td>Finalize unknowns</td>
</tr>
<tr>
<td></td>
<td>Resp Bench</td>
<td></td>
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<td>Quiz</td>
</tr>
<tr>
<td>WEEK 3</td>
<td>Unknowns (stool pathogens)</td>
<td>Unknowns contd Urine bench</td>
<td>Unknowns cont’d Urine bench</td>
<td>Academic 1/2 day</td>
<td>Finalize unknowns</td>
</tr>
<tr>
<td></td>
<td>Urine bench</td>
<td></td>
<td></td>
<td></td>
<td>Quiz</td>
</tr>
<tr>
<td>WEEK 4</td>
<td>Multiresustant Enterobacteriacea</td>
<td>MHT TIC KPC plates</td>
<td>MHT Stool bench</td>
<td>Academic 1/2 day</td>
<td>Finalize stool bench</td>
</tr>
<tr>
<td></td>
<td>Discuss INSPQ document 2022</td>
<td>Stool bench</td>
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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
ITER - (Med Micro) for Intro 2 (Bacteriology - enterobacteriaeace) Rotation

Medical Expert

- Describes rationale behind media selection, processing and workflow of urine and stool benches clearly and comprehensively
- Explains taxonomy, epidemiology and virulence factors of enterobacteriaeace clearly and comprehensively
- Performs and accurately interprets laboratory identification tests for Enterobacteriaeace
- Develops own identification chart for enterobacteriaeace
- Completes in-training quizzes and exam

Communicator

- Listens attentively in teaching sessions and seeks clarification as needed
- Participates actively during culture reviews with teaching technologist(s)
- Discusses clinical relevance of gram negative organisms during daily culture reviews on stool and urine bench

Collaborator

- Demonstrates flexibility, punctuality and motivation when working with teaching technologist and microbiology supervisor
- Demonstrates willingness to perform selected phenotypic tests during routine work on urine and stool benches
- Responds to questions from laboratory staff on limitations and clinical pertinence of conventional testing methods for enterobacteriaeace in a thoughtful manner

Leader

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

Health Advocate

- Identifies infections due to enterobacteriaeace that pose public health risks and possible methods of reporting to clinician and to public health
- Discusses relevance of testing and identification of enterobacteriaeace in different clinical and epidemiological contexts, including implementation of rational laboratory testing (laboratory stewardship)

Scholar

- Understands basic concepts of quality control measures and implementation of quality assurance for enterobacteriaeace
- 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
- Responds to questions from clinicians and other health care professionals in a manner that is helpful and mindful of own limitations

Date of revision: September 28, 2018
Date of approval by Residency Training Committee: October 18, 2018
Bacteriology 3
McGill University
Postgraduate Training Program in Infectious Diseases/Microbiology

Rotation Goals and Objectives

Microbiology Laboratory, Glen Site, McGill University Hospital Center (MUHC)

GENERAL INFORMATION

Rotation overview:
This 1-month rotation (referred to as Intro 3) follows the Intro 1 and 2 rotations, and should be completed within the first 10 months of training. 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 be provided teaching materials, 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

Learning objectives
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:

- Convey relevant medical and laboratory information at plate rounds and during daily culture reviews with teaching technologist
- 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
- Describe the limits of laboratory testing of sputum samples and rationale behind qualitative screening of such specimens to clinicians
Training Program  
Infectious Diseases - Medical Microbiology

LEADER

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

- Effectively manage his/her time to complete all assigned tasks in a timely manner
- 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
- Familiarize him/herself with aspects of lab management and quality assurance by participating in management meeting
- 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
- Demonstrate appropriate ethical standards and respond to ethical issues as they arise
- Exhibit safe laboratory practices at all times in the laboratory
- Maintain confidentiality of laboratory information
Trainee Assessment

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 medical microbiologist supervising during the 4th week of the rotation will present the final evaluation to the trainee at the end of their 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).

Authors: Dr Earl Rubin, Dr Tien Nguyen, Micheline Parent, Dr Mohammad Alghounaim, Dr Makeda Semret
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### Training Program
**Infectious Diseases · Medical Microbiology**

**Appendix: template Intro 3**

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<th>WEEK #1</th>
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<tbody>
<tr>
<td></td>
<td>Working on Resp pathogens &amp; Fastidious GNR (8 Unknowns) Resp bench reading and screening sputum gram stain</td>
<td>Cont. Unknowns &amp; Resp Bench</td>
<td>Cont. Unknowns &amp; Resp Bench</td>
<td>Academic 1/2 day</td>
<td>Quiz and finalize unknowns</td>
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<tr>
<th>WEEK #2</th>
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<th>THURSDAY</th>
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<tbody>
<tr>
<td></td>
<td>Bench: Cystic Fibrosis/Resp New specimens ( 8 Unknowns (Non Fermenter to identify(Bioch.Vite k and MS)</td>
<td>Cont unknowns Resp bench</td>
<td>Cont unknowns Resp bench</td>
<td>Academic 1/2 day Resp bench</td>
<td>Finalize unknowns</td>
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<tr>
<th>WEEK #3</th>
<th>MONDAY</th>
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<tbody>
<tr>
<td></td>
<td>Unknowns 9 (Non fermenter and Neisseria sp)</td>
<td>Cont unknowns Genital bench</td>
<td>Cont unknowns Genital bench</td>
<td>Academic 1/2 day Genital bench</td>
<td>Finalize unknowns</td>
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<th>WEEK #4</th>
<th>MONDAY</th>
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<tr>
<td></td>
<td>KPC screening Bench Pus sup Blood &amp; SBF bench</td>
<td>Cont unknowns Blood &amp; SBF bench</td>
<td>Cont unknowns Blood &amp; SBF bench</td>
<td>Academic 1/2 day Blood &amp; SBF bench</td>
<td>Finalize flow charts Quiz</td>
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**Documents**
CSMLS FASTIDIOUS GRAM NEGATIVE BACILLI IDENTIFICATION OF PSEUDOMONAS SP AND OTHER Non-Glucose Fermenter (UK Standards Microbiology)
Training Program
Infectious Diseases - Medical Microbiology
1TER - (Med Micro) for Bacteriology 3 (chap 3)

Medical Expert
- Describes rationale behind media selection, processing and workflow of respiratory (sputum, BAL, trach, Cystic Fibrosis) benches, clearly and comprehensively
- Explains taxonomy, epidemiology and virulence factors of pseudomonas, and other glucose non-fermenters clearly and comprehensively
- Performs and accurately interprets laboratory identification tests for non-fermenters
- Develops own identification chart for non-fermenters
- Completes in-training quizzes and exam successfully

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

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

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 clinical and epidemiological contexts (eg: COPD, CF, bronchiectasis, ..)

Scholar
- Reviews standard operating procedures for identification of non-fermenters for clinical pertinence
- 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

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Training Program
Infectious Diseases · Medical Microbiology

- Responds to questions from clinicians and other health care professionals in a manner that is helpful and mindful of own limitations
- Follows strict safety guidelines while working in the laboratory at all times.
GENERAL INFORMATION

Rotation overview:
This 2-week rotation involves all laboratory aspects of anaerobic bacteriology from specimen collection to result reporting. In addition, clinical aspects of medical microbiology pertaining to anaerobes will be reviewed including epidemiology, diagnosis, disease manifestations and treatment of anaerobic infections. While some aspects of anaerobic bacteriology are reviewed during other core microbiology rotations such as Introduction to Bacteriology 1, 2 and 3, the fundamental notions of anaerobic bacteriology are consolidated during this rotation.

Learning context:
This rotation will take place at the MUHC Glen site (Microbiology Laboratory, E05). This rotation will be done after successful completion of the Introductory Bacteriology 1,2,3 rotations, and should be completed within the first 14 months of training.
In addition to attending teaching rounds and participating in organizational lab meetings, residents will work at the benches alongside technologists to learn the guiding principles of diagnostic anaerobic microbiology, specimen processing, microscopy, culture and microbial identification. Residents will meet with the attending microbiologist on a weekly basis to review what has been learned.

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

MEDICAL EXPERT

- Describe the epidemiology and clinical significance of anaerobic bacteria
- Recognize the makeup of the human normal flora and when an anaerobe is considered pathogenic
- Identify which specimens are appropriate for anaerobic culture and which should be rejected
- Describe the techniques of specimen collection, transport and procedure as it pertains to anaerobic bacteria and their survival
• Identify plating mechanisms, various media required and atmospheric systems available for isolation of anaerobic bacteria

• Acquire basic skills in laboratory manipulation and propagation of anaerobic bacteria

• Describe the concept of aerotolerance testing and how to establish the presence of anaerobes in culture

• Recognize the colony morphology for the major groups and most common anaerobes isolated i.e. Bacteroides sp., Fusobacteria, Clostridium perfringens, Actinomyces, C. difficile etc

• Perform basic identification techniques such as gram stain, antibiotic containing disks, nitrate and SPS disks, the spot indole test, the reverse CAMP, lipase/lecithinase/naegler reaction and the use of the EYA.

☐ Describe the approaches to anaerobe identification and their differences from aerobic bacteria

☐ Recognize the basis for selective and non-selective growth media for anaerobe isolation

☐ Familiarize themselves with the basic categories of pathogenic anaerobes. Identify common anaerobic species, differential growth and commercial identification kits

☐ Describe the utility and limitation of identifying anaerobic bacteria

☐ Develop an organized clinical approach to the diagnosis and management of diseases caused by anaerobic bacteria

☐ Familiarize themselves with the common antimicrobials which have activity against anaerobic bacteria.

• Describe the various definitive identification systems available for anaerobic organisms

• Recognize the disk patterns for the B.fragilis group, B. urealyticus, Fusobacteria, pigmented bacteroides etc

• Describe the diagnostic algorithms available for the pathogenic anaerobic GNR, GPR, GNC and GPC.

• Describe the use of GLC for identifying organisms

• Explain the different testing methods available for C. difficile and the advantages and shortcomings of each

• Differentiate which organisms require susceptibility testing and which methodologies for susceptibility testing are recommended

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Training Program
Infectious Diseases - Medical Microbiology

- Explain the processes involved in generating a microbiology result from specimen reception to final release of the report
- Identify the quality controls used in anaerobic bacteriology
- Demonstrate how to develop guidelines for interpretation and reporting of mixed cultures

SCHOLAR

- Assimilate the basic and clinical sciences knowledge necessary to understand and provide effective consultation regarding anaerobic bacteriology
- Obtain and critically review scientific resources and other clinical evidence regarding the performance and pertinence of anaerobic cultures
- Utilize an analytic investigative approach to address clinical questions regarding anaerobic testing

LEADER

- Work with clinicians, other health care professionals, administrators and hospital/community stakeholders to determine how to best provide anaerobic bacteriology services to various populations
- Critically review anaerobic culture procedures and tests and their standard operating procedures with regard to pre-analytic, analytic and post-analytic factors
- Evaluate current or new methods for analytical performance, clinical pertinence and cost-effectiveness
- Establish quality control measures and implement quality assurance for anaerobic cultures
- Utilize internal and external proficiency-testing results for anaerobic cultures to improve laboratory practice
- Utilize errors or incidents at the pre-analytic, analytic and post-analytic levels to identify process improvements that increase patient safety and minimize the likelihood of medical errors

COMMUNICATOR

- Interact effectively with clinician users of the microbiology laboratory, with a particular focus on the graded approach to result reporting from routine Laboratory Information System (LIS) results to direct physician contact.
- Effectively convey critical laboratory information to other healthcare providers and ensure the significance of culture results are understandable and usable.

HEALTH ADVOCATE

- Describe the importance of providing reliable, cost-effective and timely anaerobic culture results in clinical decision-making
- Explain the impact of appropriate anaerobic cultures on individual patients and on public health

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Infectious Diseases - Medical Microbiology

- Advise clinicians and other health care professionals on the merits and importance of anaerobic cultures

COLLABORATOR

- Work with technologists, supervisors, health care professionals and others to evaluate, select and implement anaerobic bacteriology test methods
- Work with clinicians to ensure appropriate specimen collection and timely transport
- Work with reference laboratories and public health laboratories to obtain appropriate and timely supplementary or confirmatory tests as necessitated by initial anaerobic cultures

PROFESSIONAL

- Engage with colleagues, clinicians, laboratory personnel, other health care professionals and external laboratories in a respectful and courteous manner throughout the process of obtaining, reviewing, interpreting and communicating anaerobic bacteriology results
- Respond to questions regarding anaerobic test results in a manner that maintains patient confidentiality and respects ethical and privacy issues
- Follow strict safety guidelines while working in the laboratory.
- Handle specimens and laboratory equipment with care and respect

Trainee Assessment
Residents will be assessed based on the criteria set out in the ITER - (Med Micro/ID) Anaerobic Bacteriology Rotation.

Recommended Reading
- Reading material provided by the Teaching technologist
- Relevant chapter in textbook of medical microbiology (ASM manual, Koneman, Murray, or other)
ITER - (Med Micro) for Anaerobic Bacteriology Rotation

Medical Expert

- Interprets the principles and practice of anaerobic bacteriology, including selection of appropriate specimens, performance of different methods for identification and susceptibility testing and reporting of results
- Communicates limitations of different testing methods
- Applies principles of quality control and quality assurance to anaerobic bacteriology

Scholar

- Evaluates clinical utility of different testing methods for anaerobes through critical review of scientific resources
- Investigates clinical questions on anaerobic infections utilizing available resources

Leader

- Reviews standard operating procedures of anaerobic bacteriology for clinical pertinence and cost-effectiveness
- Utilizes internal and external proficiency testing results for anaerobic bacteriology to improve laboratory practices
- Identifies errors or incidents at the pre-analytic, analytic and post-analytic levels to identify process improvements
- Understands how to establish quality control measures and implement quality assurance for anaerobic tests

Communicator

- Advises clinicians and other health care workers regarding appropriate/optimal specimens and interpretation of anaerobic culture results in the appropriate clinical context
- Responds to questions from laboratory staff on limitations and clinical pertinence of conventional anaerobic testing methods

Health Advocate

- Discusses the impact of anaerobic testing on clinical management of anaerobic infections

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- Recognizes potential public health risks associated with certain anaerobic infections (clostridium difficile, anthrax, etc) and describes approaches to contain/mitigate risk
- Recommends cost-effective and clinically pertinent strategies for anaerobic testing in the diagnostic laboratory

Collaborator

- Demonstrates flexibility and efficiency while working with technologists and rotation supervisor
- Demonstrates helpfulness by responding to clinicians’ queries regarding results of patient testing
- Communicates with reference/public health laboratories to obtain appropriate and timely supplementary/confirmatory tests as necessitated by initial culture results

Professional

- Engages with colleagues, clinicians, laboratory personnel, other health care professionals and external laboratories in a respectful and courteous manner throughout the rotation
- Responds to questions regarding anaerobic culture results in a manner that maintains patient confidentiality and respects ethical and privacy issue
- Follows strict safety guidelines while working in the laboratory at all times.

Date revised: October 17, 2018
Date approved by Residency Training Committee: October 18, 2018
GENERAL INFORMATION

Rotation overview

This rotation involves 4 weeks of training in the theoretical aspects of antimicrobial resistance and the practical approach to susceptibility testing in the clinical microbiology laboratory. Although the resident will have been exposed to aspects of susceptibility testing during the introductory bacteriology rotations, core notions of antimicrobial resistance and susceptibility testing will be consolidated during this rotation.

Learning context:

This rotation will take place at the MUHC Glen site Clinical Microbiology lab (E05). This rotation should take place after successful completion of introductory bacteriology 1,2,3, anaerobic bacteriology, and molecular microbiology, and should be completed during the last year of training. The rotation consists of a combination of laboratory practice, self-study of assigned readings with accompanying study questions, and one-on-one sessions with the attending microbiologist. A formative examination will take place in the final week. The resident will meet with the Microbiologist at the beginning of the rotation to plan the schedule of this rotation and organize discussion/teaching sessions. The resident is also expected to prepare and present at least one teaching session to members of the bacteriology laboratory on a topic related to antimicrobial resistance (mechanisms of resistance, clinical implications of AMR, or other topic) sometime near the end of his/her rotation. The resident will be working with the technical teaching coordinator and supervised by the attending microbiologist.

Learning objectives:

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

MEDICAL EXPERT

- Demonstrate a thorough understanding of the basic mechanisms of antimicrobial resistance across all important human pathogens
- Describe the multi-drug-resistant organisms (MDRO) of specific clinical and public health concern and resistance mechanisms for the common MDROs
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- Perform and interpret standard phenotypic susceptibility tests (Kirby Bauer and E-tests) for common human pathogens
- Recognize the principles and main applications of less commonly utilized used susceptibility testing methods such as antimicrobial synergy assays (Time-kill assays, checkerboard assay), and their limitations
- Describe the processes involved in generating an antibiotic susceptibility test (AST) report from specimen reception to final release of the report
- Explain the utility and limitations of the performance of international susceptibility standards for human pathogens
- Develop an organized clinical approach to screening for multi-drug resistant organisms in the healthcare setting
- Describe the principles involved in generating a cumulative institutional antibiogram

COMMUNICATOR

- Recognize the importance of working closely with related services (infection control, antimicrobial stewardship, infectious diseases service, and others) to provide timely notifications of drug-resistant organisms and susceptibility trends over time
- Discuss the pros/cons of different AST reporting strategies for antimicrobial stewardship (eg: selective versus cascading reporting of antimicrobial susceptibility results)
- Convey clear and relevant information to laboratory staff during topic presentation on AMR, in a manner that is positive and respectful
- Address challenges and questions with the attending microbiologist effectively through respectful dialogue and thorough preparation of reading materials

COLLABORATOR

- Propose an overall approach to susceptibility testing that brings together clinicians, infection prevention and control, public health and microbiology
- Develop strategies to perform AST assays in a logical, cost-effective and time-efficient manner

LEADER

- Identify the needs of the clinicians (end users)
- Describe the elements (pre-analytical, analytical and post-analytical) that factor into the selection of different technologies and methods for susceptibility testing
- Describe the design and implementation of comparative evaluations of new vs previous “gold standards”, including evaluations of work flow and technical time in relation to proposed and existing technologies.
- Understand the complexities of balancing the cost of new AST technologies with their potential benefits and be prepared to support their decisions
- Understand the importance and use of appropriate quality control strains, and the design of proficiency testing programs established by Provincial and National laboratories.

SCHOLAR

- Critically review the AST protocol, in the context of new publications and developments in the field (evaluate medical literature and evidence relating to AMR mechanisms,
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- Facilitate the learning of other health professionals by identifying their learning needs, and demonstrating effective lecture or presentation
- Contribute to writing or provide a critical appraisal of the institutional protocol or guideline on antimicrobial susceptibility testing
- Lead the discussion in the core teaching sessions devoted to each of the MDRO encountered with clinical and public health relevance

PROFESSIONAL

- Maintain medical professionalism in their interactions with laboratory technologists, other health care providers and hospital management
- Demonstrate a commitment to the highest quality of practice and assurance of laboratory safety in AST
- Demonstrate self-awareness of limitations of ability and knowledge, and request assistance when appropriate and necessary
- Conduct him/herself in a professional manner at all times, demonstrating consideration for the benefit of the laboratory personnel and the health system in general
- Demonstrate appropriate flexibility and acknowledge the possibility of errors in susceptibility testing, and understand the measures to address them.
- Demonstrate knowledge of, assure implementation and compliance with the international guidelines and laboratory accreditation procedures for susceptibility testing
- Be responsive to health care professionals and stakeholders that request assistance.

HEALTH ADVOCATE

- Identify determinants of health particular to individual patients that will influence the emergence and spread of MDRO (eg. Antimicrobial susceptibility testing for special hosts)
- Identify opportunities for advocacy on rational laboratory testing (laboratory stewardship) and susceptibility testing (for eg: educating hospital staff on appropriate requests, selective reporting, etc)
- Identify factors (policies, regulations, practices, behaviors) involved in sub-optimal or irrational susceptibility testing for clinical and for screening specimens

Trainee Assessment
The resident will have a longitudinal in-training evaluation from the attending microbiologist(s), with feedback from the teaching coordinator.

Schedule:
The rotation is divided as follows with suggested readings each week:

Week 1: Basic Concepts in Antimicrobial Resistance (Evolutionary and clinical Considerations)
Weeks 2 and 3: Specific Mechanisms of Resistance, and common methods for detection and screening
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Week 4: The Role of the Clinical Laboratory in the identification of Antimicrobial Resistance, including the setting and revision of susceptibility testing techniques and susceptibility breakpoints

Resources
1. Assigned reading material provided at the start of the rotation
2. CLSI Guidelines.
   a) M100 - Performance standards for antimicrobial susceptibility testing: Twenty-Eights informational supplement. (Published annually) January 2018.
   d) M11-A8 Methods for Antimicrobial Susceptibility Testing of Anaerobic Bacteria, 8th Edition
4. Mandell et al. Principles and practice of infectious diseases, Chapter 18
5. Murray et al. ASM Manual of clinical microbiology, Chapters 69-75

Authors: Micheline Parent, Dr. Hugh G. Robson, Dr Alexander Lawandi, Dr Makeda Semret
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Medical expert

- Describes basic mechanisms of AMR for common MDROs of clinical and public health concern
- Performs and correctly interprets standard phenotypic ASTs
- Appraises AST reports generated manually and through the use of automated methods
- Describes principles, limitations and main applications of less commonly utilized used AST methods
- Explains principles involved in generating a cumulative institutional antibiogram, and international susceptibility standards for human pathogens
- Achieves score of >70% on quiz/examination at end of rotation

Scholar

- Reviews AST protocol critically and suggests improvements based on scientific updates and guidelines
- Identifies errors/incidents or other opportunities to conduct literature review on aspects of antimicrobial resistance
- Leads discussion in the core teaching sessions on the MDRO with public health relevance

Collaborator

- Engages with technologists and microbiologist positively and pro-actively
- Responds to technical and other queries from clinicians, staff and other stakeholders in a thoughtful manner
- Demonstrates punctuality and flexibility in scheduling teaching sessions with technologist and microbiologist
- Participates in Antimicrobial Stewardship committee meetings

Communicator

- Seeks clarification from laboratory staff and microbiologist on procedures and policies, in a clear and thoughtful manner
- Presents summary of readings/litterature review to attending staff and technologists in a clear and concise manner
- Conveys relevant and precise information to lab staff and to clinicians calling for results

Leader
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- Identifies needs of clinicians (end-users) and other stakeholders such as Antimicrobial Stewardship Programs and Infection Prevention and Control departments regarding AST
- Discusses different AST reporting strategies for antimicrobial stewardship
- Describes the design and implementation of comparative evaluations of AST methods
- Explains the design and implementation of proficiency testing programs

Health Advocate

- Responds to clinical services for timely notifications of MDRO
- Identifies determinants of health particular to individual patients that will influence emergence and spread of MDROs
- Identifies opportunities for advocacy on rational laboratory testing (laboratory stewardship) and factors involved in sub-optimal or irrational susceptibility testing

Professional

- Demonstrates respectful and considerate attitude in all interactions with laboratory and other staff
- Complies with safe laboratory practices at all times
- Aware of limitations and seeks feedback when appropriate
Mycobacteriology

McGill University

Postgraduate Training program in Medical Microbiology

Rotation Goals and Objectives

Microbiology Laboratory, Glen Site, McGill University Hospital Center (MUHC)

GENERAL INFORMATION

Rotation overview:

This rotation involves 1 month of training in laboratory aspects of mycobacteriology, encompassing all aspects of mycobacteriology from pre-analytic matters (i.e. specimen collection) through laboratory analysis to post-analytic issues (i.e. result reporting to public health responsibilities). In addition, clinical aspects of tuberculosis (TB) and other mycobacterial diseases will be reviewed including epidemiology, diagnosis, disease manifestations, treatment and prevention.

Learning context:

This rotation will take place at the MUHC Glen site, in the Mycobacteriology lab, which is part of the E-05 Clinical Microbiology lab.

The fundamental activities and duties will be visiting the level 2 and level 3 section of the mycobacteriology lab, learning the different classical, molecular and immunological tests used to secure a diagnosis of active tuberculosis or of latent TB infection. Residents will also learn the principles governing level 3 containment labs.

The resident will be supervised by Dr. Marcel Behr and will be working with the technical coordinator for the Mycobacteriology section, Lucie Leveille.

Learning objectives

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

MEDICAL EXPERT

- Describe the epidemiology, natural reservoirs and mechanisms of pathogenicity for the major mycobacterial species encountered in clinical medicine (R4-5 IDMM)
- Describe the common anti-mycobacterial agents, their usages, mechanisms of action and toxicities (R4-5 IDMM)
- Recognize the utility and limitation of nucleic-acid based for mycobacteria (R4 IDMM)
identify the utility and limitation of immunologic tests, such as the tuberculin skin test and interferon-gamma release assays, for diagnosis of mycobacterial infection (R4 IDMM)

• Develop an organized clinical approach to the diagnosis and management of mycobacterial diseases, especially tuberculosis. (R4 IDMM)

• Describe the steps involved in generating a mycobacteriology result from specimen reception to final release of the report (R5 IDMM)

• Describe quality assessment process for mycobacteriology (R5 IDMM)

• Perform microscopy for rapid diagnosis of mycobacterial infection and describe respective roles of light and fluorescent microscopy (R5 IDMM)

• Identify and describe media used to isolate mycobacteria (R5 IDMM)

• Demonstrate understanding of phenotypic and genetic approaches to mycobacterial identification;

• Identify when speciation and sub-species information is indicated and when this is not pertinent for patient care (R5 IDMM)

• Describe the basis for anti-mycobacterial susceptibility testing (R5 IDMM)

• Identify and implement appropriate preventative measures that are relevant to level 2 and level 3 laboratory environments (R5 IDMM)

COMMUNICATOR

• Develop a strategy for interaction with clinician users of the TB laboratory; in particular understand the graded approach to result reporting, from routine LIS results to necessity of direct physician contact.

• Demonstrate ability to convey critical pertinent information to 1) ensure patients provide appropriate samples to the laboratory and 2) ensure culture results are understandable and usable by the clinicians.

• Communicate knowledge gained during rotation concisely and clearly in the context of one-on-one sessions with the attending microbiologist (expert in mycobacteriology)

• Communicate the findings of the lab management project as detailed below

COLLABORATOR

• Propose an overall approach to TB diagnosis that brings together the various stakeholders (clinicians, Infection Control and Prevention, Public Health, Microbiology)

• Ensure that the various assays available are performed in a logical and timely manner

• Ensure effective communication to all stakeholders

• Develop a strategy for interaction with clinician users of the TB laboratory.
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LEADER

- Identify the end-user’s needs for mycobacteriology
- Identify the levels of service that are available, and how this relates to different laboratory settings within the hospital network.
- Determine the required workload, cost and personnel requirements for each of these levels of service
- Quantify available resources with respect to personnel, budget and time
- Synthesize and develop an implementation plan for a new technique that might be introduced into the lab.

HEALTH ADVOCATE

- Implement appropriate laboratory testing to reduce unnecessary tests and costs and to maximize the generation of clinically useful patient results
- Implement the Quantiferon protocol
- Understand the complexities of balancing the cost of new diagnostic technologies with their potential benefits and be prepared to support their decisions

SCHOLAR

- Critically review the mycobacteriology protocol, in the context of new publications and developments in the field
- Lead the discussion in the core teaching sessions devoted to each of the principle species of mycobacteria that are encountered clinically
- Work on a research project which would have been previously arranged with the attending mycobacteriologist

PROFESSIONAL

- Maintain medical professionalism in their interactions with patients, other health care providers and laboratory staff
- Follow laboratory safety guidelines strictly and at all times
- Recognize that the results of mycobacterial testing can be perceived as alarming by certain members of the health care team

Training resources:
- Textbook of medical microbiology (ASM manual, Koneman, Murray, or other)
- Published studies/reviews and other reading material will be suggested during the rotation
Trainee Assessment
The supervising medical microbiologist will evaluate the trainee during their rotation, with feedback from mycobacteriology laboratory technologists and using the specific In-training Evaluation Report (ITER) for this rotation

Author: Dr Marcel Behr
Date of last revision: October 8, 2018
Date approved by the Residency Training Committee: October 18, 2018
ITER - (Med Micro) Med Micro for Mycobacteriology Rotation

Medical Expert
- Describes principles and applications of mycobacterial detection assays (microscopy, NAAT, culture, immunologic assays)
- Selects, interprets and communicates results of mycobacterial tests appropriately and accurately
- Describes/lists analytic, pre-analytic and post-analytic factors that impact mycobacterial test performance and reporting
- Describes principles of QC and QA to mycobacterial tests
- Describes evaluation of mycobacterial testing methods for analytical performance, clinical utility and cost-effectiveness

Scholar
- Obtains and critically reviews scientific resources on performance and pertinence of mycobacterial tests or on clinical questions related to mycobacteriology
- Addresses clinical questions regarding mycobacterial infections using an analytic investigatory approach

Leader
- Schedules teaching sessions with staff ahead of time and arrives well prepared with summary of reading and questions
- Recognizes own limits and seeks advice/help from staff appropriately
- Utilizes test results, errors or incidents at the pre-analytic, analytic and post-analytic levels to identify process improvements that increase patient safety and minimize the likelihood of medical errors

Communicator
- Conveys management approach in a clear and intelligible manner (written and verbal)
- Participates actively during teachings sessions
- Responds to questions from clinicians and lab staff in a manner that is both helpful and intelligible

Health Advocate
- Describes the impact of mycobacterial infections on individual patients and on public health

Collaborator
- Interacts with technologists, supervisors, clinicians, and all stakeholders in a positive manner
- Complies with laboratory safety guidelines scrupulously at all times, and demonstrates concern for safety for all staff

Professional
- Engages with all colleagues and staff in a respectful and courteous manner
- Handles all specimens and laboratory equipment with care and respect at all times
- Maintains patient confidentiality and respects ethical and privacy issues
Mycology

McGill University

Postgraduate Training program in Medical Microbiology

Rotation Goals and Objectives

Microbiology Laboratory, Glen Site, McGill University Hospital Center (MUHC)

McGill University Health Center

GENERAL INFORMATION

Rotation overview:

This 1-month rotation involves training in laboratory aspects of mycology from specimen collection to result reporting. In addition, clinical aspects of medical mycology will be reviewed including epidemiology, diagnosis, disease manifestations and treatment. While the rotation is typically conducted over 1 month, it can also be divided into 2 blocks of 2 weeks.

Learning context:

This rotation will take place at the MUHC Glen site, at the Microbiology Laboratory and also at the MUHC Invasive Fungal Diseases Clinic where the resident will assess patients admitted with invasive fungal infections. In addition to attending teaching rounds and participating in organizational lab meetings, residents will work at the bench alongside technologists to learn the guiding principles of diagnostic mycology: specimen processing, microscopy, serologic tests, culture, fungal identification and susceptibility testing. The Technical coordinator in Mycology (currently Diane Longworth) will provide hands-on laboratory teaching; the resident will meet with the attending mycologist (usually Dr Don Sheppard) to review the core curriculum which is provided as a separate syllabus. This rotation can be supplemented by the review course at the INSPQ, which incorporates one week of mycology review.

Learning objectives

MEDICAL EXPERT

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

- Describe the processes involved in generating a mycology result from specimen reception to final release of the report
- Describe the basis for selective and non-selective growth media for fungal isolation
- Demonstrate basic skills in laboratory manipulation and propagation of yeast and filamentous fungi
- Identify the basic categories of pathogenic fungi – including dermatophytes, dimorphic fungi, pathogenic yeasts, and molds
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- Identify common yeasts and molds using microscopy, differential growth and commercial identification kits
- Describe the utility and limitation of non-culture diagnostics for fungi
- Describe the techniques, utility and interpretation of antifungal susceptibility tests
- Identify and implement appropriate preventative measures that are relevant to the safety and practice of medical microbiology – especially in the context of spore containment and use of biologic safety cabinets
- Develop an organized clinical approach to the diagnosis and management of fungal diseases including taxonomy and classification
- Demonstrate knowledge of the epidemiology, natural reservoirs and mechanisms of pathogenicity for the major groups of fungi
- Demonstrate a comprehensive strategy of the clinical syndromes associated with fungal infections
- Describe the common antifungals, their usages, mechanisms of action and toxicities

COMMUNICATOR

- Interact with users of the mycology laboratory to understand their requirements and perspectives.
- Describe an approach to effectively convey laboratory information to other healthcare providers, ensuring that mycology culture results are understandable and usable.
- Establish a therapeutic relationship with patients with fungal infections, and their families, to elicit appropriate medical information
- Document and communicate relevant clinical information in the context of consultation
- Share medical information and suggestions with health care providers, patients and their families in a clear and appropriate manner.

COLLABORATOR

- Participate effectively and appropriately in an interdisciplinary laboratory environment
- Work with patients, care-givers, and other health care professionals to provide timely, effective mycology laboratory support for clinical care
- Prevent and mitigate interpersonal conflict in the workplace

LEADER

- Demonstrate leadership in improving quality of clinical and laboratory care through working with stakeholders to determine which services are required for specific populations
- Critically review mycology standard operating procedures with regard to pre-analytic, analytic and post-analytic factors
- Develop an approach balancing cost-effectiveness and potential benefits for evaluating potential novel diagnostic technologies for mycology
- Describe quality control measures and quality assurance implementation for mycology tests
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HEALTH ADVOCATE

- Identify opportunities to for the mycology laboratory to better serve the needs of clients, and develop strategies to improve the delivery of mycology service

SCHOLAR

- Develop continuous learning skills through preparing for and leading the discussion in the core teaching sessions devoted to each of the principle topics in mycology fungi (approximately 8 sessions during the rotation)
- Engage in collaborative learning through updating a single section of the mycology curriculum, as assigned by the attending mycologist.
- Contribute to the creation of knowledge through preparing case studies that illustrate key concepts in mycology for publication or inclusion in the resident case studies file.
- Concisely communicate knowledge to peers in the context of one-on-one sessions with the attending mycologist

PROFESSIONAL

- Adhere to the highest ethical and professional standards through interaction with patients and other health care professionals

Trainee Assessment

The trainee will be evaluated by the coordinator of the mycology lab as well as by the medical mycologist during their rotation. An in-training evaluation report (ITER) based on feedback from the laboratory technologists and medical microbiologists will be presented to the trainee at the end of their rotation.

Author: Dr Don Sheppard,
Date of last revision: October 8, 2018
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ITER for mycology rotation

Medical expert
- Describes the principle of isolation, identification and reporting of fungal cultures and antifungal susceptibility tests
- Describes the utility and performance characteristics of non-culture based tests for fungi
- Demonstrates basic skills in laboratory manipulation and propagation of yeast and filamentous fungi
- Recognizes and manages diseases caused by common pathogenic fungi (including dermatophytes, dimorphic fungi, pathogenic yeasts and molds)
- Identifies common yeasts and molds using microscopy, differential growth and commercial identification kits
- Applies appropriate biosafety precautions required for individual sample types and fungal species.

Communicator
- Provides pertinent information to clinicians and health care workers on the clinical utility and limitations of fungal culture, non-culture based diagnostics and antifungal susceptibility testing
- Responds to questions from clinicians and other health care workers with respect and in a manner that is easily understandable
- Establishes a therapeutic relationship with patients and their families to elicit appropriate medical information
- Documents and communicate relevant clinical information in the context of consultations on fungal diseases

Collaborator
- Works effectively with other professionals to provide timely, effective laboratory support for clinical care
- Participates as a consultant within a multi-disciplinary team to provide appropriate patient care in the context of clinical consultations for fungal infections

Leader
- Selects appropriate testing and services for specific populations
- Demonstrates concern for cost-effectiveness versus potential benefit of laboratory tests in mycology
- Describes quality control measures and quality assurance implementation for mycology tests

Health Advocate
- Demonstrates an understanding of the need for the mycology laboratory to better serve the needs of clients, and develop strategies to improve the delivery of mycology service

Scholar
- Demonstrates continuous learning skills in the preparation for and participation in small group teaching
- Obtains and critically reviews scientific resources and other clinical evidence
- Synthesizes knowledge on mycology and concisely communicates this information to peers
Professional

- Engages with colleagues, clinicians, laboratory personnel, other health care professionals and external laboratories in a respectful and courteous manner throughout the process of obtaining, reviewing, interpreting and communicating mycology test results and in performing clinical consultations
- Handles specimens and cultures in the laboratory in a manner that is safe and respectful of the laboratory workflow
Virology

McGill University

Postgraduate Training program in Medical Microbiology

Rotation Goals and Objectives

Microbiology Laboratory, Glen Site, McGill University Hospital Center (MUHC)

GENERAL INFORMATION

Rotation overview:

This 1-month rotation involves training in the diagnostic aspects of virology. During this rotation, fundamental notions of basic viral epidemiology, disease characteristics and manifestations, culture and other identification methods including characterization and differentiation of various viruses, as well as the public health implications of diagnostic virology will be reviewed.

Learning context:

The rotation will be held at the McGill University Health Centre, Glen Site (diagnostic microbiology laboratory, E05), and will be supervised by Dr. Jane McDonald and Dr. Jesse Papenburg. The resident is expected to complete this rotation during the PGY5 or PGY6 year, after completing the introductory rotations in bacteriology (1, 2, 3). The resident will meet with the Assistant Chief Technician in virology at the beginning of the rotation to plan the content of their time in the virology laboratory, and will be required to participate in all teaching rounds and other educational events that will be occurring related to the Virology laboratory. The resident will do a combination of supervised laboratory work (Virology Bench) to learn the necessary technical skills required in the virology laboratory, will work independently to identify “unknowns”, and will receive training through interactive small-group teaching sessions.

During the rotation, the following groups of viruses will be reviewed: Respiratory viruses (influenza, parainfluenza, adenovirus, RSV, rhino, corona, hMPV); Gastroenteritis viruses (rotavirus, norovirus, ..); enteroviruses (coxsackie, echo, polio, ..); Herpes viruses (CMV, EBV, HSV1-2, ZVZ); Chlamydia trachomatis.

Learning objectives

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

MEDICAL EXPERT

- Select medically appropriate virologic tests in a cost-effective, ethical and useful manner
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- Select optimal specimens for virology testing
- Recognize the limitations of some virology test results
- Describe all processes involved in generating a virology result from specimen reception to final release of the report
- List transport and processing requirements for virology specimens
- Compare advantages and disadvantages of the various culture and identification methods, including older techniques such as electron microscopy and immunoelectron microscopy
- Apply biosafety standards and regulations as they apply to the virology laboratory
- Describe the public health implications of virologic testing
- Apply the basics of infection prevention and control as it applies to the virology laboratory, including the appropriate preventative and prophylactic measures that are relevant to the safety and practice of virology.
- Provide appropriate consultation to clinicians, residents and other healthcare providers on the interpretation of laboratory results
- Describe elements of QC and QA as they relate to clinical virology
- Describe specimen procurement and appropriate transport of specimens for virology; processing and tissue culture inoculation; elements of tissue culture techniques including maintenance of media, shell vial techniques, characterization of different cell lines, choice of cell line depending upon type of virus; tissue culture techniques for the primary isolation of viruses including shell vial assay
- Assess cytopathic effects for the viruses listed above
- Describe technique of Immunofluorescence (direct and indirect), Enzyme immunooassay, haemadsorption, and haemagglutination inhibition as they apply to clinical specimens and to tissue culture isolates for identification of specific viruses

COMMUNICATOR

- Develop a working relationship and understand the role that each plays in the healthcare system
- Demonstrate active listening and participate in discussions
- Effectively convey information both verbally and written to laboratory staff and other healthcare providers
- Effectively present a teaching session to the technicians that combines information of clinical and laboratory relevance.

COLLABORATOR

- Work well with and show respect for laboratory, clinical, public health and Infection Control professionals involved in patient care
- Interact with clinicians, technologists, and Infection Control personnel regarding results from the virology laboratory
- Maintain confidentiality and professionalism
- Participate in inter-professional teams/committees as appropriate

LEADER

- Manage time effectively manage by balancing demands to complete bench work and carry out research project(s) if possible.
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- Review aspects of the laboratory manual/standard operating procedures and participate in updates to procedures and tests as required.
- Organize a teaching seminar for the technologists and the microbiologists
- Describe competing issues in virology (costs and benefits of various assays)

HEALTH ADVOCATE

- Identify and respond to the demands placed on the virology laboratory by clinicians and administrators
- Promote the use of appropriate laboratory testing to reduce unnecessary tests and costs and to maximize the generation of clinically useful patient results
- Identify the potential safety issues in the virology laboratory and help provide solutions for minimizing the risks to staff, patients, students and visitors

SCHOLAR

- Demonstrate on-going learning by presenting at a teaching session for technologists and Microbiologists
- Demonstrate understanding of the material at hand by participating in weekly question and answer interactive sessions with the microbiologist.
- Participate in continuing professional development by attending relevant Infectious Disease or Microbiology rounds, conferences, etc.
- Provide education for virology staff and other healthcare providers through both formal and informal teaching sessions
- Participate in research activities as they arise

PROFESSIONAL

- Respond to questions on clinical virology in a manner that is professional, with complete integrity, commitment, compassion and respect
- Handle specimens and laboratory equipment with care and respect
- Respond do questions in a manner that maintains strict patient confidentiality and respects ethical and privacy issues

Trainee Assessment

At the end of each bench rotation, the resident will be given a set of “unknowns” and will be required to work these up. An in-training evaluation report (ITER) based on feedback from the laboratory technologists and medical microbiologists will be presented to the trainee at the end of their rotation.

Recommended reading:
Clinical Virology Manual (Spector, Hodinka, Young, Wiedbruck)
ASM Manual of Clinical Microbiology -Virology Chapter
Canadian Biosafety Handbook, May 2016
CLSI-M41-A Viral Culture (latest edition)

Author: Dr Jane McDonald
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ITER - Med Micro - Virology Rotation

Medical Expert

- Demonstrates an understanding of the principles and applications of the range of virology testing, including tissue culture, viral identification and immunoassays
- Describes the appropriate selection of specimens, different testing methods, interpretation and communication of test results for common viral infections encountered in the clinical setting
- Evaluates performance and utility of various virology testing methods for clinical pertinence and cost effectiveness
- Explains the principles of quality control and quality assurance as it relates to the virology laboratory

Scholar

- Investigates clinical questions on virology using standard operating procedures in virology and the scientific literature
- Reviews standard operating procedures, scientific literature and other evidence to identify gaps in knowledge of virology testing
- Provides feedback for improving standard operating procedures in virology taking into account clinical pertinence and public health implications

Leader

- Demonstrates initiative and autonomy during bench-work and self-directed learning
- Organizes teaching sessions with technologist and supervisor in a manner that is considerate of staff schedules and workflow
- Leads during teaching sessions by preparing questions and readings ahead of time
- Utilizes observations, errors or incidents to identify process improvement such as revisions in standard operating procedures, in a constructive manner

Communicator

- Demonstrates respectful listening during bench work with technologists
- Leads interactive teaching sessions in a manner that is respectful and demonstrating preparedness
- Responds to clinicians’ queries (on test results or choice of appropriate virology tests) in a clear, thoughtful, understandable and helpful manner

Health Advocate

Program Coordinator: Cher Tieng Ting  hem-medmicro-id@jgh.mcgill.ca
Program Director: Dr Makeda Semret  makeda.semret@mcgill.ca

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Training Program
Infectious Diseases - Medical Microbiology

- Advises clinicians and other health professionals on the merits, pertinence and cost-effectiveness of various virology tests
- Identifies situations where results of virologic testing need to be communicated rapidly to public health, infection prevention and control, and the treating team and takes opportunities to do so during the rotation, if applicable

**Collaborator**

- Develops good working relationship with technologists and supervisors
- Demonstrates respect by being punctual and organized
- Organizes own teaching sessions taking into account schedules of supervisors and technologist workflow

**Professional**

- Engages with colleagues, clinicians, laboratory personnel, other health care professionals and external laboratories in a respectful and courteous manner throughout the process of bench work, reviewing, interpreting and communicating virology test results
- Responds to questions regarding virology test results in a manner that maintains patient confidentiality and respects ethical and privacy issues
- Follows laboratory safety guidelines at all times while working in the laboratory
Serology

McGill University

Postgraduate Training program in Medical Microbiology

Rotation Goals and Objectives

McGill University Health Center (MUHC) & Jewish General Hospital (JGH)

GENERAL INFORMATION

Rotation overview:

This 2-week rotation encompasses laboratory aspects of the serologic diagnosis of infectious diseases. The goals of the rotation are to: i) acquire knowledge of the fundamental principles of immunoassays, ii) become familiar with basic and advanced methods and platforms used to perform immunoassays, iii) understand pre-analytical, analytical and post-analytical factors that impact upon serology testing including sample collection, conditions of testing and reporting of results, iv) understand concepts of quality control and quality assurance as they pertain to serology, v) understand the clinical relevance and learn how to appropriately select serologic tests for viral and bacterial infections and vi) gain competence in the interpretation and communication of serology results. Immunoassays used to diagnose fungal or parasitic infections will be reviewed in Mycology and Parasitology rotations, respectively.

Learning context:

The first week of the rotation will take place at the JGH (in the core, virology and bacteriology labs). The second week will take place at the MUHC (in the core lab and virology labs). Residents will be directly supervised by Dr. Jerry Zaharatos and Dr. Michael Libman and will work with technologists at each site, including technical coordinators with advanced expertise in the performance of immunoassays.

Learning objectives

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

MEDICAL EXPERT

- Describe the principles and applications of the following common serology tests/immunoassays: ELISA (direct and indirect, sandwich, competitive binding) and other analogous EIAs, Western blot, line immunoassays, avidity tests and immunofluorescence assays
- Describe the principles and applications of other immunoassays including hemagglutination inhibition, complement fixation and virus neutralization assays (including plaque reduction neutralization assays)
Training Program
Infectious Diseases - Medical Microbiology

- Describe the strengths and limitations of automated, semi-automated and manual serology testing platforms
- Select, interpret and communicate the results of serologic tests for the following infections: HIV (and confirmatory testing, window period, acute infection), Hepatitis A, Hepatitis B (and interpretation of different markers), Hepatitis C (and confirmatory testing), Syphilis (reverse algorithm, treponemal and non-treponemal tests), HSV, CMV, EBV, Parvovirus, Rubella, Measles, Mumps, Toxoplasma, Zika, Dengue, Chikungunya, Lyme, Q-fever, Bartonella, Brucella and Francisella.
- Recognize differences in the immune response of healthy vs immunocompromised hosts, patients of various ages, and in the context of natural infection vs immunization
- Describe the performance and utility of various serology tests (including IgG, IgM and avidity testing) in determining the recency or timing of infection, especially in pregnant patients
- Describe key analytical factors that impact upon serology test performance including: measurement and reference range, sensitivity, specificity, accuracy, precision and interference; concepts of pre-test probability and predictive value (negative and positive) as they pertain to serology tests
- Describe pre-analytic factors that impact serology test performance including timing of acquisition, appropriate specimen collection, required information, transportation and storage conditions; post-analytic factors that impact serology test results including mechanisms of result verification, reporting, requirements for confirmatory testing and storage of samples and data
- Evaluate current and proposed serology testing methods for analytical performance, clinical utility and cost-effectiveness
- Apply the principles of quality control and quality assurance to serology tests

SCHOLAR

- Assimilate the basic and clinical sciences knowledge necessary to understand and provide effective consultation regarding serology tests and other immunoassays
- Obtain and critically review scientific resources and other clinical evidence regarding the performance and pertinence of serology tests
- Utilize an analytic investigative approach to address clinical questions regarding serology tests

LEADER

- Work effectively with clinicians, other health care professionals, administrators and hospital/community stakeholders to determine how to best provide serology services to various populations
- Critically review immunoassay-based tests and their standard operating procedures with regard to pre-analytic, analytic and post-analytic factors
- Evaluate current or new immunoassay technologies for analytical performance, clinical pertinence and cost-effectiveness
- Develop an approach to implementing new serology tests in the clinical laboratory setting
- Establish quality control measures and implement quality assurance for serology tests
Training Program
Infectious Diseases - Medical Microbiology

- Utilize internal and external proficiency-testing results for serology tests to improve laboratory practice
- Utilize errors or incidents at the pre-analytic, analytic and post-analytic levels to identify process improvements that increase patient safety and minimize the likelihood of medical errors

COMMUNICATOR

- Advise clinicians on the choice of appropriate serology tests based on the clinical context
- Provide information to clinicians and health care workers on the clinical utility and limitations of serologic testing
- Respond to questions from clinicians and other health care workers regarding the interpretation of serology results in the clinical context
- Advise clinicians on appropriate follow-up or confirmatory testing based on initial serology results

HEALTH ADVOCATE

- Advocate for providing reliable, cost-effective and timely serology results in clinical decision-making
- Explain the impact of appropriate serologic testing on individual patients and on public health
- Advise clinicians and other health care professionals on the merits, pertinence and cost-effectiveness of various serologic tests

COLLABORATOR

- Work with technologists, supervisors, clinicians, health care professionals and other stakeholders to evaluate, select and implement immunoassay-based testing
- Work with reference laboratories and public health laboratories to obtain appropriate and timely supplementary or confirmatory tests as necessitated by initial serology results

PROFESSIONAL

- Engage with colleagues, clinicians, laboratory personnel, other health care professionals and external laboratories in a respectful and courteous manner throughout the process of obtaining, reviewing, interpreting and communicating serology test results
- Respond to questions regarding serology test results in a manner that maintains patient confidentiality and respects ethical and privacy issues

Recommended resources:
- Textbook of medical Microbiology (ASM manual, Murray, Koneman or other)
- Reading material recommended during rotation

Trainee Assessment:
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The attending microbiologist will provide an assessment following the in-training Evaluation Report (ITER Med Micro Serology) specific to this rotation.

Author: Dr. Gerasimos J. Zaharatos
Date of last revision: October 8, 2018
Date approved by Residency Training Committee: October 18, 2018
ITER - Med Micro Serology Rotation

Medical Expert

- Describes principles and applications of serology tests/immunoassays
- Selects, interprets and communicates results of serologic tests appropriately, for different clinical scenarios
- Describes analytic, pre-analytic and post-analytic factors that impact serology test performance and reporting

Scholar

- Obtains and critically reviews scientific resources and other clinical evidence regarding the performance, clinical utility, cost effectiveness and pertinence of serology tests
- Applies an analytic investigative approach to address clinical questions regarding serology tests

Leader

- Reviews and critically evaluates immunoassay-based tests and their standard operating procedures with regard to pre-analytic, analytic and post-analytic factors
- Describes implementation of new serology tests in the clinical laboratory setting, including quality control and quality assurance implementation
- Utilizes errors or incidents to identify process improvements in serology testing

Communicator

- Advises clinicians on the choice of appropriate serology tests based on the clinical context, and on appropriate confirmatory testing as needed
- Responds to questions from clinicians and other health care workers regarding the interpretation of serology results in a manner that is respectful and helpful

Health Advocate

- Identifies scenarios requiring immediate notification of serological testing to clinician and public health
- Recognizes the impact of inappropriate vs appropriate serologic testing on individual patients and on public health
- Advises clinicians and other health care professionals on the merits, pertinence and cost-effectiveness of various serologic tests

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Collaborator

- Demonstrates punctuality, respect and consideration in interactions with lab personnel and with attending microbiologist
- Communicates effectively with reference laboratory/public health to obtain appropriate and timely supplementary or confirmatory tests as necessitated by initial serology results

Professional

- Engages with colleagues, clinicians, laboratory personnel, other health care professionals and external laboratories in a respectful and courteous manner throughout the process of obtaining, reviewing, interpreting and communicating serology test results
- Responds to questions regarding serology test results in a manner that maintains patient confidentiality and respects ethical and privacy issues
Parasitology

McGill University

Postgraduate Training program in Medical Microbiology

Rotation Goals and Objectives

Microbiology Laboratory, Glen Site, McGill University Hospital Center (MUHC)

GENERAL INFORMATION

Rotation overview:

This 1-month rotation involves both laboratory aspects of clinical parasitology diagnostics and high-level clinical management of parasitological infections. This rotation is a complement to the Clinical Tropical Medicine Rotation done earlier during the course of training, and should be completed during the last year of training (PGY-6) as it is an opportunity to consolidate and advance knowledge acquired during the clinical tropical medicine rotation.

Learning context:

The rotation will take place at the J.D. MacLean Centre for Tropical Diseases, at the RVH site and in the Parasitology section of the Microbiology Laboratory. Residents will be directly supervised by Drs. Sapha Barkati (Director of Education at the Centre), Michael Libman, and Cedric Yansouni, and will work with technologists, including technical coordinators with advanced expertise in the performance of each technique.

The goals of the rotation are to: i) consolidate knowledge on basic parasitology diagnostic modalities (microscopy, serology, NAAT); ii) review key staining techniques and specimen preparation for microscopic techniques; (iii) become familiar with molecular techniques for parasite diagnostics, as well as newer approaches such as MALDI-TOF applications; iv) become familiar with the staging of parasitic diseases for which imaging is the principal diagnostic modality; v) understand pre-analytical, analytical and post-analytical factors that impact upon parasitology testing, vi) understand concepts of quality control and quality assurance as they pertain to parasitology, vii) gain competence in the interpretation and communication of parasitology results.

Learning objectives

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

MEDICAL EXPERT

- Categorize parasitic infections in terms of protozoan vs helminth, and in terms of GI vs tissue-invasive localisations.
Select, interpret and communicate the results of serologic tests for the following infections: enteric protozoa, enteric helminths, malaria, kinetoplastids (Chagas, African Trypanosomiasis, Leishmaniasis), tissue-invasive apicomplexans, tissue-invasive nematodes including Strongyloides, tissue-invasive cestodes including Echinococcus and Taenia sp., and major trematode syndromes.

Describe principles and applications of the following common serology tests/immunoassays: ELISA (direct and indirect, sandwich, competitive binding) and other analogous EIAs, Western blot, line immunoassays, avidity tests and immunofluorescence assays.

Describe principles and applications of nucleic acid amplification tests as applied to parasitology.

Recognize parasite-specific applications of newer technologies such as MALDI-TOF.

Describe strengths and limitations of microscopy, serology, and NAAT for major parasitic syndromes.

Describe key pre-analytic factors that impact parasite diagnostic test performance including timing of acquisition, lifecycle and pre-patent period, appropriate specimen collection, required information, transportation and storage conditions.

Describe post-analytic factors that impact parasite diagnostic test results including mechanisms of result verification, reporting, requirements for confirmatory testing and storage of samples and data.

Evaluate current and proposed parasite diagnostic testing methods for analytical performance, clinical utility and cost-effectiveness.

Apply principles of quality control and quality assurance to parasite diagnostic tests.

Regarding microscopy of parasitic infections:

- Process blood, stool and tissue specimens under supervision.
- Demonstrate proper and optimal use of a microscope, including Kohler-illumination conditions and key functions (contrast, resolution, magnification).
- Recognize uses and characteristics of key stains, including iodine, Geimsa-based stains, Iron-hematoxilin, and Trichome.
- Recognize uses and characteristics of methods to achieve contrast without stains, including phase-contrast and darkfield microscopy.
- Identify, speciate and quantify Plasmodium sp in blood.
- Identify other blood- or tissue-borne organisms, such as Babesia, Trypanosoma sp., and Leishmania sp.
- Identify enteric prozoans and helminths in stool specimens.

Regarding parasitic diseases for which imaging is the principal diagnostic modality:

- List the staging of cystic echinococcosis and describe the appropriate management modalities for each stage.
- Describe the staging of neurocysticercosis and understand the appropriate management modalities for each stage.
- Describe the role of laboratory testing in to the overall diagnostic process for Echinococcal infections and for neurocysticercosis.
- Describe the staging of intestinal and urogenital schistosomiasis, and understand the appropriate management modalities for each stage.
- Describe the role of laboratory testing in the overall diagnostic process for schistosomiasis.
COMMUNICATOR

- Advise clinicians on the choice of appropriate parasite diagnostic tests, their interpretation based on the clinical context and on appropriate confirmatory tests
- Lead small group discussion (with residents on the tropical medicine rotation and attending staff) on the clinical utility and limitations of parasite diagnostic testing

COLLABORATOR

- Work with technologists, supervisors, clinicians, health care professionals and other stakeholders to evaluate, select and implement appropriate parasite diagnostic tests for routine clinical specimens
- Interact effectively with reference laboratories and public health laboratories to obtain appropriate and timely supplementary or confirmatory tests as necessitated by initial parasite diagnostic test results
- Collaborates with referring laboratories to ensure that the most appropriate testing and reporting is completed, and that referring lab personnel understand the relevant diagnostic implications of these results.

LEADER

- Work with clinicians, other health care professionals, administrators and hospital/community stakeholders to determine how to best provide parasite diagnostic testing services to various populations
- Critically review parasite diagnostic tests and their standard operating procedures with regard to pre-analytic, analytic and post-analytic factors
- Evaluate current or new parasite diagnostic technologies for analytical performance, clinical pertinence and cost-effectiveness
- Develop an approach to implementing new parasite diagnostic tests in the clinical laboratory setting
- Describe the implementation of quality control measures and quality assurance for parasite diagnostic tests
- Utilize internal and external proficiency-testing results for parasite diagnostic tests to improve laboratory practice
- Utilize errors or incidents at the pre-analytic, analytic and post-analytic levels to identify process improvements that increase patient safety and minimize the likelihood of medical errors
- Identifies mechanisms for obtaining lab testing which is not routinely available in our lab network, when this is appropriate

HEALTH ADVOCATE

- Provide reliable, cost-effective and timely parasite diagnostic test results in clinical decision-making
- Recognize the impact of appropriate parasite diagnostic testing on individual patients and on public health
Training Program
Infectious Diseases - Medical Microbiology

- Advise clinicians and other health care professionals on the merits, pertinence and cost-effectiveness of various parasite diagnostic tests

SCHOLAR

- Assimilate the basic and clinical sciences knowledge necessary to understand and provide effective consultation regarding parasite diagnostic tests
- Obtain and critically review scientific resources and other clinical evidence regarding the performance and pertinence of parasite diagnostic tests
- Utilize an analytic investigative approach to address clinical questions regarding parasite diagnostic tests

PROFESSIONAL

- Engage with colleagues, clinicians, laboratory personnel, other health care professionals and external laboratories in a respectful and courteous manner throughout the process of obtaining, reviewing, interpreting and communicating parasite diagnostic test results
- Respond to questions regarding serology test results in a manner that maintains patient confidentiality and respects ethical and privacy issues
- Handle clinical specimens in the lab with care and respect
- Follow safety guidelines at all times during laboratory work

Recommended Reading
- Reading material provided by Education director
- Relevant chapters in textbook of parasitology

UNIQUE STRENGTHS of the TRAINING SITE

The J.D. MacLean Centre for Tropical Diseases (https://www.mcgill.ca/tropmed/) is a world-renowned centre of expertise, and the largest centre in North America specializing in imported, travel related, and parasitic disease. The Centre brings together 11 investigators whose core activities include surveillance of emerging infections, diagnostics for neglected diseases, clinical outcomes, and implementation research in low resource settings such as Ethiopia and Northern Canada. Of note for this rotation, the Centre includes the federal National Reference Centre for Parasitology.

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 and/or Clinical Parasitology are extremely popular and typically booked over one year in advance. In addition to trainee elective rotations, Tropical Medicine and/or Clinical Parasitology 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. (One fellow per year).

Accomplishments of MacLean Centre investigators include identification of Cryptosporidium hominis as a major cause of enteric infections in the Arctic communities, participation in detection of
Training Program
Infectious Diseases • Medical Microbiology

re-emergence of schistosomiasis in southern Europe and sarcocystosis in Malaysia, developing new diagnostics for parasitic infections, and implementing interventions to reduce antimicrobial resistance in Ethiopia. The Centre’s translational reach extends to national and international clinical guidelines, high-level training in Canada and abroad, and regulatory activities such as WHO prequalification of diagnostics.

Author: Dr Cedric Yansouni
Date of last revision: October 8, 2018
Date of approval by Residency Training Committee: October 18, 2018
ITER - (Med Micro) Parasitology rotation

Medical Expert

- Selects, interprets and communicates results of serologic tests for the major parasitic syndromes
- Describes analytic, pre-analytic and post-analytic factors that impact parasitology test performance and reporting (microscopy, serology, and NAAT)
- Demonstrates proficiency in use of microscope, identification of tissue and stool protozoans helminths, and ectoparasites, quantification of parasitemia
- Describes other testing and imaging modalities in the diagnosis of parasitic infections, and staging of cestode infections and schistosomiasis.

Communicator

- Advises clinicians on the choice of appropriate parasite diagnostic tests based on the clinical context, and on appropriate follow-up or confirmatory testing
- Leads small group discussions on selection and interpretation of parasite diagnostic test depending on clinical context

Collaborator

- Communicates effectively with reference laboratories and public health laboratories to obtain appropriate and timely supplementary information or confirmatory tests as indicated by initial parasite diagnostic test results
- Collaborates with referring laboratories to ensure that the most appropriate testing and reporting is completed, and that referring lab personnel understand the relevant diagnostic implications of these results.

Leader

- Describes the evaluation of current or new parasite diagnostic technologies for analytical performance, clinical pertinence and cost-effectiveness
- Utilizes errors or incidents at the pre-analytic, analytic and post-analytic levels to identify process improvements
- Identifies mechanisms for obtaining lab testing which is not routinely available in our lab network, when this is appropriate

Health Advocate

- Identifies scenarios when results of parasite testing should be reported to public health
- Manages notification process in scenarios where parasite test result might require immediate management in hospital
Training Program
Infectious Diseases · Medical Microbiology

- Advises clinicians and other health care professionals on pertinence and cost-effectiveness of various parasite diagnostic tests

Scholar

- Demonstrates ability to obtain and critically review scientific resources in parasitology
- Performs a literature search or other investigative approach to address clinical or laboratory question regarding parasitology, and presents findings during small group teaching sessions

Professional

- Responds to questions from junior residents, clinicians and technologists on parasitology tests in a manner that is respectful, helpful, and maintains patient confidentiality
- Handles specimens and microscopes in a manner that is safe and respectful
Molecular Microbiology

McGill University

Postgraduate Training program in Medical Microbiology

Rotation Goals and Objectives

Microbiology Laboratory, Jewish General Hospital and McGill University Health Centre

GENERAL INFORMATION

Rotation overview

This 4-week rotation involves training in laboratory aspects of molecular microbiology from specimen collection to result reporting. Since these tests are routinely applied to Infection Prevention and Control screening tests (e.g., MRSA, VRE), *C. difficile*, as well as respiratory virus detection tests (multiplex respiratory virus testing), clinical aspects pertaining to these microorganisms will be consolidated during this rotation. The rotation is supplemented by formal teaching during IDMM rounds on principles of molecular microbiology.

Learning context:

This rotation can take place at the Molecular Microbiology laboratories at MUHC-Glen or JGH sites. Residents will either do 4 weeks in one of the 2 sites, or do 2-weeks at each site. Residents will work at the benches with technologists to learn molecular techniques and processes involved from specimen processing to reporting. They will meet with the microbiologist on a weekly basis to review guiding principles of molecular diagnostics, and will participate in organizational molecular microbiology laboratory meetings.

Learning objectives

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

MEDICAL EXPERT:

- Describe the processes involved in performing a clinical molecular microbiology assay, from specimen processing to issuing of report
- List pre-analytical, analytical and post-analytical factors which impact performance of molecular assays
- Describe nucleic acid isolation techniques and the basic principles of nucleic acid amplification testing (NAAT) and different amplification methods (PCR, NASBA, strand displacement, isothermal amplification)
- Contrast conventional versus real-time NAATs in terms of relative advantages and limitations
Training Program  
Infectious Diseases - Medical Microbiology

- Outline the relative advantages and disadvantages of commercial versus “home brew” NAATs.
- Describe principles of microbial genomics and bioinformatic analysis, and list potential diagnostic and therapeutic applications.
- Describe advantages and limitations of highly multiplexed molecular assays used for syndromic testing.

Through reading of selected references and teaching rounds

- Explain principles of DNA microarray-based technologies and DNA sequencing.
- Describe principles of molecular typing techniques (RFLP, PFGE, MLST) and their potential application.
- Recognize potential applications of molecular diagnostics in areas of microbial identification, molecular typing for outbreak investigation, and determination of resistance genotypes.
- Gain knowledge on newer “rapid” molecular diagnostic assays that are of low-complexity and have been approved for use at the point of care.
- Describe how molecular essays can overcome certain limitations of traditional virology methods and what complementary role the latter may still have in contemporary clinical and public health laboratories.

COMMUNICATOR

- Interact effectively with clinicians, infection prevention and control, and other stakeholders, regarding the optimal utilization of molecular tests, significance of results, as well as their limitations.
- Convey critical information to the laboratory regarding significance of certain specimens and acceptable delays for results.

COLLABORATOR

- Contribute knowledge in inter-professional team meetings involving laboratory personnel, physicians, and Infection Control practitioners.
- Work with public health laboratory to obtain supplementary confirmatory (eg. Sequencing) tests as necessitated by initial molecular conventional test results.

HEALTH ADVOCATE

- Recognize when molecular diagnostics can be used to make therapeutic decisions, identify outbreaks, or influence patient management in other ways.

LEADER

- Develop strategies to recognize when molecular tests are appropriate and useful from the perspective of patient care, infection control and public health.
- Describe steps involved in performing cost/benefit analysis of molecular diagnostics, taking into account efficiency as it relates to medical care and patient management.
- Become familiar with the process of introduction of new molecular assays into the clinical microbiology laboratory (assay development, verification, validation, interpretation).
Training Program
Infectious Diseases - Medical Microbiology

- Discuss the role of quality management systems in molecular microbiology, including methods of quality control applicable to NAATs (e.g. amplicon contamination, negative controls, amplification controls, extraction controls).

SCHOLAR
- Obtain and critically review scientific resources regarding the performance and pertinence of molecular diagnostic tests
- If planned sufficiently in advance (at least 6 months ahead of the planned rotation), a small research project can be designed that will provide the resident with the opportunity to learn various molecular techniques, and to give hands-on experience in the above-mentioned areas

PROFESSIONAL
- Engage with colleagues, clinicians, laboratory personnel, infection prevention and control and external laboratories in a respectful and courteous manner throughout the process of obtaining, reviewing, interpreting and communicating molecular test results
- Respond to questions regarding molecular tests in a manner that maintains patient confidentiality and respects ethical and privacy issues
- Follows appropriate work etiquette, handles specimens and laboratory equipment with care.

Trainee Assessment
Residents will be assessed based on the criteria set out in the ITER - (Med Micro) Molecular Microbiology Rotation.

Recommended reading
ASM Manual of Clinical Microbiology (11th edition) Chapter 6 – “Molecular Microbiology”

Authors: Drs Matthew Oughton & Jesse Papenburg
Date of last revision: October 9, 2018
Date approved by Residency Training Committee: October 18, 2018
MEDICAL EXPERT:

- Describes the processes involved in performing clinical molecular microbiology assays, from specimen processing to issuing of report, including factors (analytical, analytical and post-analytical) which impact performance of tests for different amplification methods
- Describes principles of genomics and sequencing using examples of potential applications in infectious diseases
- Performs NAAT assays in the laboratory, under supervision (from specimen processing to result reporting)

COMMUNICATOR

- Interact effectively with clinicians, infection prevention and control, and other stakeholders
- Responds to questions comprehensively and clearly

COLLABORATOR

- Works with public health laboratory to obtain supplementary confirmatory (eg. sequencing) tests as necessitated by initial molecular conventional test results
- Reviews molecular test results with assistant chief technologist to ensure accuracy of reports (preliminary signing)

HEALTH ADVOCATE

- Identifies situations where molecular test result can be useful for identification of outbreaks

LEADER

- Describes steps involved in performing cost/benefit analysis of molecular diagnostics, and process of introduction of new molecular assays into the clinical microbiology laboratory
- Discusses the role of quality management systems in molecular microbiology, including methods of quality control applicable to NAATs

SCHOLAR

- Reviews critically scientific resources on performance and pertinence of molecular diagnostic tests
- Designs a small research project (if planned sufficiently in advance - at least 6 months ahead of the planned rotation)

PROFESSIONAL

- Engages with colleagues, lab personnel, infection prevention and control and external laboratories in a respectful and courteous manner
- Follows appropriate work etiquette, handles specimens and laboratory equipment with care.
Bacteriology – Consolidation

McGill University

Postgraduate Training program in Medical Microbiology

Rotation Goals and Objectives

Microbiology Laboratory, Glen Site, McGill University Hospital Center (MUHC)

GENERAL INFORMATION

Rotation overview:

This 1-month rotation provides an opportunity to review and consolidate bacteriology knowledge and skills, specifically microscopy skills acquired during the basic bacteriology rotations. The resident will have previously completed the introductory bacteriology rotations (1,2,3) and the anaerobic bacteriology rotation. Ideally this rotation should be done towards the end of the PGY-5 year or early in the course of PGY-6. In addition to consolidating bacteriology skills, as part of graded responsibility the resident will begin to answer questions and consultations from health care providers outside the laboratory and from technologists during their daily work hours.

Learning context

This rotation will take place at the clinical microbiology laboratory at the MUHC. Through a combination of bench work and reading, the resident will review identification algorithms for all major groups of clinically important bacteria and perform stains and microscopy relevant for bacteriology. Residents are expected to meet daily with the teaching technologist and arrange specific small group teaching sessions with the teaching microbiologist once weekly.

Learning objectives

MEDICAL EXPERT

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

- Describe the taxonomy, epidemiology, life cycle and pathology of all clinically relevant bacteria (gram positive cocci, Gram negative cocci, Gram positive bacilli, Enterobacteriaceae, Glucose non-fermenting gram negative bacilli, Oxidase positive glucose fermenting gram negative bacilli, Fastidious gram negative bacilli, Anaerobes)
- Perform standard staining and microscopy on a variety of clinically important specimens, particularly: blood, sputum, CSF, pus, vaginal
- Correctly identify common bacterial organisms encountered in the clinical microbiology laboratory using previously developed identification algorithms

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Training Program
Infectious Diseases - Medical Microbiology

- Review and describe identification methods and susceptibility testing methods used in clinical microbiology laboratory
- Perform and interpret quality control/assurance testing of media, reagents, laboratory instrumentation and other materials used in the microbiology laboratory

COLLABORATOR

- Develop a close working relationship with laboratory staff and other healthcare providers, and understand the role that each plays in the healthcare system
- Describe the medical microbiologists’ and the laboratory technologists’ roles and responsibilities to the other professions, including clinicians, infection prevention and control practitioners, public health officials, and other professionals within the health care team
- Liaise with the Infectious Diseases team and other clinical services to facilitate appropriate specimen testing and interpretation of results

COMMUNICATOR

- Effectively convey information (verbally and written) to laboratory staff and other healthcare providers
- Effectively present relevant medical and laboratory information at bench/plate rounds and during daily culture review as applicable

LEADER

- Recognize own limits and develop an approach to address knowledge and competency gaps
- Become familiar with lab management and quality assurance by participating in management meetings and as a member of the quality committee
- Become familiar with concepts of stewardship of health care resources, and search for evidence based laboratory best practices for microbiology utilization
- Describe role of microbiology testing algorithms and gatekeeping strategies
- Participate in interprofessional teams/committees as appropriate

HEALTH ADVOCATE

- Become familiar with concepts of stewardship of health care resources, and search for evidence based laboratory best practices for microbiology utilization
- Identify the role of laboratories in maintaining and promoting health and health equity for patients and communities.
- Identify and respond to the demands placed on the microbiology laboratory by clinicians and administrators
- Promote the use of appropriate laboratory testing to reduce unnecessary tests and costs and to maximize the generation of clinically useful patient results
- Identify the potential safety issues in the microbiology laboratory and help provide solutions for minimizing the risks to staff, patients, students and visitors
Training Program
Infectious Diseases - Medical Microbiology

SCHOLAR

- Engage in professional development through ongoing learning, reflection on personal performance and identification of areas for improvement

PROFESSIONAL

- Exhibit appropriate professional behaviors including honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality
- Serve as a role model for safe laboratory practice at all times
- Demonstrate responsibility in timely communication of critical results when applicable, punctuality for team meetings, and respect for deadlines
- Demonstrate insight into their own limits of expertise
- Participate in laboratory meetings as appropriate

Resources:
- Standard textbooks of medical microbiology
  - ASM manual, Koneman, Murray etc
- CDC online laboratory training resources

Trainee Assessment

At the end of the rotation, the resident will have a longitudinal in-training evaluation (ITER for consolidation bacteriology rotation) from the attending microbiologist(s) with feedback from the teaching coordinator.

Author: Dr Tien Nguyen, Dr Makeda Semret
Date of last revision: October 11, 2018
Date of approval by Residency Training Committee: October 18, 2018
ITER – Med Micro Consolidation Bacteriology (Chap 12)

MEDICAL EXPERT

- Performs stains and accurately reads microscopy slides from a variety of clinically important specimens
- Identifies common bacterial organisms encountered in the clinical microbiology laboratory using previously developed identification algorithms
- Performs and interprets quality control/assurance testing of media and reagents, used in the microbiology laboratory

COLLABORATOR

- Develops a close working relationship with laboratory technologists
- Liaises with the Infectious Diseases team and other clinical services to facilitate appropriate specimen testing and interpretation of results

COMMUNICATOR

- Effectively conveys/presents relevant information to laboratory staff and other healthcare providers during daily culture reviews
- Responds to questions from clinicians in a clear and intelligible manner
- Leads discussion in small group teaching sessions with microbiologist

LEADER

- Recognizes own knowledge gaps and develops an approach to address knowledge and competency gaps (planning of rotation and educational objectives)
- Recognizes limits of expertise when responding to clinician queries
- Describes lab management and quality assurance in broad terms
- Describes testing algorithms and gatekeeping strategies for specimens commonly encountered in the microbiology laboratory

HEALTH ADVOCATE

- Describes concepts of stewardship of health care resources
- Promotes appropriate laboratory testing to maximize the generation of clinically useful patient results
- Identifies potential safety issues in the microbiology laboratory

SCHOLAR

- Reflects on personal performance and identifies areas for improvement

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PROFESSIONAL

- Engages in safe laboratory practice at all times
- Demonstrate responsibility and consideration for others by being punctual and respecting workflow,
- Handles specimens, microscope, reagents and other equipment with care and respect
GENERAL INFORMATION

Rotation overview:

This 1-month rotation should be done during the final year of the Medical Microbiology Training program, during which the focus is on the administration and management of the Clinical Microbiology Laboratory. By this point, the trainee will have already acquired all the basic medical knowledge required for diagnostic microbiology. The focus of this rotation is on synthesizing the resident’s knowledge base into a cohesive structure around the requirements of running a microbiology laboratory.

Residents may elect to do this rotation twice in the course of their final year. From the perspective of graded responsibility, it is expected that at this point in their training the resident will act as the supervising microbiologist for the laboratory (under the supervision of their attending microbiologist), including but not limited to performing consultations with health care providers, supervising technologists, validating laboratory reports and troubleshooting problems within the laboratory. Further, resident will have opportunities to reflect on issues such as sustainability, resource-allocation, and effectiveness as they pertain to the microbiology laboratory.

Learning context:

This rotation will take place at the Microbiology laboratory at the MUHC. The resident will meet with the supervising Microbiologist once weekly. Much of the work in this rotation is centered around a series of specific activities focused on lab management, such as performing an audit, writing a standard operating procedure, leading a quality improvement initiative, and participating in laboratory safety, management, and quality committees.

Rotation specific objectives:

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

MEDICAL EXPERT

• Function effectively as a consultant to the laboratory program and demonstrate the ability to:
  a. Guide physicians and other end users on appropriate test ordering, specimen
Training Program
Infectious Diseases - Medical Microbiology

- Understand evaluation and implementation of new tests and new technology, and their application in medical microbiology.

- Understand the pre-analytic (specimen collection, specimen acceptance/rejection, labeling, transport and storage), analytic (laboratory set-up, processing and testing) and post-analytic (results, reporting, retention and storage of specimens and isolates) factors, which need to be considered to ensure accurate clinical results, are obtained for microbiological specimens from all clinical and environmental sources.

- Understand diagnostic test performance and test accuracy, sensitivity, specificity and predictive values, likelihood ratios, receive operating characteristics as they relate to diagnostic tests in Medical Microbiology.

- Understand the principles and practice of an effective laboratory quality management system including but not limited to:
  a. Structure of a quality management team and the components of an effective quality management system;
  b. Quality management system implementation, evaluation and monitoring;
  c. Regulatory and accreditation requirements and role of internal and external proficiency testing;
  d. Verification and validation of diagnostic systems, reagents, and media;
  e. Selection of appropriate quality indicators, their measurement and monitoring;
  f. Occurrence reporting and discordant result analysis.

- Understand the methods necessary for maintaining and documenting adequate quality control (QC) in all areas of the laboratory, including
  i. Media;
  ii. Control organisms;
  iii. Susceptibility testing;
  iv. Reagents and diagnostic kits and autoclave;
  v. Equipment and instrument maintenance eg. Incubator, refrigerator, freezer and autoclave maintenance.

- Understand the utilization of laboratory information systems for instrument interfaces, result reporting, storage, retrieval and analysis.

- Understand the components of a biosecurity system.
Training Program
Infectious Diseases · Medical Microbiology

- Understand the biosafety requirements for different levels of service in bacteriology, mycology, mycobacteriology, molecular diagnostics, parasitology and virology/serology.

- Understand and apply the components of laboratory safety, including Workplace Hazardous Materials Information System (WHMIS) and Material Safety Data Sheets (MSDS) to a microbiology laboratory.

- Understand the regulatory requirements for the Transportation of Dangerous Goods (TDG) for specimens and isolates of prions, viruses, Mycoplasma, Chlamydia, Rickettsia, bacteria, mycobacteria, fungi and parasites.

- Understand the evaluation of laboratory costs including calculating cost per test, including labour, with respect to purchase costs, reagents, controls, maintenance, and workflow.

- Understand the principles involved in analyzing and balancing a laboratory budget.

- Understand Laboratory Information Systems (LIS) with respect to:
  a. Requirements for data storage;
  b. Importance of downtime procedures;
  c. Validation and documentation when introducing a new LIS;
  d. Interfacing LIS with other health information systems;
  e. Importance and establishment of backup systems;
  f. Requirements for computer system maintenance.

- Understand methods of workload measurement in Canada and measures of productivity relevant to their province.

- Understand medical expertise in situations other than patient care or laboratory management, such as providing expert legal testimony or advice to government and other agencies and organizations.

- Understand the ethical dimensions in medical decision-making, including resource allocation in the microbiology laboratory.

- Understand safety and structural regulations involved in laboratory construction.

COMMUNICATOR

- Ensure that microbiology reports are issued in a standardized clear and concise format, contain only clinically relevant information, conform with guidelines and are not subject to misinterpretation.

- Communicate effectively and provide education to physicians and other healthcare professionals about changes to laboratory testing, pre-analytic, analytic and post-analytic factors, which improve laboratory utilization and cost reduction strategies.

- Communicate effectively with healthcare providers about the transmission of infections, the implications of antibiotic-resistant organisms, the importance of
Training Program
Infectious Diseases • Medical Microbiology

appropriate antibiotic use, and other factors to decrease antimicrobial resistance.

- Present medical information effectively to the public or media about a medical microbiology issue, which may include but is not limited to the transmission of infections, the implications of antibiotic resistant organisms, the importance of appropriate antibiotic use and other factors to decrease resistance.

- Respond effectively to client needs, either verbally or in writing.

- Ensure processes are in place to provide timely and accurate reporting of outbreaks, reportable pathogens, nosocomial infections or biosafety issues to public health, Occupational Health and Safety and/or Infection Prevention and Control team.

COLLABORATOR

- Explain the Medical Microbiologist’s and technologists’ roles and responsibilities to other professionals.

- Contribute in inter-professional teams/committees as appropriate.

- Assess, plan, and review other tasks, such as research problems, educational work, program review or administrative responsibilities.

- Develop interdependent relationships with other professions for the provision of quality care.

- Develop a network of colleagues and resources to facilitate decision-making.

- Liaise with the ID team and other clinical services to facilitate appropriate specimen testing and interpretation of results.

- Recognize and respect the diversity of roles, responsibilities and competencies of other professionals in relation to their own and delegate appropriately.

- Communicate effectively with laboratory staff by actively listening to their concerns, and eliciting relevant information and providing recommendations that are clear and concise and include evidence for decisions, where possible.

- Understand the principles of team dynamics.

- Respect and maintain team ethics, including confidentiality, resource allocation and professionalism.

- Demonstrate leadership in a health care team, as appropriate.

- Demonstrate a respectful attitude towards other colleagues and members of an interprofessional team.

- Work and employ collaborative negotiations with other professionals to prevent and resolve conflicts.

- Respect differences and address misunderstandings and limitations in other professionals.

- Recognize one’s own differences, misunderstanding and limitations that may contribute to interprofessional tension.

LEADER

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The resident will be able to:

- Participate in protocol development and critical review of 5 standard operating procedures that will be discussed with the appropriate microbiologist.
- Participate in the development and maintenance of a document control system for standardized operating procedures and policies and provide medical input into the development of laboratory procedures and policies.
- Supervise technologists on a daily basis and respond to their concerns and questions in a professional manner.
- Participate in systemic quality process evaluation and improvement, such as a quality management program.
- Understand the definitions and role of audits, quality management, risk management, occurrence reporting, and complaint management, patient safety.
- Design and perform a Quality Assurance Project pertinent to the functioning of the microbiology lab. The project protocol must be written by the resident and then reviewed by the attending microbiologist. The project must be implemented and completed, and as with any QA/QC project, when appropriate, changes should be suggested and if possible implemented and then re-evaluated.
- Understand the systems of internal and external proficiency testing programs and of laboratory accreditation programs.
- Understand criteria for selecting and monitoring reference laboratories.
- Understand how to critically evaluate and implement new diagnostic laboratory technologies.
- Prepare a business case for the introduction of a new test or change to current laboratory practice.
- Understand principles of health care financing, including physician remuneration, budgeting and organizational funding.
- Recognize the importance of fair allocation of health care resources, balancing effectiveness, efficiency and access with optimal patient care.
- Understand how the principles of justice, efficiency, and effectiveness are applied to decisions of resource allocation in a diagnostic microbiology laboratory.
- Understand the cost/benefit ratios of diagnostic, therapeutic and preventive interventions, cost containment and efficiency, effectiveness and efficacy as they relate to medical care.
- Discuss budget planning and workload measurement for a microbiology laboratory.
- Understand the limitations of budgetary constraints and how to develop and follow a laboratory budget.
- Understand the principles of human resource management as applied to a diagnostic laboratory including the skill mix of staff, selection and appointment of staff, labour and union issues, including disciplinary matters; orientation and training of new staff; evaluation; and feedback.
- Understand administration and leadership roles.
- Chair or participate effectively in committees and meetings.

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Training Program
Infectious Diseases - Medical Microbiology

- Lead or implement change in health care.
- Plan relevant elements of health care delivery (e.g. work schedules)
- Understand the structure and function of the health care system as it relates to Medical Microbiology, including the roles of physicians.
- Understand the various ways in which the practice of microbiology is undertaken in different settings (e.g., tertiary care, public health, community hospital and private laboratories).
- Understand the advantages, disadvantages, and relative costs of providing diagnostic services in different settings, including academic and non-academic hospitals, community hospitals and private laboratories.
- Set priorities and manage time to balance practice requirements, outside activities and personal life.
- Implement processes to ensure personal practice improvement.
- Understand the balance in professional, institutional, and societal commitments.

HEALTH ADVOCATE

The resident will be able to:

- Identify and respond to the demands placed on the microbiology laboratory by clinicians and administrators.
- Promote the use of appropriate laboratory testing to reduce unnecessary tests and costs and to maximize the generation of clinically useful patient results.
- Identify the potential safety issues in the microbiology laboratory and help provide solutions for minimizing the risks to staff, patients, students and visitors.
- Implement an incident reporting system with mechanisms to address errors and prevent recurrences.
- Implement a process to report patient results accurately and in a timely manner and communicate critical results effectively.
- Appreciate the possibility of competing interests between individual advocacy issues and the community at large.
- Understand the practice communities that they serve and identify opportunities for advocacy, tailored laboratory testing in the communities that they serve, and respond appropriately.
- Understand how public policy impacts on the health of the populations served.
- Understand the current policies that affect laboratory organization in the province.
- Understand the role of the medical profession in advocating collectively for quality and patient safety.
- Apply laboratory safety practices to protect staff.
- Understand the processes that need to be in place to convey communicable disease information to public health, infection control, physicians and/or occupational health in a timely manner.
- Implement processes and procedures for addressing client concerns about laboratory services.

SCHOLAR

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Training Program
Infectious Diseases - Medical Microbiology

- Understand the principles of maintenance of competence.
- Understand the principles and strategies for implementing a personal knowledge management system.
- Recognize and reflect on learning issues in practice.
- Maintain and enhance ongoing learning by presenting at various educational events, participating in continuing professional development with attendance at relevant rounds, conferences, journal club and other educational activities.
- Conduct a personal practice audit or audit of laboratory practice
  a. Pose an appropriate learning question;
  b. Access and interpret the relevant evidence;
  c. Integrate new learning into practice;
  d. Evaluate the impact of any change in practice;
  e. Document the learning process.
- Provide education for laboratory staff and other healthcare providers through both formal and informal teaching sessions.
- Understand the common clinical problems presented to the medical microbiologist by responding to daily questions and issues identified by the technologists.
- Educate laboratory technologists, health care professionals and other laboratory clients in formal and informal health educational settings.
- Effectively provide users with education and instruction about proper specimen collection techniques and the diagnostic utility and limitations of microbiological tests.

PROFESSIONAL

The resident will be able to:
- Exhibit appropriate professional behaviors in practice, including honesty, integrity, commitment, compassion, respect, and altruism.
- Understand appropriate ethical standards and respond to ethical issues as they arise.
- Ensure the highest quality of patient care and maintenance of competence.
- Recognize and appropriately respond to ethical issues encountered in medical microbiology, including but not limited to issues related to disclosure of adverse events and public health issues such as isolation and quarantine and reportable diseases.
- Manage conflicts of interest, including but not limited to interactions with the pharmaceutical industry and manufacturers of laboratory equipment and diagnostic tests.
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Infectious Diseases - Medical Microbiology

- Maintain appropriate relations with patients and laboratory staff.
- Recognize and develop a strategy to meet the needs of laboratory clients.
- Understand the professional, legal and ethical codes of practice, and the obligations of the physician that apply to microbiology, including but not limited to issues relating to the notification of communicable diseases.
- Fulfill the regulatory and legal obligations required of current practice, including but not limited to laws and regulations regarding transportation of dangerous goods, human pathogens, and toxins.
- Understand accountability to professional regulatory bodies.
- Recognize and respond to others’ unprofessional behaviors in practice.
- Participate in peer review assessment.
- Balance personal and professional priorities to ensure personal health and a sustainable practice.
- Strive to heighten personal and professional awareness and insight.
- Recognize other professionals in need and respond appropriately.

Trainee Assessment

The supervising medical microbiologist(s) will evaluate the trainee during their rotation, after feedback from laboratory technologists, using the specific ITER for this rotation.

Author: Dr Vivian Loo
Date of last revision: October 17, 2018
Date of approval by Residency Training Committee: October 18, 2018
Medical Expert

- Describes evaluation and implementation of new tests or new technology in medical microbiology (including aspects of test performance, accuracy, ROC, etc).
- Describes components and functioning of an effective laboratory quality management system (including structure of quality management team, regulatory and accreditation requirements, proficiency testing, etc)
- Describes the biosafety requirements for different levels of service in bacteriology, and the regulatory requirements for the Transportation of Dangerous Goods (TDG)
- Describes cost evaluation processes and principles involved in analyzing and balancing a lab budget
- Utilizes laboratory information systems effectively for result reporting, storage, retrieval and analysis.

Communicator

- Leads discussion during one-on-one sessions with supervising microbiologist
- Interprets and appropriately responds to clinician’s/end-user questions on laboratory report or other aspect of testing, in a clear and intelligible manner
- Reports outbreaks/reportable pathogens to concerned stakeholders in a timely and intelligible manner

Collaborator

- Interacts daily with technologists to clarify questions and concerns
- Addresses issues of lab reporting and questions from end-users proactively
- Seeks to actively expand network of professionals within the lab and to understand the roles played by each

Leader

- Participates in protocol development or in critical review of standard operating procedures
- Manages an incident, error, or other issue related to patient safety with technologist and microbiologist, and identifies solutions to prevent recurrences
McGill

Training Program
Infectious Diseases · Medical Microbiology

- Designs and performs (under supervision by microbiologist) an appropriate Quality Assurance project (e.g., audit, systemic quality process evaluation and improvement) pertinent to the functioning of the micro lab.

- Manages priorities and time efficiently when functioning as junior attending microbiologist

**Health Advocate**

- Identifies potential safety issues in the microbiology laboratory and provides solutions for minimizing risks to staff, patients, students, and visitors.

- Describes ethical dimensions in laboratory practice and in medical decision-making

**Scholar**

- Presents results of QA project (e.g., result of laboratory audit) with supporting evidence

- Educates laboratory technologists on a selected relevant topic (teaching session)

**Professional**

- Behaves with honesty, integrity, commitment, and respect at all times.

- De-escalates and manages conflicts between end-users and lab staff as they arise

- Behaves in a responsible manner, is punctual and responds to queries in a timely manner.

- Recognizes personal limitations and seeks advice and assistance when appropriate.

Date of last revision: October 17, 2018

Date approval RTC: October 18, 2018
GENERAL INFORMATION

Rotation overview:

This 1-month rotation will be done during the final year of the medical microbiology training. By this point, the trainee will have acquired all the basic skills in diagnostic microbiology and have done one rotation in laboratory management during which they will have synthesized core principles of laboratory management. While there is substantial overlap with the laboratory management rotation, the focus during this rotation will be on quality assurance and quality improvement in the microbiology laboratory.

Learning context
The rotation will take place at the JGH. The residents will commence their rotation by participating in a quality improvement primer, consisting of a series of small group (or one-on-one) sessions with the microbiologist to review essential principles of laboratory quality, with a focus on process management, nonconformity event management and continual improvement. The residents will also set up and implement a quality-improvement project during this rotation.

Rotation specific objectives:

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

MEDICAL EXPERT

- Define and differentiate between quality control, quality improvement, quality assurance and a quality management system
- Describe the laboratory path of workflow; including pre-analytic, analytic and post-analytic phases
- Implement the 12 quality system essentials that comprise a quality management system, with a focus on process management, nonconformity event management and continual improvement
- Differentiate between verification and validation; and be able to validate or verify that processes work as intended
- Develop and implement quality control plans for: microbial transport systems, commercially prepared microbiological culture media, and commercial microbial identification systems; and Use PDSA (Plan, Do, Study, Act) cycles as a tool for process management and improvement
- Describe a systematic approach for responding to quality control failure
Training Program
Infectious Diseases - Medical Microbiology

- Describe a systematic approach for detecting significant changes in measurement procedure performance for patient samples due to reagent lot changes; and describe a systematic approach for responding to between-lot variation
- Understand the importance of, design and implement a proficiency testing program
- Describe situations in which proficiency testing may not be available; and develop and implement alternative assessment procedures
- Describe and implement non-conformity event management, including immediate mitigation actions, incident reporting and investigation
- Perform a root cause analysis (i.e. 5 why’s, Ishikawa diagrams, process mapping), implement corrective actions and measure effectiveness of corrective strategy
- Describe key quality indicators for pre-analytic, analytic and post-analytic phases of laboratory workflow; and establish a method to track, analyze and document those indicators
- Demonstrate an understanding of and implement appropriate methods to analyze, present and interpret quality indicator data (i.e. Run charts, control charts, Pareto charts)
- Demonstrate an understanding of and perform multi-role quality control using Westgard rules
- Demonstrate an understanding of the Accreditation Canada laboratory requirements
- Demonstrate an understanding of the cost of quality, to identify quality costs and remove unnecessary expense from laboratory processes

COMMUNICATOR

The resident will be able to;
- Formulate and articulate a vision, goals and objectives for quality and communicate that vision, goals and objectives to organizational leadership, employees and laboratory end-users
- Develop skills in concisely communicating nonconformities, their investigation and corrective actions (i.e. utilizing SBAR framework for reporting) to the relevant stakeholders and leadership
- Utilize education strategies directed at key players in the relevant pre-analytic, analytic, and post-analytic phase of workflow as a part of a corrective action strategy for non-conformities
- Develop skills in communicating the assessment of the effectiveness of the quality management system as defined by key quality indicators
- Develop skills to effectively communicate the process and outcomes of quality improvement initiatives
- Summarize and concisely communicate the results of internal audits, and proficiency testing

COLLABORATOR

The resident will be able to;
- Participate effectively and appropriately in an interdisciplinary laboratory and hospital environment
- Understand and implement liberating structures (i.e. TRIZ exercises, etc.) to work with and engage key stakeholders in shaping their own solutions to problems
- Prevent and mitigate interpersonal conflict in the workplace

LEADER

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Training Program
Infectious Diseases - Medical Microbiology

- Understand the importance of gathering objective data regarding a problem, in order to define solutions
- Understand the importance of engaging stakeholders at different levels of the hospital’s hierarchy to address a given problem
- Understand and implement different approaches (logical appeals, narrative, economic appeals, etc.) to persuade others to make changes
- Understand the concept of a ‘workable level of unity’ and how best to achieve this

HEALTH ADVOCATE

- Identify opportunities for the microbiology laboratory to better serve the needs of end-users, and develop strategies to improve the delivery of those services

SCHOLAR

- Demonstrate a commitment to learning by preparing for and actively participating in the introductory teaching sessions that focus on the essentials of laboratory quality
- Contribute to the process of quality assurance by completing a quality improvement project, the results of which will be communicated to the relevant stakeholders and their peers

PROFESSIONAL

- Demonstrate a commitment to the highest ethical and professional standards through interaction with laboratory technologists, patients and other health care professionals

Trainee Assessment

The quality officer and microbiologist in charge of quality for the microbiology laboratory will evaluate the trainee during their rotation and provide an in-training evaluation report (ITER).

Recommended reading

1. CLSI. Laboratory instrument implementation, verification, and maintenance; Approved guideline. CLSI document GP31-A. Wayne, PA: Clinical and Laboratory Standards Institute; 2009.


Author: Dr. Leighanne O. Parkes
Date of revision: October 11, 2018
Date approved by Residency Training Committee: October 18, 2018
ITER – (Med Micro) Med Micro for Laboratory Quality Rotation (Chap 14)

Medical Expert

- Describes principles of QC, QI, QA and quality management system including 12 quality system essentials
- Develops quality control plans for microbial transport systems, commercial culture media or identification systems
- Designs a proficiency testing program

Communicator

- Conveys laboratory quality vision to end-users and stakeholders
- Formulates and transmits corrective action plans on nonconformities to relevant stakeholders (written and verbal)
- Describes process/outcomes of quality improvement initiatives, results of internal audits and proficiency testing, clearly and effectively

Collaborator

- Uses concept of “workable level of unity” in the process of implementing quality project (ie. Works to engage as many individuals as possible even when not uniform agreement)
- Prevents and mitigates potential interpersonal conflict in the workplace

Leader

- Designs and effectively implements a quality project in the laboratory
- Seeks “best” ideas to solve a problem or address the question (literature search, and engaging lab staff or microbiologist)
- Responds to quality control failure or non-conformity effectively
- Uses PDSA (Plan, Do, Study, Act) cycles in process management and improvement

Health Advocate

- Identifies strategies to improve the delivery of laboratory services

Scholar

- Contributes to discussion in the introductory teaching sessions that focus on the essentials of laboratory quality
- Seeks to present or publish results of quality improvement project

Professional

- Adopts a positive “can do” attitude to quality management
- Demonstrates high ethical and professional standards through interactions with lab staff, and other professionals
Public Health Laboratory (LSPQ)

McGill University

Postgraduate Training Program in Medical Microbiology

Rotation Goals and Objectives

Laboratory de Santé Publique du Quebec (LSPQ)

GENERAL INFORMATION

Rotation overview:

This 1-month rotation completes the basic microbiology laboratory training through in-depth exposure to reference laboratory tests, provincial surveillance activities, as well as biosecurity and quality insurance programs performed at the level of a public health laboratory. While several of the provincial surveillance activities will also be covered during the rotation at the Public Health Department (Direction de Santé Publique), this rotation provides a unique opportunity to review competencies in advanced microbial identification. Residents will have previously completed their basic microbiology rotations (bacteriology 1 to 4, mycology, mycobacteriology, parasitology, virology, serology and Molecular microbiology) and will do this rotation during their final year of training in medical microbiology.

Learning context:

The rotation will take place at the Laboratoire de Santé Publique du Québec (LSPQ), the provincial reference laboratory, and is organized once a year (during the spring) for all medical microbiology trainees from Quebec. The residents will acquire knowledge through a combination of formal teaching sessions, practical bench work, vignettes and interactive sessions with members of the LSPQ. The main objectives of this rotation are to: a) understand the role of a public health laboratory within the health system, and the functioning of provincial surveillance programs; b) Review biosafety and biosecurity for different biocontainment levels; c) learn reference-level identification of clinically important fungi and parasites

The residents will meet and work with different experts throughout their 4 weeks, listed below:

- Quality insurance and biosafety: France Corbeil, Maud Vallée and Philippe Dufresne
- Mycology: Philippe Dufresne
- Parasitology: Karine Thivierge
- Bacteriology and Mycobacteriology: Marc-Christian Domingo, Hafid Soualhine and Sadjia Bekal
- Surveillance, laboratory-based surveillance and outbreak investigation of enteric pathogens, antimicrobial resistance, healthcare-associated infections, reportable diseases and bioterrorism: Sadjia Bekal, Cindy Lalancette, Réjean Dion, Brigitte Lefebvre
- Virology: Richard Marchand, Donald Murphy, Sandrine Morizet and Christian Therrien

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Infectious Diseases - Medical Microbiology

- Serology based diagnosis: Bouchra Serhir, Karine Thivierge and Christian Therrien

Learning objectives

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

MEDICAL EXPERT

- Understand the role of a public health laboratory
  - Describe its main functions, recognize the pivotal role within the health system (Laboratory proficiency testing, development and optimization of diagnostic tools, collaboration with healthcare system)
- Understand and apply a quality insurance program in a microbiology laboratory
  - Describe the principles and requirements for the ISO (International Organization for Standardization) 15189 standards
  - Demonstrate knowledge of the objectives and structure of the laboratory proficiency testing for medical microbiology laboratory
  - Understand the process and challenges in the elaboration of simulated samples for proficiency testing
  - Interpret the performance of the participating laboratory using the criteria of identification of minor and major errors
- Demonstrate knowledge of the biosafety and biosecurity for different biocontainment levels
  - Describe the different element required for a comprehensive biosecurity program
  - Become familiar with the Human Pathogens and Toxins act and Regulations
- Gain competence in the identification of medically important fungi
  - Describe the classification of medically important fungi
  - Identify, with the help of an identification key, at the genus and species level the most frequently encountered fungi in clinical specimens using morphological and biochemical criteria
  - Describe the susceptibility testing method used (reference and commercial methods), the breakpoint criteria and the epidemiologic cut-off values
  - Become familiar with identification methods for fungi such as nucleic acid amplification tests, sequencing of target genes and mass spectrometry (MALDI-TOF)
  - Understand the performance and utility of various serology tests in clinical mycology
  - Understand how to appropriately select, interpret and communicate the results of serologic test for the following pathogens: *Histoplasma capsulatum, Blastomyces dermatitidis, Coccidioides immitis/posadasii, Cryptococcus neoformans*
- Gain competence in the identification of medically important parasites
  - Know how to properly set up the microscope and calibrate the microscopic ocular micrometer in order to perform proper examination and identification
  - Detect and identify intestinal protozoa and helminth and learn to distinguish them from common artefacts
  - Detect and identify blood and tissue protozoa and helminth and learn to distinguish them from common artefacts
  - Identify medically important arthropods
  - Become familiar with the different diagnosis methods used in the parasitology laboratory and specimen processing
  - Rapid diagnostic tests for malaria
  - Conservation and fixation of stool specimens
Training Program
Infectious Diseases - Medical Microbiology

- Principles of thin smears and thick smears for diagnosing malaria
- Staining: Giemsa, iron-hematoxylin and Kinyoun stains, combined hematoxylin staining and Kinyoun stain
- Culture techniques: *Strongyloides stercoralis*, *Acanthamoeba* spp.
- Technique for concentration of stool and blood parasites
- Molecular techniques for detection of stool, blood and tissue parasites
- Demonstrate knowledge of the molecular biology techniques applied to bacteriology and mycobacteriology
  - Understand the principles of housekeeping genes sequencing for identification (16S rRNA, *tuf*, *rpoB*, *cpn60* genes)
  - Become familiar with the detection of antibacterial resistance gene
  - Know the epidemiology of tuberculosis in Quebec (genotyping and antimicrobial resistance)
- Demonstrate an understanding of the principles of surveillance, reportable diseases and outbreak investigation
  - Describe the goals and objectives of surveillance and the role of the public health laboratory in infectious diseases surveillance
  - Understand the criteria used to define a reportable infection
  - Enumerate the reportable infection in Quebec and know how to report them
  - Describe the goals, objectives of different laboratory-based surveillance programs and their impact on public health interventions
  - Describe the process of surveillance, laboratory analysis and investigation of foodborne illness in Quebec
  - Describe and understand the roles of the Canadian networks for enteric pathogens and bioterrorism surveillance (PulseNet, Laboratory Response Network, Eastern Border Health initiative)
  - Understand the methods used to detect potential bioterrorism organisms and to investigate a possible threat from suspicious letters or packages
  - Understand the new developments in molecular biology and their role in outbreak investigation
  - Become familiar with the objectives and structure of the different surveillance programs of healthcare-associated infections (MRSA, VRE, C. difficile)
  - Understand the method of molecular typing by pulse-field gel electrophoresis (PFGE), its application and the interpretation of the results (Tenover criteria)
  - Demonstrate an understanding of other methods for bacterial genotyping such as MLST, SBT, MLVA, ribotyping) and their application in outbreak investigation
  - Describe the methods used to detect et investigate *Legionella* outbreaks
  - Describe the framework and the structure developed in Quebec for the surveillance, control and prevention of antimicrobial resistance (National and international surveillance, Department plans, laboratory-based surveillance)

- Establish knowledge of the molecular diagnosis and surveillance of viral infections
  - Understand the role of molecular biology for the diagnosis and treatment follow-up of hepatitis B and C virus
  - Understand the principles of different nucleic acid amplification tests (PCR, SDA, TMA/NASB, LAMP, bDNA)
  - Demonstrate an understanding of the epidemiology and detection methods used to diagnosed emerging viruses (e.g. Influenza, MERS-CoV, Ebola)
  - Describe the different methods used for sequencing

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- Understand the role and functions of the Influenza surveillance program
- Understand the principles and applications of serologic diagnosis performed in a public health laboratory
- Demonstrate an understanding of the algorithm used in Quebec for the diagnosis of syphilis and the confirmation test performed at LSPQ
- Demonstrate an understanding of the algorithm used in Quebec for the confirmation of HIV infection performed at LSPQ
- Be familiar with the epidemiology of syphilis and HIV infection in Quebec
- Understand the principles and applications of other immunoassays including hemagglutination inhibition, complement fixation and virus neutralization assays (including plaque reduction neutralization assays)
- Understand key analytical factors that impact upon serology test performance including: measurement and reference range, sensitivity, specificity, accuracy, precision and interference
- Demonstrate an understanding of the process of validation of an immunoassays and the Westgard rules
- Describe the diagnosis algorithm of Lyme disease in Quebec
- Describe and explain the principles of the immunoassays used to diagnose arboviral infections (e.g. Enzyme immunoassays, hemagglutination inhibition, complement fixation, plaque reduction neutralization assays)

COMMUNICATOR

- Advise the clinician on tests available at the public health laboratory
- Respond to questions from clinicians and the health care workers about the pre-analytical considerations, diagnosis algorithm used at LSPQ and interpretation of test results
- Advise the clinicians on appropriate follow-up of confirmatory testing done at LSPQ
- Declare reportable infectious diseases in a timely fashion and advise the clinicians to declare reportable infectious diseases to the public health agency
- Respond to questions from professional experts working at LSPQ to help them better understand the clinical aspect that triggered a reference testing
- Communicate in a timely fashion suspicion of outbreak, emerging infection or potential threats such as bioterrorism to the LSPQ and public health

COLLABORATOR

- Accept, consider and respect the opinions of other team members
- Participate effectively and appropriately in an interdisciplinary laboratory environment
- Work with other care givers to provide timely, effective reference laboratory support for clinical care, and with reference laboratories to obtain supplementary information as necessitated based on the clinical context
- Recognize the infectious diseases reportable to public health and communicate in a timely fashion the information required
- Participate in laboratory proficiency testing and provide support in interpreting performance of the participating laboratories

LEADER

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Program Director: Dr Makeda Semret  makeda.semret@mcgill.ca
Training Program
Infectious Diseases • Medical Microbiology

- Perform and interpret quality control/assurance testing of media, reagents, etc
- Describe assessment, accreditation, and audit processes as applied to microbiology
- Contribute to the development of microbiology testing algorithms and gatekeeping strategies
- Describe the structure and function of the health care system as it relates to laboratory medicine and Medical Microbiology, including the role and structure of community and hospital based clinical microbiology laboratories, provincial/public health microbiology laboratories, and reference microbiology laboratories

HEALTH ADVOCATE

- Advocate for methodologies, technologies, and strategies that maximize patient and staff safety and reduce possibility of errors or adverse effects
- Identify opportunities to advocate for antimicrobial stewardship and appropriate infection control, reporting of communicable diseases, and management of outbreaks, health education, and public safety
- Demonstrate an understanding of the role of public health in the prevention and management of particular infectious diseases, including HIV, sexually transmitted infections, tuberculosis, and vaccine preventable diseases
- Demonstrate understanding of ongoing health surveillance and trend analysis for early identification and prevention of communicable diseases outbreaks and the ability to apply epidemiological analysis for advocacy purposes
- Identify the role of laboratories in maintaining and promoting health and health equity for patients, families, and communities
- Employ the principles of public health in the detection, surveillance, and prevention of infectious diseases of public health importance, and in required communication and collaboration
- Demonstrate an appreciation for the value of sharing antibiograms and local epidemiology information to support hospital and public health programs such as antibiotic stewardship, infection prevention and control, communicable disease control, and outbreak investigation
- Demonstrate an understanding of current policies that affect health, such as immunization programs, infection control, disease surveillance, outbreak management, and antimicrobial stewardship

SCHOLAR

- Recognize and identify gaps in knowledge and expertise around a question regarding a public health issue
- Demonstrate a commitment to continuous learning through preparing for and leading the discussion in the teaching sessions and problem-based learning sessions
- Recognize practice uncertainty and knowledge gaps in medical microbiology, quality insurance, biosecurity and public health issues and generate focused questions that address them
- Demonstrate an understanding of the scientific principles of research and scholarly inquiry and the role of research evidence in public health

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PROFESSIONAL

- Exhibit appropriate professional behaviors and relationships in all aspects of practice,
- Serve as an example of safe laboratory practice at all times
- Provide timely, clear, and accurate reporting of outbreaks, reportable pathogens, nosocomial infections, or biosafety issues to public health
- Demonstrate responsibility in timely communication of reportable infectious diseases
- Demonstrate insight into their own limits of expertise
- Recognize and appropriately respond to ethical issues encountered in Medical Microbiology, including public health issues such as isolation and quarantine and reportable diseases

Recommended resources:
- Textbook of Medical Microbiology
- Reading material provided during rotation

Trainee Assessment:
The trainee will receive an in-training evaluation report (ITER Med Micro LSPQ) based on their attendance, participation and successful completion of the examination.

Author: Dr Sapha Barkati, Dr Makeda Semret
Date of last revision: October 14, 2018
Date of approval by Residency Training Committee: October 18, 2018
Medical expert

- Identifies most frequently encountered fungi in clinical specimens using morphological and biochemical criteria
- Identifies most frequently encountered medically important parasites
- Describes molecular biology techniques applied to bacteriology, mycobacteriology and virology
- Describes principles of surveillance, reportable diseases and outbreak investigation
- Describes the goals and objectives of surveillance and the role of the public health laboratory in infectious diseases surveillance

COMMUNICATOR

- Participates actively in didactic teaching sessions
- Responds to questions from professional LSPQ experts clearly and concisely

COLLABORATOR

- Accepts, considers and respects the opinions of LSPQ staff and other trainees on rotation

LEADER

- Manages time efficiently during bench work
- Recognizes knowledge gaps and addresses questions appropriately

HEALTH ADVOCATE

- Identify the role of laboratories in maintaining and promoting health and health equity for patients, families, and communities
- Demonstrates an understanding of current policies that affect health, such as immunization programs, infection control, disease surveillance, outbreak management, and antimicrobial stewardship

SCHOLAR

- Demonstrates a commitment to continuous learning through adequate preparation for teaching sessions and problem-based learning sessions
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- Recognizes practice uncertainty and knowledge gaps in medical microbiology, quality insurance, biosecurity and public health issues and generates focused questions that address them

PROFESSIONAL

- Arrives punctually and attends all sessions (organized teaching and bench work)
- Exhibits courteous and respectful behavior at all times
APPENDIX 1: Terms of Reference for Residency Training Committee (RTC)

Preamble:
As most residents are enrolled in both Microbiology and Infectious Diseases, and most ID faculty are also Medical Microbiologists supervising training in Medical Microbiology, a combined RTC meets for the (Adult) Infectious Diseases and Medical Microbiology programs. Issues specific to each of the programs will be 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 will be composed of: the ID Division Director (university chair), ID division directors for each training site, the Director of Microbiology laboratories for the McGill network of hospitals, at least one former Program Director, rotation coordinators, in-training examination coordinator, the teaching technologist, the chair of the Program Competency Committee (PCC), the Program Director for Pediatric Infectious Diseases, the Chair of the Residency Research Committee, and an elected resident representative (usually the Chief Resident or their designate). 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 (PCC)

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 assessment policy

The faculty supervisor responsible for the rotation performs resident assessments. Assessments should be completed via McGill’s one45 system within 2 weeks of the rotation.

Supervisors must make every effort to provide timely ongoing formative feedback (at a minimum, midway through the rotation) to all 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.

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. The Faculty requires all residents to 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.

A resident will receive a global assessment at the end of each rotation submitted by the faculty supervisor responsible for the resident during the rotation. If more than one faculty member is involved in the supervision of a resident during a rotation, for example during in-patient ID Consultation service, the last faculty supervisor working with the resident will be responsible for submitting a summative assessment, which must reflect the opinions of all the supervisors involved.

The assessment is based on the goals and objectives of the rotation and/or competencies each resident is required to attain at different levels of training (using the specific In – Training Evaluation Reports for each rotation). 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).

The resident bears some personal responsibility for ensuring that the rotation assessments are submitted in a timely fashion:

☐ In order for a resident to obtain a rotation assessment from the One45 System, he/she must submit an assessment of the supervisor(s) and of the rotation.

☐ If the assessment is not available within two weeks of the end of the rotation, the resident is encouraged to report this to the Program Director’s office. If the resident does not agree with an assessment, he/she should follow the process outlined in the Appeal’s Policy.

Some rotations may be longer than 4 weeks (2, 3 or 6 blocks), for example, longitudinal clinic rotations. Regardless of the duration of the rotation, a resident must receive a summative assessment after 12 weeks (maximum) and this must be submitted through the One45 System.

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

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

b) A SUPERIOR global assessment means that the overall performance of the resident has exceeded either 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) 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.

b) 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.

A resident with an UNSATISFACTORY or BORDERLINE global assessment must be notified immediately by their faculty supervisor and/or Program Director. In the event of a concern regarding an unsatisfactory or borderline global assessment, residents are first encouraged to discuss directly with their supervisors. Should a resident contest the global assessment, the resident should notify the Program Director to initiate the formal appeal process (listed under Policy on Appeals). In the event the Program Director was be involved directly in the global assessment, the Director of Infectious Diseases Service or the Program Ombudsman will assume this responsibility.

Date of last revision: October 16 2018
APPENDIX 5: Appeal Policy

Contesting a Global Rotation Assessment

A resident who is not in agreement with a rotation assessment should first discuss that assessment with the Faculty Supervisor who wrote it. The resident might provide additional information or suggest other supervisors he/she worked with during that same rotation who could speak on his/her behalf. These supervisors should only discuss the rotation in question and not promotion implications of the assessment. The supervisor has two options:
   i) The supervisor may choose to revise the assessment and the “revised” assessment becomes the official one, or
   ii) The original assessment remains as is.

Appeal Process

A resident who wishes to formally contest a rotation global assessment, which is UNSATISFACTORY or BORDERLINE, may appeal this decision. In that case, the resident must submit the request in writing to the Program Director within twenty-eight (28) days of the resident receiving the assessment in the One45 system. The request for an appeal must describe the grounds on which the appeal is based, and provide the factual information on which the resident is relying on to support such grounds. In such cases, an Ad Hoc Appeal Committee will be set up.

Ad Hoc Appeal Committee Members

Chair of the Ad Hoc Appeal Committee: a member in the Faculty of Medicine who has not been involved in the assessment of the resident in the past, and selected by the Faculty Postgraduate Promotions Committee (FPPC), or delegate.

Three members of the training program (faculty) chosen by the Program Director, and who ideally have not been involved in the assessment of the resident in the past. Should that not be possible (ie all faculty members of the division have assessed the resident in the past), faculty from the division of Pediatric ID, or from another division, will be chosen to sit on the Ad Hoc Appeal Committee.

A 4th member (resident) can be appointed if the resident choses to have a resident as part of the Ad Hoc Committee. The resident selected should have had no previous contact or link with the resident requesting the appeal and should be from another training program. The resident contesting the global assessment cannot choose a particular resident as member of the committee.

The resident contesting the global assessment must have access to: i) All final written assessments/correspondence on his/her performance relating to the rotation being appealed; ii) All documentation presented to the Ad-Hoc Appeal Committee. Patients’ medical records are not admissible in these proceedings.

The resident should ensure that any relevant and admissible correspondence or documentation to be presented is made available to the Secretary of the committee at least ten (10) working days prior to the meeting. Relevant and admissible documentation will be
The mandate of the Ad Hoc Appeal Committee is to review only the specific rotation assessment being contested. Other assessments in the resident's dossier, and future status of the resident as a result of this assessment, must not be reviewed or discussed. It is not the mandate of this committee to discuss the “promotion implications” of the given assessment.

Both the Faculty Supervisor and the resident may be accompanied by an Advisor (as per Article 1.7). The Faculty Supervisor, who submitted the Global BORDERLINE or UNSATISFACTORY Rotation assessment being contested, should attend the hearing. The Faculty Supervisor may bring additional supervisors from that rotation who contributed to the resident's assessment. The Faculty Supervisor and the resident should appear simultaneously; neither of the parties will be allotted an additional hearing. The Program Director should not participate in the hearing of an Appeal of a Rotation Assessment unless he/she was one of the supervisors of the trainee during the rotation being contested. Every effort should be made to ensure that the meeting is informal and non-confrontational.

**Ad Hoc Appeal Committee’s Determination**

In making its determination, the Committee will review whether:

- The supervisor was aware of the training level of the resident
- The supervisor was aware of the goals and objectives of the rotation and/or the required competencies for the resident
- In the supervisor’s opinion, there was adequate time and exposure to assess performance
- The supervisor had input from other sources if appropriate
- The resident was treated in accordance with the Faculty of Medicine’s Code of Conduct

The Ad Hoc Appeal Committee has the following options:

i) The global assessment may remain unchanged
ii) An unsatisfactory global assessment may be changed to borderline or to satisfactory
iii) A borderline global assessment may be changed to satisfactory or to unsatisfactory.

If the decision of the Ad Hoc Appeal Committee is to change the final assessment category, this decision changes only the overall final assessment category but does not change any of the comments or assessments in the subcategories in the assessment form.

In exceptional circumstances if the Committee is unable to reach a decision as a result of incomplete information or a procedural error, this must be reflected in the minutes and the matter referred to the Faculty Postgraduate Promotions Committee.

The parties are informed verbally by the Chair of the Ad Hoc Appeal Committee or delegate as soon as the decision has been made, and in writing. Minutes must be kept of the meeting. The minutes and all written communication must be sent to the Associate Dean of Postgraduate Medical Education.

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Status of Training during Appeal Process

While waiting for the outcome of the appeal process, a resident will remain at the same training level, and promotion to another level will be delayed pending the outcome of the appeal. If the appeal results in a SATISFACTORY assessment and the resident’s promotion to the next training level was delayed pending the outcome of the appeal, the resident will be promoted to the next training level after the outcome of the appeal is known. In this circumstance, the start date for the resident’s promotion to the next training level must be after the outcome of the appeal is known. In the event the appeal is successful, the Associate Dean of Postgraduate Medical Education shall have discretion concerning whether and how the waiting period will be credited. If the appeal is unsuccessful, then the resident will be considered for remediation at their current level (see remediation policy).

Contesting A Suspension or A Dismissal

If a resident is suspended or dismissed by the Faculty Postgraduate Promotions Committee and wishes to appeal that decision, he/she must make the request in writing, including a clear statement of the grounds for requesting the appeal, within fourteen (14) working days to the Dean of the Faculty who will then appoint an Ad Hoc Promotions Review Committee. The committee will consist of four (4) members of the Faculty’s academic staff and one (1) senior resident registered in a McGill University residency training program. All members will be knowledgeable about the postgraduate training process but must have had no previous knowledge of the resident or the case under appeal. One member will be designated as Chair.

In order to give the resident time to prepare for the meeting, there will be a minimum two-week notice period. It may be scheduled earlier if the resident requests it or agrees in advance to the shorter notice period.

The Secretary will call for a dossier from each party which will be circulated to the Committee members and all parties prior to the meeting. The dossier must be submitted to the Secretary at least ten (10) working days prior to the meeting. The Secretary to the Faculty (or delegate) acts as a technical advisor and secretary to the Committee. The Ad Hoc Promotions Review Committee has the right to review the entire record of the resident. The Chair of the Faculty Postgraduate Promotions Committee, or delegate, represents the Faculty Postgraduate Promotions Committee. Either party may be accompanied by an advisor (as per Article 1.7). Witnesses may be called if needed. The Secretary must be informed of the names of witnesses and advisors at least five (5) working days prior to the hearing. Both parties will appear before the Committee and withdraw simultaneously. The meeting is informal and non-confrontational. The Chair of the Faculty Postgraduate Promotions Committee will present the Faculty Postgraduate Promotions Committee position, and the resident will present his/her position. The Committee members may ask questions of either party. The parties may also question each other in order to clarify points. All members of the Committee including the Chair, have a vote. The parties are informed verbally by the Secretary as soon as the decision has been made, and in writing, as soon as possible. Grounds for overturning the decision of the Faculty Postgraduate Promotions Committee shall be limited to the following:

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The Ad Hoc Promotions Review Committee may refuse to give formal hearing to an appeal, after considering the written submissions of the resident, if by unanimous consent of the members, there is no basis for the appeal. Within the Faculty of Medicine, decisions of the Ad Hoc Promotions Review Committee are final.

Date of last revision: October 16 2018
APPENDIX 6: Policy on Remediation and Focused learning Experiences (FLEX)

Every attempt is made to provide guidance to residents to define, address, and remediate problems before they lead to a borderline or unsatisfactory evaluation. Specifically, weaknesses identified in a resident’s performance but not significant enough to lead to a borderline or unsatisfactory evaluation are discussed first by the supervising faculty conducting the evaluation and documented in the In-Training Evaluation Report (ITER). The Promotions Competency Committee (PCC) will assess such issues (communicated in the comments section of the ITERs) with specific suggestions for improvement, which will be communicated to the resident by the Program Director during the subsequent 6-month evaluation (within one month).

In the event of the more serious borderline or unsatisfactory evaluation(s) for a resident who is experiencing significant but remediable academic difficulties, the PCC can recommend:

1) A full review of the overall progress of the resident based on the goals and objectives of the program and the competencies, which the resident has achieved. This review is completed by the Program Director, in consultation with the resident, and is subsequently presented to the PCC for approval. The resident will be given the opportunity to meet with the PCC while it is reviewing the resident file. The PCC will then review and recommend the resident be placed on an appropriate FLEX.

2) The FLEX should start as soon as possible upon completion of the above process, and the duration can last from 1 to a maximum of 6 periods in the same academic year.

3) The structure of the FLEX will include the required clinical and other educational experiences designed to address the needs of the resident. The remedial plan must be in writing and include:
   • Resident background training information
   • The aspects of the resident’s performance that requires particular attention;
   • The proposed educational plan including learning experiences, mentors, role coaches, and/or reading plan (as applicable)
   • The specific duration of the FLEX
   • The expected goals and objectives of the FLEX and how they will be assessed throughout the FLEX as well as upon its conclusion.

4) The resident should be consulted about the design of the FLEX as described in the above section.

5) The FLEX must be documented in writing and the resident must be provided with a copy of the written FLEX plan.

6) If the resident agrees with the FLEX, he/she must indicate this in writing and then the FLEX may begin as soon as it is developed by the PCC and before it is presented to the Faculty PostGraduate Promotions Committee (FPPC).

7) If the resident does not accept the recommendation of the PCC for the FLEX or doesn’t agree with the proposed FLEX plan, then the resident may sign the document indicating his/her disagreement and appeal the recommendation to the FPPC. In that case, FLEX may not begin until it is approved by the FPPC.

8) While waiting for the decision of the FPPC, a resident will remain at the same training...
level, and promotion to another level will be delayed pending the decision of the FPPC. In the event the resident is thereafter promoted to the next level out of cycle, the Associate Dean of Postgraduate Medical Education shall have discretion concerning whether (and how) the waiting period will be credited. The Associate Dean of Postgraduate Medical Education may, in exceptional circumstances (involving patient safety or other exceptional issues), require FLEX to begin before review by the FPPC.

9) During the FLEX, the Program Director and resident are expected to take an active role in assessing the resident’s progress in achieving the FLEX goals and objectives. This means written assessments should be submitted at least once per period. If it is determined by the Program Director that the resident is progressing well, then the FLEX period may continue as originally structured. If it is determined by the Program Director that the FLEX is not progressing well as documented by assessments of resident competencies based on the goals and objectives of the FLEX, then the FLEX period should be re-evaluated. This reevaluation will include reconsideration of the components of the FLEX as well as lengthening the duration. Modifications and extensions of FLEX can be recommended by the Program Director, in consultation with the resident, to the PCC and are subject to approval by the FPPC. The maximum time permitted in FLEX in the same academic year is a total of 6 periods.

10) At the end of the FLEX, the PCC will review the resident assessments in order to determine if the goals and objectives of the FLEX were met and the resident achieved the required competencies for this period of remedial training.

11) If the PCC concludes that the goals and objectives were met and the resident demonstrated the required competencies, then it will recommend that the resident be reintegrated into the program at the same level of training they were at before starting their FLEX, subject to approval by the FPPC. Under usual circumstances, the resident will continue out of phase after successfully completing a FLEX period. Vacations or other leaves taken during FLEX may lengthen the duration of the FLEX period. All leaves requested during FLEX must be approved by the PCC. Under exceptional circumstances, a Program Director, in consultation with their PCC may recommend that some period of training be waived but this must be approved by the FPPC in accordance with the Waiver of Training Policy.

12) If the PCC concludes that the goals and objectives were not met and the resident did not demonstrate the required competencies at the end of the maximum period of 6 periods of FLEX, then it will recommend the resident will undergo remediation with probation (described below). This recommendation is subject to approval by the FPPC.

Remediation with Probation
This applies to residents who are experiencing serious and/or persistent academic difficulties, as demonstrated by:
• Completing the maximum time permitted in a FLEX (6 periods) without successfully meeting the goals and objectives or achieving the required competencies of the FLEX; or
• Successfully completing the maximum time permitted in FLEX (a total of 6 periods) and obtaining a BORDERLINE or UNSATISFACTORY in another rotation period during the same academic year; or
• A recommendation by the PCC (with appropriate supporting documentation)

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In such cases, the resident will have their overall progress in the program reviewed based on the goals and objectives of the program and the competencies achieved. This review is completed by the Program Director, in consultation with the resident, and is subsequently presented to the PCC for approval. The resident must be given the opportunity to meet with the PCC while it is reviewing the resident file. The PCC will then review and recommend that the resident be placed on an appropriate period of remediation with probation.

1) Remediation with probation should start as soon as possible upon completion of the above process.

2) The duration of the remediation with probation will be from 3 to a maximum of periods, as recommended by the PCC and approved by the FPPC.

3) The structure of the remediation with probation will include the required clinical and other educational experiences designed to address the needs of the resident. The remedial plan must be in writing and include:
   • Resident background training information;
   • The aspects of the resident’s performance that requires particular attention;
   • The proposed educational plan including learning experiences, mentors, role coaches, courses (as applicable);
   • The specific duration of the remediation with probation period;
   • The expected goals and objectives of the remediation with probation and how they will be assessed.

4) The resident should be consulted about the design of the remediation with probation period as described above.

5) The remediation with probation must be documented in writing and the resident must be provided with a copy of the remediation with probation plan.

6) If the resident agrees with the remediation with probation, he/she must indicate this in writing and then the remediation with probation may begin as soon as it is developed by the PCC and before it is presented to the FPPC.

7) If the resident does not accept the recommendation of the PCC for the remediation with probation or does not agree with the proposed plan, then he/she may sign the provided document indicating his/her disagreement and appeal the PCC recommendation to the FPPC. In such cases, Remediation with Probation may not begin until it is approved by the FPPC.

8) While waiting for the decision of the FPPC, a resident will remain at the same training level, and promotion to another level will be delayed pending the decision of the FPPC. The Associate Dean of Postgraduate Medical Education may, in exceptional circumstances (involving patient safety or other exceptional issues), require remediation with probation to begin before review by the FPPC.

9) During the remediation with probation, the Program Director and resident are expected to take an active role in evaluating the resident’s progress of the Remediation period in achieving its goals and objectives. This means written assessments should be submitted at least once per period. If it is determined by the Program Director that the resident is progressing well, then the remediation with probation may continue as originally structured. If it is determined by the Program Director that the remediation with probation period is not progressing well as documented by assessments of resident competencies based on the goals and objectives of the remediation with probation, then the remediation
with probation period should be re-evaluated. This re-evaluation will include reconsideration of the components of the remediation with probation as well as lengthening the duration. Modifications and extensions of remediation with probation are to be recommended by the Program Director, in consultation with the resident, to the PCC and are subject to approval by the FPPC. The maximum time permitted in remediation with probation is 6 periods. Vacations or other leaves taken during remediation with probation may lengthen the duration of the remediation with probation period. The Associate Dean of Postgraduate Medical Education must approve all leaves requested during remediation with probation.

10) At the end of the remediation with probation period, the PCC will review the resident assessments in order to determine if the goals and objectives of the remediation with probation period were met and the resident achieved the required competencies for this period of remedial training.

11) If the PCC concludes that the goals and objectives were met and the resident demonstrated the required competencies, then the PCC will recommend that the resident be reintegrated into the program at the same level of training they were at before starting their remediation with probation period. This recommendation is subject to approval by the FPPC.

12) If the PCC concludes that the goals and objectives were not met and the resident did not demonstrate the required competencies at the end of the maximum period of 6 periods of remediation with probation, then the PPC/CC will recommend that the resident be dismissed. This recommendation is subject to approval by the FPPC.

13) A resident is not entitled to more than one remediation with probation during their training at McGill. Residents whose lack of progress in the program would require additional remediation will be dismissed, unless the FPPC determines that exceptional circumstances justify otherwise.

14) Under usual circumstances, the resident will continue out of phase after successfully completing a remediation with probation period. Under exceptional circumstances, a Program Director, in consultation with the PCC, may recommend that some period of training be waived but this must be approved by the FPPC in accordance with the Waiver of Training Policy.
APPENDIX 7: Contact Information for Resident Safety and References

CROSS-REFERENCES TO RELATED POLICIES:


Health Care Facility Workplace Hazardous Material Information System WHMIS

McGill Student & Resident Affairs web site: http://www.mcgill.ca/medwell


CONTACT INFORMATION:

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

MUHC Commissioner for a Respectful and Non-violent Workplace: https://muhc.ca/sites/default/files/docs/Respect_Summary_En.pdf (514) 934-1934 ext 71834


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

APPENDIX 8: Resident Wellness Policy

Title: PGME WELLNESS POLICY
Policy Number: TBD
Responsible Executive(s): Dr. Paola Fata, Assistant Dean, Resident Affairs
Responsible Office(s): The WELL Office, Faculty of Medicine (PGME)
Contact: paola.fata@mcgill.ca
Date Issued: 2018/12/12

I. Policy Statement

This policy reflects the McGill Faculty of Medicine’s commitment to a safe, positive, and healthy learning environment for all McGill postgraduate medical trainees by creating, promoting, and sustaining a culture of wellness and resilience within the workplace.

Working together with The WELL Office, the Faculty of Medicine’s Learner Affairs Office, PGME Resident Professional Affairs offers and supports wellness-related programs that assist learners in optimizing their physical, mental, and emotional well-being. The WELL Office regularly monitors the learning environment through confidential reporting, surveillance, and annual surveys, and assists programs in developing positive learning environments leading to improved learning, satisfaction, and morale.

II. Who Is Affected By This Policy

This policy applies to all residents and fellows in Postgraduate Medical Education at McGill University’s Faculty of Medicine, as well as all McGill residency programs and faculty involved in their training.

III. Policy

The WELL Office

The WELL Office provides McGill post-graduate medical trainees a safe and confidential venue to seek out resources that protect and enhance their health and well-being. Residents and fellows have access to academic support with respect to academic counselling, remediation, and accommodation, as well as wellness support through individual counselling, support groups, and outreach.

1. A confidential environment is provided where learners can discuss concerns freely.

2. No member of the office has an evaluative role, including the Assistant Dean, Resident Affairs.

3. The WELL Office conducts regular assessments and evaluations on meeting wellness objectives, as well as learning environment scans, both in hospital and program-based assessments.
4. The WELL Office develops an annual wellness plan with measurable objectives that address the primary components of a healthy lifestyle during medical training, reflects the needs and interests of residents, and offers all residents the same quality and access to programs.
Our Wellness Consultants are responsible for establishing and maintaining the infrastructure of the WELL Office, by offering residents daytime and evening appointments for one-on-one wellness support and facilitating support groups and workshops designed to enhance resident resilience and well-being. Wellness Consultants belong to a professional order and are bound by a strict ethics code with regard to confidentiality and conflicts of interest.

Wellness Committee

The Wellness Committee is comprised of three Assistant Deans (UGME, PGME and Schools) and their respective Wellness Consultants, and meets formally to assist in identifying aims, goals, and implementation strategies to encourage healthy behaviors in the clinical setting, advocate for policy change, and create health-friendly work environments. Committee members are expected to be actively involved in programming, including participating in sub-committees.

Accommodations Committee

The Accommodations Committee is an ad-hoc committee that meets upon special request of the Assistant Dean, Resident Affairs to develop plans and request accommodations for residents during their training.

The Accommodations committee is comprised of a representative from the Office of Students with Disabilities, the Program Director, a content expert and resident advocate, and an experienced faculty member from a different discipline. The committee is chaired by the Assistant Dean, Resident Affairs.

The written report and recommendation from this committee is communicated directly to the program director by the Assistant Dean, Resident Affairs and, in cases of conflict, it is presented to the PGME Associate Dean for final decision.

Confidentiality and Conflict of Interest

1. Counselling electronic files are kept securely and are archived for 5 years following their closing, after which time they are deleted.
2. Administrative personnel have absolutely no access to confidential files.
3. Learner information can only be released with the learner’s written consent.
4. In cases where a learner has an academic relationship with a physician who has provided them with medical care, the learner has the right to ensure that the provider recuses him/herself from subsequent evaluations. The learner is encouraged to request a change in supervisor or teaching site, as necessary. Alternatively, the learner can still be taught by this physician, as long as there is an explicit understanding that they do not partake in the learner’s evaluation process.
5. In cases where a learner has an academic relationship with a provider, they have the right to request that McGill Health Services or any other clinic refer them to another physician.

Policy on Fatigue Risk Management

The following guidelines are in accordance with recommendations put forward in the recently published Fatigue Risk Management Toolkit, a national resource for Canadian postgraduate medical education.
RESIDENCY PROGRAMS

1. Leaders of clinical learning environments are responsible for ensuring that fatigue risk management (FRM) is a priority, for developing and implementing an institution-wide FRM policy, and for inviting trainees to effectively contribute to the creation of a management plan.

2. All programs must create a just culture-learning environment that enables the reporting of fatigue-related incidents.

LEARNERS

1. Every trainee bears a responsibility to self, to their peers, and to those they provide care for to manage their own fatigue during training and as they transition into practice.

2. Learners have a responsibility to obtain sufficient sleep, identify when they believe they are at risk of making a fatigue-related error, and report this to their immediate supervisor/attending physician.

Incident or event reporting is to be confidential and for the purposes of maintaining a safe learning environment, therefore residents should feel safe in voicing and reporting any fatigue-related risks they observe.

Complaint Management

The McGill PGME Office, residency programs, faculty, and post-graduate medical learners have a duty to adhere by the Faculty of Medicine’s Code of Conduct to ensure a safe and equitable learning and working environment. This includes, but is not limited to, the following:

1. Ensuring that the workplace is free of harassment, intimidation, or mistreatment on the basis of religion, gender, sexual orientation, race, color, age, health condition, and level of training (see a) McGill’s Policy on Harassment, Sexual Harassment, and Discrimination Prohibited by Law and b) the Categories of Mistreatment based on the definition of mistreatment by the American Association of Medical Colleges).

2. Ensuring that postgraduate trainees are educated with respect to the safety policies governing the workplace and the learning environment (see Postgraduate Medical Education & McGill Health Care Facility Resident Health & Safety Policy).

3. Recording in writing and acting promptly on any safety concerns and incidents reported by residents, following the McGill Faculty of Medicine Learner Mistreatment Reporting Process, or against residents, following the PGME Process for Investigation of Complaints.

4. Ensuring that every reasonable effort is made to record resident concerns in confidence and that residents’ rights to privacy and anonymity is protected at all times.

5. Ensuring that the FMRQ Collective Agreement with regard to resident leaves of absence, accommodation conditions, call schedule and duty, parental rights, and all other wellness-related policies is followed.
All trainees are encouraged to anonymously report incidents of mistreatment in the learning environment via the WELL Office webform, or privately and confidentially to the Assistant Dean, Resident Affairs.

Policy History and Updates:

Policy issuance date: December 2018