
Basic Clinical Year – Infectious Diseases Objectives

Selection:	Mandatory
Site:	University of Alberta Hospital, Royal Alexandra Hospital
Preceptors:	Dr. Isabelle Chiu or designate(s)
Length of Rotation:	One block (four weeks)
Prerequisites:	None

General Objectives

To provide exposure to a broad range of inpatient and outpatient diseases and clinical, therapeutic and diagnostic problems while working within the context of a multidisciplinary healthcare team.

Specific Objectives

During this rotation, the resident will display the following knowledge, skills and attitudes.

Medical Expert

Definition: As Medical Experts, Medical Microbiologists integrate all of the CanMEDS roles, applying medical knowledge, clinical skills and professional attitudes in their provision of patient-centred care. Medical Expert is the central physician role in the CanMEDS framework. The resident will be able to:

- *Demonstrate basic understanding and knowledge of etiology, pathophysiology, clinical features, diagnosis, prevention and management of common infectious disease conditions as encountered on the rotation.*
 - *Bacteremia, sepsis*
 - *Infective endocarditis*
 - *Medical device related infections (lines, prostheses)*
 - *Meningitis, encephalitis, brain abscess*
 - *Fever of unknown origin, fever in the returned traveller, febrile neutropenia*
 - *Osteomyelitis, discitis, septic arthritis, prosthetic device infections, diabetic foot infections*
 - *Cellulitis, necrotizing fasciitis, wound infections, subcutaneous abscesses, common infectious rashes, including HSV and VZV*
 - *Upper and lower respiratory tract infections including the common cold, pharyngitis, rhinosinusitis, sinusitis, otitis media, and community-acquired, hospital-acquired, and ventilator-associated pneumonia*
 - *Gastroenteritis, intra-abdominal sepsis, peritonitis, acute and chronic diarrhea*
 - *Urinary tract infections, sexually transmitted infections, infections of the reproductive tract*

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- *HIV infection and its complications*
 - *Viral hepatitis A to E*
 - *Common bacterial, viral, fungal, and parasitic etiologies of infections*
 - *Underlying diagnoses that may affect type, frequency or severity of infection: cystic fibrosis, immunosuppression (congenital and acquired)*
 - *Mechanism of action and indications for antimicrobial use*
 - Understand and perform basic interviews (history taking) and physical examination techniques.
 - Perform a focused, timely and concisely documented appropriate history and physical exam, based on the presenting complaint.
 - Identify the problem list and the primary reason for the visit.
 - Perform physical exam maneuvers using appropriate draping and with care to minimize discomfort whenever possible.
 - Develop a relevant differential diagnosis.
 - Generate a “can’t miss” list for all presenting complaints.
 - Develop an approach to the initial and ongoing management of common diagnoses.
 - Develop an approach to the systematic management of the critically ill patient.
 - Develop appropriate, patient centred management plans for common presentations.
 - Differentiate between acute and long-term management of common conditions and make plans for appropriate follow-up.
 - Adequately reassess patients with appropriate frequency.
 - Counsel patients on diagnosis, management, prevention and follow-up plans.
 - Develop a safe and comprehensive disposition plan in a timely fashion.
 - Demonstrate knowledge of indications for consultation, admission, and transfer.
 - Demonstrate knowledge of indications and limitations of relevant investigative and treatment modalities.
 - *Develop a rationale for ordering, and be able to interpret, the following investigations:*
 - *Blood, wound, urine, CSF, respiratory, and other relevant microbiological cultures.*
 - *Serological and molecular microbiological testing.*
 - *Routine blood tests (electrolytes, liver enzymes and function, complete blood count and differential, creatinine, and others).*
 - *Radiologic imaging including chest X-rays, echocardiograms, CT and MRI scans (limited interpretation of these tests).*
 - Access, retrieve, appraise and apply relevant information (both patient specific and from medical literature) in problem solving.
 - Utilize risk scores and other clinical tools to help guide decision making.
 - Recognize urgent problems that may need the involvement of more senior colleagues and engage them immediately.
 - Obtain informed consent for commonly performed procedures and therapies, under supervision, explaining the indications, risks, benefits and alternatives.
 - Perform procedures in a skillful and safe manner, adapting to unanticipated findings or changing clinical circumstances.
 - *Perform, observe or discuss the following procedures with attending staff or senior residents:*
 - *Proper collection of microbiologic samples (including blood, wound swabs etc).*
 - *Lumbar puncture.*
 - Minimize risks and discomforts to the patient during procedures.
 - Document procedures accurately.
 - Demonstrate commitment and accountability for patients in his/her care.
 - Demonstrate knowledge of the principles of quality assurance, risk management and standards of care.
 - Recognize the medico-legal issues relevant to patient care.

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- Recognize the ethical issues pertaining to informed consent, confidentiality, allocation of resources and end of life decisions.
 - Ensure that patients and their families are informed about the risks and benefits of each treatment option and/or procedure in the context of best evidence and guidelines.
 - Establish goals of care in collaboration with patients and their families, which may include slowing disease progression, achieving cure, improving function, treating symptoms and palliation.
 - Actively participate, as an individual and as a member of a team providing care, in the continuous improvement of health care quality and patient safety.
 - Prioritize the initial medical response to adverse events to mitigate further injury.
 - Disclose adverse events or near-misses to patients and their families and to appropriate institutional representatives.
 - Respond to feedback on his/her own practice and patient outcomes.
 - Actively encourage all individuals involved in health care, regardless of their role, to report and respond to unsafe situations.
 - Use cognitive aids such as procedural checklists, structured communication tools or care paths, to enhance patient safety.
 - Understand strategies to mitigate the negative effects of human and system factors on clinical practice.

Communicator

Definition: As Communicators, Medical Microbiologists effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during and after the medical encounter. The resident will be able to:

- Establish professional therapeutic relationships with patients and their families.
 - Communicate using a patient-centred approach that encourages patient trust and autonomy and is characterized by empathy, respect and compassion.
 - Communicate with respect and due consideration for individual sensitivities and diversity of values, beliefs and ethnicity, irrespective of personal perspectives and preferences.
 - Optimize the physical environment for patient comfort, dignity, privacy, engagement and safety.
 - Recognize when values, biases or perspectives of patients, physicians or other healthcare professionals may have an impact on the quality of care, and modify the approach to the patient accordingly.
- Respond to patients' non-verbal communication and use appropriate non-verbal behaviours to enhance communication with patients.
 - Identify non-verbal communication on the part of patients and their families and its impact on physician-patient communication.
 - Describe how to utilize non-verbal communication to build rapport.
- Manage disagreements and emotionally charged conversations respectfully.
 - Recognize when personal feelings in an encounter are valuable clues to the patient's emotional state.
- Adapt to the unique needs and preferences of each patient and to his/her clinical condition and circumstances when appropriate.
- Discuss patients' decision-making capacity with respect to specific decisions with other members of the multidisciplinary team.
- Elicit and synthesize accurate and relevant information, incorporating the perspectives of patients and their families.

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- Conduct a patient-centred interview, gathering all relevant biomedical and psychosocial information for any clinical presentation.
 - Conduct a focused and efficient patient interview, managing the flow of the encounter while being attentive to the patient's cues and responses.
 - Seek and synthesize relevant information from other sources, including the patient's family, with the patient's consent.
 - Share healthcare information and plans with patients and their families.
 - Communicate the plan of care clearly and accurately to patients and their families.
 - Recognize when to seek help in providing clear explanations to patients and their families.
 - Describe the steps in providing disclosure after an adverse event.
 - Engage patients and their families in developing plans that reflect the patient's healthcare needs and goals.
 - Explore the perspectives of patients and others when developing care plans.
 - Communicate with cultural awareness and sensitivity.
 - Listen effectively, understanding and analyzing relevant information from patients, their families and community members.
 - Engage patients, their families and other team members in shared decision-making.
 - Answer questions from patients and their families about next steps.
 - Adapt use of health records to each patient's health literacy and the clinical context.
 - Document and share, as appropriate, written and electronic information about the medical encounter to optimize clinical decision-making, patient safety, confidentiality, and privacy.
 - Present problems, solutions and opinions, and summarize them accurately and clearly in verbal, written and electronic form.
 - Demonstrate proficiency in using the vocabulary and appropriate abbreviations specific to the discipline and workplace.
 - Document information about patients and their medical conditions in a manner that enhances intra- and inter-professional care.
 - When appropriate, share information in his or her health record with the patient to enhance collaboration and joint decision-making.
 - Create accurate, organized and concise history, consultation, and/or discharge dictations as appropriate.

Collaborator

Definition: As Collaborators, Medical Microbiologists effectively work within a healthcare team to achieve optimal patient care. The resident will be able to:

- Work effectively with infectious disease specialists and other members of the department team.
 - Compare and contrast enablers of and barriers to collaboration in health care.
 - Respect established rules of the team.
 - Receive and appropriately respond to input from other healthcare professionals.
 - Differentiate between task and relationship issues among healthcare professionals.
 - Describe the role and scope of practice of infectious disease physicians and other professionals within the department team (including nurses, physiotherapists, occupational therapists, speech language pathologists, dietitians etc.) and recognize their expertise.
 - Identify referral and consultation as opportunities to improve quality of care and patient safety by sharing expertise.
 - Integrate the patient's perspective and context into the collaborative care plan.

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- Work with physicians and other members of the interdisciplinary healthcare teams to prevent misunderstandings, manage differences and resolve conflicts.
 - Actively listen to and engage in interactions with collaborators.
 - Identify communication barriers in a healthcare team.
 - Communicate clearly and directly to resolve conflicts.
 - Listen to, understand and find common ground with collaborators.
 - Effectively and safely transfer care to another healthcare professional.
 - Identify the appropriateness of transferring patients to other physicians or services.
 - Summarize a patient's issues in the transfer summary, including plans to deal with ongoing issues.
 - Recognize and act on patient safety issues in the transfer of care.
 - Communicate with healthcare professionals during transitions in care, clarifying issues after transfer as needed.
 - Communicate with a patient's primary health care professional about his/her contribution to the patient's care.

Leader

Definition: As Leaders, Medical Microbiologists are integral participants in healthcare organizations, organizing sustainable practices, making decisions about allocating resources and contributing to the effectiveness of the healthcare system. The resident will be able to:

- Manage multiple patients and develop a continuing follow-up and treatment plan for each.
- Work effectively and efficiently in a healthcare organization.
- Utilize information technology to optimize patient care and life-long learning activities.
- Contribute to the improvement of healthcare delivery in teams, organizations and systems.
 - Recognize the role of the Division of Infectious Diseases in the healthcare system.
 - Describe the elements of the healthcare system that facilitate or protect against adverse events or near misses.
 - Use health informatics for patient management, to improve the quality of patient care and to optimize patient safety.
- Engage in the stewardship of healthcare resources.
 - Model practice patterns after senior colleagues who deliver a high standard of service.
 - Account for costs when choosing care options.
 - Apply evidence and guidelines with respect to utilization relevant to common clinical scenarios.
- Develop leadership in professional practice.
 - Appreciate leadership styles as they relate to healthcare.
 - Appreciate how self-awareness, self-reflection and self-management are important to developing leadership skills.
 - Appreciate aspects of his/her own style (including strengths, weaknesses and biases) that are relevant to leadership.
 - Actively engage in change initiatives led by others.
 - Appreciate how healthcare goals from diverse stakeholders help set the direction for healthcare delivery.
- Manage his/her practice and career.
 - Set priorities and manage time to balance residency and personal life.
 - Develop systematic habits for practice management (e.g., checklists, prompts, to-do lists and standard operating procedures).
 - Use tools and technologies to manage his/her schedule.

Health Advocate

Definition: As Health Advocates, Medical Microbiologists responsibly use their expertise and influence to advance the health and well-being of individual patients, communities and populations. The resident should be able to:

- Identify determinants of health affecting patients.
- Contribute effectively to improve the health of patients and communities through understanding and supporting disease prevention methods, such as infection control and vaccination, and promotion of healthy lifestyles.
- Respond to the individual patient's health needs by advocating with the patient within and beyond the clinical environment.
 - Recognize and respond appropriately in advocacy situations - including those arising from trying to provide optimal care for hospitalized patients.
 - Work with patients to address determinants of health that affect them and their access to needed health services or resources.
 - Work with patients and their families to increase opportunities to adopt healthy behaviours.
 - Incorporate disease prevention, health promotion and health surveillance activities into interactions with individual patients.
- Describe communities or populations facing health inequities.
- Demonstrate knowledge of the role of patient education and preventative medicine in clinical practice, including public health aspects of disease.

Scholar

Definition: As Scholars, Medical Microbiologists demonstrate a lifelong commitment to reflective learning, as well as the creation, dissemination, application and translation of medical knowledge. The resident will be able to:

- Understand the nature of and need for a personal learning plan to enhance professional practice.
 - Develop and implement a personal self-directed learning strategy.
 - Identify and prioritize, with guidance, personal learning needs based on formal curriculum learning objectives.
 - Define reflective learning as it relates to medicine.
 - Use exam results and feedback from teachers and peers to enhance self-assessment and improve learning.
 - Compare, with guidance, self-assessment with external assessments.
 - Participate effectively in collaborative group learning.
- Facilitate the learning of students, residents, the public and other healthcare professionals.
 - Recognize the power of role modeling and appreciate factors that can positively or negatively affect the learning environment.
 - Recognize and describe strategies for reporting and managing witnessed or experienced mistreatment.
 - Work within his/her limitations, seeking guidance and supervision when needed, to ensure patient safety is maintained when learners are involved.
 - Learn effective teaching methods to facilitate learning.
- Provide effective feedback to enhance learning and performance.
 - Evaluate teachers and programs in an honest, fair and constructive manner.

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- Integrate best available evidence, contextualized to specific situations, into real-time decision-making.
 - Appreciate the different kinds of evidence and their roles in clinical decision-making.
 - Describe the advantages and limitations of pre-appraised resources.
 - Select appropriate sources of knowledge as they relate to addressing focused questions.
 - For a given clinical case, demonstrate the application of evidence during decision-making.
 - Critically evaluate, with guidance, the integrity, reliability and applicability of health-related research and literature.
 - Contribute to the dissemination and/or creation of knowledge and practices applicable to health.
 - Appreciate the basic scientific principles of research and scholarly inquiry.
 - Appreciate the common methodologies used for scholarly inquiry in medicine.
 - Appreciate the role of research and scholarly inquiry in contemporary health care.
 - Appreciate the ethical principles applicable to research and scholarly inquiry.

Professional

Definition: As Professionals, Medical Microbiologists are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation and high personal standards of behaviour. The resident will be able to:

- Exhibit appropriate professional behaviours and relationships in all aspects of practice, reflecting honesty, integrity, commitment, compassion, respect, altruism, respect for diversity (racial, cultural, gender and belief) and maintenance of confidentiality.
 - Exhibit honesty and integrity with patients, other physicians and other health professionals.
 - Demonstrate caring and compassion.
 - Recognize and respect boundaries.
 - Demonstrate sensitivity to issues concerning diversity with respect to peers, colleagues and patients.
 - Consistently maintain confidentiality in the clinical setting, while recognizing the special limitations on confidentiality.
- Reflect on experiences in the clinical setting to identify personal deficiencies and modify behaviour accordingly.
 - Meet deadlines, be punctual, monitor patients appropriately and provide follow-up.
 - Remain calm, act in a timely manner and prioritize appropriately.
 - Demonstrate an awareness of personal limitations, seeking advice when necessary and accepting it graciously.
- Appreciate the appropriate ethical concepts to address ethical issues encountered during clinical and academic activities.
- Recognize personal conflicts of interest and demonstrate an approach to managing them.
- Use technology-enabled communication, including online profiles, in a professional, ethical and respectful manner.
- Follow relevant policies regarding the appropriate use of electronic medical records.
- Demonstrate accountability to patients, society and the profession.
 - Understand the social contract between the profession of medicine and society.
 - Understand physician roles and duties in the promotion of the public good.

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- Appreciate and understand the levels of reciprocal accountability of medical students, physicians and the medical profession in relation to individual patients, society and the profession.
 - Appreciate the tension between the physician's role as advocate for individual patients and the need to manage limited resources.
 - Demonstrate a commitment to the profession by adhering to standards and participating in physician-led regulation.
 - Understand and recognize key behaviours that are unprofessional or unethical.
 - Personally respond to peer group lapses in professional conduct.
 - Demonstrate a commitment to physician health and well-being to foster optimal patient care.
 - Use strategies to improve self-awareness to enhance performance.
 - Understand the connection between self-care and patient safety.
 - Manage personal and professional demands for a sustainable practice throughout the physician life cycle.
 - Identify strategies to support personal well-being, a healthy lifestyle and appropriate self-care, with the help of a primary health professional, therapist, and/or spiritual advisor.
 - Seek appropriate health care for own needs.
 - Use strategies to mitigate stressors during transitions and enhance professional development.
 - Seek mentorship to address professional development needs.
 - Promote a culture that recognizes, supports and responds effectively to colleagues in need.
 - Recognize the multiple ways in which poor physician health can present, including disruptive behaviour, and offer support to peers when needed.
 - Appreciate the importance of early intervention for colleagues in need of assistance, identify available resources, and describe professional and ethical obligations and options for intervention.
 - Practice positive behaviours and deal with negative behaviours to promote a collegial work environment.

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