



ALBERTA MEDICAL MICROBIOLOGISTS

2018
Version 1.0

Scope of Practice of Medical Microbiologists

This document provides a summary of the scope of practice of Medical Microbiologists in Alberta and complements the standards and competencies of the Royal College of Physicians and Surgeons of Canada in the specialty of Medical Microbiology, including the CanMeds competencies (Medical Expert, Collaborator, Communicator, Health Advocate, Leader, Scholar and Professional) and the practice standards of the Alberta Medical Microbiologists.

Medical Microbiology is a branch of laboratory and clinical medicine concerned primarily with the diagnosis, treatment and prevention of infectious diseases. The specialty of Medical Microbiology consists of the following spheres of overlapping activities:

1. Clinical consultations (in both inpatient and outpatient settings) on the investigation, diagnosis, treatment, and prevention of infectious diseases.
2. Clinical, administrative and scientific direction and development of a microbiology laboratory.
3. Infection Prevention and Control and Occupational Health and Safety.
4. Antimicrobial stewardship.
5. Surveillance of and contribution to the epidemiology of communicable diseases as it relates to Public Health and acute care.
6. Education
7. Research

The actual scope of practice of an individual Medical Microbiologist is determined by the setting they practice; this can be in academic, hospital, community, private or public health laboratories and in urban or rural settings.

Regardless of individual setting, the Medical Microbiologist, incorporates CanMEDS roles of Medical Expert, Communicator, Collaborator, Leader Health Advocate, Scholar and Professional in every aspect of their practice to meet the health care needs of the patient and population they serve. This includes using their expertise and influence to advance the health and well-being of individual patients, communities, and populations, as well as advocate for the best possible patient care at all levels while promoting stewardship of medical and laboratory resources in diagnosis and management of infections.

Clinical Consultation

- Provides direct and/or indirect consultations for patients and clinicians on investigation, diagnosis, management and prevention of infectious diseases, in an ethical, compassionate and patient-centred manner.
 - These consultations integrate the available best evidence and best practices, and provide report/advice that incorporates information considered (such as history, physical findings and investigations), as well as diagnostic conclusions, treatment and follow-up recommendations, as applicable.
 - Consultations can be by telephone, electronic and/or in person in the inpatient and outpatient settings depending on the Medical Microbiologist's individual practice.
- May assume the role of primary provider or coordinate appropriate care by another provider in the event the patient has critical microbiology results and the ordering physician cannot be reached; may provide direct advice on any treatment immediately necessary.
- May provide appropriate consultation and prophylaxis for laboratory staff in the event of laboratory exposure to an infectious agent when clinically appropriate

Clinical, Administrative and Scientific Direction and Development of a Microbiology Laboratory

- Provides the medical and scientific oversight of the microbiology laboratory in collaboration with other laboratory staff (other Medical Microbiologists, Laboratory Physicians, Laboratory Scientists, Technologists, Laboratory Assistants, Managers, Operations, Safety officer) to ensure that test menus, policies and procedures are medically relevant, up to date, safe and compliant with accreditation standards clinical best practices and public health guidelines as applicable.
- Provides consultations to physicians and other health care providers on appropriate test ordering, specimen collection, interpretation of laboratory results and appropriate antibiotic therapy after integrating the available best evidence and best practices of laboratory and clinical medicine while maintaining patient safety.
- Reviews critical microbiology results performed and reported by the laboratory and provides medical follow up with clinicians/health care providers as appropriate.
- Provides medical oversight for the development and maintenance of clinical laboratory guidelines.
- Provides medical oversight in the selection and evaluation of new assays, equipment, reagents, media and instrument consistent with clinical practice guidelines and standards of care, as applicable.

- Integrates their medical expertise to lead and participate in the quality management of the laboratory in which they work to promote quality patient care and laboratory services including but not limited to:
 - quality assurance programs and initiatives
 - investigation of laboratory errors/near misses
 - addressing stakeholder/end user concerns
 - development, design and implementation of laboratory information systems
 - advocacy and development of laboratory safety policies and procedures
- Provides consultation to or, may act as the laboratory biosafety officer for the oversight of biosafety and biosecurity practices as outlined by the Human Pathogens and Toxins Act, when appropriate.

Infection Prevention and Control and Occupational Health and Safety

- Acts as the liaison between the laboratory and the hospital/region's Infection Prevention & Control (IPC) Program. This includes but is not limited to:
 - Provision of expert advice on best methods to diagnose and screen for targeted pathogens/infections.
 - Collaboration with IPC program staff to advance the program's initiatives taking into consideration laboratory costs, technology and workload.
- Can act as Medical Director for a hospital or regional Infection Prevention and Control Program; in this role, is responsible for establishing and maintaining an effective Infection Control Program for the prevention, detection, investigation and control of infections and outbreaks in acute, chronic, and/or community health care facilities.
- Provides medical leadership and expert consultation for the Occupational Health and Safety Program, within a hospital or laboratory including policies, processes and procedures for the prevention and management of work related infectious agent exposure when appropriate.
- Provides medical consultation for health care and laboratory staff for the hospital or laboratory Occupational Health and Safety Program, and if required, referral to other medical specialists.

Antimicrobial Stewardship

- Acts as the liaison between the laboratory and the hospital/regional antimicrobial stewardship program (ASP) where appropriate

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- Provides leadership and direction to medically relevant microbiology susceptibility reporting and the creation and publication of the institutional/regional antibiogram.
- Can assume the role of the Medical Director and provide Medical Leadership for an Antimicrobial Stewardship Program for a hospital/region/zone.
- Can participate actively in an ASP team to design and implement program initiatives, including but not limited to:
 - education regarding antimicrobial use
 - development of methods to guide the appropriate use of antimicrobials
 - development, evaluation and implementation of diagnostic tests that impact stewardship goals
 - collaboration with a wide range of specialties
- Provides clinical consultation for the review of stewardship cases to help guide appropriate antimicrobial use.

Surveillance of and contribution to the epidemiology of communicable diseases

- Collaborates with Public Health and Infection Control Programs with regard to the identification and reporting of organisms of interest, notifiable infectious diseases, emerging infectious agents and pandemic planning.

Education

- Provides physician mentorship to medical students, residents, physicians and other health care professionals.
- Facilitates the learning and education of laboratory staff, students, undergraduate and postgraduate medical trainees, physicians and other health care professionals as well as community and non-medical trainees as it pertains to practice of Medical Microbiology.
- May participate in the supervision of graduate students.

Research

As a researcher, the medical microbiologist leads and participates in a variety of research settings that contribute to the development, dissemination and translation of new knowledge and practices in the field of Medical Microbiology. This may include, but is not limited to:

- Development, evaluation and implementation of new diagnostic testing modalities.

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- Clinical research
- Epidemiological analysis of patient populations as it relates to diagnostic testing and disease states.
- Health systems analysis research, health care utilization and policy development research as it relates to laboratory testing.
- Basic science and translational research.