
Laboratory/Clinical Consultations

On-Call Objectives

Selection:	Mandatory
Site:	ProvLab and DynaLIFE Medical Laboratories
Preceptors:	Various Microbiologists
Length of Rotation:	One week duration at a time
Prerequisites:	Basic Clinical Year

The Responsibilities of a resident while on call will depend on the individual level of skill, knowledge and experience. The on-call objectives are divided into two levels: junior resident level (PGY-2 to PGY-3) and senior resident level (PGY-4 to PGY-5). Each level of competency is further divided into seven categories based on the framework set forth by the Royal College of Physicians and Surgeons of Canada.

Junior Resident Level (PGY-2 to PGY-3)

The resident is to work under the **direct supervision of the Microbiologist/Virologist on-call (MOC/VOC) with guidance from senior residents**; the degree and nature of supervision will vary according to the resident's performance.

Medical Expert

- Cover first call for the microbiology laboratory, ie. general clinical microbiology inquiries, specimen collection problems, test selection/requests for special tests, etc (this objective also encompasses the roles of Communicator, Leader/Manager, Health Advocate, Collaborator, and Scholar).
 - Consult the MOC or technical staff when appropriate.
- Phone sensitive blood culture/critical specimen results to physicians/residents. Before making a phone call, review the patient's medical history, medications, current clinical status, relevant laboratory and radiology results, drug allergies, etc (information can be obtained via electronic medical records, the laboratory information system [LIS], and

directly by phone/personal conversation with the physician) (this objective also covers the roles of Communicator, Health Advocate, Collaborator, and Scholar).

- o Provide results that are accurate, timely and clinically relevant.
 - o Discuss appropriate antimicrobial coverage and management plan for each patient with the responsible physician.
 - o Ensure proper diagnostic and antimicrobial stewardship is followed.
 - o Document all discussions and other interactions with relevant health care professionals in the LIS or through alternative means (such as paper-based documentation).
- When appropriate, during consults, discuss the differential diagnosis (infectious and non-infectious) with appropriate test selection and/or prioritization, including antibiotic susceptibilities, possible drug interactions with the patient's routine medications and usage, with ordering physicians/residents, taking into account clinical urgency, potential for deterioration and available resources (this objective also encompasses the roles of Communicator, Leader/Manager, Health Advocate, and Collaborator).
- Practice patient centered care (this objective also encompasses the roles of Leader/Manager and Health Advocate).

Communicator

- Answer inquiries and troubleshoot basic/intermediate level problems identified by the technologists or lab assistants during the day as well as after hours, consulting when necessary with the MOC/VOC or senior residents (this objective also encompasses the roles of Medical Expert, Communicator, Leader/Manager, Collaborator, and Scholar).
- Participate in/carry out handover to a fellow resident (or the MOC, if no resident is on call), of cases and/or laboratory issues on the Monday morning following call (this objective also encompasses the roles of Leader/Manager, Health Advocate, Collaborator, and Scholar).
 - o When desired or necessary, discuss the option to follow up on selected cases/issues for own education; carry on follow-up if mutually agreed to, but ensure the next on-call team is aware of all ongoing matters for continuity of care.
 - o Document all discussion and interaction in the LIS or through alternative means (such as paper-based documentation).
- Recognize when the values, biases or perspectives of patients, physicians, or other healthcare professionals may impact the quality of care and modify the approach accordingly.

Leader

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- When appropriate, request help and delegate tasks to fellow residents in the laboratory. Ensure all tasks are completed within the expected time frame (this objective also encompasses the roles of Communicator and Collaborator).
 - Recognize limitations and seek sources and experts to assist with issues (this objective also encompasses the roles of Medical Expert, Communicator, Health Advocate, Collaborator, and Scholar).
 - Understand the nature of and manage/respond to laboratory errors/near misses, including the resultant patient adverse effects (or potential adverse effects).
 - Understand, apply, actively encourage and promote laboratory safety among all team members.

Collaborator

- Recognize and manage overlapping and shared responsibilities with physicians and other colleagues in the health care professions.
- Engage in the decision-making process respectfully.

Health Advocate

- Practice patient centered care approach at all times when carrying out in-lab and outside consultations (this objective also encompasses the roles of Leader/Manager and Medical Expert).
- If a physician cannot be reached within a reasonable time frame for effective patient care and/or the patient is an outpatient, discuss with the MOC to decide who will call the patient directly (this objective also encompasses the roles of Medical Expert, Communicator, and Leader/Manager).
- Understand how to recognize and manage situations where inappropriate/inadequate diagnosis and antibiotic selection may have adversely affected patient safety.
- When appropriate, during a consult, discuss the common adverse effects of suggested therapy options advised.
- When appropriate, during a consult, discuss preventative measures of adverse health outcomes in special populations such as:
 - Immunocompromised patients
 - HIV infected patients
 - Pregnant patients
 - Neonatal and pediatric patients
 - Post-operative, ICU, and burn patients
 - immigrants/refugees and travelers
 - Hospitalized and non-hospitalized patients

Scholar

- Research inquiries from stakeholders/end users to form a knowledgeable and evidence-based response (this objective also encompasses the roles of Medical Expert, Communicator, Leader/Manager, Health Advocate, Collaborator, and Professional).
- Select representative/interesting cases experienced during call for the On-Call Casebook; this includes issues considered, solutions arrived at, and the reasoning behind the final decision/course of action on the case. This contributes to the education of fellow residents.
- Under the guidance of the MOC/VOC and senior residents, participate in opportunities to educate health care providers and fellow learners on the appropriate utilization of microbiological laboratory services and the diagnostic utility and limitations of microbiological tests as relevant to the particular specimen and patient (this objective also encompasses the roles of Communicator and Leader/Manager).
- Under the guidance of senior residents, participate as required in daily teaching rounds for junior and off-service residents (this objective also encompasses the role of Communicator).

Professional

- Exhibit appropriate professional behaviors and relationships in all aspects of practice reflecting honesty, integrity, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality.
- Recognize and respond to ethical issues as encountered.
- Recognize and manage conflicts of interest.
- Demonstrate accountability to patients, society, and the profession.
- Understand the nature of and adhere to the professional codes, standards of practice, and laws governing practice (ie. Code of Ethics and Professionalism of the Canadian Medical Association [CMA] and the College of Physicians and Surgeons of Alberta [CPSA]).
- Recognize and respond to unprofessional and unethical behaviors in physicians and other colleagues in health care professions.

Senior Resident Level (PGY-4 to PGY-5)

The resident is to work independently and report back to the MOC at prearranged intervals during the day (PGY-4). During the last 3-6 months of residency, the resident is expected to function in the role of junior staff independently or with minimal supervision while keeping MOC/VOC informed as needed (this is a transition to practice period).

At this level, the resident must integrate all of the CandMEDS roles, applying their medical, infectious disease, and microbiology knowledge, clinical skills, and professional attitudes in their provision of patient-centered care.

Medical Expert

- Cover first call for the microbiology laboratory (ie, general clinical microbiology inquiries, specimen collection problems, test-selection/requests for special tests, etc) (this objective also encompasses the roles of Communicator, Leader/Manager, Health Advocate, Collaborator, and Scholar).
- Phone positive blood culture/critical specimen results to physicians/residents (this objective also encompasses the roles of Communicator, Health Advocate, Collaborator, and Scholar).
 - Discuss appropriate patient-centered antimicrobial coverage for the individual patient after reviewing the patient's medical history, medications, current clinical status, other laboratory and radiology results, drug allergies, etc (information can be obtained via electronic medical records, the LIS, and directly by phone/personal conversation with the physician), while encompassing principles of antimicrobial stewardship.
 - Document all discussions and other interactions with relevant health care professionals in the LIS or through alternative means (such as paper-based documentation).
- Provide first call for outside practitioner consults.
- When appropriate, during consults, discuss the differential diagnosis (infectious and non-infectious) with relevant test selection and/or prioritization, including antibiotic susceptibilities, drug interactions with current medications and supplements, and appropriate dosage and duration of therapy for the clinical condition with ordering physicians/residents, taking into account clinical urgency, potential for deterioration and available resources (this objectives also encompasses the roles of Communicator, Leader/Manager, Health Advocate, and Collaborator).
- When appropriate, during consults, discuss pharmacologic and non-pharmacologic management of medical conditions (this objective also encompasses the roles of Communicator, Leader/Manager, Health Advocate, and Collaborator).
- When appropriate, during consults, discuss the common and severe adverse effects of suggested therapy options (this objective also encompasses the roles of Leader/Manager, Health Advocate, and Collaborator).
- Practice patient centered care at all times (this objective also encompasses the roles of Leader/Manager and Health Advocate).
- In appropriate situations, provide advice on appropriate infection control measures required for the patient (this objective also encompasses the roles of Communicator, Leader/Manager, Health Advocate, and Collaborator).

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- Examine, discuss, and advise technologists regarding specimens and cultures with difficult to identify organisms.
 - Participate in the investigation of laboratory exposures and management (monitoring of signs and symptoms and prescription of medications where appropriate) of staff for these exposures (this objective also encompasses the roles of Leader/Manager and Health Advocate).
 - Apply strategies to prevent and manage blood and body fluid exposures (this objective also encompasses the roles of Leader/Manager and Health Advocate).

Communicator

- Answer inquiries and troubleshoot problems (including complex ones) identified by the technologists or lab assistants during the day as well as after hours (this objective also encompasses the roles of Medical Expert, Communicator, Leader/Manager, Collaborator, and Scholar).
 - Act as a resource for junior residents when appropriate.
- Carry out handover to fellow residents (or the MOC, if no resident is on call) of cases and/or laboratory issues on the Monday morning following call (this objective also encompasses the roles of Leader/Manager, Health Advocate, Collaborator, and Scholar).
 - When desired or necessary discuss the option to follow up on selected cases/issues for own education; carry on follow up if mutually agreed to, but ensure the next on-call team is aware of all ongoing matters for continuity of care.
 - Document all discussions and interactions in the LIS or through alternative means (such as paper-based documentation).
- Recognize when the values, biases, or perspectives of patients, physicians, or other healthcare professionals may impact on the quality of care and modify the approach accordingly.
- Understand the management of disagreements and emotionally charged conversations between healthcare professionals and develop personal conflict resolution strategies (this objective also encompasses the roles of Leader/Manager and Professional).

Leader

- Collect and delegate tasks to fellow residents in the laboratory (this objective also encompasses the roles of Communicator and Collaborator).
 - Ensure all tasks are divided fairly between residents, taking into consideration their abilities and level of knowledge, and are completed within the expected time frame.
- Observe, discuss, and assist with the validation of results in the MOC review queue working with the MOC.

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- Recognize limitations and seek sources and experts to assist with issues (this objective also encompasses the roles of Medical Expert, Communicator, Health Advocate, Collaborator, and Scholar).
 - Recognize and manage laboratory responses to errors/near misses, including dealing with the resultant patient adverse effects (or potential adverse effects) (this objective also encompasses the roles of Medical Expert, Communicator, Health Advocate, and Professional).
 - Observe and discuss the investigation and outcomes of such incidents, including the disclosure to the patient when appropriate.
 - Actively encourage and promote laboratory safety among all residents and other team members.
 - Understand and participate in the investigation and outcomes of laboratory safety incidents.

Collaborator

- Negotiate overlapping and shared responsibilities with physicians and other colleagues in the health care professions.
- Engage in respectful decision-making.
- Apply the science of quality improvement to contribute to improving systems of laboratory diagnosis and patient care.

Health Advocate

- Practice patient centered care at all times (this objective also encompasses the roles of Leader/Manager and Medical Expert).
- If a physician cannot be reached within a reasonable time frame for effective patient care and/or the patient is an outpatient, discuss with the MOC to decide who will call the patient directly.
- Working with the MOC/VOC, recognize and manage situations where inappropriate/inadequate diagnosis and antibiotic selection may have adversely affected patient safety.
- Observe and discuss the process of generating an Exposure Investigation (EI), guiding principles for managing outbreaks, and the role of the Public Health Laboratory in these investigations (this objective also encompasses the roles of Medical Expert, Communicator, Health Advocate, and Collaborator).
 - Under the direction of the MOC/VOC, be involved in a minimum of TEN assorted outbreaks which must include those of gastrointestinal and respiratory origin.
- Actively encourage and promote patient safety.

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- When appropriate, during a consult, discuss preventative measures (including appropriate vaccinations) of adverse health outcomes in special populations such as:
 - Immunocompromised patients
 - HIV infected patients
 - Pregnant patients
 - Neonatal and pediatric patients
 - post-operative, ICU, and burn patients
 - immigrants/refugees and travelers
 - Hospitalized and non-hospitalized patients

Scholar

- Research inquiries from stakeholders/end users to form a knowledgeable and evidence-based response (this objective also encompasses the roles of Medical Experts, Communicator, Leader/Manager, Health Advocate, Collaborator, and Professional).
- Select representative/interesting cases experienced during call for the On-Call Casebook; this includes issues considered, solutions arrived at, and the reasoning behind the final decision/course of action on the case. This contributes to the education of fellow residents.
- Generate/actively participate in opportunities to educate healthcare providers and fellow learners on the appropriate utilization of microbiological tests as relevant to the particular specimen and patient (this objective also encompasses the roles of Medical Expert, Communicator, Leader/Manager, and Health Advocate).
- Organize and deliver daily teaching rounds for junior and off-service residents (this objective also encompasses the roles of Medical Expert, Communicator, and Leader/Manager).

Professional

- Exhibit appropriate professional behaviors and relationships in all aspects of practice reflecting honesty, integrity, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality.
- Recognize and respond to ethical issues encountered.
- Recognize and manage conflicts of interest.
- Demonstrate accountability to patients, society, and the profession.
- Fulfill and adhere to the professional codes, standards of practice, and laws governing practice (eg, Code of Ethics and Professionalism of the CMA and CPSA).
- Recognize and respond to unprofessional and unethical behaviours in physicians and other colleagues in the healthcare professions.

General Information for On-Call Activities

- The resident on-call (ROC) has overall responsibility for on-call caseload.
- At times, the ROC may delegate some tasks to other residents as required or requested; however, the ROC retains ultimate responsibility for follow-up, and timely completion of all assignments, as well as appropriate communication with the respective MOV/VOC.
- In certain circumstances (eg, close to the Royal College exam), a resident other than the ROC may volunteer to participate in on-call activities to gain additional knowledge/experience; this should always be discussed ahead of time with the ROC and MOC/VOC to avoid miscommunication and disruption of work flow.
- The resident must notify staff MOC/VOC when unsure of, or unable to manage or cope with, required workload (with or without help from fellow residents). Senior residents act as a resource for junior residents; seeking their advice and support is always encouraged inside or outside the on-call setting.
- It is the responsibility of the resident to find a replacement should they be unable to fulfill/complete their call obligations for reasons other than health (NOTE: this does not apply in case of an illness).
- The resident must notify the MOC/VOC, hospital switchboard, and the Program Administrator as soon as possible whenever a call change takes place.
- On call task: blood cultures
 - o Between 8 am and 5 pm, the resident on call will check the Blood Culture Bench regularly (approximately every two hours) for new positive blood cultures to be called to physicians.
 - o The resident on call will be called with blood cultures between 5 and 10 pm. Between 11 pm and 8 am, the technologist on at night will phone the results to the patient location with follow up by the resident in the morning.
- On call task: other calls that can occur at any time
 - o A new positive CSF result.
 - o Other critical results as requested (unusual pathogens/life-threatening infections, etc), or if the technologist cannot contact the ordering physician or nurse to communicate a critical result.
 - o If there is a problem with specimen integrity/selection/availability, multiple requests, or when test approval is required.
 - o Other emergent situations/problems as required.
- Academic Half Day (AHD)
 - o Tuesday, 12 pm to 5 pm, residents attend mandatory AHD activities and are released from call during the time period.
 - o All first call duties will be covered by the MOC/VOC during this time period.

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- o It is the responsibility of the ROC to meet with and receive handover from the MOC/VOC after the AHD activities are completed.

Call at DynaLIFE

- Residents will be on call for one week per block.
- First, second, and third year residents will not take outside calls.
- Residents will be involved in the consultation process based on their level of training, skills, experience and knowledge. The degree and nature of supervision will vary according to the resident's performance.
- Residents are encouraged to review and follow up significant positive blood cultures and other critical results on a daily basis.
- Residents are expected to participate in bench rounds throughout the day.
- Residents are encouraged to review DynaLIFE-specific objectives for more details.

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