

Elective: Pediatric; Infectious Diseases

OVERVIEW

The Section of Pediatric Infectious Diseases at the University of Manitoba provides educational experiences for trainees at the Health Sciences Centre. The rotation will provide the trainee the opportunity to participate in the care of patients admitted to inpatient wards for General Pediatrics, Pediatric subspecialty services, Pediatric surgical specialties, and Neonatology, as well as the Emergency department and outpatient clinics.

The pediatric infectious diseases rotation is designed to provide the trainee an educational experience in the common infectious problems experienced by patients. An evidence-based approach to infectious disease problems is stressed through one on one teaching by the infectious diseases faculty, through small group tutorials/discussions, Journal Clubs, and the Friday Infections Diseases Case Rounds. At the conclusion of this rotation, you will have the ability to:

1. Obtain a detailed history focusing on issues that pertain to infection acquisition, transmission, and treatment.
2. Perform a detailed physical examination focusing on issues pertinent to infectious diseases.
3. Plan an approach to the differential diagnosis, investigation and management of a pediatric patient with an infectious disease.

During the four week rotation on the Pediatric Infectious Diseases Service, the general principles that will be stressed are the Infectious Diseases history, physical examination, differential diagnosis, investigations and patient management will be the primary focus on your training. While the general objectives for all trainees on the infectious diseases service are essentially the same, it should be noted that the expectations for the learners at different levels of training will be modified accordingly by the faculty.

INTRODUCTION

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LEARNING OBJECTIVES (CanMEDS)

Objectives for this rotation are listed below in CanMEDS format. Objectives noted in **bold** are universal and apply to every rotation; other objectives are more specific to this rotation. Evaluations will center on all items listed, which will be assessed in context of this particular rotation and post-graduate year of training.

Medical Expert

As Medical Experts, physicians integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills and professional attitudes in their provision of patient-centered care.

The student can expect to be actively involved in the service. This will encompass:

Trainees on the infectious diseases rotation will be expected to demonstrate appropriate knowledge of the common infectious diseases routinely evaluated at the teaching centres. The focus will be on infections affecting inpatients as well as persons presenting in the emergency department and outpatient clinics. It is acknowledged that the trainee will not be exposed to the entire list of conditions and illnesses that are listed below. The trainee will show the ability to collect and synthesize data to arrive at a diagnosis and propose a treatment plan. The trainee will demonstrate ethical behaviour in practices so as to enhance patient outcome and safety. The trainee on the infectious diseases rotation will demonstrate competency in the medical expert role in the following areas:

1. Demonstrate knowledge of the basic scientific and clinical areas relevant to resolving common clinical problems in pediatric infectious diseases. Possess an appropriate level of knowledge of common infection-related diagnoses effective for the care of patients in the emergency and outpatient departments as well as on the clinical teaching units and intensive care units. This includes infections of:
 - a. Central nervous system: encephalitis, meningitis, spondylodiscitis and infections involving implanted device
 - b. Cardiovascular system: endocarditis, bacteremia, infections related to vascular access, and other implanted devices
 - c. Respiratory: Community acquired and nosocomial pneumonia, sinusitis, otitis and pharyngitis, pulmonary and extra pulmonary tuberculosis
 - d. Gastrointestinal: infectious diarrhea, versus non-infectious diarrhea, peritonitis, intraabdominal sepsis, infectious hepatitis, pancreatitis
 - e. Genitourinary: urinary tract infections, sexually transmitted infections
 - f. Musculoskeletal and integumentary system: skin and soft tissue infections including surgical site infections, osteomyelitis and septic arthritis, infections in the foot with persons with diabetes, infections in persons with burns
 - g. Immunocompromised hosts: infectious complications of infection with the human immunodeficiency virus/acquired immunodeficiency syndrome, infections in neutropenic patients with and without fevers
 - h. Gynecologic infections: pelvic inflammatory disease, septic abortions and sexually transmitted infections

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- i. Fever of unknown origin
 - j. Sepsis syndrome
 - k. Medication allergies/reactions
 - l. Infection control: infection/colonization with antibiotic-resistant bacteria such as vancomycin-resistant enterococcus and methicillin-resistant *Staphylococcus aureus* particularly as they pertain to inpatient and ambulatory management
 - m. Travel-associated and tropical diseases
 - n. Antimicrobial stewardship and related issues
2. Demonstrate proficiency in formulation of differential diagnoses with incorporation and sequential integration of prior knowledge and new information. Demonstrate the ability to make an accurate diagnosis and formulate an appropriate differential diagnosis.
 3. Able to critically analyze and prioritize problems and problem-solve.
 4. Use all of the pertinent information to arrive at complete and accurate clinical decisions. Demonstrate knowledge appropriate to level of training in terms of proposing a treatment plan based on the information obtained from the history, physical examination and laboratory investigation. This includes knowledge of:
 - a. Practice guidelines of common medical conditions such as:
 1. Pneumonia
 2. Skin and soft tissue infections
 3. Intraabdominal sepsis
 4. Urinary tract infections
 5. Use and side effects of antibiotics including:
 - Penicillins (penicillin G, amoxicillin, ampicillin, cloxacillin, piperacillin, beta-lactam/beta-lactamase inhibitor combinations)
 - Cephalosporins (first, second, third generation)
 - Carbapenems (meropenem, ertapenem, imipenem)
 - Macrolides (erythromycin, azithromycin, clarithromycin)
 - Aminoglycosides (gentamicin, tobramycin)
 - Fluroquinolones (ciprofloxacin, levofloxacin, moxifloxacin)
 - Miscellaneous (metronidazole, clindamycin, vancomycin, tetracyclines (eg. Doxycycline)
 - Antifungal agents (azoles: fluconazole, itraconazole, voriconazole, clotrimazole; amphotericin B, and its various formulations; echinocandins: caspofungin, micafungin)
 - Antiviral agents (acyclovir, famciclovir, valacyclovir, ganciclovir)
 - Demonstrate the appropriate level of training in the area of complications related to the medications specifically:
 - *Clostridium difficile* diarrhea/disease

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- Drug eruption
 - Candidiasis
6. Use appropriate clinical judgment to completely and appropriately plan consultations and therapeutic programs.
 7. Use preventive and therapeutic interventions effectively.
 8. Seek appropriate consultation from other health care professionals, recognizing the limits of one's own and others' expertise. Demonstrate the ability to identify ancillary services and consultants as needed to optimally manage the patient with an infection. Demonstrate appropriate clinical decision making skills and establishing limits of expertise. This will be demonstrated by knowing when to seek the advice of others.
 9. Demonstrate the ability to perform a complete patient assessment including:
 - a. Obtain a history of appropriate scope for the patient problem. Demonstrate the ability to perform a focused history and physical examination in a timely and organized fashion with a minimum of error or missing data.
 - b. Perform an appropriate physical examination pertaining to the infectious issue
 - c. Plan an appropriate series of investigation
 - d. Interpret all data pertaining to the patient's problem and generate a suitable differential diagnosis
 - e. Provide comprehensive continuing care and reassessments
 10. Demonstrate an evolving knowledge base with respect to legal issues and medical ethics as it pertains to the patient with infection. This includes:
 - a. Informed consent
 - b. Capacity and substitute discussion making
 - c. Confidentiality
 - d. Truth telling
 11. Practice medicine in a way to enhance patient safety and participate in endeavours to reduce adverse events.

Communicator

Physicians effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter.

As Communicators, students will facilitate the doctor-patient relationship:

The trainee on the Paediatric Infectious Diseases Service will demonstrate appropriate communication skills in the care of patients with an infection. This includes communication for the direct purpose of caring for the patient, documentation in the medical records and in the weekly grand round for the communication of information to a large group.

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The trainee on Paediatric Infectious Diseases Service will demonstrate competency in the communicator role in the following areas:

1. Develop rapport, trust and ethical therapeutic relationship with patients and families, able to understand and recognize emotional and personal needs of patients and families. Demonstrate a patient-centred approach to communication.
2. Demonstrate appropriate interviewing skills; communicate at an appropriate level with patients and families.
3. Demonstrate compassion and empathy (listen attentively; respond humanely to the concerns of patients and family members).
4. Elicit and synthesize relevant information and perspectives of patients and families, colleagues and other professionals.
5. Convey relevant and accurate information to patients, families, colleagues and other professionals.
6. Provide clear and thorough explanations to patients and families about their problems, prognosis, management and follow-up.
7. Present verbal cases in an accurate, complete and organized fashion on rounds.
8. Develop a common understanding on issues, problems and plans with patients and families, colleagues and other professionals to develop a shared plan of care.
9. Demonstrate the ability to accurately elicit and synthesize relevant information from patients, families, colleagues, and other health care provider and is able to communicate this information in a distinct fashion.
10. Demonstrate the ability to accurately convey relevant information and explanations to patients, families, colleagues, and other health care professionals.
11. Demonstrate the ability to effectively communicate through written information about medical encounter, including charting and dictated clinic records.
12. Demonstrate appropriate non-verbal communication skills
13. Demonstrate an approach to specific communications scenarios including:
 - a. Informed consent
 - b. Communication of your plans
 - c. Breaking bad news
 - d. Disclosure of adverse events

Collaborator

Physicians effectively work within a healthcare team to achieve optimal patient care.

As Collaborators, students will work effectively within the surgical team to achieve optimal patient care:

The trainee must demonstrate the ability to work with others on the health care team to achieve optimal patient care. The trainee will demonstrate the collaborator role in the following areas:

1. Participate effectively and appropriately in an inter-professional health care team, with respect for roles of other team members. Work effectively with the health care team members to assess, plan and provide care for patients including taking a lead in care, where appropriate.

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2. Recognize and respond to issues involving abilities, gender, race and culture when working with other team members.
3. Work effectively with peers, medical team members and other health professionals to prevent, negotiate and resolve inter-professional conflicts. Collaborate constructively with other members of the health care team, respecting their professional roles.
4. Describe the role of various health care team members in the care of the patient, including:
 - a. Nurses (Emergency, Intensive Care Units, Wards, Outpatient Department)
 - b. Pharmacists
 - c. Occupational Therapy
 - d. Physiotherapy
 - e. Orthopaedic technologist
 - f. Social Worker
 - g. Students (Medical, Nursing, other Allied Health Professionals)
 - h. Support Staff
 - i. Other medical professionals (attending physicians, and other consultations)
 - j. Clinical microbiology laboratory staff
4. Demonstrate respectful attitudes towards other colleagues and members of inter-professional team.
5. Participate effectively in multidisciplinary rounds where input from a consulting service is requested (when appropriate).
6. Work effectively with the staff in the emergency department, wards and outpatient department to ensure the best care for patients.

Leader

Physicians engage with others to contribute to a vision of a high-quality health care system and take responsibility for the delivery of excellent patient care through their activities as clinicians, administrators, scholars, or teachers.

As Leaders, students will participate in the activities of the surgical service, making decisions, allocating resources, and contributing to the effectiveness of the health care team:

1. Manage their practice and career effectively.
2. Use information technology to effectively optimize patient care.
3. Exhibit appropriate time management skills, with ability to prioritize, delegate and manage simultaneous tasks. This includes:
 - a. Punctual attendance at work
 - b. Effectively addressing patient care and educational activities so as to be able to leave work at an appropriate time.
4. Supervise and implement patient care decisions efficiently.
5. Make time to teach junior house staff and attend educational rounds.

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6. Demonstrate the ability to balance work and personal commitments. *** (in Professional)
7. Request the appropriate diagnostic imaging and laboratory investigation so as to optimally use limited resources.
8. Demonstrate the ability to prioritize the need to evaluate patients with different disease acuity. Appropriately triage consultation requests so that patients with the most acute and serious medical/infectious conditions are addressed in the most timely manner as possible. Demonstrate the ability to effectively prioritize consultation requests and competing demands.
9. Conduct daily rounds in efficient and effective manner.

Health Advocate

Physicians responsibly use their expertise and influence to advance the health and well-being of individual patients, communities and populations.

As Health Advocates, students will responsibly use their expertise and influence to advance the health and well-being of individual patients, communities and populations:

The trainee must demonstrate the ability to advocate on behalf of their patients to improve their overall health. The trainee must demonstrate knowledge of issues in patient safety and prevention of adverse events in the emergency and outpatient departments, intensive care units and wards. The trainee will demonstrate competency in the health advocate role in the following areas:

1. Identify biologic, psychosocial and economic factors that may affect a child's health and respond appropriately.
2. Demonstrate and promote active involvement of patients and families in medical decision-making and comprehensive care of the child.
3. Recognize opportunities and work with the patient and family to obtain needed services for care and ongoing family support to improve their health outcomes.
4. Demonstrate an understanding of the specialist's role and responsibilities in advocacy for children under the specific circumstances of child protection.
5. Recognize that the health care needs of children are different from adults and change throughout the developmental continuum.
6. Identify opportunities for advocacy, health promotion and disease prevention in the communities and respond appropriately.
7. Advocate for their own patients to access appropriate investigations, consultations, and interventions in an appropriate and timely fashion.
8. Recognize and appropriately manage the conflict between health advocate and an individual patient and the manager of allied health resource.
9. Appropriately identify opportunities to educate patients about health promotion and disease prevention.
10. Counsel patients about disease entity and measures to improve or control their condition.
11. Appropriately report adverse patient events.

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Scholar

Physicians demonstrate a lifelong commitment to reflective learning, as well as the creation, dissemination, application and translation of medical knowledge.

As Scholars, students will demonstrate a lifelong commitment to learning:

The trainee must demonstrate the ability to improve on their knowledge and skills and to assist themselves and others in learning. This includes the ability to identify gaps in their own knowledge base and assess information in practice and review data in a critical manner. The trainee is expected to be involved in the teaching of junior learners including providing teaching sessions and involvement in evaluation. The trainee will demonstrate competency in the scholar role in the following areas:

1. Develop and implement an ongoing and effective personal learning strategy, as evidenced by clinical performance.
2. Evaluate information and its sources critically and apply this appropriately to practice decisions.
3. Perform critical and accurate self-evaluation of one's performance. Recognize gaps in knowledge and expertise and develop strategies for improvement.
4. Facilitate the learning of patients, families, students, residents, other health professionals, and others as appropriate, through formal and informal means.
5. Seek out and receive feedback well with a goal of incorporating constructive feedback into clinical practice.
6. Identify his/her own learning needs and resources to assist in independent learning.
7. Able to ask critical questions and perform a focused literature review and critically evaluate the data that has been retrieved.
8. Teach others, including the medical team by sharing the results of data search. This also includes supervision and teaching of the clinical clerk and participation in the weekly grand round and weekly plate rounds.
9. Participate in evaluation of peers and clinical clerks as well as senior medical residents at the request of the attending physician.
10. Present a case at least once at Friday ID Case Rounds.

Professional

As Professionals, physicians are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behaviour.

As Professionals, students are committed to health and well-being of individuals through ethical practice, profession-led regulation and high personal standards of behavior:

The trainee will demonstrate a commitment to their patients, profession and society through ethical practice. The trainee will demonstrate competence in the professional role in the following areas:

- Demonstrate honesty and integrity, being fair, truthful and forthright.
- Demonstrate respect for others, confidentiality and diversity, including treating all persons with regard for their individual worth and dignity in a fair and non-discriminatory manner, aware of emotional, personal, family and cultural influences on patients' well-being, rights and choices.

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- Demonstrate reliability, responsibility and conscientiousness with meeting deadlines and completing assigned duties, being accountable and willing to accept responsibility for errors.
- Demonstrate an understanding of ethical practice and apply this to one's work.
- Recognize personal limitations and act upon them to always optimize patient care and safety.
- Seek advice when necessary and accept advice graciously.
- Demonstrate insight regarding impact of one's behavior on others, cognizant of appropriate professional boundaries.
- Exhibit altruism with appropriate regard for the welfare of others, prioritizing appropriately the care of patients and families over one's own self-interest or interest of other parties.
- Show motivation and ability to learn.
- Demonstrate recognition of the importance of work/life balance.
- Appear neat, tidy and well-groomed and wearing appropriate attire and identification.
- Demonstrate appropriate relationships with patients, and all members of the health care team, including referring and consulting services/staff.
- Communicate absences from the service to the attending physician and members of the team.
- Assure appropriate sign over of patients from on-call activity.
- Attend teaching rounds and demonstrate respect for presenter and points of view of participant.
- Recognize limits of their expertise. This will be demonstrated by knowing when to seek guidance/advice from other members of the health care team, performing literature reviews and discussion with the attending faculty.
- Recognize and respond to others in appropriate behaviour and practice.
- Recognize other professionals and their needs with an appropriate response.
- Disclose adverse events to health care team members and the patient.
- Participate on the on-call system including making arrangements for on-call coverage in the event that obligations cannot be met. This will also include the accommodation of the needs of fellow residents in times of need for change in the on-call rota (after hours or weekend call is not mandatory for general residents or students).

INFORMATION

These are locations, readings, evaluations, call responsibilities, etc.

Required Reading

List will be provided just prior to rotation.

WARD ACTIVITIES

These are examples of schedules, expectations, rotation details, etc. All the details below are subject to change.

Expectations

You should aim to be on site by approximately 0800-0815 to allow for sufficient time to arrange and meet for sign-over of any issues that came up overnight, and to divide the patient list and plan for the

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day. If you have issues/delays etc. please page the first person on call for Pediatric ID through hospital paging, either the Peds ID fellow or this may be the attending staff person.

Monday

- Ensure handover from weekend

Tuesday

- Clinic (Unit W, WCH) – 9:00 – 12:00

Wednesday

- Morning – ID Fellows' academic half-day
- Med Micro Seminar Series (11:15 - 12:15) ~Sept - June
- Afternoon (12:30 – 15:30) – Pediatric residents' academic half-day

Thursday

- Pediatric Grand Rounds (08:00 – 09:00) – Frederic Gaspard Auditorium (BMSB)
- Clinic (Unit Y, WCH) – 9:00 – 12:00
- Clinic Meeting (1:00-2:00 pm) – Rm 540 BMSB (or alternate)

Friday

- Plate Rounds (09:30 – 10:00) - Pathology Conference Room (HSC 4th floor)
- Combined ID/MM Case Rounds (10:45 – 12:00) – 5th floor video-conferencing room
- Friday noon hour – Journal Watch (first Friday each month), Journal Club (last Friday each month, lunch provided)

Clinic

To round out the clinical infectious diseases rotation, you are required to attend all infectious disease clinics when not post-call. These clinics provide valuable exposure to common infectious disease problems that are seen in the ambulatory care setting: Children's Out-patient Clinics, Unit W, Tuesday mornings, 09:00 – 12:00 and in Unit Z Thursday mornings 09:00 – 12:00 (locations may change over time).

Service Rounds

Plate Rounds

Plate Rounds serves as a correlation to clinical cases evaluated on the wards. The micro organisms from cases evaluated by the service alter interesting teaching cases a review micro biologic significance discussed. Rounds are conducted at both the Health Sciences Centre Pathology Conference Room, 4th Floor on Fridays from 9:30 am – 10:30 am.

Weekly ID Grand Rounds

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These Rounds are conducted Friday mornings at 10:45 am – 12 noon in the link rooms at both St. Boniface Hospital and Health Sciences Centre. Each service (St. Boniface Hospital and Health Sciences Centre Medical; Health Sciences Centre Surgical, and Pediatrics Infectious Diseases Services) present brief summary of cases evaluated on the ward. A case based discussion will ensue.