

Queen's University Course Description

EPID 852- Foundations of Infection Prevention and Control

Instructors and General Information

Instructor: Heather Candon, BSc, MSc, MHM CIC, Adjunct Lecturer
Department of Public Health Sciences, Queen's University
Director, Infection Prevention and Control, Sunnybrook Hospital

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Office Hours: By appointment

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Co-Instructor: Kim Allain, BScN, RN, MHS, CIC, Adjunct Lecturer
Director of Education, IPAC Canada

Office Location: Virtual

Office Hours: By appointment

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Course Information

Course Title and Number: EPID-852 Foundations of Infection Prevention and Control

Classroom Location: Carruthers Hall 102

Course Description: This course provides foundational and applied information to support learners' development of infection prevention and control (IPAC) practices within various healthcare and public health settings. Students will gain an understanding of the core competencies for IPAC. Diverse principles and practices associated with routine practices, additional precautions, program evaluation, surveillance and outbreak management, occupational health, emergency management, disinfection methods, reprocessing, construction/renovation, and principles of adult learning will be explored as the foundational concepts of an IPAC program. Students will be able to apply these IPAC skills and concepts to a broad environment of care and its overall impact in public health. Three term hours. Offered Winter term annually.

Prerequisites: There are no specific prerequisites. This course is designed for students enrolled in Master of Public Health (MPH)- IPAC Specialization at Queen's University. If spaces are available and with consent of the instructor, the course may be of interest to students in other programs.

Learning Outcomes: Upon successful completion of the course, students will be able to:

1. Develop an understanding and conceptualize the key components of a IPAC program in various public health settings in Canada.
2. Describe and demonstrate critical thinking to apply the foundational practices to prevent and control the spread of infections in health care delivery.

3. Apply knowledge and concepts of surveillance activities within an IPAC program, evaluate metrics, and communicate results to implement evidence-based practice, policies, and standards.
4. Identify and describe the role of IPAC programs in assessing and facilitating a clean and safe environment of care (e.g., OH, disinfection, construction, environmental services)
5. Describe the leadership role of IPAC in health care system in preparing and responding to public health emergencies.

Rationale: To meet the demands of this evolving field, advance the profession, and equip infection control professionals (ICPs) to meet current and future challenges, there is an urgent need for standardized IPAC training and education to develop subject matter experts and leaders. Infection prevention and control in public health requires practitioners to be equipped with competencies to interpret data, do prepared for assessments, evaluations, surveillance, outbreak management and to communicate effectively to lead organizational change in keeping populations (patients/staff/visitors) safe.

Assessment: Students will be evaluated and graded on a variety of this includes quizzes (4), surveillance project, case study assignment with peer assessment, briefing note/SBAR, presentation and class participation.

Assignment	Description	Due date	Weight
1	Class quizzes (4 x 5%)	Quiz 1: Jan 17 th Quiz 2: Jan 31 st Quiz 3: March 7 th Quiz 4: March 28 th	20%
2	Surveillance project	Feb 17 th	25%
3	Outbreak case study assignment and peer evaluation	March 14 th	30%
4	Briefing note/SBAR & teaching plan/presentation (2 parts)	Part 1: BN/SBAR- March 28 th (5%) Part 2: Presentation- April 4 th (15%)	20%
5	Class Participation		5%
			100%

After the end of the term when all grades have been submitted, students will be asked to evaluate the course via an online survey. Feedback will be sent to the MPH Program Director.

Course Materials

Textbooks:

Red Book, 2018. Committee on Infectious Diseases; American Academy of Pediatrics; David W. Kimberlin, MD, FAAP; Michael T. Brady, MD, FAAP; Mary Anne Jackson, MD, FAAP; Sarah S. Long, MD, FAAP

Mayhall's Hospital Epidemiology and Infection Prevention 5th edition (2020). David Weber, Tom Talbot. Lippincott Williams & Wilkins (LWW) ISBN: 978-1-97-512458-8

Course Schedule:

Module	Topic	Learning Objectives	Reading	Assessment
MODULE 1	PART 1: History of IPAC & the IPAC Program Lecturer: Kim Allain	<ol style="list-style-type: none"> 1. Identify IPAC core competencies and practice standards. 2. Identify key components of an IPAC program. 3. Describe the role and key responsibilities of the IPAC committee in the IPAC program. 4. Identify reporting structures in IPAC. 5. Identify policies and procedures relevant to IPAC. Identify characteristics and importance of well-written policies and procedures relevant to IPAC	Infection Prevention and Control (IPAC) Standards, IPAC Canada, 2016 Section 2.9 https://ipac-canada.org/photos/custom/pdf/IPAC_PROGRAM_STANDARD_2016.pdf Advancing the profession: An updated future-oriented competency model for professional development in infection prevention and control. Billings et al., American Journal of Infection Control 47 (2019) 602–614. Read this article from: Medical Xpress (June 26, 2018). New studies illustrate need for rigorous review of infection preventionist staffing models across healthcare systems. Provincial Infectious Diseases Advisory Committee. Best Practices for Infection Prevention and Control Programs in All Health Care Settings, 3rd edition. Toronto, ON: Queen's Printer for Ontario; May 2012. OAHPP. <ul style="list-style-type: none"> ▪ Pages 13-49 Mayhall's Hospital Epidemiology and Infection Prevention 5th edition (2020). David Weber, Tom Talbot. Lippincott Williams & Wilkins (LWW) ISBN: 978-1-97-512458-8 <ul style="list-style-type: none"> ▪ Chapter 10 	OPTIONAL: Students may complete the IPAC Canada - Self-Appraisal Tool for Infection Prevention and Control Professionals (pre-course assessment)
	PART 2: Preventing and Controlling Infections: Routine Practices & Additional Precautions Lecturer: Heather Candon		Required Reading: Mayhall's Hospital Epidemiology and Infection Prevention 5 th edition (2020). David Weber, Tom Talbot. Lippincott Williams & Wilkins (LWW) ISBN: 978-1-97-512458-8 <ul style="list-style-type: none"> ▪ Chapter 1 – start at section on “epidemiology of infectious disease” – to the end. ▪ Chapter 3 ▪ <i>Note: standard precautions is an American term; Canadian's use “routine practices”.</i> Reference Material: Provincial Infectious Diseases Advisory Committee. Routine Practices and Additional Precautions in All Health Care Settings. 3rd edition. Toronto, ON: Queen's Printer for Ontario; November 2012. OAHPP	Quiz #1- Developing an IPAC Program Due date: January 17 th (5%)

MODULE 2	PART1: Hand Hygiene & PPE Lecturer: Kim Allain	<ol style="list-style-type: none"> 1. Describe the four moments of hand hygiene, analyzing the importance and impact of hand hygiene education, motivation, and behaviours. 2. Compare various types of personal protective equipment (PPE) and implications for use. 3. Apply the proper techniques for putting on and removing PPE. 	<p>Public Health Agency of Canada (2012). Hand hygiene practices in health care settings. Part D: Recommendations for hand hygiene practices in healthcare settings. Pages 39-45.</p> <p>Resources available provincially, nationally, and internationally can be found on the IPAC Canada website.</p> <p>Mayhall's Hospital Epidemiology and Infection Prevention 5th edition (2020). David Weber, Tom Talbot. Lippincott Williams & Wilkins (LWW) ISBN: 978-1-97-512458-8</p> <ul style="list-style-type: none"> ▪ Chapter 4 	
	PART 2: Environmental Cleaning Lecturer: Heather Candon	<ol style="list-style-type: none"> 4. Describe practice principles contributing to effective environmental cleaning. 5. Analyze benefits and risks associated with use of disinfectant products and technologies including evaluation. 6. Identify IPAC issues related to waste management. 	<p>Required Reading:</p> <p>Mayhall's Hospital Epidemiology and Infection Prevention 5th edition (2020). David Weber, Tom Talbot. Lippincott Williams & Wilkins (LWW) ISBN: 978-1-97-512458-8</p> <ul style="list-style-type: none"> ▪ Chapter 42 <p>Rutala WA, Weber DJ. Selection of the ideal disinfectant. Infect Control Hosp Epidemiol. 2014 Jul;35(7):855-65. 2014</p> <p>Reference Material:</p> <p>Provincial Infectious Diseases Advisory Committee. Best practices for environmental cleaning for prevention and control of infections in all health care settings. 3rd ed. Toronto, ON: Queen's Printer for Ontario; 2018. OAHPP</p>	<p>Quiz #2 Hand Hygiene Module 5% Due date: January 31st (5%)</p> <p>Complete and upload module certificate</p>

MODULE 3	PART 1: IPAC Surveillance Lecturer: Kim Allain	<ol style="list-style-type: none"> 1. Define surveillance and describe types, goals, and objectives of IPAC surveillance. 2. Analyze how IPAC surveillance is performed including planning, data collection, data analysis, interpretation, communication, and evaluation. 	<p>Mayhall's Hospital Epidemiology and Infection Prevention 5th edition (2020). David Weber, Tom Talbot. Lippincott Williams & Wilkins (LWW) ISBN: 978-1-97-512458-8</p> <ul style="list-style-type: none"> ▪ Chapters 1, 2, 32 <p>Provincial Infectious Diseases Advisory Committee. Best practices for surveillance of health care-associated infections in patient and resident populations. 3rd ed. Toronto, ON: Queen's Printer for Ontario; 2014.OHAPP</p>	
	PART 2: IPAC Role in Control & Management of Infections Lecturer: Kim Allain	<ol style="list-style-type: none"> 3. Design a surveillance plan using appropriate indicators, case definitions, data collection methods, and communication strategy. 4. Examine clinically significant healthcare-associated infections (HAIs) in healthcare settings and the role of the IPAC program in prevention and management. 	<p>Mayhall's Hospital Epidemiology and Infection Prevention 5th edition (2020). David Weber, Tom Talbot. Lippincott Williams & Wilkins (LWW) ISBN: 978-1-97-512458-8</p> <ul style="list-style-type: none"> ▪ Chapters 12-18, 22 	<p>Assignment: Surveillance Project (25%)</p> <p>Due date: February 17th</p>
READING WEEK (Feb 20-24th)				
MODULE 4	PART 1: Outbreak Management Lecturer: Heather Candon	<ol style="list-style-type: none"> 1. Define outbreak, cluster, and watch. 2. Compare common-source, propagated, and combined epidemics. 3. Identify the main goals of outbreak investigation and the management team. 	<p>Mayhall's Hospital Epidemiology and Infection Prevention 5th edition (2020). David Weber, Tom Talbot. Lippincott Williams & Wilkins (LWW) ISBN: 978-1-97-512458-8</p> <ul style="list-style-type: none"> ▪ Chapter 9 	
	PART 2: Occupational Health Lecturer: Heather Candon	<ol style="list-style-type: none"> 4. Describe the ten steps of outbreak investigation and management and explain and identify how to use these steps in an outbreak situation. 5. Describe the five classes of occupational hazards. 	<p>Workplace Safety and Insurance Board. Protecting healthcare workers from infectious diseases https://www.pshsa.ca/wp-content/uploads/2013/02/IIFTLAEN0912-PSHSA-Protecting-Healthcare-Workers-from-Infectious-Disease-Self-Assessment-Tool-05232013-SECURED.pdf</p>	<p>Quiz 3- Rapid Fire IPAC Presentations (5%) Due date: In class March 7th</p>

		6. Identify the main functions of Occupational Health as it relates to infectious diseases.		
MODULE 5	Emergency Preparedness & IPAC in Disasters and Emergencies Lecturer: Heather Candon & guest (AMR)	<ol style="list-style-type: none"> 1. Define and explain the importance and role of IPAC in emergency preparedness in health care settings. 2. Explain the basic principles of an Incident Management System (IMS) 3. Understand the basics of "Pandemic Planning" - lessons learned with COVID-19. 	<p>Required reading: Rebmann, T., APIC State-of-the-art Report: The role of the infection preventionist in emergency management <i>Am J Infect Control</i> 2009;37:271-81.</p> <p>Reference Material: http://www.health.gov.on.ca/en/public/programs/emu/ebola/ Ebola Emergency Management – Emergency Management Unit</p> <p>https://www.cdc.gov/flu/pandemic-resources/basics/index.html - Center for Disease Control Pandemic Planning</p>	Assignment 3: Group Outbreak Case Study with OHS components (30%) Due date: March 14
	Teaching & learning Lecturer: Kim Allain	<ol style="list-style-type: none"> 4. Provide an understanding of teaching and learning in the context of IPAC 5. Describe the principles of adult education and the steps in planning & evaluating learning experiences. 6. Create an infection prevention & control related learning plan/teaching guide 	<p>Mayhall's Hospital Epidemiology and Infection Prevention 5th edition (2020). David Weber, Tom Talbot. Lippincott Williams & Wilkins (LWW) ISBN: 978-1-97-512458-8</p> <ul style="list-style-type: none"> ▪ Chapter 11 <p>Meyers, G et al (2018). Understanding infection control professionals' educational practice: There is more to it than meets the eye. <i>Canadian Journal of Infection Control</i>. 33 (4), 198-203.</p>	

MODULE 6	<p>PART 1: Construction, Renovation and Healthcare Facility Design</p> <p>Lecturer: Kim Allain</p>	<ol style="list-style-type: none"> 1. Describe the role of Infection Prevention and Control professional in construction, renovation and maintenance of healthcare facilities. 2. Determine, implement and evaluate IPAC preventative measures used to ensure maintenance, renovations and construction activity are safely conducted within healthcare facilities. 3. Examine how healthcare facility design impacts infection prevention and control. 4. Review important IPAC considerations including: <ol style="list-style-type: none"> a. Antimicrobial stewardship b. Diagnostic stewardship 	<p>Mayhall's Hospital Epidemiology and Infection Prevention 5th edition (2020). David Weber, Tom Talbot. Lippincott Williams & Wilkins (LWW) ISBN: 978-1-97-512458-8</p> <ul style="list-style-type: none"> ▪ Chapter 41 <p>Public Health Ontario. IPAC: Construction, Renovation, Maintenance and Design (CRMD)</p> <ul style="list-style-type: none"> ▪ https://www.publichealthontario.ca/en/health-topics/infection-prevention-control/crmd?tab=0 	<p>Assignment 4: Briefing note only March 28th (5%)</p> <p>Quiz #4 (ICRA-completed in class) March 28th (5%)</p>
	<p>Important Considerations in IPAC</p> <p>Lecturer: Heather Candon</p>	<ol style="list-style-type: none"> a. Antimicrobial stewardship b. Diagnostic stewardship 	<p>Mayhall's Hospital Epidemiology and Infection Prevention 5th edition (2020). David Weber, Tom Talbot. Lippincott Williams & Wilkins (LWW) ISBN: 978-1-97-512458-8</p> <ul style="list-style-type: none"> ▪ Chapter 44 & 45 <p>Reference Material: Knobloch MJ, McKinley L, Keating J, Safdar N. Integrating antibiotic stewardship and infection prevention and control programs using a team science approach. <i>Am J Infect Control</i>. 2021;49(8):1072-1074.</p>	<p>Assignment #4: Education presentations in class April 4th (15%)</p>

ACADEMIC INTEGRITY

Queen's students, faculty, administrators and staff therefore all have responsibilities for supporting and upholding the fundamental values of academic integrity. Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility (see <http://www.academicintegrity.org>) and by the quality of courage. These values and qualities are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University.

Students are responsible for familiarizing themselves with and adhering to the regulations concerning academic integrity. General information on academic integrity is available at [Academic Integrity @ Queen's University](#), along with Faculty or School specific information. Departures from academic integrity include, but are not limited to, plagiarism, use of unauthorized materials, facilitation, forgery and falsification. Actions which contravene the regulation on academic integrity carry sanctions that can range from a warning, to loss of grades on an assignment, to failure of a course, to requirement to withdraw from the university.

ACCESSIBILITY AND ACCOMMODATION

Queen's University is committed to achieving full accessibility for people with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact the **Queen's Student Accessibility Services (QSAS)** and register as early as possible. For more information, including important deadlines, please visit the QSAS website at: <http://www.queensu.ca/studentwellness/accessibility-services/>

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MISSED ASSIGNMENTS / LATE SUBMISSIONS: Please endeavor to turn your work in on time. Late submissions will receive a 10% reduction grade penalty per day.

Grading Method

Grade	Numerical Course Average (Range)
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66

C-	60-62
D+	57-59
D	53-56
D-	50-52
F	49 and below