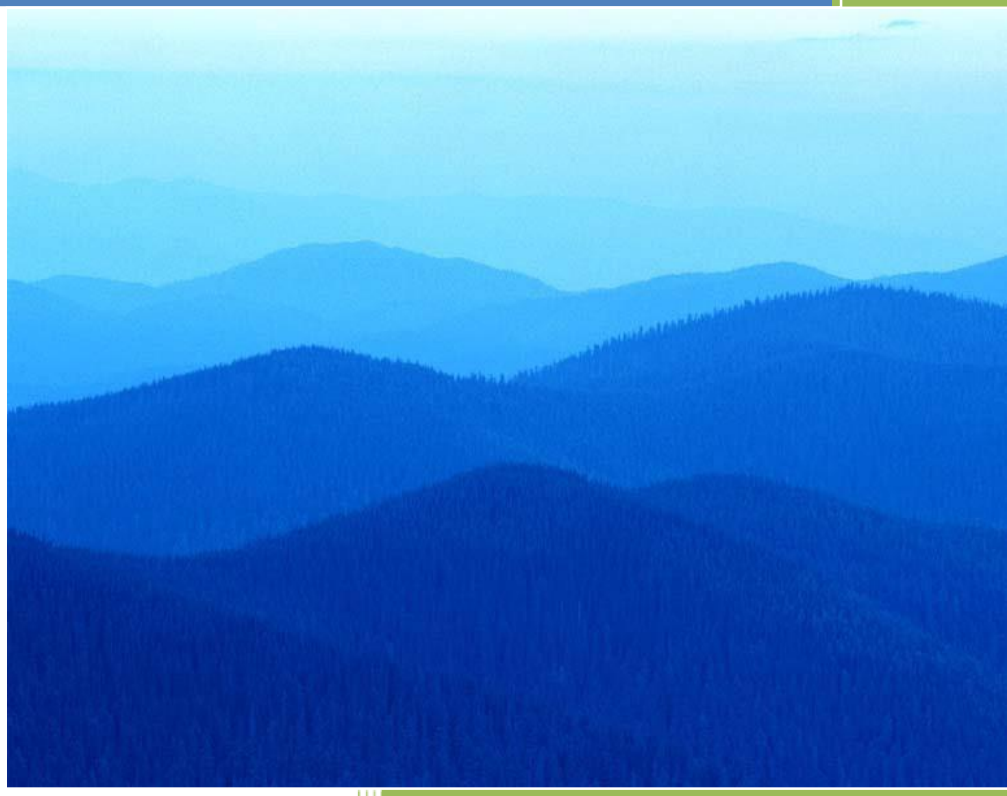
Orientation Program for Infection Control Professionals



Module 7: Communicable Diseases

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Objectives

At the completion of this module, the ICP will:

1. Identify communicable disease which are on the national and provincial reportable diseases list
2. Describe the surveillance activities required to identify reportable communicable diseases
3. Demonstrate a knowledge of the reporting process for reportable diseases
4. Identify key contacts for public health
5. Determine the process for contact tracing for reportable communicable diseases
6. Determine the role of IPC in immunization delivery in your facility
7. Demonstrate a knowledge of the national surveillance system for influenza

Number of hours

- Key Concepts – 1
- Methods – 2

Required text

- Heymann, D (2008) Control of Communicable Diseases Manual – 19th Edition
  - H Rogier van Doorn (2014) Emerging Infectious Diseases: https://www.medicinejournal.co.uk/article/S1357-3039(13)00301-0/pdf

Other suggested readings

- Guideline for Meningococcal Disease Management https://www.gov.nl.ca/hcs/files/publichealth-cdc-meningococcal-management.pdf
- Guideline for invasive group A Streptococcus management https://www.gov.nl.ca/hcs/files/publichealth-cdc-invasive-groupa-streptococcal-management.pdf
- FluWatch: https://www.canada.ca/en/public-health/services/diseases/flu-influenza/influenza-surveillance.html

Instructions

Read the material. Write out your answers to the questions and discuss them with your mentor. It is recommended that a one hour session with a Communicable Disease Control Nurse (CDCN) be included in the orientation period.

Overview

Infection Prevention and Control staff and Public Health staff have a number of intersecting roles within the hospital and the community. The first contact with a communicable disease such as tuberculosis may be in the hospital but the contact tracing and follow-up is done in the community by Public Health and staff exposure follow-up by Worksafe Health and Safety. The timely reporting to public health allows for prompt identification of contacts and appropriate follow-up. Specific communicable diseases (CDs) are made reportable in the provinces and territories of Canada by provincial and territorial statute. The purpose of making a specific communicable disease reportable is to facilitate both tracking and the required control efforts by public health personnel. The List of Reportable Communicable Diseases in British Columbia is found in Appendix A.

Key Concepts

Definitions

Define the following terms:	
Chain of infection	
Reservoir	
Occurrence	
Mode of transmission	
Incubation period	
Period of communicability	
Susceptibility	
Communicable disease	
Reportable disease	

Surveillance

Surveillance
What structures are in place for surveillance of communicable disease in BC?
Explain the role of BCCDC:
What processes are in place to alert you to a reportable disease in your facility?

Reporting

How are reportable communicable diseases reported in your facility?	
Responsibility	**To Whom**
Micro Lab	
Public Health Lab	
IPC	
Other	

Follow-up

Who is defined as a contact?	
What is contact tracing?	
Who is responsible for contact tracing in your facility/Regional Health Authority?	
What does post-exposure mean?	

Prevention

Immunization has been recognized as one of the most important contribution to the control of communicable diseases over the past several decades. The ICP collaborates frequently with Occupational Health and Public Health on issues involving the immunization of staff and patients. This requires knowledge of immunization recommendations.

Immunization Manual
Browse the information about immunizations on the BCCDC website: http://www.bccdc.ca/health-professionals/clinical-resources/communicable-disease-control-manual/immunization http://www.bccdc.ca/health-professionals/clinical-resources/vaccine-management http://www.bccdc.ca/health-professionals/clinical-resources/immunization
Canadian Immunization Guide: http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php
Why is it important for employees to have the hepatitis B vaccination?

Methods

Communicable diseases on the reportable disease list

Identify five diseases on the Reportable Disease List
1.
2.
3.
4.
5.

Surveillance

You have heard from an emergency room nurse about the case of meningococcal disease admitted during the night. You have no information on this case. How are you going to find out about this case?

Time to apply your knowledge!

Your investigations reveal that there is a case of meningococcal disease in the ICU.	
Is this a reportable disease?	
Why should you notify public health?	
Whom should you notify?	
Is there a policy in your facility regarding the follow-up for meningococcal disease?	

Public Health Contacts

Reportable communicable diseases must be reported to public health officials as soon as they are identified. Discuss with your mentor the key public health officials in your area.

Key Public Health Staff	Name	Contact Information
Health Unit		
Regional Medical Health Officer		
Communicable Disease Control Nurse		

Key Public Health Staff	Name	Contact Information
Public Health Laboratory		
Other		

Reporting Requirements

What are the reporting requirements relating to meningococcal disease in your facility?

Follow-up

Contact tracing

The doctor in the Emergency Room intubated the patient without the use of personal protective equipment	
Define a close contact of a meningococcal case?	
Is the doctor considered a close contact?	
Who is responsible for identifying close contacts of the case?	
Does the doctor require chemoprophylaxis?	
If the doctor is recommended to have the prophylaxis; who provides the medication?	
How is the close contacts list developed?	

Post-exposure

You have been called to the Patient Care Unit where a nurse has had a needle stick injury. The nurse is very concerned about contracting hepatitis B, hepatitis C and HIV.	
Does your institution have a policy for post exposure prophylaxis for needle stick injuries?	
Who does the follow-up for this exposure in your facility?	
What is the policy for hepatitis B vaccination for staff?	

You have been called to the Patient Care Unit where a nurse has had a needle stick injury. The nurse is very concerned about contracting hepatitis B, hepatitis C and HIV.	
What is the post exposure follow-up for hepatitis B?	
What is the follow-up required for possible exposure to HIV and hepatitis C?	
Where can the employee access the post-exposure drugs for HIV?	

Prevention

Identify the role of IPC in relation to pneumococcal immunization in your facility

Identify the role of the IPC in relation to influenza immunization for patients/residents in your facility

Documentation and Reporting

Identify the process in your facility for reporting to Public Health, including your own records

Other Circumstances

Influenza

BCCDC provides provincial surveillance on the incidence of influenza as well as vaccine uptake.: http://www.bccdc.ca/health-professionals/data-reports/communicable-diseases/influenza-surveillance-reports

FluWatch

FluWatch is Canada's national surveillance system that monitors the spread of influenza and influenza-like illnesses. FluWatch reports, posted every Friday, contain specific information for health professionals on influenza viruses circulating in Canada. Additional information can be found at: https://www.canada.ca/en/public-health/services/diseases/flu-influenza/influenza-surveillance.html Discuss with your mentor your facilities responsibilities for FluWatch reporting.

What is the FluWatch definition for influenza-like illness for the 2011-2012 season?	
What is the hospitals and residential institutions definition?	
Do you have any responsibilities for reporting to FluWatch for your facility?	

Epidemics and Pandemics

An **epidemic** is the rapid spread of disease to a large number of people in a given population within a short period of time.

The World Health Organization (WHO) defines a **pandemic** as "an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people". The classical definition includes nothing about population immunity, virology or disease severity. Pathogens with pandemic potential vary widely in the scale of their potential health, economic, and sociopolitical impacts as well as the resources, capacities, and strategies required for mitigation.

Pandemics are large-scale outbreaks of infectious disease that can cause sudden, widespread morbidity and mortality as well as social, political, and economic disruption. The world has endured several notable pandemics, including the Black Death, Spanish flu, and human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS). Pandemics have increased over the past century, likely because of increased global travel and integration, urbanization, changes in land use, and greater exploitation of the natural environment.

There are several broad categories of pandemic threats. Extreme global threat results from pathogens that have high potential to cause truly global, severe pandemics. This group includes pandemic influenza viruses. These pathogens transmit efficiently between humans, have sufficiently long asymptomatic infectious periods to facilitate the undetected movement of infected persons, and have symptomatic profiles that are similar to more mild illnesses (particularly in the early periods of infection), making timely accurate diagnosis difficult. A second group of pathogens presents a moderate global threat. These agents (for example, Nipah virus and H5N1 and H7N9 influenzas) have not demonstrated sustained human-to-human transmission but could become transmitted more efficiently as a result of mutations and adaptation. A third group of pathogens (for example, Ebola, Marburg, Lassa) has the potential to cause regional or interregional epidemics, but the risk of a truly global pandemic is limited because of the slow pace of transmission or high probability of detection and containment.

Most recent pandemics have originated through the "zoonotic" transmission of pathogens from animals to humans. Zoonoses enter into human populations from both domesticated animals (such as farmed swine or poultry) and wildlife. Many historically significant zoonoses were introduced through increased human-animal interaction following domestication, and potentially high-risk zoonoses (including avian influenzas) continue to emerge. Some pathogens (including Ebola) have emerged from wildlife reservoirs and entered into human populations through the hunting and consumption of wild species (such as bushmeat), the wild animal trade, and other contact with wildlife. Zoonotic pathogens vary in the extent to which they can survive within and spread between human hosts. Strategies to minimize pandemic spread include the following:

- *Curtailing interactions* between infected and uninfected populations. Examples of this include: through patient isolation, quarantine, social distancing practices, and school closures

- *Reducing infectiousness* of symptomatic patients. Examples of this include antiviral and antibiotic treatment and infection control practices (source control)
- *Reducing susceptibility* of uninfected individuals: for example, through vaccines.

Pandemic preparedness requires close coordination across public and private sector actors: vaccine development requires close coordination between government and vaccine producers; whereas critical response measures—such as managing quarantines—requires engagement between nonprofit organizations (hospitals, clinics, and nongovernmental organizations), public health authorities, affected communities and civil society groups, and the security sector.

Reflecting on what you've read about pandemics and the 3 strategies for minimizing spread. Which of these strategies can be implemented rapidly even when details about the organisms attributes are not well known?

Ethical and Privacy Issues

Freedom of Information and Protection of Privacy Act (FIPPA). Office of the Information and Privacy Commissioner: https://www.oipc.bc.ca/

FIPPA came into force in British Columbia in 1993 to provide a legislative framework for information and privacy rights by governing public bodies' management of personal and/or business information held in records within their custody or control. FIPPA makes the health authority more accountable to the public and provides strong protection for an individual's personal privacy.

Under FIPPA, personal information is defined as any recorded information that uniquely identifies you, which includes, but is not limited to your name, address, phone number, sex, race, religion, sexual orientation, fingerprints, disability or blood type. There are only a few reasons why this information may be shared among health care professionals. Make sure that you know these reasons and what your health authority's policies and procedures are.

What are the privacy issues regarding the reporting of communicable diseases such as HIV?

APPENDIX A: Reportable Diseases in BC

LIST OF REPORTABLE COMMUNICABLE DISEASES IN BC
January 2018

Schedule A: Reportable by all sources, including Laboratories

Acquired Immune Deficiency Syndrome
Anthrax
Botulism
Brucellosis
Carbapenemase Producing Organism (CPO)
Chancroid
Cholera
Congenital Infections:
- Toxoplasmosis
- Rubella
- Cytomegalovirus
- Herpes Simplex
- Varicella-Zoster
- Hepatitis B Virus
- Congenital Rubella Syndrome
- Listeriosis and any other congenital infection

Creutzfeldt-Jacob Disease
Cryptococcal infection
Cryptosporidiosis
Cyclospora infection
Diffuse Lamellar Keratitis
Diphtheria:
- Cases
- Carriers

Encephalitis:
- Post-infectious
- Subacute sclerosing panencephalitis
- Vaccine-related
- Viral

Foodborne illness:
- All causes

Gastroenteritis epidemic:
- Bacterial
- Parasitic
- Viral

Genital Chlamydia Infection
Giardiasis
Gonorrhea – all sites
Group A Streptococcal Disease, Invasive
H5 and H7 strains of the Influenza virus
Haemophilus influenzae Disease,
- All Invasive, by Type

Hantavirus Pulmonary Syndrome
Hemolytic Uremic Syndrome (HUS)
Hemorrhagic Viral Fevers
Hepatitis Viral:
- Hepatitis A
- Hepatitis B
- Hepatitis C
- Hepatitis E
- Other Viral Hepatitis

Human Immunodeficiency Virus Infection
Leprosy
Lyme Disease
Measles
Meningitis: All causes
- (i) Bacterial:
  - Haemophilus
  - Pneumococcal
  - Other
- (ii) Viral

Meningococcal Disease, All Invasive
- including "Primary Meningococcal Pneumonia" and "Primary Meningococcal Conjunctivitis"

Mumps
Neonatal Group B Streptococcal Infection
Paralytic Shellfish Poisoning (PSP)
Pertussis (Whooping Cough)
Plague
Poliomyelitis
Rabies
Reye Syndrome
Rubella
Severe Acute Respiratory Syndrome (SARS)
Smallpox
Streptococcus pneumoniae Infection, Invasive
Syphilis
Tetanus
Transfusion Transmitted Infection
Tuberculosis
Tularemia
Typhoid Fever and Paratyphoid Fever
Waterborne Illness
- All causes

West Nile Virus Infection
Yellow Fever

Schedule B: Reportable by Laboratories only

All specific bacterial and viral stool pathogens:
- (i) Bacterial:
  - *Campylobacter*
  - *Salmonella*
  - *Shigella*
  - *Yersinia*
- (ii) Viral

Amoebiasis
Borrelia burgdorferi infection
Cerebrospinal Fluid Micro-organisms
Chlamydial Diseases, including Psittacosis
Creutzfeldt-Jacob Disease
Cryptococcal Infection
Herpes Genitalis
Human Immunodeficiency Virus Infection
Influenza virus, including the H5 and H7 strains
Legionellosis
Leptospirosis
Listeriosis
Malaria
Q Fever
Rickettsial Diseases
Severe Acute Respiratory Syndrome (SARS)
Smallpox
Tularemia
West Nile Virus Infection

As per Health Act Communicable Disease Regulation B.C. Reg. 4/83 O.C. 6/83 includes amendments up to B.C. Reg. 380/2012, March 18, 2013 http://www.qp.gov.bc.ca/statreg/reg/H/Health/4_83.htm