

Infection Prevention & Control Program

Module #6: Outbreak Management

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Winnipeg Regional
Health Authority
Caring for Health

Office régional de la
santé de Winnipeg
À l'écoute de notre santé

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MODULE # 6: OUTBREAK MANAGEMENT

OBJECTIVES

At the completion of this module you will be able to:

Demonstrate the basic knowledge of outbreak management by completing the exercises associated with the case study provided, specifically be able to:

- Define** an outbreak
- Identify** ways in which an outbreak might be identified
- Explain** how to confirm the existence of an outbreak
- Identify** the purpose of a case definition and how to find/create a case definition
- Identify** the strategies for finding additional cases
- Identify** stakeholders who will need information and the type of information they need.
- Outline** the steps in outbreak investigation and management, illustrating each step with an example
- Outline** the key points to include in an outbreak report

Required Readings

- Infection Control Professional specific: Outbreak Reporting and Management (July 2015)** [R:\Shared\Infection Prevention Control\Infection Control Professional Specific Manual \(ISM\)\8\) Outbreak](R:\Shared\Infection Prevention Control\Infection Control Professional Specific Manual (ISM)\8) Outbreak)
(NOTE: Please connect with your WRHA IPC to review together)
- Outbreak Management for Infection Prevention & Control in Hospitals:** [Operational Directive](#)
- Outbreak Management for Infection Prevention & Control for PCH's/LTCF's:** [Infection Prevention & Control - Shared Health](#)
- [LTC – Outbreak Management](#)
- [Outbreak Management Orientation Review](#)

Other Readings

- ❑ **APIC Text: 4th Edition, Chapter 12**
- ❑ **MB Health Notifiable Disease list:** [Reporting of Diseases and Conditions Regulation, M.R. 37/2009 \(gov.mb.ca\)](#)
- ❑ **MB Health Outbreak Protocol:** <http://www.gov.mb.ca/health/publichealth/cdc/protocol/investigation.pdf>
- ❑ **National Notifiable Disease List (PHAC):** [Case definitions: Nationally notifiable diseases \(canada.ca\)](#)
- ❑ **Clinical Notification of Reportable Diseases and Conditions Form:** <http://www.gov.mb.ca/health/publichealth/cdc/protocol/form13.pdf>
- ❑ **Centers for Disease Control and Prevention:** [Lesson 6: Investigating an Outbreak](#)

OVERVIEW

Outbreaks are defined as an increase over the expected occurrence of an event. The terms “outbreak” and “epidemic” are frequently used interchangeably. A small rise in events may be referred to as a “cluster” and both “clusters” and “outbreaks” require prompt investigation and management. To identify an outbreak, baseline endemic rates must be available for comparison. This is the reason for conducting surveillance.

Outbreaks may occur for a number of reasons including: introduction of and transmission of an infectious disease within the healthcare site, lapses in infection control practices, contaminated or defective products or devices and establishment of a reservoir for a pathogen somewhere in the healthcare site. While outbreaks will continue to occur, many can be prevented or have their impact reduced through intentional, knowledgeable and rapid management.

KEY CONCEPTS

Instructions

Read the material and do the practice exercises. Write out your answers to the questions and discuss them with your preceptor.

Define these key terms	
TERM	DEFINITION
Attack Rate	
Common Source	
Cluster	
Endemic	
Epidemic	
Epidemic Curve	
Healthcare Associated Infections (HAIs)	
Line List	
Outbreak	
Pandemic	
Propagated Outbreak	
Pseudo Outbreak	
Sporadic	
Suspect Outbreak or Cluster	

Reasons for Investigating a Presumed Outbreak List

3 Reasons for Investigating an Outbreak	
1.	
2.	
3.	

Recognizing an Outbreak

Surveillance Information:

Potential outbreaks may be suspected when HAIs occur above the background rate or when an unusual microorganism is recognized. There are several avenues for identifying outbreaks.

Complete the table	
AVENUE	INFORMATION THAT MAY IDENTIFY AN OUTBREAK
Laboratory	
Patient Care Unit	
Admissions Form	
Media	
Where Else?	

Clinical Information

Although it is often not initially clear what the source of the outbreak may be, it is important to think about this from the beginning. The type of specimens to collect and send may depend upon the source suspected (e.g., food borne versus viral pathogen).

To determine this one must understand the possible common sources, potential modes of transmission, usual reservoirs, incubation periods and the microbiological traits of the pathogen of concern. This information will enable one to formulate a hypothesis, initiate the appropriate observation strategy and ensure the correct specimens are collected and sent. The ability to identify the source will provide information that will be helpful in bringing the outbreak under control.

Complete the table	
CLINICAL SYMPTOMS	POSSIBLE SOURCES
Fever, cough, dyspnea in several patients	
Vomiting, diarrhea in several patients	
Infected surgical wounds in several patients (same surgery) in the same week	
Variety of non-incisional post-op infections caused by the same organism	
Several patients with itchy skin rashes	

Steps in Outbreak Management

The steps for Outbreak Management have been described in many text books and guidelines. Reflect on the actions that you would consider if you were called to investigate an increase in the number of cases of an infectious nature.

Referring to the Outbreak Management Policy of your facility, list at least 10 steps for Outbreak Management
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

METHODS

In this section you will have an opportunity to apply the knowledge you have learned in the key concepts sections to scenarios which you may encounter in your job. Reflect on your readings and discuss difficult situations with your preceptor so that you will be better prepared for real life situations.

Case Study

On September 1, Nurse Marion noted that Mr. Jones in Ward A on Unit B had 3 loose stools during the 12 hour night shift. It was a very busy unit working at full capacity of 20 beds. Marion noted the following information about Mr. Jones:

- 60 year old married male
- History of cancer of the bowel
- Abdominal surgery 5 days earlier
- Nasogastric tube removed on August 31
- Started on clear fluids today
- Poor hygienic practices
- Mrs. Jones providing help with his care

On September 2, Mrs. Jones helped her husband with his care including helping him to the bathroom several times during the day and evening. She forgot to mention this to his nurse as it was normal for him to have several stools per day prior to his surgery.

On September 3, Nurse Marion was on day duty and was assigned to Ward A. On entering the Unit, she realized she had forgotten to report that Mr. Jones had had 3 loose stools the previous night. When she asked Mr. Jones how he was doing he told her of his continuing problem with loose stools which he thought the surgery was going to remedy. He told her of having to go to the bathroom 5 times since midnight. A stool from Mr. Jones was sent to the laboratory for C&S. During the day (Sept. 3) two other P/R/C complained of nausea.

On September 4, the two patients with nausea were now having diarrhea, and IP&C (you) was notified.

Work through this study with your preceptor, answering the following questions and using them to stimulate conversation around control methods, communication to patients, staff and public, education to patient's staff and public and the roles and responsibilities of the various people at your site.

**You are the ICP at this facility that is notified of this situation.
Given what you have just learned:**

STEP #1 - DETERMINE IF AN OUTBREAK EXISTS

What is the first thing you should do?

Who should be sources of information about the cases?

How would you rule out alternative causes?

Consider the possible diagnosis and think of the possible causes, the incubation periods and the typical signs and symptoms.

Can you use the chain of infection to help identify the cause of this event?

What specimens would you send (if any)?

If this event occurred during the weekend or holidays, how would you arrange for specimen transfer to the laboratory?

What information would you collect on the line list?

What would you tell staff about monitoring their own health?

What would you advise the staff regarding working on other units/facilities?

Any other things you would suggest?

**Look at your surveillance data and see if this is a normal trend for this unit?
Would you expect this number of cases on this unit?**

STEP #2 – IMPLEMENT IMMEDIATE CONTROL MEASURES

What infection control measures would you recommend?

Is there signage available?

Is there a fact sheet about gastrointestinal infections?

Where would you get extra gowns and gloves for this situation?

Who will notify the patient, family and others of this event?

Who will notify the Medical Officer of Health (MOH)?

When should they notify the MOH?

How will you determine if there is a need for education sessions relating to this outbreak?

Who gives this educational session?

STEP # 3 – CONFIRM THE EXISTENCE OF AN OUTBREAK/ESTABLISH A CASE DEFINITION

What would you consider the case definition?

How long does it take to get the results of the test that you requested?

STEP # 4 – ASSEMBLE THE TEAM

Does your facility have an Outbreak Management Team?

Who should be on this Team?

What would be on the responsibility of the communications expert?

Who needs to know about this outbreak?

When will you close the ward/facility to visitors/admissions?

How often should you meet?

Is there a sample agenda ready for Outbreak Meetings?

Explore with your preceptor the process for assembling a team if an Outbreak occurs on a weekend.

STEP # 5 – ONGOING MONITORING COMMUNICATIONS

Who is at risk of becoming ill on the unit?

Are you responsible for analyzing and interpreting data?

Evaluate the overall investigation and response. Is there anything else you should do now?

Whom else might you communicate with as the outbreak continues? (external & internal)

How do you communicate to other employees, the community and family members regarding this Outbreak?

Is there legislation in your province regarding the reporting of Outbreaks?

STEP # 6 – DECLARING THE OUTBREAK OVER

What criteria could be used to indicate that the Outbreak is over?

Who can declare the Outbreak over in your facility?

STEP # 7 – DEBRIEFING THE STAFF

Who is responsible for doing this at your facility?

How will you do this?

Do you have an outline of activities to discuss?

STEP # 8 – WRITING THE REPORT AND RECOMMENDATIONS

Why write a report?

What are the key elements of a report?

Why is it important to include a recommendations section?

Who should get the report?

TYPE OF OUTBREAK	PERSON RESPONSIBLE	CRITERIA NEEDED
Gastrointestinal Outbreak		
Respiratory Outbreak		
Exposure to a Piece of Equipment or Instrument		
MRSA Outbreak		

If you would like to do another case study focusing on respiratory illness, it is available in [Appendix A](#).

DOCUMENTATION AND REPORTING

Determine the roles and responsibilities for outbreak management in your facility. Who are you required to report this information to inside and outside your facility? In Manitoba, there is a Notifiable Disease List; the link is listed in the “Other Readings” section. Are you or your site required to report an outbreak through an electronic system?

APPENDIX A

If you would like to have further practice on outbreak management, **work through [this case study](#) with your preceptor**, answering the following questions and using them to stimulate conversation around control methods, communication to patients, staff and public, education to patients, staff and public and the roles and responsibilities of the various people at your site.

CASE STUDY - RESPIRATORY ILLNESS

You are an ICP in an acute care site but you also provide support to the nearby LTC facility. This morning (November 10th) you receive a call from the Director of Care from the LTC site, indicating:

On November 7th the LTC site had 3 residents with varying degrees of fever and productive cough. Then on November 8th they had 4 more residents with similar symptoms. Two of the residents had fever of 38.9°C and one of them was hospitalized this morning with pneumonia.

The hospitalized patient also has a history COPD.

No ill residents are in the assisted living unit.

In the past week she has had 2 staff members call in sick with respiratory symptoms.

The WRHA would like to thank the Provincial Infection Control Network of British Columbia (PICNET) for allowing the use of their ICP Orientation Manual.

IP&C ORIENTATION MODULE EVALUATION – OUTBREAK

These modules have been developed in order to make your orientation to the WRHA Infection Prevention & Control Program a good experience. Please complete the below evaluation for each module so any necessary changes can be made to improve the manual for future use. Your thoughts and comments are greatly appreciated, thank you.

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. The material was presented in a clear and organized way.				
2. The information in the module was consistent with the objectives stated.				
3. The required readings were useful.				
4. The instructions with in the module were clear.				
5. The amount of time given for the module was adequate.				
6. The module provided information that I needed in order to do my job.				
7. The module helped me to develop my critical thinking by using examples of IP&C situations.				

COMMENTS

1. Do you now feel better prepared to begin your job, recognizing that this is an orientation manual and not meant to replace an accredited infection control course?

2. Do you have any suggestions on how this module can be improved?

3. Are there any additional topics that should be included in this module?

4. Any further comments?