Outbreak Response

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SECTION I: SUSPICION AND DECLARATION OF AN OUTBREAK

1. INTRODUCTION

Detection, investigation, and management of communicable disease outbreaks are critical steps to prevent further transmission of disease throughout a population. The implementation of health promotion and primary and secondary disease prevention activities all contribute to the prevention of outbreaks (WHO, 2023).

This chapter provides general guidance for outbreak management and specifies reporting requirements to the Chief Public Health Officer (CPHO) as outlined in the *Public Health Act*. Additional resources for field investigation are listed in the References.

An outbreak is determined by the CPHO. Outbreak definitions for some reportable diseases (i.e., pertussis) can be found within the NWT Communicable Disease Manual (NWT CDM).

An abnormal number or presentation of any reportable disease or epidemic forms or outbreaks of any disease, including new and emerging infectious diseases can trigger the suspicion of an outbreak and should be reported to the OCPHO.

When a health care provider suspects an outbreak, the following steps should be taken:

1. Report the suspect outbreak to a supervisor and to the Office of the Chief Public Health Officer (OCPHO) by telephone (867) 920-8646 as per the *Communicable Disease Regulations*.

2. Review the NWT CDM for case definitions and information on the disease or condition. Signs and symptoms should be reviewed and listed to assist in the formulation of a case definition if this is a new disease or condition not found in *Schedule 3 of the Communicable Disease Regulations*.
3. Record on a line listing those presenting with the illness, including name, date of birth, symptom onset date, treatment, etc.
4. Establish clear reporting and communication procedures.
5. Take rapid action to institute control measures, including appropriate isolation precautions to prevent further transmission.
6. Liaise with healthcare services to communicate the potential resources required for management of outbreak patients.
7. Once notified, the Chief Public Health Officer (CPHO) or designate will assess the situation and may:
    a. Declare an outbreak.
    b. Form an outbreak management team.
    c. Appoint an outbreak coordinator.
    d. Implement a disease outbreak control plan.
    e. Declare the end of an outbreak.

Figure 1. Investigation and Control of an Outbreak



2. DEFINITIONS

Case definition: A set of standard criteria for deciding whether a person has a particular disease of health-related condition, by specifying clinical criteria and limitations on person, place, and time. Case definitions may include multiple categories such as: confirmed, probable, or suspect.

Epidemic: An unexpected increase in the number of cases of an illness, specific health-related behaviour, or other health-related events in a specific geographic area. May be used synonymously with outbreak.

Outbreak: An epidemic limited to localized and increased incidence of a disease, e.g., in a village, town, or closed institution. May be used synonymously with epidemic.

- Point (or common) source outbreak: an outbreak that results from a group of persons being exposed to a common noxious influence, such as an infectious agent or toxin.
- Propagated (or person to person) outbreak: An outbreak that does not have a common source, but instead spreads from person to person.

3. REPORTING

As set out in the *NWT Public Health Act, Reportable Disease Control Regulations (Section 4) and Disease Surveillance Regulations (Sections 6-10 and Schedule 3)* health care professionals and laboratories are legally required to report a suspected reportable disease outbreak to the Chief Public Health Officer (CPHO) or designate by telephone (867) 920-8646 **within the timeframe identified in the regulations.**

Potential indicators of an outbreak include:

- Unusually high number of absences from schools or childcare facilities.
- Significant and/or unexpected increase in visits to a work camp/mine site health clinic of individuals with similar signs and symptoms of illness.
- Significant number of individuals with similar illnesses presenting for care at community health level that can be associated with a single event or exposure (i.e., numerous gastrointestinal illness complaints after attending a potluck).
- More cases than expected of a specific disease during routine surveillance.
- In the case of a highly contagious disease, such as measles, only two linked cases would be needed to meet the definition of an outbreak.

After initial reporting of a suspected outbreak, the OCPHO may investigate further. If an outbreak is declared, the following minimum information should be collected and reported to the OCPHO on an agreed-upon frequency (i.e., daily, weekly). Please see Table 1 for a potential template. This information should also be reported from IPAC-governed facilities:

- **Outbreak status:** Active or declared over (including dates).
- **Outbreak site:** Name of location/facility of outbreak.

- **Outbreak setting:** Identifies the type of setting or location associated with the outbreak event (i.e., long-term care, acute care, Corrections, congregate living, daycare, community, work camp, etc.).
- **Community:** Community where the outbreak is occurring.
- **Number of cases:** Cumulative number of confirmed and probable outbreak-associated cases.
- **Pathogen(s) involved:** Specify pathogen(s) under investigation in outbreak; may be more than one (i.e., COVID-19, influenza, salmonella).
- For all outbreaks, a line list of cases under investigation should be maintained. Contact information should also be recorded in person-to-person outbreaks.
- For outbreaks in IPAC-governed facilities, Occupational Health & Safety may be the custodians of key contact information and are also expected to report this.
- Please contact the Communicable Disease Control Unit (cdcu@gov.nt.ca) for a template line list. Case and contact line lists should be reported to the OCPHO using SFT (cdcu@gov.nt.ca).

Table 1: Minimum data elements to be reported to OCPHO after declaration of an outbreak.

	Item	Definition	Examples
1	**Outbreak Status**	Indicates whether an outbreak is active or has been declared over.	ACTIVE or INACTIVE
2	**Date Declared**	Records the date the outbreak was declared, or outbreak investigation was initiated.	YYYY-MM-DD
3	**Date Ended**	Date outbreak declared over (if applicable)	YYYY-MM-DD
4	**Outbreak Site**	Name of location/facility of outbreak	e.g., Woodland Manor
5	**Outbreak Setting**	Identifies the type of setting or location associated with the outbreak event.	e.g., Long-term care, hospital, daycare
6	**Community**	Community where outbreak is occurring	e.g., Yellowknife, Fort Smith
7	**Number of Cases**	Indicates the cumulative number of laboratory-confirmed and probable outbreak-associated cases at the time of reporting IF KNOWN	XX
8	**Pathogens Involved**	What pathogen(s) involved in outbreak; can be more than one if multi-pathogen	e.g., COVID-19, influenza, salmonella

SECTION II: OUTBREAK MANAGEMENT

1. OUTBREAK MANAGEMENT TEAM

The outbreak management team is created in consultation with the OCPHO and may include a variety of personnel depending on the setting and type of disease. Members may include:

Table 2. Members that may be included in an outbreak management team (not an exhaustive list).

Health & Social Services Authority	NWT Department of Health & Social Services	Community
Chief Executive Officer (CEO) & Chief Operations Officer (COO)	Chief or delegate	Home care manager or delegate
Nursing Manager	Communicable Disease Specialist	Social Services manager or delegate
Regional Public Health	Epidemiologist	RCMP
Nurse in Charge or Health Centre Nurse	Environmental Health Officer	School and/or daycare administrator
Community Health Representative	Communications	Faith community representative
Community Physician	Municipal and Community Affairs	Municipal government representative
Public Health Physician	8-1-1 Services	Indigenous government representative

Key roles in the Outbreak Management Team include:

- Coordinator
- Logistics support
- Communications representative
- Data management and reporting
- Field services support
- Human Resources support for new staff, as needed
- Senior management support for resources and capacity required to manage the outbreak (both ministerial and front-line health services)

Objectives of the Outbreak Management Team include:

- Protecting the population from further infection
- Identifying and establishing a control centre
- Defining each team members' roles and responsibilities
- Establishing work priorities
- Appoint a spokesperson and recorder
- Ensuring communications are clear
- Establishing clear reporting relationships and processes

- Ensuring training and competence in data and specimen collection
- Overseeing investigative work and case/contact management, as appropriate
- Institute control measures

2. INVESTIGATION

- Determine if outbreak criteria have been met based on the NWT Communicable Disease Manual definitions, OCPHO direction and/or facility specific policies/procedures.
- Compare baseline disease incidence information and review present situation, noting the differences. **Only the OCPHO (or delegate) can declare an outbreak of infectious disease in the NWT**.

3. OUTBREAK RESPONSE

Once the outbreak has been declared:

1. The outbreak team is determined, and roles and responsibilities of each member are defined.
    a. **One individual** assumes overall responsibility for co-ordination to ensure that outbreak management team decisions are coordinated and completed. This individual must have the appropriate authority to assign specific tasks to individuals or groups.
2. Determine the type of infection and define its characteristics.
3. Establish case definitions according to recognized standards and use these definitions consistently throughout the outbreak.
4. Review the current number of cases, dates of onset and case profiles using descriptive epidemiology (i.e., onset of symptoms, history of illness, potential contact groups).
5. Review laboratory results if available.
6. Establish overall principles of disease control and institute measures to halt transmission of infection, i.e., isolation requirements, immunization.
7. Establish external and internal communication strategies.
8. Ensure spokesperson(s) have been designated:
    a. It is essential that **only designated person(s)** communicate with the media to avoid confusion. **ALL** public information related to the outbreak should be via this person(s).
    b. It may be advisable to schedule daily press conferences or daily press releases to avoid multiple reports.
9. Designate a recorder to record minutes of meetings.
10. Establish date, time, and place of next meeting.

a. In general, daily meetings are advisable during initial outbreak.

11. Determine what human and financial resources are required to implement investigation and control measures.
12. Ensure a delegated senior management position provide the resources necessary to support management of the outbreak at the health authority level.

4. PUBLIC HEALTH MEASURES

Outbreak control measures vary depending on the type of outbreak and pathogen involved.

For common source environmental health outbreaks, public health measures may include:

- Recall of contaminated foods.
- Public communications of safe food handling and cooking practices.
- Temporary closure of restaurants or food processing plants for deep cleaning.
- Disinfection of water storage facilities and systems for waterborne pathogens.

For person-to-person outbreaks, public health measures are dependent on the disease, please refer to the NWT Communicable Disease Manual and facility specific infection prevention and control policies.

Public health measures may include:

- Isolation of individuals
- Identification of high-risk events or situations where transmission may have occurred and public messaging if required to identify exposures
- The initiation of contact tracing.
- The exclusion of ill students and/or staff.
- Cohorting of ill individuals as per facility infection prevention and control procedures.
- Cleaning and disinfection of high touch surfaces.
- Public communications reminding individuals of proper hand hygiene and healthy respiratory practices
- Vaccination, if available and appropriate as per the Canadian Immunization Guide.
- Public health alerts and communications from the Chief Public Health Officer.

REFERENCES

1. The Canadian Immunization Guide: https://www.canada.ca/en/public-health/services/canadian-immunization-guide.html
2. The CDC Field Epidemiology Manual: Conducting a Field Investigation: https://www.cdc.gov/eis/field-epi-manual/chapters/Field-Investigation.html
3. Centers for Disease Control and Prevention Epidemiology Glossary: https://www.cdc.gov/reproductivehealth/data_stats/glossary.html
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5. The Government of the Northwest Territories: Communicable Disease Manual:

https://www.hss.gov.nt.ca/professionals/en/services/communicable-disease-manual
6. The Government of the Northwest Territories: Communicable Disease Report Form: https://www.hss.gov.nt.ca/professionals/sites/professionals/files/resources/nwt-communicable-disease-report-form.pdf
7. The Government of the Northwest Territories: Disease Surveillance Regulations: https://www.justice.gov.nt.ca/en/files/legislation/public-health/public-health.r9.pdf
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