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CANADIAN COMMUNICABLE DISEASE SURVEILLANCE SYSTEM

Disease-Specific Case Definitions and Surveillance Methods

Health and Welfare Canada
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Canada

CANADIAN COMMUNICABLE DISEASE SURVEILLANCE SYSTEM

Disease-Specific Case Definitions and Surveillance Methods

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PREFACE

The Canadian Communicable Disease Surveillance System is the product of close cooperation between the Laboratory Centre for Disease Control in the Health Protection Branch (HPB) of the Department of National Health and Welfare, and the communicable disease control epidemiologists in each province and territory. This cooperation is achieved through the Advisory Committee on Epidemiology (ACE), which is a forum for these provincial and territorial officials to advise HPB on matters related to the study and control of diseases. ACE decided in 1987 to review communicable disease surveillance in Canada and recommend improvements. The review process resulted in this document, which has been approved by HPB.

Because provincial and territorial operational requirements differ from those of the national surveillance system, health authorities in the provinces and territories could use case definitions which differ from those in this document. (Persons wishing to know the case definition in use in their jurisdiction should contact their provincial or territorial Ministry of Health). When such differences occur, and are likely to significantly affect disease reporting, provincial and territorial authorities will notify LCDC, and national surveillance publications will alert users. Otherwise, users of national communicable disease surveillance data should assume that the case definitions outlined in this document have been used.

TABLE OF CONTENTS

Continued on next page

CANADIAN COMMUNICABLE DISEASE SURVEILLANCE SYSTEM

BASIC PRINCIPLES AND METHODS

Goals

1. To facilitate the control of the disease under surveillance by identifying the following:
   a. Prevailing incidence levels, impacts and trends to assist in the development of feasible objectives for prevention and control of the disease and the evaluation of control programs.

   b. Epidemiologic patterns and risk factors associated with the disease to assist in the development of intervention strategies.

   c. Outbreaks for the purpose of timely investigation and control.

2. To satisfy the needs of government (especially regulatory programs), health care professionals, voluntary agencies and the public for information on risk patterns and trends in the occurrence of communicable diseases.

Quality

If surveillance is considered necessary on any particular disease, that surveillance must be carried out in such a way as to be of the highest epidemiologic quality. This implies the following:

a. Use of a uniform case definition across Canada and definition of a preventable case if applicable.

b. Collection of sufficient, appropriate epidemiologic data on each case to fulfil goal number one and identify preventable cases.

c. Timely transmission of these data from local to provincial and national agencies for analysis. Personal identifying information should be deleted prior to reaching the federal level.

d. Use of the data to enhance control programs and assist in the development of realistic objectives for reducing the number of preventable cases.

e. Periodic effectiveness and economic evaluation of the surveillance system and progress towards control of the disease.

We realize that full implementation will require a gradual phase-in period and will proceed at different rates in different jurisdictions.

General Surveillance Method (National Notification)

To avoid repetition, a general surveillance method is described. When the surveillance method chosen for a specific disease differs from this general method, it is described under that specific disease. See Tables 1 and 2 for lists of diseases for which the general surveillance method applies and diseases for which the surveillance method differs from the general surveillance method.

Physicians diagnosing a case of a specific (notifiable) disease report their clinical diagnosis with/without laboratory confirmation to local health authorities. These authorities are responsible for determining that the case meets the surveillance case definition before officially reporting the case. Where there is uncertainty because data are missing or the results are inconclusive, the case may be reported as a possible case, but the status must be made definite later; if not, the case must be deleted from reporting system. The local health authority reporting the case collects all necessary epidemiologic data on it.

All pertinent laboratory detections (from appropriate sites) must be reported to local health authorities who will then contact the physician to determine whether the isolate/specimen came from a person who meets the case definition. If so, the case is reported and the necessary epidemiologic data are gathered by the health authority.

The reporting of a case should be **timely** and need not be delayed until all epidemiologic data are available. Such data may be reported later and added to the original case report centrally. While local health authorities are encouraged to collect all information requested by the reporting system, when some items are not available, the case should be reported with missing items listed as unknown. A case should never go unreported or be deleted because of missing data. The only exception is when data to determine whether the case meets the case definition are missing. Such cases should not be reported. However, this exception does not apply to paralytic poliomyelitis cases. These cases should be reported as soon as they are **suspected** and later confirmed as meeting the case definition, which requires 60 days.

The Protocol for Interprovincial/Territorial Notification of Disease

1. The jurisdiction where the disease is diagnosed normally reports the case or has the responsibility to make sure that the disease is reported by some jurisdiction.

2. The jurisdiction of diagnosis notifies the jurisdiction of residence or exposure if public health action (e.g., contact management, source of identification, etc.) is necessary in those jurisdictions.

3. Where cases resident in one jurisdiction are being diagnosed in another (such as in border towns), and thereby significantly affecting the incidence rate in the second jurisdiction, the two jurisdictions may make a disease-specific agreement that the diagnosing jurisdiction does not count the cases but does notify the residence jurisdiction which will count them.

4. Cases moving from one jurisdiction to another while still under surveillance for a notifiable disease are not re-counted in the new jurisdiction.

National Analysis and Reporting

LCDC will analyze the epidemiologic data on each nationally notifiable disease and publish annual surveillance reports. For all zoonotic diseases, LCDC will collect, analyze and report on all pertinent animal data.

Table 1
Diseases for which the General Surveillance Method Applies (Nationally Notifiable Diseases)

DISEASE

Under Surveillance 1988

AIDS[1]
Amoebiasis
Botulism
Brucellosis
Campylobacteriosis
Cholera
Diphtheria
Giardiasis
Gonococcal Infection
Haemophilus influenzae Invasive Disease
Hepatitis A
Hepatitis B
Legionellosis
Leprosy (Hansen's Disease)
Malaria
Measles
Meningitis/Encephalitis (pneumococcal and other)
Meningococcal Infection
Mumps
Paratyphoid
Pertussis
Plague
Poliomyelitis (paralytic)
Rabies
Rubella and CRS[2]
Salmonellosis
Shigellosis
Syphilis
Tetanus
Trichinosis
Tuberculosis
Typhoid
Yellow Fever

Recommended for Addition 1989-1991

Chancroid
Chlamydial Infection
Hepatitis nonA-nonB
Herpes Simplex Infection (congenital/neonatal)
Listeriosis
Verotoxigenic *E.coli* Infection

1. Acquired immunodeficiency syndrome
2. Congenital rubella syndrome

Table 2
Diseases for which the Surveillance Method Differs from the General Surveillance Method

DISEASE
Under Surveillance 1988
Chickenpox
Recommended for Addition 1989-1991
Influenza
Non-AIDS[1] HIV[2] Infection
Rotavirus Infection
RSV[3] Infection
Hepatitis C
Herpes Infection (genital)
Parvovirus Infection

1. Acquired immunodeficiency syndrome
2. Human immunodeficiency virus
3. Respiratory syncytial virus

DISEASE-SPECIFIC CASE DEFINITIONS AND SURVEILLANCE METHODS

PREAMBLE

An attempt was made to use wording which is general enough to allow the definitions to remain current in a rapidly changing environment, particularly in the field of laboratory diagnosis. It is recommended that the ACE Communicable Disease Subcommittee review the case definitions annually and recommend to ACE any changes that are felt to be necessary.

It must be kept in mind that the case definitions are for **surveillance purposes only** and are not necessarily appropriate clinical case definitions. **In addition, it may be appropriate to alter the case definition in outbreak situations.**

ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

Case Definition

An illness characterized by one or more of the following "indicator" diseases, depending on the status of laboratory evidence of HIV infection, as shown below.

I. AIDS - Without Laboratory Evidence Regarding HIV Infection

If laboratory tests for HIV were not performed or gave inconclusive results (See Appendix I) and the patient had no other cause of immunodeficiency listed in Section IA below, then any disease listed in Section I B indicates AIDS if it was diagnosed by a definitive method (See Appendix II).

IA. Causes of immunodeficiency that disqualify diseases as indicators of AIDS in the absence of laboratory evidence for HIV infection

1. High-dose or long-term systemic corticosteroid therapy or other immunosuppressive/cytotoxic therapy ≤ **3 months before the onset of the indicator disease.**

2. Any of the following diseases diagnosed 3 months after diagnosis of the indicator disease; Hodgkin's disease, non-Hodgkin's lymphoma (other than primary brain lymphoma), lymphocytic leukemia, multiple myeloma, any other cancer of lymphoreticular or histiocytic tissue, or angioimmunoblastic lymphadenopathy.

3. A genetic (congenital) immunodeficiency syndrome or an acquired immunodeficiency syndrome atypical of HIV infection, such as one involving hypogammaglobulinemia.

IB. Indicator diseases diagnosed definitively (See Appendix II)

1. Candidiasis of the esophagus, trachea, bronchi, or lungs.

2. Cryptococcosis, extrapulmonary.

3. Cryptosporidiosis with diarrhea persisting > 1 month.

4. Cytomegalovirus disease of an organ other than liver, spleen, or lymph nodes in a patient > 1 month of age.

5. Herpes simplex virus infection causing a mucocutaneous ulcer that persists longer than 1 month or bronchitis, pneumonitis, or esophagitis for any duration affecting a patient < 1 month of age.

6. Kaposi's sarcoma affecting a patient < 60 years of age.

7. Lymphoma of the brain (primary) affecting a patient < 60 years of age.

8. Lymphoid interstitial pneumonia and/or pulmonary lymphoid hyperplasia (LIP/PLH complex) affecting a child < 13 years of age.

9. *Mycobacterium avium* complex or *M. kansasii* disease, disseminated (at a site other than or in addition to lungs, skin, or cervical or hilar lymph nodes).

10. *Pneumocystis carinii.*

11. Progressive multifocal leukoencephalopathy.

12. Toxoplasmosis of the brain affecting a patient > 1 month of age.

II. AIDS - With Laboratory Evidence for HIV Infection

Regardless of the presence of other causes of immunodeficiency (IA), in the presence of laboratory evidence for HIV infection (See Appendix I), any disease listed above (IB) or below (IIA) indicates a diagnosis of AIDS.

IIA. Indicator diseases diagnosed definitively (See Appendix II)

1. Bacterial infections, multiple or recurrent (any combination of at least 2 within a 2-year period), of the following types affecting a child < 13 years of age: septicemia, pneumonia, meningitis, bone or joint infection, or abscess of an internal organ or body cavity (excluding otitis media or superficial skin or mucosal abscesses), caused by *Haemophilus, Streptococcus* (including pneumococcus), or other pyogenic bacteria.

2. Coccidioidomycosis, disseminated (at a site other than or in addition to lungs or cervical or hilar lymph nodes).

3. HIV encephalopathy (also called "HIV dementia", "AIDS dementia", or "subacute encephalitis due to HIV") (See Appendix II for description).

4. Histoplasmosis, disseminated (at a site other than or in addition to lungs or cervical or hilar lymph nodes).

5. Isosporiasis with diarrhea persisting > 1 month.

6. Kaposi's sarcoma at any age.

7. Lymphoma of the brain (primary) at any age.

8. Other non-Hodgkin's lymphoma of a B-cell or unknown immunologic phenotype and the following histologic types:

a. small noncleaved lymphoma (either Burkitt or non-Burkitt type);

b. immunoblastic sarcoma (equivalent to any of the following, although not necessarily all in combination: immunoblastic lymphoma, large-cell lymphoma, diffuse histiocytic lymphoma, diffuse undifferentiated lymphoma, or high-grade lymphoma).

Note: Lymphomas are not included here if they are of T-cell immunologic phenotype or their histologic type is not described or is described as "lymphocytic", "lymphoblastic", "small cleaved", or "plasmacytoid lymphocytic".

9. Any mycobacterial disease caused by mycobacteria other than *M. tuberculosis*, disseminated (at a site other than or in addition to lungs, skin, or cervical or hilar lymph nodes).

10. Disease caused by *M. tuberculosis*, extrapulmonary (involving at least one site outside the lungs, regardless of whether there is concurrent pulmonary involvement).

11. *Salmonella* (non-typhoid) septicemia, recurrent.

12. HIV wasting syndrome (emaciation, "slim disease") (See Appendix II for description).

IIB. Indicator diseases diagnosed presumptively (by a method other than those in Appendix II)

Note: Given the seriousness of diseases indicative of AIDS, it is generally important to diagnose them definitively, especially when therapy that would be used may have serious side effects or when definitive diagnosis is needed for eligibility for anti-retroviral therapy. Nonetheless, in some situations, a patient's condition will not permit the performance of definitive tests. In other situations, accepted clinical practice may be to diagnose presumptively based on the presence of characteristic clinical and laboratory abnormalities. Guidelines for presumptive diagnoses are suggested in Appendix III.

1. Candidiasis of the esophagus.

2. Cytomegalovirus retinitis with loss of vision.

3. Kaposi's sarcoma.

4. Lymphoid interstitial pneumonia and/or pulmonary lymphoid hyperplasia (LIP/PLH complex) affecting a child < 13 years of age.

5. Mycobacterial disease (acid-fast bacilli with species not identified by culture), disseminated (involving at lease one site other than or in addition to lungs, skin, or cervical or hilar lymph nodes).

6. *Pneumocystis carinii* pneumonia.

7. Toxoplasmosis of the brain affecting a patient > 1 month of age.

III. AIDS With Laboratory Evidence Against HIV Infection

With laboratory test results negative for HIV infection (See Appendix I), a diagnosis of AIDS for surveillance purposes is ruled out unless:

IIIA. All the other causes of immunodeficiency listed above in Section IA are excluded; *and*

IIIB. The patient has had either:

1. *Pneumocystis carinii* pneumonia diagnosed by a definitive method (See Appendix II);

or

2. a. Any of the other diseases indicative of AIDS listed above in Section I.B diagnosed by a definitive method (See Appendix II); and

   b. A T-helper/inducer (CD4) lymphocyte count < 400/mm^3.

Surveillance System

General surveillance method (carried out by the Federal Centre for AIDS).

APPENDIX I
Laboratory Evidence For or Against HIV Infection

1. For Infection:

When a patient has disease consistent with AIDS:

a. A serum specimen from a patient ≥ 15 months of age, or from a child < 15 months of age whose mother is not thought to have had HIV infection during the child's perinatal period, that is repeatedly reactive for HIV antibody by a screening test (e.g., enzyme-linked immunosorbent assay (ELISA), as long as subsequent HIV-antibody tests (e.g., Western blot, immunofluorescence assay), if done, are positive;

or

b. A serum specimen from a child < 15 months of age, whose mother is thought to have had HIV infection during the child's perinatal period, that is repeatedly reactive for HIV antibody by a screening test (e.g., ELISA), plus increased serum immunoglobulin levels and at least one of the following abnormal immunologic test results: reduced absolute lymphocyte count, depressed CD4 (T-helper) lymphocyte count, or decreased CD4/CD8 (helper/suppressor) ratio, as long as subsequent antibody tests (e.g., Western blot, immunofluorescence assay), if done, are positive;

or

c. A positive test for HIV serum antigen;

or

d. A positive HIV culture confirmed by both reverse transcriptase detection and a specific HIV-antigen test or *in situ* hybridization using a nucleic acid probe;

or

e. A positive result on any other highly specific test for HIV (e.g., nucleic acid probe of peripheral blood lymphocytes).

2. Against Infection:

A non-reactive screening test for serum antibody to HIV (e.g., ELISA) without a reactive or positive result on any other test for HIV infection (e.g., antibody, antigen, culture), if done.

3. Inconclusive (neither for nor against Infection):

a. A repeatedly reactive screening test for serum antibody to HIV (e.g., ELISA) followed by a negative or inconclusive supplemental test (e.g., Western blot, immunofluorescence assay) without a positive HIV culture or serum antigen test, if done;

or

b. A serum specimen from a child < 15 months of age, whose mother is thought to have had HIV infection during the child's perinatal period, that is repeatedly reactive for HIV antibody by a screening test, even if positive by a supplemental test, without additional evidence for immunodeficiency as described above (in 1.b) and without a positive HIV culture or serum antigen test, if done.

APPENDIX II
Definitive Diagnostic Methods For Disease Indicative of AIDS

Diseases	Definitive Diagnostic Methods
Cryptosporidiosis Cytomegalovirus Isosporiasis Kaposi's sarcoma Lymphoma Lymphoid pneumonia or hyperplasia *Pneumocystis carinii* pneumonia Progressive multifocal leukoencephalopathy Toxoplasmosis	Microscopy (histology or cytology)
Candidiasis	Gross inspection by endoscopy or autopsy or by microscopy (histology or cytology) on a specimen obtained directly from the tissues affected (including scrapings from the mucosal surface), not from a culture.
Coccidioidomycosis Cryptococcosis Herpes simplex virus Histoplasmosis	Microscopy (histology or cytology), culture or detection of antigen in a specimen obtained directly from the tissues affected or a fluid from those tissues.
Tuberculosis Other mycobacteriosis Salmonellosis Other bacterial infection	Culture
HIV encephalopathy* (dementia)	Clinical findings of disabling cognitive and/or motor dysfunction interfering with occupation or activities of daily living, or loss of behavioral developmental milestones affecting a child, progressing over weeks to months, in the absence of a concurrent illness or condition other than HIV infection that could explain the findings Methods to rule out such concurrent illnesses and conditions must include cerebrospinal fluid examination and either brain imaging (computed tomography or magnetic resonance) or autopsy.
HIV wasting syndrome*	Findings of profound involuntary weight loss > 10% of baseline body weight plus either chronic diarrhea (at least 2 loose stools per day for ≥ 30 days), or chronic weakness and documented fever (for ≥ 30 days, intermittent or constant) in the absence of a concurrent illness or condition other than HIV infection that could explain the findings (e.g., cancer, tuberculosis, cryptosporidiosis or other specific enteritis).

* For HIV encephalopathy and HIV wasting syndrome, the methods of diagnosis described here are not truly definitive, but are sufficiently rigorous for surveillance purposes.

APPENDIX III
Suggested Guidelines for Presumptive Diagnosis of Diseases Indicative of AIDS

Diseases	Presumptive Diagnostic Criteria
Candidiasis of esophagus	a. Recent onset of retro-sternal pain on swallowing; ***and*** b. Oral candidiasis diagnosed by the gross appearance of white patches or plaques on an erythematous base or by the microscopic appearance of fungal mycelial filaments in an uncultured specimen scraped from the oral mucosa.
Cytomegalovirus retinitis	A characteristic appearance on serial ophthalmoscopic examinations (e.g., discrete patches of retinal whitening with distinct borders, spreading in a centrifugal manner, following blood vessels, progressing over several months, frequently associated with retinal vasculitis, hemorrhage, and necrosis). Resolution of active disease leaves retinal scarring and atrophy with retinal pigment epithelial mottling.
Mycobacteriosis	Microscopy of a specimen from stool or normally sterile body fluids or tissue from a site other than lungs, skin, or cervical or hilar lymph nodes, showing acid-fast bacilli of a species not identified by culture
Kaposi's sarcoma	A characteristic gross appearance of an erythematous or violaceous plaque-like lesion on skin or mucous membrane. **(Note:** Presumptive diagnosis of Kaposi's sarcoma should not be made by clinicians who have seen few cases of it.
Lymphoid interstitial	Bilateral reticulonodular pneumonia interstitial pulmonary infiltrates present on chest X-ray for $\geq$ 2 months with no pathogen identified and no response to antibiotic treatment.
Pneumocystis carinii pneumonia	a. A history of dyspnea on exertion or non-productive cough or recent onset (within the past 3 months); ***and*** b. Chest X-ray evidence of diffuse bilateral interstitial infiltrates or gallium scan evidence of diffuse bilateral pulmonary disease; ***and*** c. Arterial blood gas analysis showing an arterial $p0_2$ of $<$ 70 mm Hg or a low respiratory diffusing capacity ($<$ 80% of predicted values) or an increase in the alveolar-arterial oxygen tension gradient; ***and*** d. No evidence of a bacterial pneumonia.
Toxoplasmosis of the brain	a. Recent onset of a focal brain neurologic abnormality consistent with intracranial disease or a reduced level of consciousness; ***and*** b. Brain imaging evidence of a lesion having a mass effect (on computed tomography or nuclear magnetic resonance) or the radiographic appearance of which is enhanced by injection of contrast medium; ***and*** c. Serum antibody to toxoplasmosis or successful response to therapy for toxoplasmosis.

AMEBIASIS

Case Definition

One of the following:

1. The presence of cysts or trophozoites of *Entamoeba histolytica* in appropriate laboratory specimens.
2. Signs and symptoms compatible with amebiasis accompanied by positive serologic tests for *E. histolytica.*

Surveillance System

1. General surveillance method.
2. Amebiasis would be a candidate for the sentinel health unit surveillance system described under campylobacteriosis.

BOTULISM

Foodborne Botulism

Case Definitions

Confirmed case
Clinically compatible symptoms with a history of exposure to a probable food source and one of the following:

1. Detection of *Clostridium botulinum* toxin in sera, feces or food.
2. Isolation of *C. botulinum* from stools.
3. Epidemiologic linkage to other cases of confirmed foodborne botulism.

Clinical case
Overwhelming clinical and epidemiologic evidence of foodborne botulism, but no laboratory confirmation obtained.

Wound Botulism

Case Definition

Clinically compatible symptoms in a patient with no history of exposure to suspect food, but with a history of a contaminated wound two weeks or less before onset of symptoms, and isolation of *C. botulinum* from a wound culture or detection of its toxin in patient's serum.

Infant Botulism

Case Definition

Symptoms compatible with botulism in a person less than one year of age and the detection of botulinal toxin or *C. botulinum* from the patient's stool.

Surveillance System

General surveillance method.

BRUCELLOSIS

Case Definition

Clinically compatible symptoms with one of the following:

1. A positive culture for a species of *Brucella.*
2. Detection of *Brucella* antigen.
3. Four-fold or greater change in the serologic titre against *Brucella* to > 1/80 by Standard Tube Agglutination (STA) or equivalent between acute and convalescent serum specimens obtained 2 or more weeks apart and studied in the same laboratory.
4. A single significantly high titre against *Brucella* (> 1/160).

Surveillance System

1. General surveillance method.
2. Agriculture Canada identification of animal brucellosis.

CAMPYLOBACTERIOSIS

Case Definition

Isolation of *Campylobacter* from any site on the body, regardless of symptoms.

Surveillance System

1. General surveillance method.
2. Intensive surveillance for a 1-year period in sentinel health units by interviewing one case in detail each week regarding possible risk factors for infection and illness.
3. All laboratories are encouraged to forward isolates from suspected outbreaks to LCDC for phage and biotyping.

Additional Objective for Surveillance

Identify foodhandler cases.

CHANCROID

Case Definition

A patient with clinically compatible symptoms and laboratory identification of *Haemophilus ducreyi* in a specimen taken from any anatomical site.

Surveillance System

General surveillance method.

CHICKENPOX

Case Definition

One of the following:

1. Rash with rapid evolution of macules to papules, vesicles and crusts; all stages are simultaneously present; lesions are superficial; distribution is centrifugal.
2. Laboratory evidence of infection and compatible clinical illness.

Surveillance System

1. National sentinel physician reporting of chickenpox and herpes zoster should begin before vaccine licensure and continue until the incidence rates are too low for a sentinel group to determine them in a reliable manner. Once a sentinel system is working well for 3 years, consider dropping national notification, if vaccine licensure is unlikely for several years.
2. Multi-centre hospital-based study to describe the clinical profile of hospitalized cases in order to better define the incidence of complications.
3. The pediatrician-based surveillance system for rare vaccine adverse reactions should also report neurologic complications of chickenpox.
4. Continue notification in some provinces and nationally, pending results of a pilot national sentinel physician reporting system.

Additional Objectives for Surveillance

1. Establish pre-vaccine baseline incidence data.
2. Identify presence in a community in order to alert those at high risk.

CHLAMYDIAL INFECTION

Case Definitions

Genital Infections
Detection of *Chlamydia trachomatis* by cell culture or direct antigen method in a specimen of genital tract secretions.

Rectal Infections
Detection of *C. trachomatis* by cell culture in a specimen obtained from the rectal mucosa.

Pneumonia
Detection of *C. trachomatis* by cell culture or direct antigen method in nasopharyngeal and/or tracheal aspirates from a newborn who developed pneumonia in the first 6 months of life.

Conjunctivitis
Detection of *C. trachomatis* by cell culture or direct antigen method in a specimen of conjunctival exudate or pseudomembrane in a newborn who developed conjunctivitis in the first month of life.

Surveillance System

General surveillance method.

CHOLERA

Case Definition

Isolation of cholera-toxin-producing *Vibrio cholerae* serovar O1 from any specimen from a person with gastrointestinal symptoms.

Surveillance System

General surveillance method.

Additional Objective for Surveillance

To advise WHO, adjacent countries and country where infection was likely acquired.

DIPHTHERIA

Case Definition

Clinically compatible symptoms involving upper respiratory tract (URT)(pharyngitis or laryngitis) with or without a membrane and/or toxic (cardiac or neurologic) symptoms in a person from whom toxigenic *Corynebacterium diphtheriae* has been isolated.

Preventable Case
A case in an unimmunized or inadequately immunized Canadian resident eligible for immunization.

Carrier Definition
A person who harbors and may disseminate toxigenic *C. diphtheriae* but who manifests no upper respiratory tract (pharyngitis or laryngitis) or systemic symptoms. Carriers include those with otitis media, nasal or cutaneous infections and asymptomatic pharyngeal infections due to toxigenic *C. diphtheriae*.

Asymptomatic persons and persons with URT symptoms harbouring non-toxigenic *C. diphtheriae* are not considered carriers or cases.

Surveillance System

Cases only are to be notified according to the system described in the general surveillance method.

GIARDIASIS

Case Definition

The demonstration of *Giardia* trophozoites or cysts in stools or small bowel specimens.

Surveillance System

General surveillance method.

GONOCOCCAL INFECTION

Case Definitions

Genitourinary Infection
Detection of *Neisseria gonorrhoeae* from any site by definitive culture or direct antigen method OR a stained smear of male urethral secretions that demonstrates typical Gram negative intracellular diplococci.

Eye, joint, pharyngeal, anal and rectal infection or infection at other sites:
Detection of *N. gonorrhoeae* from any specific site by definitive culture.

Surveillance System

General surveillance method.

HAEMOPHILUS INFLUENZAE INVASIVE DISEASE

Case Definitions

Confirmed Case
Laboratory isolation of *Haemophilus influenzae b* from a site normally sterile, or the epiglottis*, with symptoms clinically compatible with invasive disease.

Clinical Case
Buccal cellulitis or epiglottitis* in a child < 5 years of age with no other causative organism isolated.

Preventable Case
A case in a Canadian resident eligible for chemoprophylaxis and/or vaccine who did not receive same.

Surveillance System

General surveillance method.

*The clinician may deem it unwise to attempt culture in suspected epiglottitis.

HEPATITIS (VIRAL)

Case Definitions

Clinically compatible symptoms in a person with laboratory evidence of hepatitis, i.e., hyperbilirubinema and/or aminotransferase levels > 2.5 times the upper limit of normal with no evidence for any non-infectious cause.

Cases are further subdivided into the following types:

Confirmed Case
Hepatitis A: IgM anti-HAV positive

Hepatitis B: HBsAg positive, or IgM anti-HBc positive with negative results for IgM anti-HAV, if done.

Hepatitis C: Documented seroconversion to Hepatitis C*

Hepatitis Non-A, Non-B: HBsAg and IgM anti-HAV negative; or IgM anti-HBc and IgM anti-HAV negative regardless of HBsAg status, with no evidence for any other specific causative agent found (Hepatitis C, EBV and CMV in particular), if tested.

*It is recognized that, at present, difficulties in diagnosing acute Hepatitis C will frequently result in its being classified as Hepatitis Non-A, Non-B .

Clinical Case

Hepatitis A Hepatitis B Hepatitis C Hepatitis Non-A, Non-B	Epidemiologically linked to a confirmed case

Note: A person with chronic viral hepatitis should be counted only once, the first time he/she becomes symptomatic.

1. General surveillance method. — Surveillance System

2. Hepatitis C:
   a. national surveillance of age and sex aggregated laboratory findings of seropositivity.

   b. special studies of maternal-fetal transmission.

HERPES INFECTION (GENITAL)

Compatible clinical illness and laboratory evidence of infection. — Case definition

1. Hospital and laboratory-based surveillance. — Surveillance System
2. Special studies to establish the disease burden, trends and risk groups.

HERPES SIMPLEX INFECTION (CONGENITAL/NEONATAL)

Isolation of herpes simplex virus from any site in an infant less than 1 month old who demonstrates one of the following: — Case Definition

1. Generalized systemic infection involving the liver and other organs compatible with herpes simplex infection.
2. Localized central nervous system disease.
3. Localized infection involving the skin, eyes or mouth.

General surveillance method. — Surveillance System

INFLUENZA

For sentinel physician systems. — Case Definition

Febrile (temperature ≥ 38°C) respiratory illness; usually characterized by prostration and cough, which in the physician's opinion could be due to an influenza virus.

1. Provincial/territorial or national sentinel physician surveillance of influenza-like illness with periodic reporting of national data. — Surveillance System
2. Reporting of outbreaks by selected nursing homes and other chronic care facilities to health units in a standard manner for reporting to the province/territory and LCDC.
3. Weekly reporting of the extent of influenza-like illness by province/territory to LCDC, weekly, using uniform categories:
   0 = no reported cases;
   1 = sporadic cases, no reported outbreaks;
   2 = localized outbreaks;
   3 = widespread outbreaks;
   1, 2 and 3 defined as in the opinion of the Provincial Epidemiologist.

4. Weekly reporting of influenza viral isolations, detections, and seroconversions to LCDC by participating laboratories using computer network or telephone during the influenza season.

5. Further typing/subtyping and strain identification of viral isolates by LCDC Virus Laboratory as requested.

6. Annual analysis of sera from the general population and sub-populations at high risk of influenza complications in order to determine the antibody level to new subtypes/strains.

7. Weekly collection of pneumonia and influenza mortality data (underlying or antecedent cause) by LCDC from provincial vital statistics offices in 19 jurisdictions with a population of approximately 11.5 million.

8. Periodic reporting of provincial/territorial pneumonia and influenza standardized mortality rates, potential years of life lost, and hospital separations.

9. Periodic surveys of

   a. vaccine doses distributed in each province/territory by government/private sector;

   b. groups eligible for government funded vaccine; and

   c. amantadine use for influenza prophylaxis.

10. A National population-based survey of influenza immunization knowledge, attitudes, and practice.

11. Reporting of nationally collected surveillance data to interested parties on a weekly basis by computer network and Canada Diseases Weekly Report.

12. End of season summary reporting by LCDC comparing above data with previous years.

13. Special studies regarding influenza epidemiology and effectiveness of prevention and control measures.

Additional Objectives for Surveillance

1. Determine susceptibility of the Canadian population and high risk sub-populations to new strains.

2. Monitor incidence of influenza-like illness and laboratory evidence of influenza.

3. Identify new strains.

4. Monitor utilization of influenza vaccines.

5. Assess immunogenicity, efficacy, and adverse reactions to influenza vaccines.

LEGIONELLOSIS

Case Definitions

Confirmed Case
Clinically compatible symptoms (fever, cough) and pneumonia plus one of the following:

1. Isolation of *Legionella* organisms or detection of the antigen from a site which is normally sterile, sputum or bronchial washings.
2. A 4-fold or greater rise in antibody titre to ≥ 1:128 against *Legionella pneumophila.*

Clinical Case
Clinically compatible symptoms and static or single antibody titre of ≥ 1:256.

Surveillance System

1. General surveillance method.
2. In addition, special studies should be encouraged, e.g., hospital surveillance and investigation of outbreaks.

LEPROSY (HANSEN'S DISEASE)

Case Definitions

Confirmed Case
The demonstration of acid-fast bacilli in skin or dermal nerve from a patient with clinically compatible symptoms who is being seen for the first time in Canada for symptoms of leprosy.

Clinical Case
Histopathologic evidence of leprosy in a skin biopsy from a patient with prior diagnosis of leprosy seen for the first time in Canada for symptoms of leprosy.

Surveillance System

1. General surveillance method.
2. The Laboratory Centre for Disease Control, Health and Welfare Canada, will maintain its present registry of known Canadian leprosy cases with identifying data in order to prevent double counting of this chronic disease.

LISTERIOSIS

Case Definition

Clinically compatible symptoms with the isolation of *Listeria monocytogenes* from a site which is normally sterile, including fetal gastrointestinal contents.

Surveillance System

1. General surveillance method.
2. At the present time each case identified is subjected to a special protocol as agreed to by the provinces. When this special surveillance period has ended, routine surveillance will continue using the general surveillance method.
3. All laboratories are requested to forward human isolates to LCDC for serotyping and isoenzyme characterization and report immediately to the local health authorities and/or the provincial health departments.

Case Definitions

The following are surveillance definitions and are not intended to guide clinical management. Failure to meet a surveillance case definition does not preclude treatment which, instead, should be initiated on the basis of clinical judgement. Since the epidemiology of Lyme disease is not fully known and since laboratory methodology is evolving, the case definitions will require review as experience is gained with the disease.

Confirmed Case
One of the following:

1. Isolation of *Borrelia burgdorferi* from tissue or body fluid by a laboratory of demonstrated competence.

2. History of exposure in an endemic area[1] and **either** of the following:

   a. erythema migrans[2] observed by a physician;

   b. at least one clinically compatible late manifestation[3] **and** laboratory evidence of *B. burgdorferi* infection[4].

3. No history of exposure in an endemic area[1] and **both** of the following:

   a. erythema migrans[2] observed by a physician;

   b. laboratory evidence of *B. burgdorferi* infection[4].

Probable Case
One of the following:

1. History of exposure in an endemic area[1] and physician recognition of erythema migrans[2] as reported by the patient.

2. No history of exposure in an endemic area[1] and **both** of the following:

   a. at least one clinically compatible late manifestation[3];

   b. laboratory evidence of *B. burgdorferi* infection[4].

Notes

1. **Exposure in an endemic area**

   Living in, or visiting, an endemic area[a]. Such exposure should have occurred no more than 30 days prior to onset of erythema migrans or no more than 1 year before the onset of late manifestations. A history of tick bite is **NOT** required.

   a. **Endemic area**

      One in which the risk of transmission of Lyme disease to humans is supported by **either** of the following:

i. the presence of an established vector population known to be infected with *B. burgdorferi;*

ii. the occurrence of at least 3 confirmed human cases, with adequate histories, for whom there are no histories of exposure in previously identified endemic areas (a provisional definition of an endemic area in the absence of appropriate tick studies).

There is no time limit within which cases must occur or infected vectors be identified for an area to be declared endemic. The geographic limits of the endemic area will be defined by the provincial or territorial health authorities.

2. **Erythema migrans (EM)**
An erythematous expanding lesion, at least 5 cm in diameter, with central clearing. The lesion occurs within 30 days of exposure. Annular erythematous lesions occurring within 48 hours of a tick bite may represent hypersensitivity reactions and do not qualify as EM.

3. **Late manifestations**
These include any of the following **when all other known causes have been ruled out:**
a. **Musculoskeletal system**

Recurrent, brief attacks (lasting weeks or months) of physician observed large joint swelling in one or a few joints or chronic progressive arthritis preceded by brief attacks. Chronic progressive arthritis **NOT** preceded by brief attacks, chronic symmetric polyarthritis, arthralgias, myalgias, or fibromyalgia syndromes are **NOT** accepted as criteria for musculoskeletal involvement.

b. **Nervous system**

Lymphocytic meningitis, cranial neuritis, facial palsy, radiculoneuropathy, or rarely, encephalomyelitis. Headache, fatigue, paresthesias, or stiff neck are **NOT** accepted as criteria for neurologic involvement.

c. **Cardiovascular system**

Acute onset atrioventricular conduction defects that resolve in days to weeks. Palpitations, bradycardia, bundle branch block or myocarditis are **NOT** accepted as criteria for cardiovascular involvement.

4. **Laboratory evidence of *B. burgdorferi* infection**
Any one of the following findings, determined in a laboratory of demonstrated competence, provides laboratory evidence of *B. burgdorferi* infection:
a. immunospecific staining of the spirochete in tissue or body fluid;

b. significant changes in confirmed antibody response to *B. burgdorferi* in sequential serum samples;

c. serum positive by enzyme-linked immunosorbent assay (ELISA) serology according to recognized cutoff values **and** also positive by Western blot.

Surveillance System

1. The disease should not be made nationally notifiable; however, LCDC will continue informal surveillance as at present.

2. Provinces/territories and other funding agencies are encouraged to fund appropriate epizootiologic studies.

3. Provinces/territories are encouraged to consider whether the disease should be notifiable in their jurisdiction.

MALARIA

Case Definition

Positive peripheral blood smear for malaria parasites. A case is counted if it is the individual's first attack of malaria in Canada, regardless of whether or not he/she had experienced previous attacks of malaria while outside the country.

A subsequent attack in the same person caused by a different plasmodium species is counted as an additional case.

A repeat attack/relapse in the same person in this country caused by the same species is not considered to be an additional case unless the person has been to a malaria endemic area since the previous attack.

Malaria cases are sub-divided into the following categories:

a. ***Imported:*** malaria acquired outside Canada.

b. ***Autochthonous:*** malaria acquired by mosquito transmission within Canada.

c. ***Induced:*** malaria acquired through artificial means e.g., blood transfusions or the sharing of syringes or needles.

d. ***Foreign:*** A history of malaria acquired and treated abroad and confirmed in Canada by examination of a blood smear prepared abroad or with a history suggesting to the examining physician that the patient did have a positive blood smear abroad. Excluded are patients with a history of fever that responded to anti-malarials but for whom a blood smear was never prepared.

Preventable Case
A case in any Canadian resident returning from a malaria endemic country who did not take recommended malaria prophylaxis.

Surveillance System

General surveillance method.

Case Definitions

Confirmed Case
One of the following:

1. Detection of measles virus in appropriate specimens.
2. A 4-fold rise in serum antibody titre or the presence of measles specific IgM.
3. Clinical measles in a person who has been in known contact with a laboratory confirmed case.

In outbreak situations the index case must be laboratory confirmed.

Clinical Case
All of the following symptoms:

1. Fever ≥ 38.3°C (101°F).
2. Cough, coryza or conjunctivitis followed by
3. Generalized maculopapular rash for at least 3 days.

Preventable Case
A case in a Canadian resident who meets all of the following criteria:

1. At least 13 months of age.
2. Born after 1956.
3. Lacking documented receipt of live measles vaccine on or after first birthday or physician-diagnosed measles disease.
4. Without medical contraindication to receiving vaccine.
5. Without valid philosophic/religious exemption.

Surveillance System

1. General surveillance method.
2. Implementation of ACE Guidelines for Measles Control in Canada (CDWR 1991;17:35-40).

MENINGITIS/ENCEPHALITIS

Case Definition

Clinically compatible symptoms and laboratory evidence of CNS infection with isolation of an organism or detection of its antigen from any site normally sterile or serologic confirmation of infection with an organism known to cause meningitis or encephalitis.

Notes Meningitis due to *Haemophilus influenzae, Neisseria meningitidis* (meningococcus) or *Listeria monocytogenes* will be reported under those organisms.

Meningitis due to other organisms will be reported under meningitis which will be further subdivided into the following categories:

A: **Bacterial Meningitis:**

1 Pneumococcal: laboratory evidence of *Streptococcus pneumoniae* (pneumococcus) infection.

2. Other bacterial: laboratory evidence of bacterial infection other than *S. pneumoniae, N. meningitidis, Haemophilus influenzae* or *Listeria monocytogenes.*

B: **Viral meningitis/encephalitis:** laboratory evidence of viral infection.

Surveillance System

1. General surveillance method.

2. Special studies involving hospital/laboratory surveillance are to be encouraged.

MENINGOCOCCAL INFECTION

Case Definitions

Confirmed Case
Clinically compatible symptoms with the identification of meningococcus (*Neisseria meningitidis*) or its antigen from any site normally sterile or skin lesions.

Clinical Case
Symptoms clinically compatible with purpura fulminans even if there is failure to identify any organism in the blood or CSF by either isolation or antigen detection.

Preventable Case
A case in a Canadian resident eligible for chemoprophylaxis and/or vaccine who did not receive same.

Surveillance System

1. General surveillance method.
2. Serogroup identification of isolates is essential.

MUMPS

Case Definitions

Confirmed Case
Clinically compatible symptoms confirmed by appropriate serologic tests, virus isolation or epidemiologically linked to another confirmed case.

Clinical Case
Clinically compatible symptoms of mumps i.e., fever and tender self-limited swelling of the salivary gland(s) lasting 2 or more days without other apparent cause.

Preventable Case
A case in a Canadian resident who meets all of the following criteria:

1. At least 13 months of age.

2. Born after 1956.

3. Lacking documented receipt of live mumps vaccine on or after first birthday.

4. Without medical contraindication to receiving vaccine.
5. Without valid philosophic/religious exemption.

General surveillance method. — Surveillance System

NON-AIDS HIV INFECTION

Serologic or other evidence of HIV infection in an individual who does not meet the above case definition for AIDS. — Case Definition

Surveillance System

1. Anonymous unlinked serosurveys of selected populations.
2. Provincial reporting of:
   a. Laboratory findings of seropositivity aggregated by age, sex and risk factor (with the exclusion of duplicate positive tests), and
   b. Denominators (i.e. number of specimens submitted) by age, sex and risk factor.
3. Regular published reports on the above by the Federal Centre for AIDS.

PARATYPHOID (See TYPHOID)

PARVOVIRUS INFECTION

Compatible clinical illness and laboratory evidence of infection. — Case Definition

Surveillance System

1. Hospital and laboratory-based surveillance.
2. Special studies to establish the disease burden, trends and risk groups.

PERTUSSIS

Case Definitions

Confirmed Case
Clinically compatible symptoms with isolation of *Bordetella pertussis*.

Clinical Case
One of the following:

1. Characteristic paroxysmal cough; cough episodes ending in apnea or vomiting; or inspiratory 'whoop' without other cause.

2. Cough lasting at least 2 weeks and epidemiologically linked to a laboratory-confirmed case.

Preventable Case

Case in an unimmunized or inadequately immunized Canadian resident eligible for immunization.

Surveillance System

1. General surveillance method.

2. Special studies are to be encouraged. These include health unit based sentinel systems, and studies morbidity, mortality, transmission patterns and outbreaks.

PLAGUE

Case Definitions

Confirmed Case
Clinically compatible symptoms and the isolation of *Yersinia pestis* or a 4-fold or greater rise in serum antibody titre to *Y. pestis*.

Clinical Case
Clinically compatible symptoms and one of the following:

1. Single high antibody titre to *Y. pestis* in the absence of history of immunization.

2. Demonstration of *Y. pestis* antigen in appropriate clinical specimens.

Surveillance System

General surveillance method.

Additional Objective For Surveillance

To advise WHO, adjacent countries and country where infection was likely acquired.

POLIOMYELITIS (Paralytic)

Case Definitions

Confirmed Case
Clinically compatible signs and symptoms of paralytic poliomyelitis including all of the following:

1. Acute flaccid paralysis of one or more limbs.

2. Decreased or absent deep tendon reflexes on the affected limbs.

3. No sensory or cognitive loss.

4. No other apparent cause (including laboratory investigation to rule out other causes of a similar syndrome).

5. Neurologic deficit present 60 days after onset of initial symptoms unless the patient has died.

Associated with the isolation of either vaccine or wild poliovirus from a clinical specimen.

Non-paralytic poliomyelitis will be reported under viral meningitis.

Paralytic poliomyelitis cases are sub-divided into the following categories:

1. **Wild Virus:** Laboratory investigation implicates wild type virus. This group is further subdivided as follows:
   a. ***Imported:*** travel or residence in a polio-endemic area 30 days or less before onset of symptoms.

   b. ***Import-related:*** epidemiologically linked to someone who has travelled or resided in a polio-endemic area within 30 days of onset of symptoms.

   c. ***Indigenous:*** no travel or contact as described above.

2. **Vaccine-Associated:** Laboratory investigation implicates vaccine-type virus. This group is further sub-divided as follows:
   a. ***Recipient:*** the illness began 7-30 days after the patient received oral polio vaccine.

   b. ***Contact:*** the patient was shown to have been in contact with a vaccinee and became ill 7-60 days after the vaccinee had received oral polio vaccine.

   c. ***Possible contact:*** there was no known direct contact with a vaccinee and no history of the patient receiving oral polio vaccine, but the paralysis occurred in an area in which a mass vaccination campaign had been in progress 7-60 days before the onset of paralysis. Within Canada, all provinces routinely using oral polio vaccine meet this criteria all the time.

   d. ***No known contact:*** the paralysis occurred in a patient with no known contact with a vaccinated person or recent receipt of polio vaccine in an area where intensive vaccination had not been in progress. In Canada this would include only provinces that do not routinely use oral polio vaccine.

   e. ***Immunocompromised:*** diagnosis of concurrent medical condition associated with deficient immune function in any vaccine-associated case.

Possible case

Clinically compatible symptoms of paralytic poliomyelitis (as listed above), without isolation of poliovirus from clinical specimens, with serologic evidence of recent poliovirus infection, without evidence for infection with other neurotropic viruses.

Preventable case

All wild virus cases in unimmunized or inadequately immunized Canadian residents who are eligible for immunization.

Surveillance System

1. General surveillance method.

2. Adequate investigation of all cases clinically compatible with poliomyelitis is essential. This includes collection of multiple stool and other clinical specimens as soon as possible (at least within 2 weeks of onset of symptoms) and rapid transport of these specimens to a recognized viral laboratory with documentation of maintenance of the cold chain; adequate neurologic assessment, including nerve conduction studies; and follow-up to establish neurologic deficit lasting at least 60 days.

3. Polio cases are to be reported as soon as they are suspected. Do not wait the 60 days for the case definition to be met.

4. All suspected cases of paralytic poliomyelitis are reviewed to determine their classification by a subcommittee of the National Advisory Committee on Immunization with representatives from the Advisory Committee on Epidemiology .

RABIES

Case Definition

Clinically compatible neurologic symptoms with diagnosis confirmed by tissue antigen detection, virus or appropriate serologic evidence.

Preventable Case
A case in a Canadian resident with recognized exposure who did not receive appropriate prophylaxis.

Surveillance System

1. General surveillance method.

2. Each province will keep a register of all exposure incidents and the use of post-exposure prophylaxis in their province and transmit this information to LCDC for collation and reporting.

3. LCDC will collate and report on animal rabies occurrence.

RESPIRATORY SYNCYTIAL VIRUS (RSV) INFECTION

Case Definition

Compatible clinical illness and laboratory evidence of infection.

Surveillance System

1. Hospital and laboratory-based surveillance.

2. Special studies to establish the disease burden, trends and risk groups.

ROTAVIRUS INFECTION

Case Definition

Compatible clinical illness and laboratory evidence of infection.

Surveillance System

1. Hospital and laboratory-based surveillance.

2. Special studies to establish the disease burden, trends and risk groups.

Case Definitions

Confirmed Case
Even in the absence of symptoms any one of the following:

1. Virus detection.
2. A 4-fold rise in serologic titre.
3. Rubella specific IgM in the serum.

Clinical Case
Both of the following:

1. Fever and rash and one or more of arthritis/arthralgia, lymphadenopathy, conjunctivitis.
2. In a community with documented rubella activity or epidemiologically linked to a confirmed case.

Preventable Case
A case in a Canadian resident who meets all of the following criteria:

1. At least 13 months of age.
2. Born after 1956.
3. Lacking documented receipt of live rubella vaccine on or after first birthday.
4. Without medical contraindication to receiving vaccine.
5. Without valid philosophic/religious exemption.

Surveillance System

General surveillance method.

CONGENITAL RUBELLA SYNDROME

Case Definitions

Confirmed Case
Includes live and stillborn children. Clinically compatible defects and one or more of the following:

1. Isolation of rubella virus.
2. Detection of rubella specific IgM.
3. Persistence of rubella specific IgG higher than that expected from passive transfer of maternal antibody.

Clinical Case
Clinically compatible defects without laboratory confirmation. The following laboratory findings must not exist:

1. Rubella antibody titre absent in the infant.
2. Rubella antibody titre absent in the mother.

3. Rubella antibody titre declines in the infant consistent with the normal decline after birth of passively transferred maternal antibody.

Preventable Case
Case in an infant whose mother was eligible for immunization or had been previously tested and recognized as rubella susceptible.

Surveillance System

1. General surveillance method.
2. Surveillance of birth records, hospital discharge data and laboratory data.

SALMONELLOSIS

Case Definition

The first isolation of a particular *Salmonella* from any site on a human body regardless of symptoms.

Surveillance System

1. General surveillance method.
2. Salmonellosis would be a candidate for a sentinel health unit surveillance system described under Campylobacteriosis.

SHIGELLOSIS

Case Definition

Isolation of *Shigella* from any site on the body regardless of symptoms.

Additional Data Needed

Additional risk factors for infection and disease.

Surveillance System

1. General surveillance method.
2. Laboratory reports to include species, serotype, subtype.
3. All laboratories are encouraged to forward non-typable isolates to LCDC.
4. Additional data are needed regarding risk factors for infection and disease.
5. Shigellosis would be a candidate for a sentinel health unit surveillance system as described under Campylobacteriosis.

SYPHILIS

Case Definitions

Congenital Syphilis
One of the following:

1. Identification of *Treponema pallidum* by darkfield microscopy or fluorescent antibody examination of material from nasal discharges or skin lesions, or in placental, umbilical cord or autopsy material of a neonate.
2. Reactive serology (non-treponemal and treponemal) in an infant whose mother has not been adequately treated for syphilis.

Primary Syphilis
One of the following:

1. Identification of *T. pallidum* by darkfield microscopy or fluorescent antibody examination in material from a chancre or in aspirated material from a regional lymph node.

2. Presence of one or more typical lesions (chancres), and one of the following:
   a. Without a previous history of syphilis, reactive serology (non-treponemal and treponemal)

   b. With a previous history of syphilis, reactive serology (treponemal only),

   c. A 4-fold (e.g. 1:8 to 1:32) or greater increase in the titre over the last known non-treponemal test in individuals with a past history of syphilis treatment.

Secondary Syphilis
One of the following:

1. Identification of *T. pallidum* from mucocutaneous lesions or condylomata lata and reactive non-treponemal and treponemal serology.

2. Presence of any of cutaneous or mucous membrane lesions, alopecia, loss of eyelashes and lateral third of eyebrows, iritis, generalized lymphadenopathy, fever, malaise or splenomegaly

   and

   Either a reactive syphilis serology (non-treponemal and treponemal) OR a 4-fold (e.g. 1:8 to 1:32) or greater increase in titre over the last known non-treponemal test.

Note: The possibility of a prozone reaction should be considered in individuals who are suspected of having secondary syphilis but whose non-treponemal test is non-reactive.

Early Latent Syphilis
An asymptomatic patient with reactive serology (non-treponemal and treponemal) who within the past 1 year had:

1. Non-reactive serology.

2. Symptoms suggestive of primary or secondary syphilis.

3. Exposure to a sexual partner with primary, secondary or latent syphilis.

Late Latent Syphilis
An asymptomatic patient with reactive serology (non-treponemal and/or treponemal) who does not meet the criteria for early latent disease and who has not been previously treated for syphilis.

Neurosyphilis
The findings of pleocytosis (particularly lymphocytes), elevated protein and reactive non-treponemal tests in a non-bloody cerebrospinal fluid and reactive serology (non-treponemal and/or treponemal).

General surveillance method.

Surveillance System

TETANUS

Case Definition

Clinically compatible symptoms without other apparent medical cause with or without laboratory evidence of the organism or its toxin and with or without history of injury.

Preventable Case

1. A case in an unimmunized or inadequately immunized Canadian resident.
2. A case whose wound was not managed according to recommended guidelines.
3. A neonatal case whose mother was unimmunized or inadequately immunized and eligible for immunization.

Surveillance System

General surveillance method.

TRICHINOSIS

Case Definitions

Confirmed Case

Clinically compatible symptoms with a *Trichinella* positive muscle biopsy or positive serology for trichinosis.

Clinical Case

Clinically compatible symptoms and epidemiologically linked to a confirmed case or to meat known to contain trichinella larvae.

Surveillance System

1. General surveillance method.
2. LCDC will collect data from Agriculture Canada regarding animal detections.

TUBERCULOSIS

Case Definitions

One of the following:

1. Cases with *Mycobacterium tuberculosis* complex (i.e. *M. tuberculosis*, *M. bovis* (excluding BCG strain), or *M. africanum)* demonstrated on culture.
2. Cases with significant evidence of activity, and preferably a positive (significant) tuberculin reaction even though bacteriologic proof has not been demonstrated, such as:
   a. Chest X-ray change compatible with active tuberculosis, including idiopathic pleurisy with effusion;
   b. Clinically active non-respiratory TB (meningeal, bone, kidney, etc.);
   c. Pathologic or post-mortem evidence of active TB.

New Active Case

No documented evidence or history of previously active tuberculosis.

Reactivated Case
Documented evidence or history of previously active tuberculosis which became inactive.

Active Tuberculosis
Absolute: Positive culture for *M. tuberculosis.*

Probable: In the opinion of the clinician: clinical signs and laboratory tests compatible with active tuberculosis (including pathology, if available).

Inactive Tuberculosis
One of the following:

1. Cultures for *M. tuberculosis* negative for at least 6 months.
2. In the absence of cultures, chest (or other) X-rays stable for a minimum of 6 months.

Surveillance System

1. General surveillance method.
2. Agriculture Canada's animal surveillance.

TYPHOID AND PARATYPHOID FEVER

Case Definition

The isolation of *Salmonella typhi*, or *S. paratyphi* A, B, C, from any appropriate specimen regardless of symptoms.

Surveillance System

General Surveillance Method

VEROTOXIGENIC *ESCHERICHIA COLI* INFECTION

Case Definition

Laboratory evidence of verotoxin producing *E. coli* (including *E. coli* 0157:H7) in appropriate laboratory specimens.

Surveillance System

General surveillance method.

YELLOW FEVER

Case Definitions

Confirmed Case
Clinically compatible symptoms with one of the following:

1. Isolation of yellow fever virus.
2. Detection of yellow fever viral antigen in serum or tissue.
3. A 4-fold change in serum antibody titre to the yellow fever virus or a single elevated specific yellow fever IgM antibody titre in the absence of yellow fever vaccination within the previous 2 months.

Clinical Case
One of the following:

1. Clinically compatible symptoms and a compatible travel history with a single high CF or HI antibody titre, not explained by prior immunization.

2. Characteristic hepatic histopathology at autopsy in cases dying with symptoms clinically compatible with acute yellow fever.

Surveillance System

General surveillance method.

Additional Objectives for Surveillance

1. Advise WHO, adjacent countries, and the country where infection was likely acquired.

2. Protect laboratory personnel.