Section 1

Introduction

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1.1 Introduction to Provincial Communicable Disease Control

The control of communicable and infectious diseases in Newfoundland and Labrador (NL) is necessary for a healthy population. The Disease Control Manual is provided for health practitioners to facilitate detection and control of communicable and infectious diseases by providing a framework of provincial legislation and policy.

Authority

The *Communicable Diseases Act* and the *Communicable Diseases Amendments Order*, *1998* (Appendix A) constitute the statutory basis for the control of communicable diseases in Newfoundland and Labrador.

The Minister of Health and Community Services has the ultimate responsibility for this Act; however, this authority may be delegated to the Chief Medical Officer of Health (CMOH) and the Regional Medical Officers of Health (RMOH).

Purpose

The purpose of the manual is to set out the provincial policies and procedures related to the prevention and control of communicable and infectious diseases. This provides a mechanism for consistency across the province while allowing the flexibility that may be necessary within the regions.

The effective control of communicable and infectious diseases relies on the cooperation, collaboration and coordination among public health, acute care, laboratory and related health professionals at all levels.

This manual provides guidance for these health practitioners in fulfilling their roles in the prevention, surveillance, detection, investigation, control and reporting of communicable and infectious diseases in Newfoundland and Labrador.

Objectives

- Provide provincial policy direction for the prevention, surveillance and control of communicable and infectious diseases
- Ensure consistency across the province for the disease and infection control programs
- Outline the procedures for carrying out provincial policy
- Describe the procedures for reporting of communicable and infectious diseases
- Be a resource for health practitioners on issues related to the prevention and control of communicable and infectious diseases
- Serve as a guide for the orientation of new staff
- Ensure the protection of vulnerable populations

Policies related to specific diseases are included under the section for that disease.

1.2 Abbreviations and Definitions

5TUPPD	5 Tuberculin Units of Purified Protein Derivative		
AFB	Acid Fast Bacillus		
BBI	Bloodborne Infection		
BWA	Boil Water Advisory		
CDCN	Communicable Disease Control Nurse		
CDR	Communicable Disease Report		
CFIA	Canadian Food Inspection Agency		
CHN	Community Health Nurse		
CIOSC	Canadian Integrated Outbreak Surveillance Centre		
СМОН	Chief Medical Officer of Health		
CNPHI	Canadian Network for Public Health Intelligence		
DC	Division of Disease Control		
DCNS	Disease Control Nurse Specialist		
DHCS	Department of Health and Community Services		
	Environmental Health Coordinator (Manager with Regional Health		
EHC	Authority)		
EHO	Environmental Health Officer (Inspector with GSC)		
GBS	Guillain-Barre Syndrome		
GIS	Geographic Information Systems		
GSC	Government Services Centre		
H&CS	Health and Community Services		
HAV	Hepatitis A Virus		
HBV	Hepatitis B Virus		
HCV	Hepatitis C Virus		
ICP	Infection Control Practitioner		
lgG	Immunoglobulin G		
IgM	Immunoglobulin M		
ISG	Immune Serum Globulin		
NACI	National Advisory Committee on Immunization		
NL	Newfoundland and Labrador		
PCR	Polymerase Chain Reaction		
PHAC	Public Health Agency of Canada		
PHL	Public Health Laboratory (of Newfoundland and Labrador)		
PZA	Pyrazinamide		
RCMP	Royal Canadian Mounted Police		
RHA	Regional Health Authority		
RMOH	Regional Medical Officer of Health		
RMP	Rifampin		
RNC	Royal Newfoundland Constabulary		
SARS	Severe Acute Respiratory Syndrome		
STI	Sexually Transmitted Infection		
TST	Tuberculin Skin Test		
VPD	Vaccine Preventable Disease		
VZIG	Varicella Zoster Immunoglobulin		

1.3 Reporting Of Notifiable Diseases

Reporting of notifiable diseases is a mechanism by which illness information is shared as part of surveillance activities. To ensure opportunities for adequate prevention and control of communicable diseases, reporting must be accurately and promptly completed. Newly diagnosed cases are reported to the RMOH by the diagnosing physician or laboratory.

These cases are then referred by the Communicable Disease Control Nurse (CDCN) to the Community Health Nurse (CHN), Environmental Health Officer (EHO) or Infection Control Practitioner (ICP) for appropriate investigation and follow-up. Detailed case information is necessary for case validity and to adequately assess a possible outbreak situation. The Newfoundland and Labrador Notifiable Disease Report (Appendix B) has been provided to facilitate the collection of disease related information. Reporting to the provincial office involves individual case reports and outbreak summaries resulting from the investigation; this information is reported through the electronic reporting system on a routine (weekly) basis.

To facilitate reporting, the diseases listed in the Communicable Disease Act have been divided into subgroups, listed as A, B & C. These can be found on the Notifiable Disease List for Newfoundland and Labrador available on the Department of Health and Community Services website

http://www.health.gov.nl.ca/health/publichealth/cdc/listabc20.pdf).

The subgroups are based on the level of priority of response needed for a particular disease. This list is reviewed and updated as the epidemiology of a disease changes or as new or emerging diseases are identified. For this reason diseases may be added to the Notifiable Disease Summary list when surveillance is required.

List A

Rationale

List A diseases must be reported immediately by the diagnosing physician or laboratory to the Regional Medical Officer of Health (RMOH) to ensure a coordinated and rapid response. The RMOH or designate reports to the provincial office. These diseases are rare but may put other people at risk if immediate control and prevention measures are not implemented.

Associated Activities

- Physician or laboratory report immediately by telephone to the RMOH
- The Regional Health Authority initiates coordinated and rapid response including contact tracing, as indicated within specific disease sections (refer to Disease Registry)
- RMOH, or designate, reports immediately by telephone to the provincial office
- A complete report is entered into the electronic database
- Case details are collected for specific diseases (refer to Disease Registry on page 1.3-2)
- Outbreaks are reported using the NL Outbreak Summaries module in the CNPHI application

List B

Rationale

List B diseases require immediate investigation and detailed routine reporting to the RMOH. In the event of a suspected or confirmed outbreak, such as food or waterborne, immediate reporting to the RMOH is required.

Associated Activities

- Physician or laboratory report within 4 days to the RMOH
- The RHA initiates coordinated response including contact tracing, as indicated within specific disease sections
- The RHA reports once a week to the provincial office with electronic reporting of all case details
- Case details are collected for specific diseases (refer to Disease Registry on page 1.3-2)
- Outbreaks are reported using the NL outbreak summaries module in the CNPHI application

List C

Rationale

List C diseases require aggregate routine reporting; specific details are not needed. This method of surveillance helps to determine diseases that are occurring at a given time and to identify outbreaks.

Associated Activities

- Public health nurses working with schools and childcare, physicians, and laboratories report these diseases to the RMOH
- The RHA reports weekly to the provincial office as an aggregate report
- Contact tracing as indicated within disease-specific sections
- Outbreaks are reported using the NL outbreak summaries module in the CNPHI application.

Disease Registry

The process for reporting some Communicable Diseases includes case details; these reports are included in disease-specific sections of this manual and also located on the Department of Health and Community Services (DHCS) website: http://www.health.gov.nl.ca/health/publichealth/cdc/health_pro_info.html#forms.

The diseases that require additional case details are:

- Group A Streptococcal invasive
- Hepatitis B
- Hepatitis C
- HIV
- Invasive Listeriosis Infection
- Invasive Meningococcal Disease

- Measles
- Mumps
- Severe Respiratory Illness, unknown origin
- Tuberculosis
- West Nile Virus Infection

Additionally, case details may be requested on an ad hoc basis for specific cases or diseases, particularly in the event of water or foodborne outbreaks, or if an increase in incidence is detected during surveillance activities.

Grouping of Notifiable Syndromes/Symptoms

The following are groups of symptoms or a symptom that can result from a variety of bacterial or viral infections. While the presence of the infectious agent itself may not be reportable, the collection of symptoms resulting from its infection is reportable.

Bacterial meningitis (List A)

Meningitis resulting from bacterial infection, 75% of which are cause by *Neisseria meningitidis*, *Streptococcus pneumoniae*, and *Haemophilus influenzae type B* (Hib). Symptoms indicative of this illness in neonates include difficulty breathing and feeding, lethargy, and seizures. Symptoms in adults and children include intense headache, nausea, and stiff neck, sudden fever onset, and vomiting. For more information on this topic, please visit <u>http://dsol-smed.phac-aspc.gc.ca/dsol-smed/ndis/diseases/othmeng.php</u>

Epidemic Encephalitis (List B)

Encephalitis is a swelling of the brain that can lead to irreversible brain and nerve damage. Epidemic encephalitis occurs when the disease occurs in epidemic proportions. There are many forms of encephalitis: Murray Valley Encephalitis (<u>http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/arbovirus-eng.php</u>),

Japanese Encephalitis (<u>http://www.phac-aspc.gc.ca/tmp-pmv/info/japenc-eng.php</u>), Eastern Equine (<u>http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/equine-eng.php</u>), and Tick borne Encephalitis (<u>http://www.phac-aspc.gc.ca/tmp-pmv/info/tbe_et-eng.php</u>).

Paralytic Shellfish Poisoning (List A)

Collection of symptoms related to shellfish poisoning. Symptoms include paralysis and/or paresthesia involving extremities and the mouth. Symptoms can also be gastrointestinal in nature. For more information on this topic, please visit http://origin.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/35s2/Paraly-eng.php

Viral meningitis (List B)

Meningitis resulting from viral infection, which may be a result of adenovirus and herpes simplex viruses, among others. Symptoms indicative of this illness include breathing problems, intense headache, nausea, rash, stiff neck, sudden fever onset, and vomiting. Other symptoms include a rash similar to the rubella rash, stomach upset and breathing problems. Recovery is fortunately imminent with most cases of this disease. For more information on this topic, please visit <u>http://dsol-smed.phac-aspc.gc.ca/dsol-smed/ndis/diseases/virm-eng.php</u>

1.4 Provincial Procedure for Communicable Disease Control

The following section on procedure provides general guidelines for prevention, surveillance and control of communicable disease. This involves surveillance, investigation and reporting. These sections also include some background information that is important for all persons involved in communicable disease follow-up. For disease-specific procedures please refer to the section for that disease.

Surveillance

Disease surveillance is the continuous collection, analysis, interpretation of data and the timely dissemination of that information to those who need to know. Flow charts provided in Appendix B outline the activities required for surveillance and reporting.

Communicable disease surveillance is achieved by health professionals who carry out the following activities:

- Identify and describe each individual who has acquired a communicable disease
- Determine the source of the infection
- Identify exposed individuals to whom the infection may have been transmitted
- Specify the frequency and pattern of occurrence of infection in population groups at risk by person, place and time
- Identify populations that are experiencing or may experience an increased frequency of infection
- Prepare and distribute surveillance reports to health professionals

Surveillance is used to determine the extent and risk of disease transmission; the reports are collected for the purpose of noting changes in disease trends to allow for implementing disease prevention and control strategies that will decrease the burden of illness. Prevention and control measures must be applied effectively and efficiently to minimize the burden of disease. Health care professionals working in communicable disease control programs may use several types of surveillance to obtain information.

Passive Surveillance

Passive surveillance occurs when disease reports are forwarded to the collector, usually as a result of legislation and/or policy. These reports may come from primary health care providers, laboratories or other health care professionals who are required to submit such reports. Passive reporting is simple, inexpensive and not a large burden to collect once procedures are established; however, reporting quality and underreporting may be an issue with this means of surveillance.

Active Surveillance

With active surveillance, the collector actively solicits communicable disease case reports. Active surveillance provides a more complete report of the health even when compared to passive surveillance; however, active surveillance is more time and resource intensive. As such, active surveillance is usually limited to diseases with a high incidence rate at a particular point in time, or those that are currently in outbreak.

Sentinel Surveillance

Sentinel surveillance is the collection and interpretation of data by designated institutions (hospitals, physician offices, schools, etc.). These select population samples are chosen

because they are representative of the general community; non-representative sites may produce biased information. Sentinel surveillance provides a lower cost alternative to population-based surveillance methods.

Syndromic Surveillance

Syndromic surveillance observes a collection of symptoms that may be associated with a particular disease in order to detect the potential onset of an outbreak. Although the infectious disease itself may not be identified, detecting an increase in clinical syndromes can encourage a quicker mobilization of resources to potentially contain the spread of an infectious agent. Syndromic surveillance is captured from the provincial HealthLine data.

1.5 General Investigation Procedure

In Newfoundland and Labrador single cases of disease and outbreaks are investigated. Investigation is carried out by health professionals who work under the direction of the RMOH. This may include the CHN; EHO working within the Government Service Centre; or Infection Control Practitioner (ICP) working within the acute care or long term care setting.

The investigation of illness may begin before a case is confirmed. This may include testing and control measures for the disease entity. Once a disease is confirmed the actions may involve investigation of single cases of illness and outbreaks or suspected outbreaks of illness. For a summary of disease reporting of single cases and outbreaks please see Figures 1, 2, 3 in Appendix B.

Single Case Investigation

Identify Illness

Single cases of illness should be investigated thoroughly by investigators. The information obtained from single cases could be important in preventing the case from suffering similar illness in the future, preventing others from becoming ill, and identifying enteric illness outbreaks.

Notification of Illness

Cases may be clinically diagnosed or lab-confirmed. Please refer to subsequent chapters of this manual for disease-specific case definitions.

Refer to CDCN or coordinator

Laboratory confirmed reports are initially received by the RHA and forwarded to the CDCN (if the illness is nosocomial, the Infection Control Nurse may complete on behalf of the CDCN).

Follow Disease Specific Protocol

To ensure that information is collected consistently throughout the province, the Newfoundland and Labrador Notifiable Disease Report (Appendix B) has been developed for use by investigators of single cases of illness. For some diseases, specific questionnaires have been developed; these questionnaires are placed in the appropriate disease section within this manual and also located on the DHCS website: http://www.health.gov.nl.ca/health/publichealth/cdc/health pro_info.html#forms. The responsibility for collection of this information is the RMOH; this may be with the cooperation of physicians or other professionals responsible.

Investigations must include the assessment for specific risk groups. The type of work or school attendance may impact the individual's ability to attend work or school when they have a communicable disease. Specific risk groups include:

- Food Handlers
- Health Care Workers or attendants
- Child Care Staff
- Children below the age of five years

• Older children and adults with inability to attend to personal hygiene

Electronic Reporting

CDCN reports all notifiable diseases via the CDC surveillance system once per week.

Review other data for related cases

The investigator will review historical data, which includes, but is not limited to: NL Communicable Disease Control (CDC) system data, provincial disease reports, previous investigation reports, discussions with other RHAs, historical trends of enteric disease, current events in the province or region, Canadian Network for Public Health Intelligence (CNPHI) and discussions with other RHA health professionals.

Determine if further investigation is necessary

Single case investigations may lead to suspect an outbreak. If data for related cases shows a possible connection to this case, the CDCN or investigator will consult with the RMOH to determine if further investigation is necessary.

If an outbreak is not suspected at this time, the CDCN shall document the conclusion of the case interview and this information should be considered in similar, future disease events.

Expand Investigation (if applicable)

Single case investigations may lead the investigator to suspect a communicable disease outbreak. When this occurs, the investigator shall immediately notify the RMOH by telephone and begin the outbreak investigation as per the procedures outlined in Figure 2, Appendix D.

Outbreak Investigation

There are several steps that must be followed when conducting an outbreak investigation. An outbreak management plan needs to be situation-specific, while still including the fundamental steps of an outbreak. Any suspected outbreak requires immediate response.

The below steps may occur simultaneously or in any order during an outbreak investigation.

Determine if an Outbreak Exists

In current practice, the terms "epidemic" and "outbreak are frequently used interchangeably; however, the former is usually used for larger outbreaks. To simply things the term "outbreak" will be used to designate an epidemic. An epidemic is defined as the occurrence, in a community or region, of cases of an illness, specific health-related behavior, or other health-related events clearly in excess of normal expectancy (Last, 2001). "Normal" must be determined in terms of times, geographic locations and groups of people. The occurrence of just one or two cases of a rare or severe disease (botulism, plague, anthrax) is sometimes called an "epidemic" (or an outbreak). At the very least, it indicates the emergence or resurgence of a problem that could justify an investigation to find other cases and a source.

Implement Immediate Control Measures

Develop means to control and contain outbreak according to the characteristics of the disease. This includes but is not limited to contact tracing, immunization, determining the outbreak source, closing the location of the source, enhanced environmental cleaning, decontaminating equipment, etc.

Define a Case and Count Cases

An outbreak case definition is a set of criteria that *must* be fulfilled in order to identify a person as a case of this particular disease outbreak. Start with a broad definition to detect as many potential cases as possible; refine the case definition as more information becomes available.

The definition should include:

Person	Place	Time
Clinical or laboratory	Where the exposure	When the exposure
criteria	occurred	occurred

Example: Living in a specific Long Term Care Facility in the 5 days prior to illness onset AND symptom onset on or after February 7, 2011 AND laboratory confirmation of Influenza A.

For each case collect all pertinent information including, but not limited to, demographics, medical information (symptoms and laboratory data), disease-specific risk factors, exposure to various sources (food, water, people, and environment), etc.

Orient Data in terms of Person, Place, Time

Using the information gathered from cases, begin descriptive analysis of the data. This should occur early in the investigation in order to focus subsequent data collection.

Investigation will provide time, place and/or person associations. Descriptive analyses may offer insight into vehicle or mode of transmission, exposure source and/or magnitude of the outbreak.

- **Person**: examine characteristics that show the uniqueness of the case population, such as demographics, occupation, culture, activities, presence at social event where they may have acquired disease, contact with vectors, and other potential exposures, etc.
- **Place**: plot cases geographically to establish a distribution pattern
- **Time**: summarize onset and duration of symptoms and the number of cases over time (epidemic curve).

Determine who is at Risk

Determine potential cases based on risk factors, case definition and epidemiological data.

Establish a list of contacts or potential cases in regards to the outbreak. Note: the emergent/urgent care services at area hospitals can be asked to provide line lists of suspect cases if case-finding is deemed necessary.

Confirm the Diagnosis

Cases may be clinically diagnosed, epidemiologically-linked or lab-confirmed. Please refer to subsequent chapters of this Disease Control Manual for disease-specific case definitions.

Assemble Team

When an outbreak is **limited to one region**, the regional investigation team should be assembled to carry out the investigation of an outbreak or suspected outbreak of illness. The RMOH is the lead of this team. A rapid and thorough response to an outbreak may control the magnitude of the outbreak and prevent future outbreaks from occurring.

If an outbreak occurs in **more than one region**, the Public Health Division of the DHCS will become involved in the coordination of the outbreak. The regional outbreak team(s) will work with the Province to ensure a consistent and coordinated approach.

Membership of the Outbreak Management Team may include:

- Chief Medical Officer of Health (CMOH)
- Regional Medical Officer of Health
- Communicable Disease Control Nurses
- Community Health Nurses
- Environmental Health Officers
- Environmental Health Program Manager
- Manager of Operations/Regional Director
- Director of Environmental Health
- Communication Staff
- Provincial Epidemiologist
- Regional Surveillance Analyst
- Public Health Laboratory
- Administrative Support
- Infection Control Practitioner if an institution is involved

External agencies/individuals on the Outbreak Management Team may include:

- Other provincial government departments
- Individual(s) with content expertise
- Canadian Food Inspection Agency (CFIA)
- Health Canada
- Public Health Agency of Canada (PHAC)

Follow Disease-Specific Protocol

Disease-specific investigation protocols are described in later chapters of this manual. As required by disease: conduct case history and/or environmental assessment; collect clinical specimens and/or food samples.

Disease-specific questionnaires are available online: <u>http://www.health.gov.nl.ca/health/publichealth/cdc/health_pro_info.html#forms</u>.

^{*} Roles and Responsibilities are included in Appendix C.

Generate and Test Hypothesis

Develop working hypothesis regarding source, as well as mode and rate of transmission; modify case definition as needed. Test hypothesis based on clinical, laboratory and epidemiological facts of the investigation.

Factors such as incubation period, type of illness, duration of illness, population affected and contributing factors leading to contamination of food/water and the proliferation or survival of organism in food/ water should be consistent with the known facts of the suspected agent.

Analyze data and Interpret Results

Perform ongoing analysis of information including, but not limited to, refining of the case definition, revising the descriptive analysis, conducting more advanced epidemiological analysis, interpreting laboratory results, refining geographic information system (GIS) tracking, etc..

Based on hypothesis and analytical evidence, identify the responsible outbreak source and recommend or take precautionary control actions.

Outbreak Concluding Actions

The outbreak team determines when it is appropriate to dissolve the outbreak investigation. The outbreak summaries tool in CNPHI is updated and finalized.

More detailed concluding actions are outlined in Figure 3, Appendix B.

Evaluate Overall Investigation and Response

Request feedback from outbreak team.

Write Report and Recommendations

Upon completion of the investigation of the outbreak all relevant outbreak information should be published on CNPHI Outbreak Summaries module using the FINAL Outbreak Summaries option.

This report will summarize the investigation, the findings, recommendations and prevention measures; it is a form of communication with DHCS and other RHAs, but may also serve as evidence to justify program area needs.

Debrief Team

Disseminate aggregate feedback to outbreak team members. If necessary, disseminate the abbreviated report to the public and applicable outside agencies (e.g. PHAC), as per the RMOH.

A debrief meeting may serve as a basis for the development of preventive measures or may include staff training, if required.

Implement or Enhance Long-Term Prevention and Control Measures

Identify the lead person responsible for implementing the recommendations, including a timeline for implementation and a plan for evaluation.

1.6 Organization of Manual

For the purpose of this manual communicable diseases are grouped into the following categories:

Section Titles

- Section 1: Introduction to Communicable Disease Control
- Section 2: Enteric, Food and Waterborne Diseases
- Section 3: Diseases Transmitted by Respiratory Routes
- Section 4: Diseases Preventable by Routine Vaccination
- Section 5: Sexually Transmitted Infections and Bloodborne Pathogens
- Section 6: Vectorborne and Other Zoonotic Diseases
- Section 7: Diseases Transmitted by Direct Contact and through the Provision of Health Care
- Section 8: Diseases Related to Bioterrorism
- Section 9: Infection Prevention and Control

Note: All the disease case definitions used in this Disease Control Manual are extracted with modification from Case Definitions for Diseases under National Surveillance: <u>http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/35s2/index-eng.php</u>

1.7 Appendices

Appendix A: COMMUNICABLE DISEASES ACT

http://www.assembly.nl.ca/Legislation/sr/statutes/P37-1.htm

Related Legislation

Health and Community Services Act: <u>http://www.assembly.nl.ca/Legislation/sr/statutes/P37-1.htm</u>

Health Care Association Act http://www.assembly.nl.ca/Legislation/sr/statutes/h08.htm



Appendix B: Disease Investigation Steps

Figure 1: Single Case Investigation.







Figure 3: Outbreak Concluding Actions.

Appendix C: Outbreak Roles and Responsibilities

The roles and responsibilities listed here are suggestions; each region is responsible for assigning tasks as appropriate with the health authority.

The roles and responsibilities of the Regional Medical Officer of Health:

- Ensure case/cases are investigated
- Ensure that appropriate public health measures are activated
- Determine presence of outbreak; if so, assemble outbreak team
- Act as team leader; ensure proper investigation and management of outbreak
- Ensure that outbreak reports (initial and final) are submitted to Outbreak Summaries
- Ensure that debriefing sessions occur

The roles and responsibilities of the Investigator:

- Start the investigation upon receipt of report of illness
- Complete information on case details
- Conduct outbreak investigations in accordance with the disease-specific procedures
- Implement public health measures
- Report investigation to the RMOH
- Provide education for the general public, as required

The role and responsibilities of the Family Physician:

- Patient education, follow-up, and culture for special risk contacts
- Facilitate specimen collection
- Exclusion from work and school

The role and responsibilities of the **Laboratory**:

- Report positive tests via traditional methods (hard copy of laboratory report)
- When necessary, report via phone or secure email
- Collaborate with lead investigators regarding specimens linked to outbreak

The role and responsibilities of **Administration**:

- Schedule of meetings
- Record meeting minutes
- Securely store outbreak details
- Disseminate information to outbreak team members, and others as necessary

The role and responsibilities of Epidemiologist / Regional Surveillance Analyst:

- Monitor trends using routine surveillance sources
- Identify potential increases of disease incidence
- Create outbreak interview tools, as required
- Analyze, interpret and disseminate information, as needed

Appendix D: Useful Resources

Websites

CNPHI https://www.cnphi-rcrsp.ca/cnphi/index.jsp

Community Accounts <u>http://nl.communityaccounts.ca/</u>

FluWatch http://www.phac-aspc.gc.ca/fluwatch/

Newfoundland and Labrador Center for Health Information <u>http://www.nlchi.nf.ca/</u>

Newfoundland and Labrador Division Public Health http://www.health.gov.nl.ca/health/publichealth/cdc/cdc.html

Public Health Agency of Canada – Infectious Diseases http://www.phac-aspc.gc.ca/id-mi/index-eng.php

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