Appendix A: Disease-Specific Chapters

Chapter: Influenza

Ontario

Influenza

☒ **Communicable**
☐ **Virulent**

Health Protection and Promotion Act:
Ontario Regulation 558/91 – Specification of Communicable Diseases

Health Protection and Promotion Act:
Ontario Regulation 559/91 – Specification of Reportable Diseases

1) Aetiologic Agent:	Causative agents include three types of influenza virus: A, B, and C. Type A includes 15 subtypes of which 2 (H1 and H3) are associated with widespread seasonal epidemics; Types A and B are of public health importance since they both have been responsible for epidemics (1). Influenza A subtypes are classified by the antigenic properties of surface glycoproteins, hemagglutinin (H) and neuraminidase (N). Frequent mutation of the genes encoding these surface glycoproteins results in emergence of variants that are described by geographic site of isolation, year of isolation and culture number; some examples include: A/New Caledonia/20/99(H1N1), A/Moscow/10/99(H3N2)-like virus, B/Hong Kong/330/2001 (1). Since 1997 influenza avian infections have been identified in sporadic human cases with high fatality. Transmission gradually increased among poultry and poultry outbreaks of influenza A were occurring in several Asian countries (1).

2) Case Definition:

Surveillance Case Definition	See Appendix B
Outbreak Case Definition	The outbreak case definition varies with the outbreak under investigation. Consideration should be given to the following in establishing an outbreak case definition: 1. Clinical, laboratory and/or epidemiological criteria 2. A time frame for occurrence 3. A geographic location(s) or place(s) where cases live or became ill/exposed 4. Special attributes of cases (e.g. age, underlying conditions) Cases should also be classified by levels of probability (i.e. confirmed, probable or suspect).

3) Identification:

Clinical Presentation	Influenza is an acute respiratory illness. Symptoms include sudden onset of high fever, headache, myalgia, lethargy, coryza, sore throat and non-productive cough. Infections in children may also be associated with some gastrointestinal symptoms such as nausea, vomiting and diarrhea. Most people resolve within 2-7 days, however the very young and old could develop complications such as pneumonia, or middle ear infections (1). Many individuals infected with the influenza virus are asymptomatic.
Diagnosis	See Appendix B The specimen of choice for seasonal influenza virus is the nasopharyngeal swab (NPS) taken within the first four days of illness (1). Refer to the Specimen Collection Guide, Testing Guidelines, Public Health Laboratory, MOHLTC, June 2008. http://www.health.gov.on.ca/english/providers/pub/labs/specimen_guide/testing_guidelines.pdf

4) Epidemiology:

Occurrence	Worldwide; as sporadic cases, epidemics occur almost annually and pandemics rarely. In Canada, the influenza season usually runs from November to April (2). The Ontario Influenza Bulletin provides information on influenza activity in Ontario it is produced weekly from November to May and every other week in the 'off-season'. http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_07/flubul_mn.html. PHAC Flu Watch provides Canada-wide influenza activity data: http://www.phac-aspc.gc.ca/fluwatch/index-eng.php
Reservoir	Humans are the primary reservoir for human infection. Birds and mammalian reservoirs such as swine are likely sources of new human subtypes thought to emerge through genetic reassortment as well as possibly horses (1).
Modes of Transmission	Influenza virus particles travel in droplets larger than 5 microns in diameter, which are released or shed from infected persons when they sneeze, cough, or talk. These large droplets do not travel very far and it is thought that they spread no farther than one metre (6). Infection occurs in another person who is within the one metre range (as in a close contact) as the droplets with virus particles enter the mucous membranes of the eyes, nose or mouth. Droplets may also deposit themselves on objects and spread infection to those touching the surfaces and bringing the virus to their mucous membranes (2, 3). Virus may persist for hours as suspended droplets when the temperature is cold and the humidity is low.

Incubation Period	Usually 1-3 days (1)
Period of Communicability	May become infectious during the 24 hours prior to onset of symptoms (5); viral shedding in nasal secretions usually peaks during the first 3 days of illness and ceases within 7 days but can be prolonged in young children and the immunocompromised (5).
Susceptibility and Resistance	Vaccine preventable; new vaccine required annually the components of which depend on circulating strains. Immunity is generally achieved within 2 weeks following immunization and lasts less than a year. Immunity to a strain of a specific subtype can provide significant immunity against a different strain of the same subtype (1).

5) Reporting Requirements:

To local Board of Health	All laboratory confirmed cases shall be reported to the medical officer of health by persons required to do so under the *Health Protection and Promotion Act*, R.S.O. 1990.
To Public Health Division	Report only case classifications specified in the case definition to PHD. For laboratory confirmed cases of novel (not seasonal) influenza, the board of health must phone the Public Health Division call centre and enter the data into iPHIS or any other method specified by the ministry **within one (1) business day of receipt of initial notification** of a case as per the *iPHIS Bulletin* Number 17: Timely Entry of Cases (7). All other influenza reports are to be entered within five (5) business days. The minimum data elements to be reported for each case is specified in the following: • *Ontario Regulation 569* (Reports) under the Health Protection and Promotion Act (HPPA) • The disease-specific User Guides published by the Ministry, and • Bulletins and directives issued by the Ministry.

6) Prevention and Control Measures:

Personal Prevention Measures	**The best prevention measure is annual immunization:** Immunization is the most effective means to reduce the impact of influenza. All Ontario residents aged 6 months and older are eligible to receive publicly funded influenza vaccine yearly. The National Advisory Committee on Immunization (NACI) statement on influenza is published annually and is available on the Public Health Agency of Canada (PHAC) website: http://www.phac-aspc.gc/naci-ccni/index.html For health care workers refer to the Ontario Hospital Association,

	OHA/OMA Communicable Diseases Surveillance Protocols for Ontario Hospitals: http://www.oha.ca/Client/OHA/OHA_LP4W_LND_WebStation.nsf/page/Communicable+Diseases+Surveillance+Protocols Other measures include: • Travel Considerations: People at high risk of influenza complications embarking on travel to destinations where influenza is likely to be circulating should receive immunization (5) • General public education about the importance of hand hygiene, using proper respiratory etiquette, e.g. covering one's mouth when coughing or sneezing and coughing and sneezing into the arm or using disposable tissues
Infection Prevention and Control Strategies	Infection Control Strategies: • Promotion of hand hygiene and care with personal hygiene has been shown to be effective in reducing disease transmission • Education about staying home from work or school when ill • Droplet precautions for cases in healthcare facilities
Management of Cases	Refer to *Ontario Regulation 569* under the HPPA for relevant data to collect and where possible and feasible inquire about immunization status with current influenza vaccine. Treatment is under the direction of the attending health care provider. Advise the individual to stay away from work and school when ill and limit exposure to others, especially those at high risk for complications.
Management of Contacts	**Not applicable for sporadic community cases.**
Management of Outbreaks	The most important control measure to prevent serious morbidity and mortality from influenza epidemics is appropriate immunization annually. For outbreak management in institutions refer to Ontario Ministry of Health and Long-Term Care. A Guide to the Control of Respiratory Infection Outbreaks in Long-Term Care Homes. Toronto: Queen's Printer for Ontario, 2004.
7) References	(1) Heymann D, editor. Control of communicable diseases manual. 18th ed. Washington: American Public Health Association; 2004. (2) National Advisory Committee on Immunization (NACI). Statement on influenza vaccination for the 2008-2009 season. An Advisory Committee Statement (ACS). Can Commun Dis Rep. 2008;34(ACS-3):1-46. Available from http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/07pdf/acs33-07.pdf. (or as current) (3) Lam V, Lee C. The flu pandemic and you: a Canadian guide. Toronto: Doubleday Canada; 2006. (4) Ontario Hospital Association; Ontario Medical Association. Influenza surveillance protocol for Ontario hospitals. Toronto: Ontario Hospital

Association; 2008. Available from http://www.oha.com/Client/OHA/OHA_LP4W_LND_WebStation.nsf/resources/Communicable+Disease+Surveillance+Protocols/$file/Influenza+Protocol+Revised+January+2008.pdf.

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8) Additional Resources

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