Influenza-Like Illness (ILI) Toolkit
for Physicians, Nurse Practitioners & Family Practice Nurses

This toolkit has been developed to provide guidance to family physicians, nurse practitioners, and family practice nurses in the infection prevention and control and clinical management of influenza-like illness (ILI). This toolkit provides information about the following:

- Clinical Management
- Infection Prevention & Control
- Antiviral Use
- Resources
- Contact Information

CLINICAL MANAGEMENT

Objectives

- To manage ILI in individuals.

Diagnostic Testing

- Testing should be based on the clinical picture, and if required, for management.
- A single nasal pharyngeal swab should be used to diagnose ILI. Specimens should be transported immediately. Refrigerate the specimen at 4º C if transport will be delayed.
- Virology swabs can be obtained from your local hospital laboratory. There is no cost for these swabs.

Treatment

- Follow the attached guidelines for the use of antiviral drugs. In general, antiviral chemotherapy is recommended for individuals with severe illness and those most likely to develop complications of influenza or die prematurely as a result.

Preventing Transmission

- You should post an entry sign which indicates that patients with signs and symptoms of ILI should don a surgical mask.
- You should also provide conveniently located dispensers of alcohol-based hand rub; where sinks are available, ensure that supplies for hand washing are consistently available.
- Patients with ILI should wear surgical masks in the waiting room; this should be routine practice in your office. If possible, separate them from other patients, for example, schedule them at the end of the day.
- The following measures to contain respiratory secretions are recommended for all individuals with signs and symptoms of a respiratory infection:
    - Cover your cough by sneezing into your sleeve, or into a facial tissue which should be discarded and not reused;
    - Perform hand hygiene (e.g. hand washing with soap and water, use of alcohol-based hand sanitizer or antiseptic hand wash) after having contact with respiratory secretions and contaminated objects/material.

INFECTION PREVENTION & CONTROL

Guidelines

"Infection Prevention and Control Best practices for Long-Term Care, Home and Community Care including Health Care Offices and Ambulatory Clinics" (www.ccar-ccra.com/english/pdfs/IPC-BestPractices-June2007.pdf) provides a general guide to infection prevention and control practices. It focuses on cleaning protocols in the office setting, including advice on purchasing and using disinfectants, equipment and the environment, as well as guidance to personal protective equipment (PPE). This is a useful guide to help office staff set up basic infection prevention and control practice for the practitioner's office.

Screening patients with ILI

- All offices should have signage posted requesting that any patient with a fever, new cough or ILI perform hand hygiene and don a surgical mask.
- These screening questions should be asked at the time the patient books an appointment. The patient can then be informed of the need to don a mask immediately upon arrival to the office.

Having an ILI patient in the office:

- Patients with ILI should wear surgical masks in the waiting room; this should be routine practice in your office.
- If possible, separate them from other patients – for example, place them in a separate area of the office or schedule them at the end of the day. If separating them from other patients is not possible, the patient with ILI should remain masked.
- Alcohol-based hand sanitizer should be readily available for staff and patients. Patients should be asked to wash their hands and perform respiratory hygiene practices (coughing into sleeve, using tissues, wearing a surgical mask).
- If a physical barrier (i.e. window or Plexiglass barrier) does not exist, the receptionist should maintain a two metre (six foot) distance from all patients whenever possible.

Routine practices for use with all patients include:

- Hand hygiene before and after all patient contact.
- Appropriate use of personal protective equipment (gloves, masks, eye protection) for contact with all patient secretions/excretions (refer to document link above).
- Disinfection of all equipment that is shared between patients.
- Cleaning/disinfection of all patient contact surfaces after the patient leaves the examining room.

Practices for use with ILI patients:

- Hand hygiene (alcohol-based hand sanitizer or liquid soap and running water)
- Gloves and gowns should be worn when there is a risk of widespread contamination with respiratory secretions.
- Wear respiratory protection if within two metres (six feet) of a patient.
- When taking a nasopharyngeal swab, the health care worker should wear appropriate respiratory protection. The guidance for choice of surgical mask versus N95 respirator is based on the clinical presentation of the patient.
- If the patient is compliant with respiratory hygiene practices or has a weak or no cough, wear a surgical mask.
- Wear a fit tested N95 respirator:
  - If conducting an aerosol-generating medical procedure, all individuals in the room should wear an N95 respirator.
  - When the patient is coughing forcefully and is unable or unwilling to comply with respiratory hygiene (i.e. wear a surgical mask). Dispose after use.
- Contact your regional hospital Occupational Health or Occupational Safety department for information about fit testing for N95 respirators.
- If an N95 is not available, a surgical mask should be worn and the patient should remain masked.
- Whenever a surgical mask or respirator is required, eye or face protection (goggles or face shield) should also be worn.
- After the patient leaves, surfaces that may be contaminated with droplets must be cleaned with a hospital-grade disinfectant.

Please continue to procure your supplies (gloves, masks, etc.) as you normally would. If you have questions, please contact the materials management department in your District Health Authority.

ANTIVIRAL USE

Developed with Dr. Kathryn Slayter, clinical pharmacy specialist, Infectious Diseases, Capital District Health Authority

Guidelines for Treatment

- Treat all patients with severe influenza-like illness (those that require hospitalization due to their illness).
- Treat all patients who are moderately ill with influenza-like illness (this is based on clinical judgment by evaluating the degree of fever and respiratory symptoms), and have risk factors that require them to have an annual flu shot with antiviral medication.
- The risk factors for influenza complications include:
    - People 65 years of age or older
    - Residents of a long-term facility
    - Children less than two years of age
    - People under 18 years of age on chronic acetylsalicylic acid therapy
    - Residents of residential care facilities and community small options homes
    - Children and adults with the following chronic conditions severe enough to require regular medical follow-up or hospital care:
        - Cardiac diseases
        - Pulmonary diseases
        - Asthmas
        - Diabetes and other metabolic disorders
        - Renal disease
        - Liver disease
        - Anaemia and hemoglobinopathy
        - Sickle cell disease or splenectomy patients
        - Immunosuppression, cancers, HIV
        - Chronic cerebrospinal fluid
        - Alcoholism
        - Pregnant women

- For patients with mild symptoms, it is recommended that they be treated in the same way as other influenza-like illnesses, with an emphasis on staying at home to prevent spread of the illness.

Guidelines for Antiviral Use

It is especially important that antiviral medications are prescribed appropriately. Unnecessary use of antivirals will result in a decrease of the community antiviral supplies. It also increases the risk of developing resistance to antivirals and no longer being effective for treatment.

Prophylaxis

- We are currently not recommending the use of antivirals for prophylaxis as a general measure. Decisions around individual prophylaxis may be made on a case by case basis between the patient and physician.

Treatment

- Mild cases of influenza-like illness (ILI) do NOT require antiviral treatment. For any patients experiencing mild symptoms, they should be advised to use symptomatic treatment for their symptoms.
- Antiviral treatment should ONLY be prescribed to patients who are moderately or severely ill with influenza-like illness
- While we understand it can be difficult to say no when asked by concerned patients to prescribe antivirals for treatment of mild symptoms or prophylaxis, it is extremely important that antivirals be prescribed according to the national guidelines. Unnecessary use will decrease the community supplies and increase the risk of developing resistance to antivirals.

Medications for treatment

- Oseltamivir (Tamiflu®) and Zanamivir (Relenza®) are the recommended treatments for influenza. These antiviral medications can reduce the severity of the illness and may reduce the risk of complications among those most at risk.
- Antiviral treatment, when appropriate, should be started as soon as possible, i.e. within 12-48 hours after onset of symptoms.

Treatment Guidelines

- If you have determined that your patient requires treatment, please use the following guidelines:

		Oseltamivir (Tamiflu®)	**Zanamivir (Relenza®)**
Treatment - see attached fact sheet for more detailed treatment guidelines	Adults	75 mg twice daily for 5 days	2 inhalations (10 mg) twice daily for 5 days
	Children	15 kg or less: 30 mg twice daily for 5 days >15-23 kg: 45 mg twice daily for 5 days >23-40 kg: 60 mg twice daily for 5 days (given as two 30 mg capsules) >40 kg: 75 mg twice daily for 5 days Adolescents 13 years and older: 75 mg twice daily for 5 days	Age 7 and above: 2 inhalations (10 mg) twice daily for 5 days
Prophylaxis* - see attached fact sheet for more detailed treatment guidelines	Adults	75 mg daily	2 inhalations (10 mg) once daily
	Children	15 kg or less: 30 mg once daily >15-23 kg: 45 mg once daily >23-40 kg: 60 mg once daily (given as two 30 mg capsules) >40 kg: 75 mg once daily	Age 7 and above: 2 inhalations (10 mg) once daily)
Renal impairment: adult**	Creatinine Clearance of 10-30 mL/min	Treatment: 75 mg once daily for 5 days Prophylaxis: 75 mg every other day or 30 mg once daily	No dosage adjustment necessary
	Renal dialysis (treatment or prophylaxis)	Low flux hemodialysis: 30 mg orally every second hemodialysis session Continuous ambulatory peritoneal dialysis: 30 mg orally once a week	No dosage adjustment necessary

Source: www.phac-aspc.gc.ca/cpip-pclcpi/ann-e-eng.php.

* Duration of prophylaxis is determined by the circumstances. Standard post-exposure prophylaxis is given for 10 days. For outbreak control, prophylaxis is continued until the outbreak is over, usually 10-14 days. Pre-exposure prophylaxis generally continues for the duration of exposure. Note: pre-exposure use for oseltamivir and use beyond 28 days for zanamivir are not approved indications.

** Consult your renal dialysis unit.

Oseltamivir use in children under 1 year of age should be guided by consultation with a clinician experienced with treating infection in children.
The safety and efficacy of Zanamivir for the treatment of influenza in pediatric patients less than 7 years of age have not been established.

- Use of oseltamivir (Tamiflu®) and zanamivir (Relenza®) for treatment or prophylaxis is expected to be interchangeable in most cases. They cannot, however, be used interchangeably in the following circumstances:
    - Zanamivir is *preferred* for pregnant and nursing women as it is administered by inhalation and is poorly absorbed systemically;
    - Zanamivir is *not suitable* for:
        - Children under the age of seven;
        - Persons with reactive airways disease;
        - Persons who cannot use the inhaler, e.g. some elderly and nursing home patients and small children;
        - Persons with severe respiratory disease, because absorption would be impeded; and
        - Treatment of seriously ill persons if there is evidence that the pandemic virus replicates outside the respiratory system.

- Antiviral use in pregnant women should be guided by consultation with an infectious disease specialist or obstetrician. For information on prescribing antivirals for pregnant women, see: www.cdc.gov/h1n1flu/clinician_pregnant.htm and www.phac-aspc.gc.ca/cpip-pclcpi/ann-e-eng.php.

- Pharmacists may contact you for clarification on any prescriptions for antivirals.

Adverse Reactions

- Adverse reactions may include:
  - Oseltamivir: nausea and vomiting (alleviated by taking food).
  - Zanamivir: bronchospasms and is not recommended for people with chronic respiratory disease such as asthma or COPD. Patients with lung disease should have a fast-acting inhaled bronchodilator available while being treated with Zanamivir. Zanamivir should not be used in patients with sever lactose allergy. Zanamivir should be given to children only under adult supervision and instruction, and the supervising adult should first be instructed by a healthcare professional, including demonstration if possible.
  - People with flu, particularly children and adolescents, may be at increased risk of seizures, confusion or abnormal behavior early in their illness. Patients should be observed for signs of unusual behavior.

- Adverse reactions to antiviral therapy should be reported to Health Canada:
  - By calling toll-free at 1-866-234-2345
  - Online at www.healthcanada.gc.ca/medeffect
  - By completing a Canada Vigilance Reporting Form which you can send by fax toll-free to 1-866-678-6789.

If you have questions or require assistance completing forms, contact Dr. Kathryn Slayter, clinical pharmacy specialist, Infectious Diseases, at Capital District Health Authority, T: (902) 473-6829 or email: Kathryn.Slayter@cdha.nshealth.ca.

Antiviral Logistics

Cost

- The cost of five days of treatment with Tamiflu is in the range of $55 to $60.
- The cost of five days of treatment with Relenza is $35. Relenza is not available in community pharmacies at the current time.

Payment

- Please be aware that not all drug insurance plans provide coverage of these antiviral medications.
- Tamiflu is an Exception Status Benefit under the Nova Scotia Pharmacare Programs. Patients who are covered under one of the Pharmacare Programs (Family, Seniors or Community Services) and meet the exception status criteria will have access to Tamiflu.
- The criteria are for the treatment of long-term care residents with clinically suspected or lab confirmed influenza. For clinically suspected cases, it is covered for the treatment of residents with influenza-like illness where there is lab confirmed influenza circulating in the facility or community.
- To avoid spread of the illness among the potentially vulnerable population, it is covered for use as a prophylaxis of residents when the facility has an influenza outbreak.

Note: Tamiflu is covered by the Pharmacare programs based on the direction of a Medical Officer of Health who would notify Pharmacare when there is an influenza outbreak at a long-term care facility.

Accessibility

- There are supplies of antiviral medications, including Tamiflu, in community pharmacies; however, that supply is limited.
- To ensure there is a supply within the community for confirmed cases with moderate to severe illness, physicians are encouraged NOT to prescribe antiviral medications unless it is within the recommended guidelines.
- Relenza is not available from community pharmacies at the current time.

Tamiflu Treatment Guidelines

TAMIFLU® is available as a 75 mg, 45 mg and 30 mg oral use capsules. TAMIFLU® powder for oral suspension (12 mg/mL) is not as readily available.

Recommended Treatment Dosage

Adults and Adolescents 13 years and older:
- 75 mg twice daily for five days.
- Treatment should begin within 12-28 hours to be consistent of symptom onset.

Pediatric Patients ≥1 year old:
- Dosage is shown in the following table.
- For pediatric patients who cannot swallow capsules and if the oral suspension product is not available, TAMIFLU® capsules may be opened and mixed with sweetened liquids such as regular or sugar-free chocolate syrup, apple sauce, cereal or pablum.

		Oseltamivir (Tamiflu®)	**Zanamivir (Relenza®)**
Treatment	Adults	75 mg twice daily for 5 days	2 inhalations (10 mg) twice daily for 5 days
	Children	15 kg or less: 30 mg twice daily for 5 days >15-23 kg: 45 mg twice daily for 5 days >23-40 kg: 60 mg twice daily for 5 days (given as two 30 mg capsules) >40 kg: 75 mg twice daily for 5 days Adolescents 13 years and older: 75 mg twice daily for 5 days	Age 7 and above: 2 inhalations (10 mg) twice daily for 5 days
Prophylaxis*	Adults	75 mg daily	2 inhalations (10 mg) once daily
	Children	15 kg or less: 30 mg once daily >15-23 kg: 45 mg once daily >23-40 kg: 60 mg once daily (given as two 30 mg capsules) >40 kg: 75 mg once daily	Age 7 and above: 2 inhalations (10 mg) once daily)
Renal impairment: adult**	Creatinine Clearance of 10-30 mL/min	Treatment: 75 mg once daily for 5 days Prophylaxis: 75 mg every other day or 30 mg once daily	No dosage adjustment necessary
	Renal dialysis (treatment or prophylaxis)	Low flux hemodialysis: 30 mg orally every second hemodialysis session Continuous ambulatory peritoneal dialysis: 30 mg orally once a week	No dosage adjustment necessary

Source: www.phac-aspc.gc.ca/cpip-pclcpi/ann-e-eng.php.

* Duration of prophylaxis is determined by the circumstances. Standard post-exposure prophylaxis is given for 10 days. For outbreak control, prophylaxis is continued until the outbreak is over, usually 10-14 days. Pre-exposure prophylaxis generally continues for the duration of exposure. Note: pre-exposure use for oseltamivir and use beyond 28 days for zanamivir are not approved indications.

** Consult your renal dialysis unit.

Oseltamivir use in children under 1 year of age should be guided by consultation with a clinician experienced with treating infection in children.
The safety and efficacy of Zanamivir for the treatment of influenza in pediatric patients less than 7 years of age have not been established.

- Use of oseltamivir (Tamiflu®) and zanamivir (Relenza®) for treatment or prophylaxis is expected to be interchangeable in most cases. They cannot, however, be used interchangeably in the following circumstances:
    - Zanamivir is *preferred* for pregnant and nursing women as it is administered by inhalation and is poorly absorbed systemically;
    - Zanamivir is *not suitable* for:
        - Children under the age of 7;
        - Persons with reactive airways disease;
        - Persons who cannot use the inhaler, e.g. some elderly and nursing home patients and small children;
        - Persons with severe respiratory disease, because absorption would be impeded; and
        - Treatment of seriously ill persons if there is evidence that the pandemic virus replicates outside the respiratory system.

- Antiviral use in pregnant women should be guided by consultation with an infectious disease specialist or obstetrician. For information on prescribing antivirals for pregnant women, see: www.cdc.gov/h1n1flu/clinician_pregnant.htm and www.phac-aspc.gc.ca/cpip-pclcpi/ann-e-eng.php.

Recommended Prophylaxis Dosage

Adults and Adolescents:
- 75 mg once daily for at least 10 days following close contact with an infected person.
- Therapy should begin within two days of exposure.
- The recommended dose for prophylaxis during a community outbreak of influenza is 75 mg once daily.
- Safety and efficacy have been demonstrated for at least six weeks. The duration of protection lasts for as long as dosing is continued.

Pediatric Patients ≥1 year old:
- Dosage following close contact with an infected individual is shown in the chart above.
- For pediatric patients who cannot swallow capsules and if the oral suspension product is not available, TAMIFLU® capsules may be opened and mixed with sweetened liquids such as regular or sugar-free chocolate syrup, apple sauce, cereal or pablum.

Dose Adjustment

Renal impairment:
- No dose adjustment is necessary with creatinine clearance > 30 ml/min.
- If creatinine clearance 10-30 ml/min, reduce by 50% (e.g. treatment = 75 mg daily; prophylaxis = 75 mg every other day or 30 mg suspension daily)
- If creatinine clearance < 10 mg/min, contact an Infectious Diseases Specialist.

Cockcroft formula to calculate creatinine clearance:

$$\text{CrCl} = \frac{(140 - \text{age}) \times (\text{weight in kg}) \times 1.2}{(\text{serum creatinine in mmol/L})} \quad \text{(for males)}$$

For females, multiply CrCl x 0.85

Elderly patients:
- No dose adjustment required for elderly patients.

Direction for Patients**:**
- A missed dose should be taken as soon as remembered. Do not take two doses at the same time.
- Tamiflu may be taken with or without food (better with food to decrease nausea)
- Shake suspension well.

References:

Compendium of Pharmaceuticals and Specialties
Ruth Stewart, RN, MHA, CHE, Vice President | Marsh Risk Consulting (MRC)
ruth.l.stewart@marsh.com / www.mmc.com

Public Health Agency of Canada: www.phac-aspc.gc.ca/alert-alerte/swine_200904-eng.php

Centres for Disease Control and Prevention: http://www.cdc.gov/h1n1flu/

ZANAMIVIR FACT SHEET FOR HEALTH CARE PROVIDERS

As you may already be aware, a public health emergency has been declared in the U.S. due to a current outbreak of swine influenza virus. You have been asked to give Relenza® (zanamivir), as appropriate, to people who may have been exposed to swine influenza A (H1N1). Zanamivir is approved by the U.S. Food and Drug Administration (FDA) for treatment of influenza in patients 7 years of age and older who have been symptomatic for no more than 2 days, and for prophylaxis of influenza in patients 5 years of age and older.* The FDA-approved package insert on zanamivir can be found via Drugs@FDA on www.fda.gov/cder.

Who should not take Zanamivir?
Patients with a history of severe allergic reaction to zanamivir or lactose, or have an underlying airway disease should not take zanamivir. Zanamivir should only be used for treatment of persons aged 7 years and older and for prevention in persons aged 5 years and older. It should not be used for prevention of flu in nursing home patients.

What is the dose of Zanamivir?
- **For Treatment**: 10 mg (2 inhalations) twice daily for 5 days
- **For Prevention:** Household Setting: 10 mg (2 inhalations) once daily for 10 days
  Community Outbreaks: 10 mg (2 inhalations) once daily for 28 days

The dose should be given at approximately the same time each day.

Zanamivir will be supplied in the manufacturer's packaging. Zanamivir is packaged in a medicine disk called a Rotadisk® and is inhaled by mouth using a delivery device called a Diskhaler®. Each Rotadisk® contains 4 blisters. Each blister contains 5 mg of active drug and 20 mg of lactose powder (which contains milk proteins). Each packaged box of zanamivir contains 5 Rotadisks® (total of 10 doses) and a Diskhaler® inhalation device.

Zanamivir should be given to children only under adult supervision and instruction, and the supervising adult should first be instructed by a healthcare professional. Instructions should include a demonstration whenever possible.

What are the possible serious side effects of Zanamivir?
- Some patients have had bronchospasm or serious breathing problems when they used zanamivir. Zanamivir is not recommended for people with chronic respiratory disease such as asthma or chronic obstructive pulmonary disease.
- Patients with lung disease should have a fast-acting inhaled bronchodilator available while being treated with zanamivir. Bronchodilators should be used prior to administration of zanamivir.
- People with the flu, particularly children and adolescents, may be at an increased risk of seizures, confusion, or abnormal behavior early in their illness. These events may occur after beginning zanamivir or may occur when flu is not treated. These events are uncommon but may result in accidental injury to the patient. Therefore, patients should be observed for signs of unusual behavior.
- Zanamivir was not effective in reducing the chance of getting the flu in 2 studies in nursing home patients.
- Patients should be instructed to stop taking zanamivir if they experience signs or symptoms of an allergic reaction.

Refer to the Package Insert for more safety information.
Make available to recipients the information in the "Zanamivir Summary Fact Sheet for Patients and Parents."

Reporting And Monitoring Adverse Events
Health care providers and recipients that experience adverse events or medication errors are encouraged to report to MedWatch at www.fda.gov/medwatch, by submitting a MedWatch Form 3500 (available at http://www.fda.gov/medwatch/safety/FDA-3500_fillable.pdf) or by calling 1-800-FDA-1088.

*Certain aspects of this emergency use are not part of the approved drug applications. However, the FDA Commissioner has authorized the emergency use of zanamivir. Additional information can be found on: www.cdc.gov/swineflu.

Zanamivir EUA, Fact Sheet for HCP
Authorized by FDA on April 27, 2009

RESOURCES

Interim Guidance Documents:
www.phac-aspc.gc.ca

Infection Prevention & Control Best Practices:
www.ccar-ccra.com/english/pdfs/IPC-BestPractices-June2007.pdf

Handwashing posters:
www.gov.ns.ca/hpp

CONTACT INFORMATION FOR COMMUNITY-BASED PHYSICIANS

DHA 1	South Shore Health	Dr. Peter Vaughan	Office: 902-527-5271 Assist: Melissa Hiltz (527-5057) Email: pvaughan@ssdha.nshealth.ca
DHA 2	South West Health	Dr. Edwin Janke	Office: 902-742-3542 (x194) Assist: Lynn Crowell 902-742-3542 (x116) Email: ejanke@swndha.nshealth.ca
DHA 3	Annapolis Valley Health	Dr. Lynn Harrigan VP Medicine	Cell: 902-679-7629 Email: lharrigan@avdha.nshealth.ca
DHA 4	Colchester East Hants Health Authority	Dr. Shaun MacCormick Chief of Staff / Medical Director	Office: 902-893-5554 (x2296) Cell: 902-897-3738 Email: shaun.maccormick@cehha.nshealth.ca
DHA 5	Cumberland Health Authority	Dr. David Gass Chief of Staff	Office: 902-661-1090
DHA 6	Pictou County Health Authority	Barb O'Brien	Office: 902-752-5151
DHA 7	GASHA	Dr. Jeremy Hillyard	Office: 902-867-4170 Cell: 902-870-0069
DHA8	Cape Breton District Health Authority	Donna Lahey Coordinator, Infection Control	Office: 902-567-8143 Cell: 902-574-0629
DHA 9	Capital Health	Dr. Rick Gibson District Chief, Department of Family Practice	Office: 902-454-8199 Cell: 902-483-6102 Email: Rick.Gibson@cdha.nshealth.ca
IWK	IWK Health Centre	Dr. Carolyn Thomson	Office: 902-470-8263 Email: carolyn.thomson@iwk.nshealth.ca