

**Ministry of Health and
Long-Term Care**

Emergency Health
Services Branch
5700 Yonge Street, 6th Floor
Toronto ON M2M 4K5
Tel.: 416-327-7909
Fax: 416-327-7879
Toll Free: 800-461-6431

**Ministère de la Santé et des
Soins de longue durée**

Direction des services de
santé d'urgence
5700 rue Yonge, 6^e étage
Toronto ON M2M 4K5
Tél.: 416-327-7909
Télééc.: 416-327-7879
Appels sans frais: 800-461-6431



October 2, 2009

MEMORANDUM TO: Municipal EMS Directors and Managers
First Nation EMS Directors and Managers
CAOs of Upper Tier Municipalities and Designated Delivery Agents
Ornge

FROM: Malcolm Bates
Director
Emergency Health Services Branch

RE: **Training Bulletin, Issue Number 101 – version 8.0**
Influenza Educational Review 2009/2010

I am pleased to present the Influenza Educational Review for 2009/2010. The Influenza Educational Review is based on the most current information available and is being forwarded to ambulance services to provide service operators an opportunity to facilitate the distribution of this important information to their staff.

There continues to be clear scientific evidence that vaccination against influenza each year is the most effective way to prevent being infected with the influenza virus and to avoid transmitting the virus to those at high risk for influenza-related complications. Getting immunized for influenza will not only reduce the morbidity and mortality from the disease itself, but will also assist in the management of other serious respiratory infectious diseases by reducing the number of people requiring investigation for respiratory symptoms.

The emergence of the H1N1 Influenza virus earlier this year and predictions of a possible resurgence of the virus during the upcoming influenza season means that paramedics must remain alert and take all necessary precautions when managing patients with suspected infectious respiratory illnesses.

Training Bulletin, Issue 101 – version 8.0
Influenza Educational Review 2009/2010
Page 2

Public Health officials recently announced a revised influenza immunization strategy in light of new information regarding the H1N1 influenza virus. This year, Ontario will provide seasonal influenza vaccination first to people aged 65 and over and to residents of long-term care facilities, followed by the H1N1 vaccination program for all Ontarians. Seasonal influenza vaccine will be made available to the rest of the province following the H1N1 vaccination program.

As a result of the 2009 influenza vaccination strategy announced by the province and to assist ambulance operators in their responsibility to ensure that the reporting dates stipulated within Section C (Influenza Control) of the *Ambulance Service Patient Care and Transportation Standards (revised October 2007)* will be met, the following reporting date changes, to Paragraphs 2 and 4 of Section C, will be in effect for 2009:

- “2. Each operator shall ensure that, as of January 30, 2010, EMAs and paramedics must:
- (a) provide a valid certificate signed by a physician or delegate that states that he or she has been vaccinated against influenza, or that such vaccination is medically contraindicated; or
 - (b) provides a written statement that he or she has taken the educational review and has not been, and does not intend to be, vaccinated against influenza.”

“4. Each operator shall, no later than February 16, 2010, report to the local Senior Field Manager of the Emergency Health Services Branch, the following:

- (a) the total number of active EMAs and paramedics employed by the operator;
- (b) the number of EMAs and paramedics that have provided a valid certificate signed by a physician or delegate that states that he or she has been vaccinated against influenza;
- (c) the number of EMAs and paramedics that have provided a valid certificate signed by a physician or delegate that states that vaccination is medically contraindicated;
- (d) the number of EMAs and paramedics that signed the written statement that he or she has taken the annual educational review and has not been, and does not intend to be, immunized against influenza.”

Please note that both the H1N1 and seasonal influenza vaccinations are to be included in the reports to EHS, also pursuant to the 2009 vaccination strategy.

This Training Bulletin will be printed by the Branch and forwarded to you in sufficient quantities so that you can provide every paramedic in your service with a copy as required by Section C (Influenza Control) of the *Ambulance Service Patient Care and Transportation Standards (revised October 2007)*.

Training Bulletin, Issue 101 – version 8.0
Influenza Educational Review 2009/2010
Page 3

If you have any questions, please contact Ms. Cathy Francis, Manager of Education and Patient Care Standards at (416) 327-7843.



Malcolm Bates

- c:
- D. Brown, Senior Manager, Operations and Quality Management
 - Dr. A. Campeau, Manager, Land Ambulance Programs
 - N. Arron, Director, Public Health Protection & Prevention Branch
 - P. Graham, Co-Director, Operations, Emergency Management Branch
 - Senior Field Managers/Field Managers, EHSB
 - C. Francis, Manager, Education and Patient Care Standards
 - R. Nishman, Manager, Policy and Operations
 - J. Van Pelt, Manager, Investigations, Certification and Regulatory Compliance
 - R. Brady, Manager, Investigations Unit
 - L. Colvin, Coordinator, Operational Policy, Land Ambulance Programs
 - Dr. C. Mazza, CEO, Ornge
 - J. Trickett, Chair, OBHG
 - Dr. R. Verbeek, Chair, MAC
 - Regional Training Coordinators
 - Paramedic Program Coordinators

Training Bulletin

Influenza Educational Review 2009/2010

October 2009

Issue Number 101 – version 8.0

Emergency Health Services Branch
Ministry of Health and Long-Term Care

Training Bulletin, Issue Number 101 – version 8.0

Influenza Educational Review 2009/2010

(Based on the most current information available)

Introduction

Influenza continues to be a major cause of morbidity and mortality. Health Canada estimates that 10-25% of Canadians may get influenza each year. Although most recover completely, between 4,000 and 8,000 Canadians die of influenza and its complications annually, depending on the severity of the season. Many others die from other complications of influenza. Both the Public Health Agency of Canada (PHAC) and the Center for Disease Control and Prevention in the United States recognize that the morbidity and mortality from influenza can be significantly reduced through the vaccination of those in high priority groups (i.e. those persons who are at high risk of dying or developing other complications from influenza and those who are most likely to transmit the virus, including health care workers, to those at disease risk).

Past experience has given Health Care Workers (HCWs) a heightened awareness about infectious respiratory diseases. It also confirmed that HCWs, including paramedics, have a higher risk of acquiring viral respiratory infections related to occupational exposure and they should be aware of their potential to unknowingly transmit such infections to high risk patients for two reasons:

- Adults may spread influenza to others one (1) day before the onset of symptoms, and
- Many health care workers experience sub-clinical infection.¹ In a British study, 59% of HCWs with serologic evidence of recent influenza infection could not recall having influenza.²

The emergence of the Pandemic (H1N1) 2009 influenza virus (H1N1) earlier this year and predictions of a possible resurgence of the virus during the 2009-2010 influenza season means that paramedics must remain alert and take all necessary precautions when managing patients with suspected infectious respiratory illnesses.

One of the most important lessons learned as a result of respiratory infection outbreaks is that prevention is the key to containing and controlling the spread of infectious diseases, including influenza. Reducing the instances of influenza will not only reduce the morbidity and mortality associated with the disease but will assist in identifying the emergence of other diseases by reducing the number of patients requiring investigation for respiratory infections.

The National Advisory Committee on Immunization (NACI) releases an annual statement on influenza vaccination which provides medical, scientific and public health advice relating to influenza vaccination. The information in this Training Bulletin includes information and the recommendations from the NACI *Statement on Influenza Vaccination for the 2008-2009 Season*.

¹ National Advisory Committee on Immunization
Statement on Influenza Vaccination for the 2008-2009 Season

² Nguyen-Van-Tam J, Granfield R, Pearson J, et al,
Do influenza epidemics affect patterns of sickness absence among British hospital staff?

Some of the information presented in this Training Bulletin may be revised when the 2009-2010 NACI statement becomes available.

In their *Statement on Influenza Vaccination for the 2008-2009 Season*; NACI considers “the provision of influenza vaccination for HCWs involved in direct patient care to be an essential component of the standard of care for influenza prevention for the protection of their patients. HCWs who have direct patient contact should consider it their responsibility to provide the highest standard of care, which includes receiving annual influenza vaccination”. For the purposes of the document, NACI defines a HCW as a person who provides direct patient care as well as an individual who provides health services in an indirect fashion, such as a person who performs administrative activities. The term “direct patient contact” is defined as activities that allow opportunities for influenza transmission between HCWs and patients.

This Training Bulletin has been produced to provide paramedics with the information necessary to help limit the spread of influenza. This information is especially important since a substantial number of patients transported in ambulances each year are within the high risk categories. The information within the Routine Practices and Additional Precautions section of this bulletin is consistent with the *Ambulance Service Patient Care and Transportation Standards (revised October 2007)* and the *Infection Prevention and Control-Best Practices Manual for Land Ambulance Paramedics (March 2007)*.

What is Influenza?

Influenza, commonly referred to as the “flu”, is a highly contagious respiratory disease that is caused by the influenza virus. There are three types of influenza viruses, Influenza A, B and C. Influenza types A and B viruses cause epidemics of the disease almost every winter. Influenza type C infections cause a much milder respiratory illness and are not thought to cause epidemics. Influenza A viruses are classified into subtypes on the basis of two surface antigens: hemagglutinin (H) and neuraminidase (N). Immunity to these antigens will reduce the likelihood of becoming infected and lessens the severity of the disease if infection does occur. Infection with a virus of one subtype gives little or no protection against viruses of other subtypes.

Furthermore, over time, influenza viruses can change or mutate. The most common way that a virus can change is called “antigenic drift”. The small changes that occur in the virus produce “new” virus strains that may not be recognized by the body’s immune system. This is the main reason why people get influenza multiple times throughout their lifetime.

More than 100 viruses are capable of causing respiratory infections with similar symptoms. All influenza vaccines provide protection from influenza only. This is the reason that people who receive the “flu vaccine” may still experience colds and influenza-like symptoms due to other causes.

Identification of Influenza Strains for Seasonal Vaccine Purposes

Antigenic characteristics of current and emerging influenza strains are tracked by the World Health Organization (WHO). This allows the WHO to recommend the most appropriate strains to be included in each year's supply of influenza vaccine. All seasonal influenza vaccines include two strains of an influenza A virus and one strain of an influenza B virus that the WHO predicts will best provide immunity to the influenza types determined to be associated with the 2009-2010 influenza season.

Vaccines developed for seasonal influenza may not be effective against the H1N1 virus. Therefore, in addition to the seasonal influenza vaccine, a vaccine specific to H1N1 is being developed. The Government of Canada has placed an order for the H1N1 vaccine on behalf of the provinces. The H1N1 vaccine is expected to be available in late fall of this year.

Seasonal Influenza Vaccine Effectiveness

Protection from the vaccine generally develops by two weeks after the vaccination, and may last up to one year in healthy adults and children. The vaccine is about 70 to 90 percent effective in preventing influenza infection in healthy adults. In children, it is about 77 to 91 percent effective against influenza. In elderly persons, the vaccine can prevent pneumonia and hospitalization in about six out of ten persons, and prevent death in about eight out of ten persons.

In spite of best efforts to predict the upcoming year's circulating influenza strain(s) and to include those strains in the vaccine, in some years when the match is not perfect, the efficacy of the vaccine is not optimal, but still provides some measure of protection.

Signs and Symptoms of Influenza

A person is considered contagious and can spread the influenza virus up to one (1) day before the onset of symptoms during the incubation period. Persons with sub-clinical infection are also capable of spreading the infection.³ Influenza symptoms usually come on suddenly and may include any of the following signs and symptoms:

- Fever, chills
- Sore throat
- Headache
- Tiredness (can be extreme)
- Body aches
- Dry cough
- Loss of appetite
- Nasal congestion

To date, the signs and symptoms of H1N1 influenza have been similar to those of seasonal influenza.

³ Nguyen-Van-Tam J, Granfield R, Pearson J, et al,
Do influenza epidemics affect patterns of sickness absence among British hospital staff?

Nausea, vomiting and diarrhea may accompany influenza infection, especially in children, but these are not common symptoms. Sometimes influenza can be mistaken for the common cold. However, in most cases influenza onset is faster and has more severe symptoms than a cold.

Illness due to influenza usually lasts from three to five days; however, complete recovery can sometimes take one to two weeks. Some people will develop life-threatening complications such as pneumonia. Bronchitis, sinus and ear infections are other complications caused by influenza. Influenza commonly exacerbates chronic health problems. For example, influenza worsens symptoms in patients with chronic cardio-respiratory disease, and can lead to pneumonia and/or respiratory or heart failure.

Modes of Influenza Virus Transmission

Influenza transmission occurs predominately by large respiratory droplets (particles $>5\mu$ [microns] in diameter) that are expelled from the respiratory tract during coughing or sneezing. Particles do not remain suspended in the air, and close contact (<2 metre) usually is required for transmission. Transmission also occurs through direct contact with respiratory droplets/secretions or contaminated objects (including equipment), followed by touching one's nose, mouth or eyes.

Recommended Recipients of Seasonal Influenza Vaccine:

1) People at High Risk for Influenza Related Complications

NACI recognizes that the following people are at high risk for severe influenza related complications or more likely to require hospitalization:

- Adults (including pregnant women) and children with the following chronic health conditions:
 - cardiac or pulmonary disorders (including bronchopulmonary dysplasia, cystic fibrosis and asthma);
 - diabetes mellitus and other metabolic diseases;
 - cancer, immunodeficiency, immunosuppression (due to underlying disease and/or therapy);
 - renal disease;
 - anemia or hemoglobinopathy;
 - conditions that compromise the management of respiratory secretions and are associated with an increased risk of aspiration;
 - children and adolescents with conditions treated for long periods of time with acetylsalicylic acid.
- People of any age who are residents of nursing homes and other chronic care facilities.
- People ≥ 65 years of age.
- Healthy children aged 6 to 23 months.
- Healthy pregnant women (the risk of influenza-related hospitalization increases with increasing length of gestation; e.g. it is higher in the 3rd than the 2nd trimester).

Recommended Recipients of Seasonal Influenza Vaccine (continued)

2) People Capable of Transmitting Influenza to Those at High Risk

- Health care and other care providers in facilities and community settings who, through their activities, are capable of transmitting influenza to those at high risk of influenza complications.
- Household contacts (adults and children) of individuals at high risk of influenza-related complications (whether or not the individual at high risk has been immunized):
 - household contacts of individuals at high risk listed in the section above;
 - household contacts of infants <6 months of age (who are at high risk of complications from influenza but for whom influenza vaccine is not approved); and
 - members of a household expecting a newborn during the influenza season.
- Those providing regular child care to children <24 months of age, whether in or out of the home.
- Those who provide services within closed or relatively closed settings to persons at high risk (e.g. crew on ships).

3) Others

- People who provide essential community services.
- People in direct contact during culling operations with poultry infected with avian influenza.

Note: Healthy persons aged 2 to 64 years without contraindication are encouraged to receive influenza vaccine even if they are not in one of the aforementioned priority groups.

Ways to Reduce the Risk of Influenza for You and Your Patient

Immunization

There is clear scientific evidence that immunization each year is the most effective way to prevent being infected with the influenza virus.

In the NACI document titled *Statement on Influenza Vaccination for the 2008-2009 Season*, the following statements are made:

- *“Vaccination is recognized as the cornerstone for preventing or attenuating influenza for those at high risk of serious illness or death from influenza infection and related complications”.*
- *“People who are potentially capable of transmitting influenza to those at high risk should receive annual vaccination regardless of whether the high risk person(s) is immunized”.*
- *“Transmission of influenza between infected HCWs and their vulnerable patients results in significant morbidity and mortality”.*
- *“In a British study, 59% of HCWs with serologic evidence of recent influenza infection could not recall having influenza, suggesting that many HCWs experience subclinical infection”.*
- *“To reduce the morbidity and mortality associated with influenza and the impact of illness in our communities, immunization programs should focus on those at high risk of influenza-related complications, those capable of transmitting influenza to individuals at high risk of complications and those who provide essential community services”.*

Influenza Control Standard

For more information regarding the responsibilities of paramedics and ambulance service operators to control the contraction and spread of influenza, please refer to Section C (Influenza Control) of the *Ambulance Service Patient Care and Transportation Standards (revised October 2007)* and any updates to this standard as issued by the Ministry.

Routine Practices and Additional Precautions

In addition to the requirements in Section C, the *Ambulance Service Patient Care and Transportation Standards* describe Routine Practices and Additional Precautions for preventing the transmission of infection, especially infectious respiratory diseases. Routine Practices are to be followed at all times. Appropriate and consistent use of these practices not only reduces the incidence of cross infection of patients, especially the most vulnerable, but also the incidences of infection transmission to co-workers, family members and the public.

The following points will enhance the effectiveness of Routine Practices and Additional Precautions (droplet/contact) and should be considered by paramedics:

Hand Hygiene

Hand hygiene is the most important measure in preventing the spread of infection. The use of an alcohol-based hand rub containing 70-90% alcohol (isopropanol or ethanol) is the most effective type of hand hygiene as it kills organisms in seconds when applied correctly. Alcohol-based hand rubs are the preferred method for cleaning hands. Alcohol-based hand rubs however, will not be effective on visibly soiled hands. Visible soiling must be first removed using a moistened towel/towelette prior to using the hand rub. It is important not to touch one's face and mucous membranes (including eyes) with the hands until appropriate hand hygiene has been completed.

Washing hands with soap and water is an effective method to remove microorganisms. Soap suspends easily removable organisms from the skin and allows them to be rinsed off.

Hand hygiene shall be performed:

- before patient contact;
- after direct patient contact;
- after contact with blood, body fluids, secretions, excretions, items known or considered likely to be contaminated with secretions, etc;
- before contact with the paramedic's face;
- before cleaning/decontamination of equipment and vehicles;
- immediately after removing gloves and other protective equipment.

In addition to the points above, it is considered best practice to perform hand hygiene:

- any time hands are visibly soiled;
- before performing invasive procedures;
- before leaving the emergency department;
- before and after handling food;
- before and after smoking;
- after using the bathroom, or other personal body functions (e.g. sneezing, coughing);
- at the end of a shift;
- whenever there is doubt about the necessity to do so.

For more information on hand hygiene practices, paramedics may wish to review the information included on the Ministry of Health and Long-Term Care “*Just Clean Your Hands*” website available at <http://www.justcleanyourhands.ca/> and in the Provincial Infections Diseases Advisory Committee (PIDAC) Hand Hygiene best practice document found at : http://www.health.gov.on.ca/english/providers/program/infectious/diseases/ic_hh.html.

Gloves

Gloves are to be used as an additional measure, not as a substitute for proper hand hygiene. Medical quality, non-latex, non-sterile gloves shall be worn when anticipating contact with blood, body fluids, secretions, excretions, mucous membranes or non-intact skin. In addition:

- gloves must cover the sleeve cuffs when a gown is worn;
- gloves should be changed between patient care activities and procedures with the same patient after contact with materials that may contain high concentrations of microorganisms such as after open suctioning of an endotracheal tube;
- hand hygiene must be performed immediately after removing gloves, before touching one’s nose, mouth or eyes, or touching another person;
- gloves should not be worn in the cab of an ambulance to prevent contamination of surfaces and equipment.

Gowns/Coveralls

Long-sleeved gowns or coveralls are to be worn to protect uncovered skin and to prevent soiling of clothes during procedures and patient care activities likely to generate splashes or sprays of blood, body fluids, secretions or excretions, which include cough producing and aerosol-generating procedures. Gowns should be securely tied at the neck and waist and discarded in an appropriate hazardous materials receptacle as soon as the interaction is completed.

Masks

Masks, protective eyewear or face shields shall be worn to protect the mucous membranes of the eyes, nose and mouth during procedures and patient care activities likely to generate splashes or sprays of blood, body fluids, secretions or excretions, which include cough-producing and aerosol-generating procedures.

However, to minimize the transmission of infectious respiratory diseases transmitted by large droplets, including influenza, a mask should be worn when face to face with patients exhibiting new onset cough or respiratory symptoms.

In the general health care setting, fluid resistant surgical masks are considered adequate to prevent transmission of respiratory infections spread predominantly by large droplets. However, in the pre-hospital setting where situations are often uncontrolled and procedures with potential for aerosolization are frequently carried out, the routine use of a Particulate Respirator Mask (sub-micron particulate filtration mask) is accepted.

Masks should be:

- used and changed according to manufacturer's recommendations;
- removed carefully, using the straps so as not to self-contaminate;
- discarded if crushed, wet or contaminated by patient or paramedic's secretions;
- seal checked on each use (if a sub-micron particulate filtration mask is used).

Appropriate hand hygiene needs to be performed after removal of the mask.

Sub-micron Particulate Filtration Mask

When in contact with patients in the pre-hospital setting presenting with respiratory symptoms suggestive of a respiratory infection, or when performing a procedure with potential for aerosolization, paramedics must wear a sub-micron particulate filtration mask.

In cases of airborne respiratory infection, such as tuberculosis or measles, standard surgical masks do not afford paramedics the necessary level of protection provided by a sub-micron particulate filtration mask, because they filter less than 50% of airborne particles that are 1-5 microns in size. Standard surgical masks also do not provide an adequate facial seal necessary to prevent infection. The sub-micron particulate filtration mask used must comply with the Particulate Respirator Mask minimum requirements, as listed in the *Provincial Equipment Standards for Ontario Ambulance Services, version 1.1*. This will ensure that the mask is designed to filter a minimum of 95% of airborne particles in a size range of 0.1 to >10 microns and provide a better facial seal.

Sub-micron particulate filtration masks must be qualitatively fit tested to ensure maximum mask effectiveness. Once the testing is complete, paramedics should be aware of the size of mask required for adequate protection from airborne particles.

Protective Eyewear

Protective eyewear shall be utilized to prevent the exposure of the conjunctiva of the eyes from respiratory droplets that might contain infectious microorganisms. Paramedics should consider the following points with respect to eye protection:

- Prescription eye glasses do not provide adequate protection against splashes and sprays. Paramedics must utilize appropriate protective eyewear specifically designed to be worn over prescription eye glasses.
- Appropriate eye protection that does not impair vision and thereby interfere with patient care must be chosen.
- To prevent self-contamination, paramedics must not touch their eyes or face during care of a patient with a respiratory infection.
- Protective eyewear must be removed carefully to prevent self-contamination.
- Following the removal of eye protection, appropriate hand hygiene must be performed.

Masking of Patients with Symptoms of Respiratory Infection

As an added precaution, patients presenting with symptoms of an undiagnosed respiratory infection should be fitted with a surgical mask, if tolerated, to contain respiratory secretions.

Oxygen Administration for Patients with Symptoms of Respiratory Infection

The patient will wear:

- a surgical mask, if tolerated, with a nasal cannula if low concentration oxygen is required;
- low flow/high concentration oxygen mask outfitted with a hydrophobic submicron filter if high concentration oxygen is required;
- for patients requiring ventilatory assistance using a face mask or an endotracheal tube (ETT), a tube extender and a hydrophobic submicron filter shall be used. A tube extender is not necessary for pediatric patients and must not be used for any infants (<1 year old).

Use of Antiviral Agents for Influenza Prevention

NACI recommends that antiviral medication be used as an adjunct to immunization in those patients who may have an impaired immune response to vaccine, during outbreaks of influenza where vaccine is unavailable, and for unvaccinated people who provide care for people at high risk during an outbreak. NACI also states, however, that “*Antiviral prophylaxis should not replace annual influenza vaccination. Vaccination remains our primary tool for the prevention of influenza infection and illness*”.⁴

There are a number of antiviral medications approved by the Public Health Agency of Canada for prophylactic use in the prevention of influenza virus infections. Prescriptions of antiviral agents, as for all other prescription medications, are the responsibility of the individual’s physician. More information on the use of antiviral agents can be accessed on the Public Health Agency of Canada (PHAC) website at:

www.phac-aspc.gc.ca/publicat/ccdr-rmtc/08vol34/acs-3/index-eng.php.

Paramedics should review the *Ambulance Service Patient Care and Transportation Standards (revised October 2007)* Section C – Influenza Control for information on the requirements for unvaccinated paramedics when providing patient care during declared outbreaks, including the use of antiviral medications and PPE.

⁴ National Advisory Committee on Immunization
Statement on Influenza Vaccination for the 2008-2009 Season

Frequently Asked Questions

1. When is influenza season?

In Canada, influenza season usually runs from October to April.

2. Can getting the influenza vaccine cause me to come down with influenza?

No. The vaccine contains an inactivated influenza virus and therefore cannot cause influenza. Soreness at the injection site is the most common side effect and may last up to two days. Taking acetaminophen may prevent soreness at the injection site. Other potential side effects, such as allergic reactions, are rare.

3. How effective is the seasonal influenza vaccine?

Protection from the vaccine is generally achieved by two weeks after vaccination. From the NACI statement on influenza vaccination: “Systematic reviews of randomized controlled trials in healthy children and adults show that inactivated influenza vaccine is about 70% - 90% effective in preventing laboratory-confirmed influenza infection”.

4. Will the vaccine developed for seasonal influenza protect an individual from acquiring H1N1 influenza?

The H1N1 influenza virus has different antigenic characteristics than seasonal influenza and as such, vaccines developed for seasonal influenza may not be effective against H1N1. Ontario is planning to make a H1N1 vaccine available in addition to the seasonal influenza vaccine program.

5. When will the H1N1 vaccine be available?

The Government of Canada has placed an order for the H1N1 vaccine on behalf of the provinces. It is expected that the vaccine will be available in late fall of this year. Information regarding the H1N1 vaccination program will be communicated to the public and health care professionals as soon as details become available.

6. Can pregnant women or women that are breast feeding be immunized for influenza?

Yes. The influenza vaccine is recommended for pregnant and lactating women. Current evidence indicates that influenza vaccine is safe for pregnant women at all stages of pregnancy and for breast-feeding mothers. The influenza vaccine is safe for use in the first trimester. In the past, there was a concern about the administration of the influenza vaccine during the first trimester due to a perceived association between receipt of the influenza vaccine and spontaneous abortion. This was found to be coincidental, not casual, as both conditions are common in the first trimester.

7. Are there any contraindications and/or precautions for the influenza vaccine?

The vaccine viruses are initially grown in embryonic hen's eggs, so the vaccine may contain minute quantities of residual egg protein. Because of this, influenza vaccine is contraindicated in any individual who has a known anaphylactic hypersensitivity to eggs. As well, individuals who have had an anaphylactic reaction to a previous dose of influenza vaccine should not receive the vaccine without first consulting a physician.

Persons with an acute febrile illness should wait to be vaccinated until their fever has abated.

8. I've heard that the influenza vaccine can cause Guillain-Barre syndrome (GBS). Is this true?

In 1976–1977, the swine influenza vaccine was associated with an increased frequency of Guillain-Barre Syndrome (GBS), a condition involving paralysis. Other than the swine influenza vaccine used in 1976-77, the risk of GBS associated with influenza vaccination is extremely small, if present at all. Vaccines prepared from other virus strains have not been clearly associated with an increased risk of GBS. If there is an association between influenza vaccination and GBS, studies show that any increased risk of GBS would be extremely small, and less than the risk of morbidity and mortality from influenza. Studies show that the risk of developing GBS related to the influenza vaccine, if it exists at all, is approximately one additional case of GBS occurring per million persons vaccinated against influenza.

9. Why should I get the influenza vaccine every year?

Every year the influenza vaccine is updated to address the fact that influenza viruses mutate and the influenza vaccine is prepared to include the current and anticipated strains of viruses for the upcoming influenza season. The vaccine used in previous years may not protect against a newer virus. As well, your immunity to influenza declines over time and may be too low to afford adequate protection after one year.

10. If I get the influenza vaccine every year, will my immune system become weaker, and will I get sick?

The influenza vaccine protects you for the coming season. It does not weaken your ability to fight the flu or other infections. Getting a flu shot every year has been shown to be your best protection against the flu and possibly against passing it on to your patients or to others.

11. I exercise, eat well and take vitamins. Isn't this enough to protect me from influenza?

While a healthy lifestyle can strengthen your defense system in general, it cannot protect you from a specific infectious agent (bacteria or virus).

12. Where can I go to receive the influenza vaccine?

The seasonal influenza vaccine may be obtained by contacting your local public health unit or visiting your family physician. Details regarding the H1N1 vaccination program will be communicated as more information becomes available.

13. Is there a link between the influenza vaccine and an increased risk of Alzheimer's disease?

There is no evidence that influenza vaccine increases the risk of Alzheimer's disease. Alzheimer's is a complex illness involving damage to and degeneration of the neurons within the brain. Its cause isn't fully understood, however it may be due to abnormal protein (amyloid) deposits and inflammation in the brain. While it was once thought that aluminum contributed to this process, most experts believe that there is no clear evidence to support this theory, moreover, the vaccine does not contain aluminum.

14. The vaccine contains trace amounts of thimerosal; is the vaccine toxic?

Thimerosal is a preservative used in minute quantities in several influenza vaccines. Thimerosal contains *ethyl* mercury, which is structurally different than methyl mercury.

It is important to note that the minute amount of ethyl mercury in the vaccine and the daily average intake for mercury (from food) totals less than the daily tolerated amount defined by national guidelines. There is no evidence that the mercury in thimerosal is harmful at such low levels.

References

For further information on the prevention of disease transmission, including influenza, paramedics are encouraged to review the following documents:

National Advisory Committee on Immunization (NACI)
Statement on Influenza Vaccination for the 2008-2009 Season
www.phac-aspc.gc.ca/publicat/ccdr-rmtc/08vol34/acs-3/index-eng.php

Ministry of Health and Long-Term Care
H1N1 Flu Virus
http://www.health.gov.on.ca/english/public/updates/archives/hu_09/provider/default.html

Ministry of Health and Long-Term Care - Provincial Infectious Diseases Advisory Committee
Preventing Febrile Respiratory Illnesses (Revised August 2006)
www.health.gov.on.ca/english/providers/program/infectious/diseases/best_prac/bp_fri_080406.pdf

Ministry of Health and Long-Term Care
Just Clean Your Hands
<http://www.justcleanyourhands.ca/>

Ministry of Health and Long-Term Care - Emergency Health Services Branch
Ambulance Service Patient Care and Transportation Standards (revised October 2007)
http://www.ambulance-transition.com/pdf_documents/amb_service_patient_care_transportation_standards.pdf

Ministry of Health and Long-Term Care - Emergency Health Services Branch
Infection Prevention and Control
Best Practices Manual for Land Ambulance Paramedics (March 2007)
http://www.ambulance-transition.com/pdf_documents/infection_prevention_&_control_best_practices_manual.pdf

Ministry of Health and Long-Term Care – Emergency Health Services Branch
Preventing and Assessing Occupational Exposures to Communicable Diseases (January 1996)
http://www.ambulance-transition.com/pdf_documents/occupational_exposure_to_selected_communicable_diseases.pdf

Ministry of Health and Long-Term Care – Emergency Health Services Branch
Basic Life Support Patient Care Standards, Version 2.0 (January 2007)
Available at:
http://www.ambulance-transition.com/pdf_documents/bls_patient_care_standards_2.0.pdf