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November 3, 2017

MEMORANDUM TO: Paramedic Chiefs, Ornge and First Nations

FROM: Tanzeel Merchant
Director
Emergency Health Regulatory and Accountability Branch

RE: **Training Bulletin, Issue Number 101 – version 16.0
Influenza Educational Review 2017/2018**

I am pleased to present the Influenza Educational Review for 2017/2018. The Influenza Educational Review is based on the most current information available and is being forwarded to paramedic services to facilitate the distribution of this important information to your staff. In an effort to streamline the document, much of the content from previous years has been revised/removed. We hope this approach will result in the key information being communicated more effectively to paramedic services and 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.

This training bulletin has been produced to provide paramedics with the information necessary to help limit the spread of influenza. Each year, a substantial number of patients are transported in ambulances that are within the high risk categories. It is important that paramedics remain alert and take all necessary precautions when managing patients with suspected infectious respiratory illnesses.

The reporting dates stipulated within Section C (Influenza Control) of the *Patient Care and Transportation Standards*, version 2.2 are modified for 2017 as follows:

2. Each operator shall ensure that, as of **December 16, 2017** each EMA (Emergency Medical Attendant) and paramedic 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) provide 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 **January 20, 2018**, report to the local Senior Field Manager of the Emergency Health Program Management and Delivery 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.

If you have any questions, please contact Mike Eby, Paramedic Standards and Certification Coordinator at 416-327-7852 or michael.eby@ontario.ca .

ORIGINAL SIGNED BY

Tanzeel Merchant

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Enclosure

Training Bulletin

Influenza Educational Review 2017/2018

Issue Number 101 - Version 16.0
November 2, 2017

Emergency Health Regulatory and Accountability Branch
Ministry of Health and Long-Term Care



To all users of this publication:

The information contained in this training bulletin has been carefully compiled and is believed to be accurate at date of publication.

For further information on the *Training Bulletin 101 – Influenza Educational Review 2017/2018*, please contact:

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Document Control

Version Number	Date of Issue	Brief Description of Change
13.0	October 15, 2014	Finalized 2014/2015 Influenza Educational Review Training Bulletin
14.0	October 15, 2015	Finalized 2015/2016 Influenza Educational Review Training Bulletin
15.0	October 31, 2016	Finalized 2016/2017 Influenza Educational Review Training Bulletin
16.0	November 2, 2017	Finalized 2017/2018 Influenza Educational Review Training Bulletin

Table of Contents

Influenza Educational Review 2017/2018	5
Document Purpose	6
NACI Statement on Seasonal Influenza Vaccine for 2017-2018	6
New or Updated Information for 2017-2018.....	6
Key Information	7
Paramedic Considerations.....	9
Influenza Vaccine	9
Influenza Information for Paramedics	9
Influenza Control.....	10
Routine Practices and Additional Precautions.....	10
Conclusion	14

Training Bulletin – Influenza Educational Review 2017/2018

Issue Number 101 – Version 16.0

Influenza Educational Review 2017/2018

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Influenza Educational Review 2017/2018

Document Purpose

“The National Advisory Committee on Immunization (NACI) provides the Public Health Agency of Canada (PHAC) with ongoing and timely medical, scientific, and public health advice relating to immunization.”¹

This training bulletin provides paramedics information on NACI’s Canadian Immunization Guide Chapter on Influenza and Statement on Seasonal Influenza Vaccine for 2017-2018, as well as additional considerations for paramedics.

NACI Statement on Seasonal Influenza Vaccine for 2017-2018

The Canadian Immunization Guide Chapter on Influenza and Statement on Seasonal Influenza Vaccine for 2017–2018 is available on the Government of Canada’s website at:

<https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-statement-seasonal-influenza-vaccine-2017-2018.html>

Additionally, a summary document of the NACI Statement on Seasonal Influenza Vaccine for 2017-2018 can be found in [here](#).

New or Updated Information for 2017-2018

The 2017-2018 NACI recommendations incorporate two considerations that were released as addendums to the 2016-2017 statement:

- 1) “That egg-allergic individuals may be vaccinated against influenza using the low ovalbumin-containing LAIV licensed for use in Canada”²; and
- 2) “To continue to recommend the use of LAIV in children and adolescents 2-17 years of age, but to remove the preferential recommendation for its use”²

¹ National Advisory Committee on Immunization (NACI). "Canadian Immunization Guide Chapter on Influenza and Statement on Seasonal Influenza Vaccine for 2017–2018 [Internet]". Ottawa:PHAC;2017 [updated 2017 May 2]

² Vaudry, W., and R. Stirling. "Summary of the NACI Statement on Seasonal Influenza Vaccine for 2017-2018" Canada Communicable Disease Report 43, no. 5 (2017): 96.

Key Information

The following are the key information points, taken directly from NACI Canadian Immunization Guide (2017):

What

Influenza is a respiratory infection caused primarily by influenza A and B viruses. In Canada, influenza generally occurs each year in the late fall and winter months. Symptoms typically include the sudden onset of high fever, cough and muscle aches. Other common symptoms include headache, chills, loss of appetite, fatigue and sore throat. Nausea, vomiting and diarrhoea may also occur, especially in children. Most people will recover within a week or ten days, but some are at greater risk of more severe complications, such as pneumonia. People with chronic diseases may have worsening of their underlying disease.

Both inactivated and live attenuated influenza vaccines are authorized for use in Canada; some are trivalent formulations and some are quadrivalent formulations.

Influenza vaccine is safe and well-tolerated. Influenza vaccine cannot cause influenza illness because the inactivated influenza vaccines do not contain live virus and the viruses in live attenuated influenza vaccines are weakened so that they cannot cause influenza.

Who

Influenza vaccination is recommended for all individuals aged 6 months and older (noting product-specific age indications and contraindications), with particular focus on people at high risk of influenza-related complications or hospitalization, including all pregnant women, people capable of transmitting influenza to those at high risk, and others [...].

How

Risks and benefits of influenza vaccine should be discussed prior to vaccination [with a primary health care provider], as well as the risks of not being immunized.

Dose and schedule

Children who have been previously immunized with seasonal influenza vaccine and adults should receive one dose of influenza vaccine each year. Children 6 months to less than 9 years of age receiving seasonal influenza vaccine for the first time in their life should be given two doses, with a minimum interval of four weeks between doses.

The route of administration and dosage varies by product.

Contraindications and Precautions

Persons who have developed an anaphylactic reaction to a previous dose of influenza vaccine or to any of the vaccine components, with the exception of egg, or who have developed Guillain-Barré Syndrome (GBS) within six weeks of influenza vaccination, should not receive a further dose.

NACI has concluded that egg allergic individuals without other contraindications may be vaccinated against influenza (with any product) without a prior influenza vaccine skin test and

with the full dose. The vaccine may be given in any settings where vaccines are routinely administered [...]. As with any vaccine, immunizers should be prepared for and have the necessary equipment to respond to a vaccine emergency at all times. [Live attenuated influenza vaccine] (LAIV) also appears to be well tolerated in individuals with a history of stable asthma or recurrent wheeze; however, it remains contraindicated for individuals with severe asthma (defined as currently on oral or high dose inhaled glucocorticosteroids or active wheezing) or for those with medically attended wheezing in the 7 days prior to immunization. There are also additional contraindications for LAIV [...].

Administration of the seasonal influenza vaccine should usually be postponed in persons with serious acute illnesses until their symptoms have abated. Immunization should not be delayed because of minor acute illness, with or without fever. If significant nasal congestion is present that might impede delivery of LAIV to the nasopharyngeal mucosa, inactivated vaccines can be administered or LAIV can be deferred until resolution of the illness.

Co-administration

All influenza vaccines, including LAIV, may be given at the same time as or at any time before or after administration of other live attenuated or inactivated vaccines [...]. For concomitant parenteral injections, different injection sites and separate needles and syringes should be used.

Why

Influenza occurs globally with an annual attack rate estimated at 5%–10% in adults and 20%–30% in children.

Annual vaccination is required because the body's immune response from vaccination diminishes within a year. Also, because influenza viruses change often, the specific strains in the vaccine are reviewed each year by WHO and updated as necessary so that there is the greatest probability of matching circulating viruses.³

Although vaccine effectiveness can vary from season to season due to viral changes and vaccine mismatch, vaccination remains the most effective way to prevent influenza and its complications.

Universal Influenza Immunization Program

Across Ontario, the influenza vaccine is offered for free to anyone 6 months of age and older who lives, works or attends school in Ontario; find out where at:

<https://www.ontario.ca/page/get-flu-shot>

³ Ibid.

Paramedic Considerations

Influenza Vaccine

According to NACI, the influenza vaccine is particularly recommended for those who are “capable of transmitting influenza to those at high risk.”

Included in this category are paramedics (“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.”).

It is recommended that health care workers, including paramedics, receive “TIV and QIV, instead of LAIV”.⁴

Influenza Information for Paramedics

The following is additional influenza related information for health professionals from the Government of Canada website:

What health professionals need to know about influenza

- Influenza is a respiratory illness caused primarily by the influenza A and B viruses.
- While most people recover in 7 to 10 days, severe illness can occur. Some groups are at a greater risk of influenza-related complications.
- It is estimated that influenza causes approximately 12,200 hospitalizations and 3,500 deaths in Canada each year.
- FluWatch, Canada's national influenza surveillance system, provides up-to-date information about currently circulating influenza strains
- Getting vaccinated against influenza each autumn is the best way to help prevent influenza infection.
- There are antiviral drugs [...] currently authorized for influenza treatment and/or prophylaxis in Canada.

Agents of disease

- While there are 3 types of influenza virus (A, B and C), only influenza A and B cause seasonal outbreaks in humans.
- Influenza A viruses are classified into subtypes based on 2 surface proteins:
 1. haemagglutinin (HA)
 2. neuraminidase (NA)
- Of these, the influenza A viruses that have caused widespread human disease over the decades are:
 - 3 subtypes of HA (H1, H2 and H3)
 - 2 subtypes of NA (N1 and N2)

⁴ Ibid.

- Influenza B has evolved into 2 lineages:
 1. B/Yamagata/16/88-like viruses
 2. B/Victoria/2/87-like viruses

Over time, antigenic variation (antigenic drift) of strains occurs within an influenza A subtype or B lineage. The ever-present possibility of antigenic drift requires seasonal influenza vaccines to be reformulated annually. Antigenic drift may occur in one or more influenza virus strains.⁵

Additional information for health professionals regarding influenza can be found at:

<https://www.canada.ca/en/public-health/services/diseases/flu-influenza/health-professionals-flu-influenza.html>

Influenza Control

For more information regarding the responsibilities of paramedics and ambulance service operators to mitigate the spread of influenza, please refer to Section C (Influenza Control) of the Patient Care and Transportation Standards, version 2.2 and as outlined by clause 11(d) of O. Reg. 257/00 under the *Ambulance Act*.⁶

Routine Practices and Additional Precautions

In addition to the requirements in Section C, the Patient Care and Transportation Standards, version 2.2 describes 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 is a brief summary of Routine Practices and Additional Precautions (droplet/contact).

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 method of hand hygiene as it kills organisms in seconds when applied correctly. Alcohol-based hand rubs are the preferred method for cleaning hands, with the exception of when hands are visibly soiled. When hands are visibly soiled, first remove the soil by washing hands or with a moistened towel/towelette followed by alcohol hand rub. Hands must be rubbed until completely dry. It is important not to touch one's face and mucous membranes (including eyes) with the hands until appropriate hand hygiene has been completed.

⁵ Government of Canada. "For health professionals: Flu (influenza) [Internet]". Last modified September 23, 2016, <https://www.canada.ca/en/public-health/services/diseases/flu-influenza/health-professionals-flu-influenza.html>

⁶ *Ambulance Act*, R.S.O. 1990, c. A.19

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 entering the emergency department;
- 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; and
- whenever there is doubt about the necessity to do so.

As a reminder, always follow Routine Practices which includes frequent hand hygiene. This information is included on the Public Health Ontario website "*Just Clean Your Hands Hand Care Program*" at:

<http://www.publichealthontario.ca/en/eRepository/hand-care-program.pdf>

The Public Health Ontario '*Protecting Your Hands Fact Sheet for Health Care Providers*' can be found at:

<http://www.publichealthontario.ca/en/eRepository/hand-care-assessment.pdf>

Gloves

Gloves are to be used as an additional measure, not as a substitute for proper hand hygiene. Medical grade, 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; and
- 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 that may 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 complete.

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 is encouraged.

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; and
- seal checked on each use (if a particulate respirator mask is used).

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

Particulate Respirator 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 particulate respirator mask. Particulate respirator masks are designed to filter sub-micron particulate ranging in size from 0.1 to >10 microns.

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 particulate respirator 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 choice of particulate respirator mask must comply with the Particulate Respirator Mask minimum requirements, as listed in the most current version of the *Provincial Equipment Standards for Ontario Ambulance Services*⁷. This will ensure that the particulate respirator mask will filter a minimum of

⁷ Ontario Ministry of Health and Long-Term Care. "Provincial Equipment Standards for Ontario Ambulance Services (v3.2)". *Emergency Health Services Branch*, Retrieved online September, 2017, http://www.health.gov.on.ca/en/public/programs/ehs/edu/docs/pro_eq_stds%20On_ambulance_serv_v3.2.pdf

95% of airborne particles, ranging in size from 0.1 to >10 microns to maximize protection for the paramedic.

Particulate respirator masks must be qualitatively fit tested and seal checked to ensure maximum respirator effectiveness. It is important that individuals perform a particulate respirator mask fit test to determine which respirator mask is best suited to their facial features and respiratory needs. Once the testing is complete, paramedics should note and use the appropriate style and size of particulate respirator mask assigned to them.

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

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 for antiviral agents, as for all other prescription medications, are the responsibility of the individual's physician. Paramedics should discuss the use of antiviral medications directly with their personal physician if they have been in direct contact with a person suspected with influenza. Antivirals should be started within 48

hours of contact with an ill, infectious person for maximum efficacy. Antivirals can help reduce the severity of the illness and the recovery time.⁸

For additional information about antiviral use, see Public Health Ontario's 2016 Antiviral Medication Influenza Factsheet found here:

https://www.publichealthontario.ca/en/eRepository/Antiviral_Medications_Influenza_Fact_sheet_2016.pdf

Paramedics should review the *Patient Care and Transportation Standards*, version 2.2 Section C – Influenza Control in relation to requirements for unvaccinated paramedics when providing patient care during declared outbreaks, including the use of antiviral medications and PPE.

Conclusion

This training bulletin provides information on the personal, patient care, and public health benefits of an annual influenza vaccination. Additionally, it discusses procedures to prevent exposure to influenza and to protect patients from exposure to influenza, as well as other information relevant to transmission and protection.

Paramedics are encouraged to further review information regarding influenza and where appropriate, discuss influenza considerations, including vaccination, with patients.

⁸ Centers for Disease Control and Prevention, "Use of Antivirals: Background and Guidance on the Use of Influenza Antiviral Agents", Last modified May 26, 2016 <http://www.cdc.gov/flu/professionals/antivirals/antiviral-use-influenza.htm>

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