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# Influenza



## Bug of the Month

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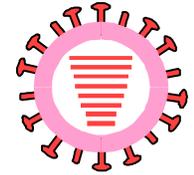


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# Outline

- Brief general overview about influenza and seasonal influenza vaccine
- Facts and myths
- Questions

# What is Influenza?



- Influenza is a contagious disease of the respiratory tract caused by a virus
- Influenza is **NOT** diarrhea and vomiting
- **Seasonal** influenza occurs in Canada every year during the late fall and winter months
- Influenza viruses:
  - Type A - infects humans, birds & other mammals
  - Type B - only infects humans

<b><i>Signs and Symptoms</i></b>	<b><i>Common Cold</i></b>	<b><i>Influenza (the flu)</i></b>
<b>Fever</b>	Rare	Usual, sudden onset 39°-40°, lasts 3 to 4 days
<b>Headache</b>	Rare	Usual, can be severe
<b>Aches and Pains</b>	Sometimes mild	Usual, often severe
<b>Fatigue and weakness</b>	Sometimes mild	Usual, severe, may last 2-3 weeks or more
<b>Extreme fatigue</b>	Unusual	Usual early onset, can be severe
<b>Runny, stuffy nose</b>	Common	common
<b>Sneezing</b>	Common	Sometimes
<b>Sore throat</b>	Common	common
<b>Chest discomfort, coughing</b>	Sometimes mild to moderate	Usual, can be severe
<b>Complications</b>	Can lead to sinus congestion or earache	Can lead to pneumonia and respiratory failure and cause more complications in persons with chronic diseases; can be life threatening
<b>Prevention</b>	Frequent hand-washing; cough/sneeze into sleeve	Annual influenza vaccine; frequent hand-washing; cough/sneeze into sleeve
<b>Treatment</b>	No specific treatment is available; symptom relief only	An anti-viral drug, which reduces severity and shortens the duration of symptoms if started within two days of becoming ill is available by prescription from your doctor.

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# How Influenza is Spread

- Influenza is spread by coughing, sneezing, direct physical contact, contact with objects in the environment.
- People can become contagious starting 1 day before the onset of symptoms and remain contagious for up to 5 to 7 days after the first symptoms.
  - Children may be able to spread the virus longer than 7 days.
- Infected people without any symptoms may still be contagious.

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# Survival of Influenza Viruses

- Influenza A virus can survive on hard, nonporous surfaces (e.g., stainless steel, hard plastic) for 24 to 48 hours and on porous materials (e.g., cloth, paper) for < 8 – 12 hours in ambient temperatures.
  - Infectious virus can be transferred to hands from nonporous surfaces for at least 2 – 8 hours during periods of heavy viral shedding in respiratory secretions.
  - The secondary spread of infectious virus from environmental reservoirs to susceptible persons is accomplished primarily via hand transfer (i.e., hand contact with contaminated surfaces and then touching mucous membranes of the eyes, nose, and mouth)

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# Influenza Vaccines

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# Influenza Vaccines

- Indicated for the prevention of influenza in adults and children 6 months of age or older.
- The vaccine provides protection only against influenza caused by the specific strains of influenza virus contained in the vaccine
- Each year the seasonal vaccine contains 3 virus strains
  - Usually 2 type A strains and one type B strain representing the influenza viruses believed most likely to circulate during the current flu season.

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# Influenza Vaccination

- The “Flu Shot” is:
  - 70-90% effective in healthy individuals.
  - 70% effective in preventing hospitalizations for pneumonia and flu among older persons in the community.
  - 50-60% effective in preventing hospitalizations and pneumonia in LTC residents.
  - 85% effective in preventing death in LTC residents.

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# 2012-2013 Influenza Vaccine

- **The three components in this year's vaccine:**
  - **A/California/7/2009 (H1N1)-pdm09-like,**
  - **A/Victoria/361/2011 (H3N2)-like, and**
  - **B/Wisconsin/1/2010-like virus (B Yamagata lineage).**

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# Seasonal Influenza Campaign

- Start date was Tuesday October 9<sup>th</sup>, 2012
- Three vaccine products are being used in the publicly-funded program in Saskatchewan – only two will be used in SCHR:
  - AGRIFLU® for the general population; and
  - FLUAD® for individuals who reside in long term care facilities.

*Both these products are latex free and thimerosal free.*

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# Priority Groups Recommended to Receive the 2012-13 Seasonal Influenza Immunization

## People at high risk of influenza-related complications or hospitalization

- **Adults (including pregnant women) and children with a chronic health condition including but not limited to:**
  - ❑ cardiac or pulmonary disorders (including bronchopulmonary dysplasia, cystic fibrosis and asthma);
  - ❑ diabetes mellitus and other metabolic diseases;
  - ❑ cancer, immune compromising conditions (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;
  - ❑ morbid obesity (BMI  $\geq$  40); and
  - ❑ children and adolescents with conditions treated for long periods with acetylsalicylic acid.
- **People of any age who are residents of nursing homes and other chronic care facilities.**
- **People  $\geq$ 65 years of age.**
- **Healthy children 6 to 59 months of age.**
- **Healthy pregnant women** (the risk of influenza-related hospitalization increases with length of gestation, i.e. it is higher in the third than in the second trimester).

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# Priority Groups Recommended to Receive the 2012-13 Seasonal Influenza Immunization

## People capable of transmitting influenza to those at high risk

- All health care workers and volunteers who, through their activities, are capable of transmitting influenza to those at high risk of influenza complications:
  - Defined as anyone who provides direct patient care or indirect health services (e.g., office reception, housekeeping staff).
- Household and close contacts (adults and children  $\geq 6$  months) of individuals at high risk of influenza-related complications (whether or not the individual at high risk has been immunized):
  - household and close contacts of individuals at high risk, as listed in the section above;
  - household and close contacts of infants  $< 6$  months of age as these infants cannot receive influenza vaccine; and
  - members of households expecting newborns.
- 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 a ship).

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## Priority Groups Recommended to Receive the 2012-13 Seasonal Influenza Immunization

### Others:

- People who provide essential community services.
- People working in direct contact during culling operations with poultry infected with avian influenza.
- People working with poultry or swine.
- Health sciences students (human and animal health).

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# Contraindications to Influenza Vaccine

- Anaphylactic reaction to a previous influenza vaccine
- Anaphylactic reaction to any component of the influenza vaccine
- History of Guillain-Barré syndrome within 6 weeks of receiving influenza vaccine

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# GBS and Influenza Vaccine

- The 1976-1977 “swine flu” vaccine was associated with an increased risk of Guillain-Barré syndrome (GBS).
- In 1990, a small excess of cases were seen in the 6 weeks following vaccination in adults under age 65. However, the population base rate of Guillain-Barre cases was lower than normal, making the significance of these observations unclear.
- A causal relationship has not been established.
- Cause of GBS is not always known however may follow viral infections including influenza

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# Facts and Myths

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Influenza isn't serious, it's  
just a cold

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**True or False**

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# Influenza isn't serious, it's just a cold?

- Influenza is the 6<sup>th</sup> leading cause of death among adults
  - Between 4000 and 8000 Canadians can die each year of influenza and its complications annually, depending on the severity of the season.
  - Approximately 36,000 deaths and 114,000 hospitalizations occur each year in the United States.

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## Influenza isn't serious, it's just a cold?

- Over 1 billion dollars of lost productivity each year in Canada is caused by influenza
- On average healthy adults have fever, cough, muscle pain and other symptoms lasting for 3 to 6 days
- Influenza can cause heart failure and inflammation of the heart muscle
- Respiratory disease including influenza are the 3<sup>rd</sup> leading cause of death and hospitalization in adults over 55 years old

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# Influenza isn't serious, it's just a cold?

## Complications can include

- ❑ Viral pneumonia
- ❑ Bacterial pneumonia
- ❑ Exacerbation of COPD
- ❑ Heart failure
- ❑ Myocarditis
- ❑ Encephalitis
- ❑ Reye's syndrome
- ❑ ECG abnormalities
- ❑ Poor diabetes control

# Hospitalization Rates for Influenza By Age and Risk Group\*

<u>Age Group</u>	<u>Rate**</u> <u>(high-risk)</u>	<u>Rate**</u> <u>(not high-risk)</u>
0-11 mos	1900	496-1038
1-2 yrs	800	186
3-4 yrs	320	86
5-14 yrs	92	41
15-44 yrs	56-110	23-25
45-64 yrs	392-635	13-23
≥65 yrs	399-518	125-228

22 \* Data from several studies 1972 - 1995  
\*\* Hospitalizations per 100,000 population

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Influenza Vaccine can give  
me influenza

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**True or False**

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## Influenza vaccine can give me influenza?

- Influenza vaccine is an inactivated virus vaccine, which means that the virus particles are killed during the manufacturing process.
- Because the virus has been killed/inactivated, the vaccine is not capable of causing an influenza infection.

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# Influenza vaccine can cause influenza?

- 24 to 48 hours after being vaccinated, < 2% of people immunized with influenza vaccine will experience symptoms such as slight fever, slight headache
- These side effects of the vaccine reflect an individual's immune response to the vaccine rather than a case of influenza.
- The side effects are short-lived and are not known to be associated with any decrease in overall protection.
- Other viral infections are also circulating and coincidentally may be the cause of the illness the person is experiencing (incubation period).

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I got vaccinated & developed  
influenza anyway so it didn't  
work

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**True or False**

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# I was vaccinated & still developed influenza

- Protection from influenza vaccine is not immediate and it takes 2 weeks for an adequate immune response and complete protection to occur.
- Other viral infections are also circulating and coincidentally may be the cause of the illness the person is experiencing.
- The vaccine contains the 3 strains of influenza that were predicted to be most common and the vaccine does not match all the circulating strains every year.

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## I was vaccinated & still developed influenza

- With a good match of vaccine to circulating influenza strains, the vaccine prevents influenza in 70 to 90% of healthy adults
  - In those who do not develop full protection from disease following vaccination - they are less likely to develop complications, severe disease, be hospitalized or die (see slide on vaccine efficacy).
- Vaccine efficacy may be lower in certain populations (e.g. the immunocompromised, the elderly) than in healthy adults. However...

## I was vaccinated & still developed influenza

- ...the possibility of lower efficacy should not prevent immunization in those at high risk of influenza-associated morbidity since protection is still likely to occur.
- Immunization of residents of LTCFs, may only prevent < 50% of lab confirmed influenza but vaccination may be 50% to 60% effective in preventing hospitalization and pneumonia, and up to 85% to 95% in preventing death.

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I don't need to get an  
Influenza vaccine every year

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**True or False**

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## It is necessary to get immunized against influenza every year!

- The types of influenza viruses circulating in the community usually change from year to year.
- A new vaccine is made each year to protect against the current strains.
- Immunity to influenza viruses only lasts for a year, so it is important to get vaccinated against influenza every year.

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I am pregnant so I shouldn't  
get an Influenza vaccination

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**True or False**

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# Pregnancy and Influenza Vaccine

- I should be immunized with the influenza vaccine if I am pregnant.
  - Studies have indicated that pregnancy can increase the risk for serious medical complications associated with influenza.
  - Increased risks might result in increases in heart rate, stroke volume, oxygen consumption, and decreases in lung capacity.

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# Pregnancy and Influenza Vaccine

- Risk of hospitalization is 4 times higher than nonpregnant women
- Risk of complications comparable to nonpregnant women with high-risk medical conditions
- Vaccination (with TIV) recommended if pregnant during influenza season
- Vaccination can occur during any trimester

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I am allergic to eggs so I can't  
have the Influenza Vaccine

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**True or False**

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# Influenza Vaccination

- Egg allergy - is not a contraindication to receiving the injectable flu vaccine.
  - Individuals with a history of egg allergy may be able to receive influenza vaccine depending on the severity of the allergy.

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Questions?

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# **What Can You Do to Protect Yourself?**

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## What can you do to protect yourself?

- Wash your hands frequently.
- Wash your hands thoroughly with soap & warm water, or use a hand sanitizer that contains at least 60% alcohol (hand hygiene).
- Cough and sneeze in your arm or sleeve or cover your cough with a tissue (respiratory etiquette).
- Avoid touching your eyes, nose or mouth (germs spread this way).
- Stay at home if you are sick and do not visit people who are sick.



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## Protect Our Residents, Our Patients, & Our Clients

“The Duty of Care for patients on the part of HCWs must prevail. The vaccination of HCWs must be regarded more as a matter of meeting professional and ethical standards than of personal preference.”

– Pamela Orr (2000)

Infection Control = Team Effort  
We need all players to be effective!

Thank You!



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