



FALL NEWSLETTER

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IEI MISSION STATEMENT:

The **Immunization Education Initiative** (IEI) is a national group of nurses partnering with other immunization supporters, who educate about the importance of immunization to enhance the health of Canadians.



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TAKING THE “OUCH” OUT OF IMMUNIZATION

Immunization is associated with some pain. In general, the pain is mild and short-lived. Children may be particularly concerned about pain, which can be a source of anxiety and distress. Here are some tips on how to prevent and manage pain related to immunization in children:

- ▶ swaddle or hold the child
- ▶ get the child to suck on a pacifier
- ▶ if appropriately-aged, breast-feed infants.
- ▶ offer sweet-tasting solutions such as oral sucrose or glucose
- ▶ use distraction techniques: books, video games, cartoons, shaking a noisy toy in front of infants and very young children, playing music, or encouraging older children to blow away the pain using windmill toys or bubbles
- ▶ topical anaesthetics may be considered for some children who are particularly fearful or who previously had negative experiences
- ▶ oral analgesics (e.g., acetaminophen, ibuprofen) in age-appropriate dosing may be considered before and after they get vaccinated
- ▶ ensure the health care provider and the parent's demeanour is calm and sensible, without excessive reassurance

For adolescents and adults who may experience anxiety, there is a risk of fainting. Techniques to reduce this risk include:

- ▶ ensuring the room temperature is comfortable
- ▶ minimizing wait times in the clinic or office
- ▶ administering the vaccine while the person is seated

Vaccines known to cause more pain or stinging should be administered last if non-simultaneous multiple injections are given.



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H1N1 INFLUENZA: NOT SWINE INFLUENZA

When the H1N1 influenza virus first broke news earlier this year, everyone referred to this new strain of influenza as the “swine flu.” Does this mean that the virus originated from pigs? That you can become infected if you’re in close contact with pigs? That you can get the flu from eating pork products like bacon or ham? The confusion caused concerns about the safety of pork and pork products and even caused some countries to slaughter hundreds of thousands of pigs in response to the perceived threat of pigs spreading the virus to humans.

This confusion prompted the World Health Organization to stop referring to the flu virus as “swine flu” and start using the scientific name, “influenza A (H1N1).” In addition, WHO released a statement to emphasize that the H1N1 virus is not transmitted through pork and pork products, and properly prepared pork will not cause H1N1 infection. Properly prepared pork means preventing foodborne illnesses by practicing good hygiene habits and cooking the pork to an internal temperature of at least 70 °C (160 °F) to kill any viruses, including the H1N1 virus that may be found in raw meat. Sick pigs or pigs found dead should not be processed or consumed by humans under any circumstances.

But the origin of the term “swine flu” has some merit. Swine influenza virus causes a highly contagious respiratory infection of pigs, just like human influenza virus causes flu among humans, and avian influenza virus causes flu among birds. Swine influenza viruses do not normally infect humans, although sporadic outbreaks of humans infected with swine influenza virus have been reported. This most commonly occurs in people who have direct and close contact, such as people who work

on farms or slaughterhouses. Transmission occurs through contact with respiratory secretions or by inhaling droplets or aerosols from coughing and sneezing. Pigs have also been infected with human influenza virus.

Pigs, like humans, can be infected by swine influenza, avian influenza, and human influenza viruses. When a pig is infected with influenza viruses from different species, the viruses can swap genes and a new virus that is made up of genes from swine, human, and/or avian influenza viruses can appear. This gene-swapping process is known as *genetic reassortment*, and occurs when influenza viruses exchange genetic information during replication. This genetic reassortment can also occur in humans.

An influenza virus that has undergone genetic reassortment is not new to the pandemic world – the 1957 “Asian” flu and the 1968 “Hong Kong” flu pandemics were viruses with genes from both human and avian influenza viruses.

The influenza A (H1N1) virus that is causing the current influenza pandemic is a virus that has undergone a genetic assortment, with genes from swine, human, and avian influenza viruses. This new influenza virus with this particular combination has not been seen in humans (or pigs) previously, meaning the population has no or little natural immunity to protect against the virus. Therefore, the H1N1 virus could cause more infections than those of the seasonal flu. Further investigation is being conducted to understand this virus, to clarify the role of pigs in the emergence of this virus, and to develop a safe and effective vaccine.

INTERESTED IN BECOMING A NURSE SPEAKER?

Contact the IEI for more information!

Don't forget to visit the IEI website at www.immunizationeducation.ca!

To stay informed on immunization news, bookmark or make www.immunizationeducation.ca your home page

IEI Nurse Speakers are available to provide education sessions for your group or organization of health care professionals.

There are several presentations to choose from: *Administration Techniques, Communication Strategies, Immunology/Vaccinology, Immunization Overview, and Influenza.*

Each session takes about 1½ hours and light refreshments are provided. **Best of all, there is no cost to your group!**

For further information or to book a presentation, please visit our website at www.immunizationeducation.ca.



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VACCINE TRUTHS

- ▶ Vaccines strengthen, not weaken, the immune system, even for infants. In fact, infants need to be protected from vaccine-preventable diseases because they are more likely to get sick from the diseases the vaccines can prevent, such as meningitis, diphtheria, and whooping cough.
- ▶ Although live vaccines (e.g., measles, mumps, rubella, varicella) should generally not be given to immunocompromised people, inactivated (e.g., inactivated polio, influenza) or component (hepatitis A, hepatitis B, pneumococcal) vaccines are safe for these people.
- ▶ Vaccines can be given during minor acute illness, with or without fever of $\geq 39.5^{\circ}\text{C}$. Minor illness does not interfere with vaccine response and there is no increased risk of adverse events.

IMMUNIZATION BY THE NUMBERS

- ▶ Anaphylaxis rarely occurs, with an estimated annual rate of 0.4 to 1.8 reports per 1,000,000 doses of vaccines in Canada.
- ▶ According to the most recent Canadian National Report on Immunization, the most commonly reported side effects related to immunization are local reactions, rash, and fever.
- ▶ The development of an H1N1 vaccine takes approximately 23 weeks—4 weeks to develop the primary seed strain (the base material to develop a vaccine), 12 weeks for development and production, 6 weeks for testing, and 1 week for reviewing and authorization for use in Canada.

MANAGING ANAPHYLACTIC REACTIONS

Anaphylaxis is a rare but potentially life-threatening allergic reaction. It can be caused by things like food, latex, and insect stings. Anaphylactic reactions from vaccination are very rare. However, preparations should be made to manage it for every person who receives a vaccine.

Pre-vaccination screening should be done to prevent anaphylaxis. The screening should include questions about possible allergies to the vaccine and its components. A history of anaphylaxis to a specific vaccine component is a contraindication to receiving that vaccine. People who have had a previous anaphylactic reaction to a specific vaccine should not receive subsequent doses of that vaccine.

Since anaphylaxis is not always predictable or avoidable, all health care providers should be familiar with the symptoms of anaphylaxis and be ready to initiate management and administer appropriate medications. Symptoms of anaphylaxis develop over several minutes and include:

- ▶ itchy, urticarial rash
- ▶ progressive, painless angioedema of the mouth and face, which may be preceded by facial flushing, itchiness, nasal congestion, and tearing
- ▶ respiratory symptoms: sneezing, coughing, wheezing, difficulty or laboured breathing, upper airway swelling (indicated by hoarseness, difficulty swallowing)
- ▶ hypotension – this generally develops later in the reaction and can progress to shock and cause collapse
- ▶ nausea, vomiting, diarrhea may also occur

Fainting, anxiety, and breath-holding are common reactions to receiving vaccination but are benign and should be distinguished from anaphylaxis symptoms.

To manage anaphylaxis, several steps should be taken:

1. Administer epinephrine subcutaneously or intramuscularly as soon as possible. Administer in the opposite limb that the vaccination was given.
2. Call for medical assistance, including an ambulance.
3. Position the patient in a recumbent position and elevate the feet.
4. Establish an oral airway if needed.
5. If oxygen is available, administer to patients with cyanosis, dyspnea, or any other severe reaction.
6. Repeat dose of epinephrine if necessary and only in certain situations. Diphenhydramine can be given as an adjunct to epinephrine. For specific recommendations on these medications, see the Canadian Immunization Guide at: <http://www.phac-aspc.gc.ca/publicat/cig-gci/p02-03-eng.php>.
7. Monitor vital signs and reassess the situation frequently and regularly.
8. Arrange for transportation to the emergency department. Hospitalization or a long period of observation is usually recommended for monitoring.



IMMUNIZATION OF IMMUNOCOMPROMISED PEOPLE

People who are immunocompromised are at increased risk of all types for infection, including vaccine-preventable infections. Immunocompromisation may be congenital or acquired as a result of a medical condition, such as HIV infection, chronic liver disease, chronic kidney disease (including those undergoing dialysis), and splenic disorders (e.g., asplenia, hyposplenism). People may also be immunocompromised if they are taking immunosuppressive therapy, such as long-term corticosteroid use, cancer chemotherapy, or if they have received solid organ transplantation or hematopoietic stem cell transplantation. People who were not born immunocompromised retain immunity from previous vaccinations, meaning they remain protected from infections for which they have already been immunized. The exception is for people who receive allogeneic bone marrow transplants (bone marrow transplant with stem cells from a donor).

Immunization in immunocompromised people can be a complex issue due to a number of factors, including the following:

- ▶ The number of immunocompromised people in Canada is increasing.
- ▶ The increasing number of vaccines that immunocompromised people are likely to be exposed to.
- ▶ The relative degree of immunodeficiency varies over time in many people.
- ▶ An insufficient response to immunization may occur in immune deficient systems, resulting in lessened protection provided by the vaccine.

Despite these complexities, immunization of immunocompromised individuals is generally recommended, since there is the potential for serious illness and death in under-vaccinated immunocompromised people. When possible, vaccinate someone before immunodeficiency begins.

The Canadian Immunization Guide recommends some general principles that need to be considered when immunizing immunocompromised people:

- ▶ Maximize the benefits while minimizing harm of vaccination.
- ▶ Do not make assumptions about an individual's susceptibility or protection. For example, a childhood history of infection or previous immunization may not be relevant.
- ▶ Anticipate when the maximum immune response will occur and immunize at that time.
- ▶ Consider vaccination of family members and other household contacts where appropriate.
- ▶ Avoid live vaccines. Live vaccines can cause serious adverse events in some immunocompromised people because of the uncontrolled replication of the virus or bacterium, resulting in infection. They are generally contraindicated in people with deficient immune systems.
- ▶ Monitor immunocompromised people carefully and provide booster shots as appropriate.

Immunizing immunocompromised people should be done after consultation with vaccination experts.

For a list of vaccinations for immunocompromised people recommended by the Canadian Immunization Guide, please go to:
<http://www.phac-aspc.gc.ca/publicat/cig-gci/p03-tab08-eng.php>.

IEI NEWS

Summary of CHNAC conference

The 3rd National Community Health Nurses Conference was held in Calgary, Alberta from June 17th to 19th and was attended by 440 participants from across Canada. The conference theme was "Blazing Our Trail—Tools, Tactics & Taking Charge" and included a broad range of presentations and roundtable discussions.

The IEI booth was hosted by nurse speakers Caroline Henry from Canmore and Cathy Lewis from Calgary. The IEI exhibit generated great interest, as conference participants were able to view the IEI website and the content of the modules through the use of a laptop.

Other IEI nurse speakers in attendance included Felicity Hemming from British Columbia, who were presenting at the conference on behalf of BC Health Regions. Overall, the conference was an excellent opportunity to introduce nurses from across Canada to the IEI.

Upcoming IEI events

IEI is busy again this year getting the word out on immunization and will be exhibiting at the following conferences this fall. Drop by our booth, if you can!

2009 York Region Education Day

Theme: Infection Control on Centre Stage
Thursday October 1, 2009
Markham, ON

IEI nurse speaker Cathy Coburn will be presenting on adult immunization

6th Biennial Pediatric Nursing Conference

Theme: Child First, Patient Second
October 22–23, 2009
Toronto, ON

Ontario Public Health Conference 2009

November 1–4, 2009
Toronto, ON