



SUMMER 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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REVIEW OF MEASLES

Measles (also called rubeola) is a highly contagious viral disease with symptoms of fever, cough, runny nose, rash, conjunctivitis, and Koplik spots (white marks on the inner lining of the mouth). It is transmitted via airborne droplets released through coughing or sneezing or via direct, close personal contact with the nasal or throat secretions of an infected person. Measles is contagious for about 4 days before until 4 days after the appearance of the rash. It is a leading cause of vaccine-preventable deaths in children worldwide.

Complications of measles include otitis media, bronchopneumonia, and measles encephalitis. Encephalitis (swelling of the brain) can lead to permanent brain damage. Treatment is usually supportive.

Measles is rarely seen in Canada due to the high vaccination rates from publicly funded immunization programs. However, there have been recent confirmed cases of measles in Calgary and an outbreak in British Columbia. These outbreaks emphasize the need to keep immunizations up-to-date.

Canadian children receive the measles vaccine as part of a vaccine that protects against 3 diseases (measles, mumps, and rubella), the MMR vaccine. This shot is given twice – once at 12 months of age, and later at 18 months of age or before they start school (between age 4 and 6 years).

People born in or after 1970 without a history of measles or do not have documentation of adequate measles immunization require one dose of the MMR vaccine. Those born before 1970 may be considered immune to measles.



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VACCINE BURDEN: ADDRESSING PARENTS' CONCERNS

It's natural for parents to be concerned about immunization, especially considering the amount of media that has been surrounding vaccine safety. Vaccines, however, have saved more Canadian lives in the last 50 years than any other public health intervention. Worldwide, more than 2 million deaths are prevented every year because of immunization.

The controversial link between autism and the measles-mumps-rubella (MMR) vaccine has died down as research continually debunks this association. Similarly, parents may no longer be as worried about the preservative thimerosal in vaccines, since science has also shown that thimerosal does not cause autism or other neurodevelopmental disorders. In addition, thimerosal is no longer present in routine childhood immunizations, except in some vaccines (e.g., influenza, hepatitis B).

With these controversies slowly abating, others are coming up. Despite the number of deaths prevented each year by immunization, some children have never been vaccinated and many are undervaccinated (they have not received all doses of the recommended vaccinations).

An increasing number of parents are concerned that children are receiving too many vaccines too soon, fearing later adverse outcomes, such as their children's immune systems becoming overburdened or weak. This has led parents to delay immunization for their children. However, this practice of delaying immunization is not evidence-based. In fact, it may even lead to increased incidence and complications of vaccine-preventable diseases. This is especially true for pertussis (whooping cough), where the number of cases and death rates are highest in infants less than 6 months old. There is no evidence, however, that the recommended vaccine schedule infants receive causes any adverse effects.

A recent study published in *Pediatrics* has added further evidence that vaccination in children does not cause any adverse effects. In the study, children who received vaccinations on time during their first year of life (i.e., according to the recommended immunization schedule) showed no adverse effects on neurodevelopmental outcomes 7 to 10 years later. In fact, receiving vaccinations on time was associated with better performance on 12 of the 42 neuropsychological outcomes assessed in the study, and the children who did not receive vaccinations on time did not do better than the timely group in any of the neuropsychological outcomes. Interesting to note from this study was that lower socioeconomic status was associated with less timely vaccinations, but

children who received no vaccinations were more likely to come from well-educated, affluent families.

Addressing parents' concerns can be a difficult task. In order for parents to make informed decisions about immunization, they need to understand the benefits and risks. When parents express concern about vaccination, you can address them by:

- ▶ Listening to and empathizing with parents as they express their concerns.
- ▶ Explaining the benefits and risks from a personal perspective. Let parents know what immunization decisions will mean for them and their children.
- ▶ Providing evidence-based information and real numbers to help them balance benefits and risks.

Consider highlighting the following points about vaccine burden:

- ▶ The recommended immunization schedule for infants is not associated with any harm to neurological development when the child is older (7 to 10 years later).
- ▶ Canadian vaccines are safe and effective, and are held to high safety standards.
- ▶ Vaccination needs to start early (i.e., at 2 months) to protect children against diseases that they are more likely to get sick from (that can cause high mortality and complications), such as pertussis, haemophilus influenzae type b (Hib), and diphtheria.
- ▶ Vaccine side effects do not occur more often in infants.





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VACCINE TRUTHS

- ▶ Vaccines are necessary because the diseases still occur. Vaccine-preventable diseases may be uncommon in Canada, but they are a common risk in other countries. Travellers can carry disease and if you are not immunized, you could be at serious risk.
- ▶ It is common to receive several vaccines during the same appointment at the clinic. This is recommended only after studies have shown that doing so is a safe practice and does not compromise effectiveness.
- ▶ Vaccines are not 100% effective. Some people will never become completely immune, even if they have received their vaccinations. These people are protected as long as the people around them are immunized.

IMMUNIZATION – BY THE NUMBERS

- ▶ The risk of getting encephalitis from the MMR vaccine is less than one in a million doses. The risk of encephalitis from measles disease itself is 1 to 2 cases per 1,000 cases.
- ▶ Before the chickenpox vaccine was introduced, 90% or more Canadians were infected by chickenpox by the time they were 12 years old.
- ▶ Countries that let their immunization levels drop have seen an increase in the appearance of disease. For example, in Japan, a vaccination rate of 70% in 1974 saw 393 cases of pertussis and no deaths; in 1979, the vaccination rate dropped to 20% to 40% and saw 13,000 cases of pertussis and 41 deaths.

STORING AND HANDLING VACCINES

Vaccines are biological products that are sensitive to conditions such as inappropriate temperatures, direct sunlight, or fluorescent light. These conditions can destroy vaccines. Vaccines must be properly stored in order to maintain their effectiveness. Health care providers must ensure proper vaccine storage and handling so their patients receive effective vaccinations.

The vaccine “cold chain” is a process that ensures the vaccines are properly transported, stored, and handled so that they are protected from exposure to conditions that could damage them, such as light and inappropriate temperatures. This process starts from the time of production by the manufacturer to the time the vaccine is given to the patient.

Follow these general principles when storing and handling vaccines:

- ▶ Most vaccines should be stored between 2°C to 8°C.
- ▶ Some vaccines need to be frozen; the ideal temperature is -15°C or lower.
- ▶ Some vaccines, such as MMR, chickenpox, and Bacillus Calmette-Guérin (BCG), must be protected from light at all times.
- ▶ Certain types of vaccines should not be used if they have been frozen, including Tdap, DTaP, DT, DTaP-Polio, DT-Polio, Td, Td-Polio, hepatitis A and B, influenza, and pneumococcal and meningococcal vaccines.
- ▶ Always read the manufacturer’s product label for specific vaccine storage and handling instructions.

Health care providers working in office or clinic settings should keep these points in mind:

- ▶ The clinic should have detailed written policies and procedures for routine vaccine storing and handling (i.e., the day-to-day operations). There should also be written protocols for storing and handling vaccines in urgent or emergency situations, such as when there is a power failure or when the refrigerator malfunctions.
- ▶ Every individual who will be handling and transporting the vaccines should be properly trained.
- ▶ Clinics should designate a specific person to be responsible for managing vaccines.
- ▶ Daily logs of temperature recordings should be kept. A special thermometer that can measure maximum-minimum temperatures should be used.
- ▶ Place vaccine shipments in the refrigerator immediately upon arrival.
- ▶ Multidose vials of vaccine should only be removed from the refrigerator before dosage administration. They should be placed back in the refrigerator immediately.
- ▶ The refrigerator should be used only to store vaccines. Do not use it to store food.



FOCUS ON SHINGLES

The varicella-zoster virus (VZV) is a type of herpes virus that causes two types of infection: chickenpox (varicella) and shingles (herpes zoster). The first time someone is infected with VZV, it is chickenpox that manifests. Chickenpox is a highly contagious disease that usually occurs in childhood and is identifiable by a red, itchy rash with blisters. A person is most contagious 1 or 2 days before and up to 5 days after the appearance of the rash (i.e., until the last chickenpox sore has crusted).

Shingles occurs when the dormant VZV lying in the sensory ganglia (peripheral nerves) from the previous chickenpox infection is reactivated. The risk of reactivating the virus and getting a shingles infection is about 15% to 20%. Shingles causes pain and a rash to appear in the area of the body connected to the nerves where the dormant virus is located. A person is contagious from the appearance of the rash until they have dried and crusted. Complications of shingles include severe eye infections, central nervous system infection, nerve paralyses, and post-herpetic neuralgia (PHN), the most common complication. PHN is prolonged and often a debilitating neuropathic pain that persists or occurs after the initial shingles infection. Patients' rashes may clear up but the pain persists. The risk of PHN lasting more than 6 months increases with age. Among shingles patients 50 years or older, 35% have PHN.

The herpes zoster vaccine (Zostavax™) is a vaccine indicated to prevent shingles in people who have had prior chickenpox infection. It is not meant for the primary prevention of VZV infection (chickenpox).

Because PHN has a large impact on quality of life, the National Advisory Community on Immunization (NACI) recommends the herpes zoster vaccine to prevent shingles and its complications in people 60 years and older who do not have contraindications to the vaccine. The herpes zoster vaccine reduces shingles risk and its complications by about 60%. NACI does not make recommendations on administering the vaccine to people with a history of shingles.



IMMUNIZATION NEWS

IEI will be in attendance and exhibiting again at this year's National Canadian Immunization Conference to be held December 5 to 8, 2010. IEI is also exhibiting this year at the biennial Canadian Nurses Association Conference June 7 to 9 in Halifax, as well as other smaller congresses throughout the country.

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.