



DUE Quarterly

DRUG USE IN THE ELDERLY

July 2010

PROMOTING MORE EFFECTIVE MEDICATION USE BY SENIORS

What vaccines are recommended for seniors?

This issue is based on the following familiar scenario.

Long-time patients to your practice, Bob and Donna, have recently retired having reached their 65th birthdays.

They present to your office proudly reporting they are taking your advice to become more active, and have signed up for a two-month project building a school in rural northern Uganda.

As well as ensuring Bob will have an adequate supply of his antihypertensive medication, they want to take precautions to avoid other illnesses while in Africa and to ask you for advice.

Your advice would probably include safe food and water precautions, anti-malaria considerations, motor vehicle collision and dehydration avoidance, and obtaining the appropriate vaccines.

What are the vaccine recommendations for adults 65 years of age and older?

- Vaccines for travellers can be divided into those that are:
 - ✦ routine (for Canadian adults)
 - ✦ special (for individuals with specific risk factors)
 - ✦ travel-related
- Routine and special vaccines are generally publicly funded and available through Public Health.
- Travellers take responsibility for travel-related vaccine costs.

Routine vaccines (Canadian adults)

Tetanus and diphtheria

- Most adults in Canada have

completed a primary or childhood series of tetanus and diphtheria (Td) immunization.

- For those who have not, Td should be given at appropriate intervals:
 - ✦ Doses one and two separated by two months.
 - ✦ Followed by the third dose at least six months after the second dose.

Vaccines for travellers can be divided into those that are routine (for all Canadian adults), special (for individuals with specific risk factors) and travel-related.

- All Canadian adults require maintenance of immunity to tetanus and diphtheria, preferably with a combined toxoid every 10 years.
- A single dose of combined tetanus, diphtheria and acellular pertussis vaccine (given as dTap) is recommended in adulthood for those younger than 65. Currently, this is not publicly funded.

Measles, mumps, rubella (MMR)

- In Canada, adults born before 1970 are considered immune to measles as the disease was so widespread in this country prior to the advent of immunization.
- Immigrant populations may need to be assessed for immunity on an individual basis prior to vaccination.

- Similarly, rubella and mumps immunization generally are not required.

Influenza

- Influenza moves around the globe yearly, causing widespread illness during the winters in temperate zones and illness year-round in tropical zones. The ever-changing nature of influenza viruses means there is a new vaccine each year.
- In Alberta, an annual influenza vaccine is available to all Albertans, but it is particularly recommended for adults aged 65 years and older and people of any age who have chronic medical conditions.



NEXT ISSUE

- The art of managing seniors with heart failure

DUE Quarterly offers expert opinions – not ACP-AMA guidelines or evaluations of drug use.

Streptococcus pneumoniae (pneumococcus)

- Invasive pneumococcal disease occurs most commonly in very young children, the elderly and anyone with underlying medical conditions.
- One dose of polysaccharide vaccine, offering protection against 23 of the most common strains of *Streptococcus pneumoniae*, is recommended for individuals 65 years of age and older.
 - ✦ **A repeat dose is not currently recommended for the majority of seniors.**
 - ✦ A single reimmunization is only recommended after five years in individuals at highest risk of invasive infection: functional or anatomic asplenia or sickle cell disease; hepatic cirrhosis; chronic renal failure or nephrotic syndrome; HIV infection; and immunosuppression related to disease or therapy.

Herpes zoster

- Herpes zoster (shingles) results from reactivation of a varicella-zoster virus from prior varicella (chickenpox) illness.
- In 2008, a herpes zoster live-attenuated vaccine (Zostavax™) was licensed in Canada for use in individuals aged 60 years and older. It is expected to decrease incidence of herpes zoster about 60% and decrease severity of the disease if it does occur.
- The Canadian National Advisory Committee on Immunization recently recommended a single dose of the herpes zoster vaccine in those 60 years and older if they do not have congenital or acquired immune deficiency, are not on immunosuppressive medications or do not have anaphylactic hypersensitivity to any vaccine component.¹
- Herpes zoster and influenza vaccines may be given simultaneously, but a **separation of at least four weeks** is recommended between receipt of herpes zoster and pneumococcal vaccines.¹
- Currently, the herpes zoster vaccine is not publicly funded in Alberta.

Special vaccines (for high-risk groups)

Meningococcal

- Meningococcal vaccine is recommended for those with asplenia or recipients of solid organ and hematopoietic stem cell transplants.
 - ✦ The specific vaccine depends on age.
 - ✦ Adults 56 years of age and older require one dose of meningococcal conjugate C vaccine, followed by quadrivalent polysaccharide meningococcal vaccine no less than two weeks later. The quadrivalent polysaccharide vaccine should be repeated five years later.
 - ✦ For individuals two-55 years of age with the above conditions, a single dose of quadrivalent conjugate meningococcal vaccine is recommended.

Hepatitis A

- The hepatitis A vaccine is recommended for individuals with:
 - ✦ Chronic liver disease (including hepatitis B and C)
 - ✦ Hemophilia (or if getting plasma-derived clotting factors)
 - ✦ Lifestyle risks (males having sex with males, illicit drug use in unsanitary conditions)
- Two doses separated by six-12 months are recommended for full protection.

Travel-related vaccines

Hepatitis A/B

- The most widely recommended travel vaccine is taken to prevent hepatitis A, a common infection from ingestion of contaminated food or water.
 - ✦ Given alone, two doses, six-12 months apart, are required for long-lasting protection.
- Pre-immunization serology (anti-HAV total) may be considered for adults born before 1945 if they had "yellow jaundice" while growing up in Canada or the US, or if they were born in hepatitis A-endemic countries because they may be immune due to prior disease.

- Most travellers can benefit from a combination hepatitis A/B vaccine, especially if there is a risk of exposure to blood or body fluids – an unanticipated visit to a medical facility may put them at risk.
 - ✦ This hepatitis A/B vaccine requires three doses for full protection, with doses one and two separated by one month, and dose three administered six months after the first dose ideally (or four to five months after the second dose).
 - ✦ Travellers leaving on trips in less than one month may use a rapid dosing schedule of 0, seven and 21 days, followed by a fourth dose at 12 months after the first dose. This schedule must **not** be modified.

Typhoid

- Typhoid, caused by exposure to contaminated food and water, is readily preventable by vaccine.
- A combination hepatitis A/typhoid vaccine can be given (one dose) or the typhoid vaccine by itself, either as a live oral (multiple-doses) or an injectable (one-dose) vaccine.
- Despite having a typhoid vaccination, individuals should also take food and water precautions.

Meningococcal

- Quadrivalent polysaccharide vaccine should be considered if travelling to endemic areas, such as sub-Saharan Africa, if there will be prolonged contact with the local populace. In northern Uganda, this vaccine is recommended for such travellers throughout the year.
- The polysaccharide vaccine should be repeated every five years if meningococcal risk is increased. (A quadrivalent conjugate meningococcal vaccine is licensed for use in Canada but only for individuals two-55 years of age.)

Dukoral

- The Dukoral oral vaccine protects against cholera or travellers' diarrhea caused by enterotoxigenic *E coli* (ETEC).

Practically speaking . . .

Principles for scheduling and administering vaccines

1. Optimal immune response is achieved if recommended intervals between vaccine doses are maintained.
2. The interval between vaccine doses can be shortened to a minimum length to provide protection as early as possible when warranted.
3. The interval between vaccine doses can be extended without unduly compromising the immune response.
4. An interrupted vaccine schedule should be resumed rather than restarted, regardless of length of delay, unless specifically advised otherwise.
5. Administering less than the recommended dosage volume may result in a compromised immune response and inadequate protection. Vaccine doses should never be reduced nor split between two sites.
6. Individuals with unknown vaccination histories should generally be considered susceptible and started on an appropriate vaccine series.
7. Live vaccines should be administered on the same day or separated by a period of four weeks.
8. Two or more vaccines can be administered on the same day unless there are special contraindications.

Vaccine recommendations

Vaccines have been so successful in preventing serious infectious diseases over the past decades that many people have forgotten the devastation caused by vaccine-preventable diseases like measles, diphtheria and tetanus, to name a few.

- Physicians are trusted providers of health information. Advice about vaccines is critical to the health of patients.

Travel recommendations

For a list of travel clinics, visit Public Health Agency of Canada online: www.phac-aspc.gc.ca/tmp-pmv/travel/clinic-eng.php.

- Many travel clinics in Alberta provide yellow fever vaccine. Check the website above for a listing, which may not be complete.
- For complete travel recommendations for specific destinations, consult the Centers for Disease Control and Prevention online: <http://wwwnc.cdc.gov/travel>.

Barriers to vaccinations

Myths

- I'll contract the flu/pneumonia/herpes.
- Can't receive any vaccines if I am allergic to eggs.
- I'm sick and, therefore, should not receive vaccines.
- Getting vaccines is inconvenient.
- Only children need vaccines.
- Immune systems are overwhelmed by vaccines.

To help refute vaccine myths

- Canadian Coalition for Immunization Awareness & Promotion (2010). *Immunization: Get the facts* (four commonly held myths general to immunization), <http://resources.cpha.ca/CCIAP/data/1688e.pdf>.
 - ✦ *Influenza Bulletin #1 (What can I tell my patients about...)*, <http://resources.cpha.ca/CCIAP/data/725e.pdf>
 - ✦ *Influenza Bulletin #3*, <http://resources.cpha.ca/CCIAP/data/727e.pdf>
 - ✦ *Questions & misconceptions* (includes resources), <http://www.immunize.cpha.ca/en/publications-resources/questions.aspx>

Other resources

- *Adult immunization: Are you up-to-date?* (2010), <http://resources.cpha.ca/CCIAP/data/104e.pdf>
- Public Health Agency of Canada
 - ✦ *Well on your Way: A Canadian's Guide to Healthy Travel Abroad*

(*immunization, travelling with medications, the senior traveler, avoiding disease when travelling, etc.*), 2008, www.phac-aspc.gc.ca/tmp-pmv/pdf/bon_depart-on-your_way-eng.pdf

- ✦ *Canadian Immunization Guide*, seventh edition, 2006, <http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php>

Approximate costs for Uganda trip

Vaccine costs vary among travel health providers.

- Clinic fees often include a consultation fee (which may be waived if vaccines are purchased) and individual vaccine charges.
 - ✦ Consultation fees can be \$25-70 per adult
- Approximate costs for the vaccines required for this trip, per person, follow:
 - ✦ Tetanus/diphtheria, measles/mumps/rubella (MMR), influenza, pneumococcal vaccines – generally no charge; these are publicly funded routine vaccines
 - ✦ Herpes zoster vaccine – \$191-200
 - ✦ Hepatitis A/B vaccine (three-dose series) – \$180-258
 - ✦ Typhoid vaccine (oral) – \$30-97
 - ✦ Typhoid vaccine (injectable) – \$30-67
 - ✦ Meningococcal polysaccharide vaccine – \$135-160
 - ✦ Dukoral – \$80-100
 - ✦ Yellow fever vaccine – \$80-101

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- A series is two doses taken one week apart, with a repeat dose after two years (for cholera) or every three months for continuing ETEC risk.

Yellow fever

- An increased risk of adverse events (yellow fever vaccine [YFV]-associated neurotropic disease) follows immunization with YFV. Therefore, careful assessment of the disease risk is necessary if giving YFV to individuals 60 years of age or older.
- If YF disease risk is present in the rural area where the patients will be visiting, the vaccine is strongly recommended regardless of their ages.
- If the vaccine is not given or contraindicated, a YFV exemption is required for travel to some countries.
- YFV is only available through a designated Yellow Fever Vaccination Centre.

Other vaccines

- Rabies vaccine in a three-dose pre-exposure series may be recommended for individuals at risk for animal bites, who cannot readily access adequate health care services.
- For another trip, Japanese encephalitis virus (JEV) vaccine is recommended for travel to South and East Asia.

General considerations

Adverse reactions

Reporting and monitoring adverse events post-immunization are critical to vaccine safety surveillance.

- Adverse events temporally associated with immunization should be reported on the Public Health Agency of Canada *Adverse Event Following Immunization Reporting Form* (www.phac-aspc.gc.ca/im/aeif-form-eng.php).

- ✦ The completed form should be forwarded to the Office of the Medical Officer of Health in the zone in which the immunization provider practises.

Anaphylaxis

Immunization providers are responsible for ensuring they have processes and procedures to respond to anaphylaxis in clients following immunization.

- *The Canadian Immunization Guide*, seventh edition, 2006, provides guidelines for "Anaphylaxis: Initial Management in Non-Hospital Settings" (on the Public Health Agency of Canada website at www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php).

Vaccine storage and handling

Immunizing agents are subject to gradual loss of potency from deterioration and denaturation, which can be accelerated under certain conditions of transport, storage and handling.

- Immunization providers must establish and monitor appropriate cold-chain practises in their respective settings to protect vaccines from inappropriate temperatures and light.
- The Public Health Agency of Canada's *National Vaccine Storage and Handling*

Guidelines for Immunization Providers is online at www.phac-aspc.gc.ca/publicat/2007/nvshglp-Idemv/index-eng.php.

Vaccine records

All immunization providers should ensure they complete a record of vaccines administered, which includes patient demographics, date of vaccine administration, vaccine name and lot number, dose, route and site.

- One copy of the record should be given to the patient and one retained for the chart.

Now you're set to make sure Bob and Donna have all the vaccines they need for protection at home and in Uganda.

Remember, a trusted health care professional's advice is one of the most effective influences in promoting good health behaviors, including taking advantage of the protection vaccines confer.

Reference

1. "Statement on the Recommended Use of Herpes Zoster Vaccine: An Advisory Committee Statement, National Advisory Committee on Immunization," *Canada Communicable Disease Report (CCDR)*, Vol 36, ACS-1, January 2010.

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We'd like your feedback . . .

Feedback from an internal medicine specialist about the April issue regarding restless legs syndrome: A recent article in *Sleep* 2010; 33(1): 81-87 mentioned an incidence, up to 30%, of impulse control disorders with dopaminergic treatment. Patients need to be advised of this risk, which seems higher with ropinirole than pramipexole. It may take several months to emerge, but it is reversible.

DUE Quarterly focuses on the provision of practical drug management information for practising clinicians. Comments and suggestions for future articles are welcome. Please contact:

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