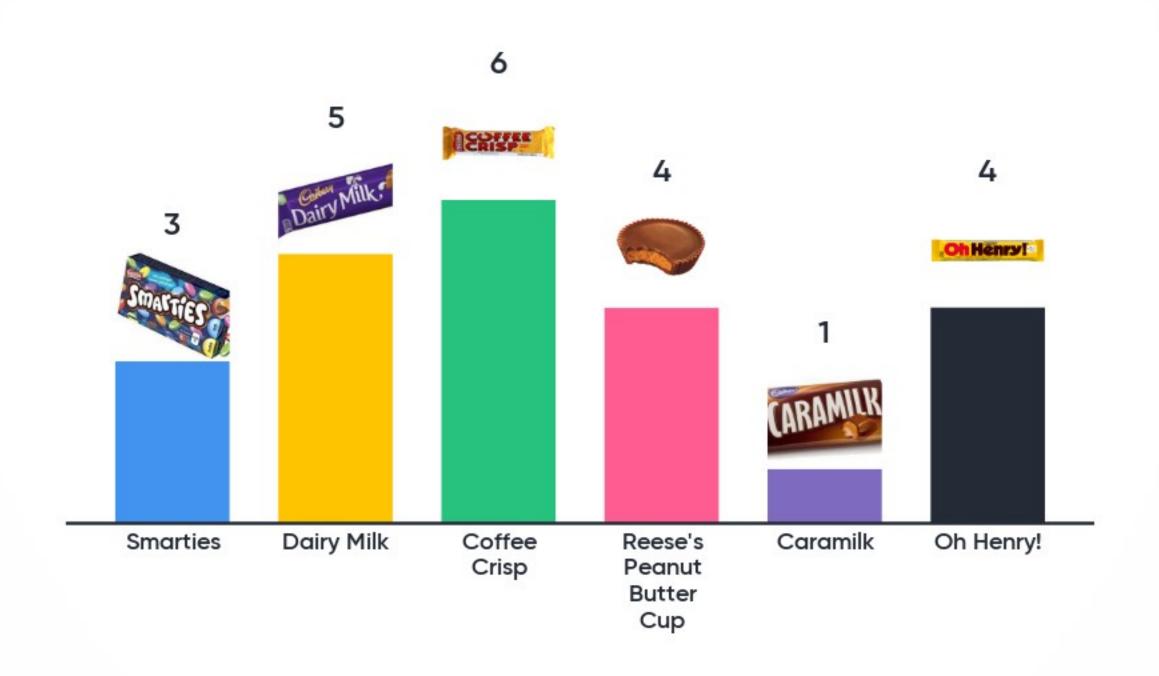


TRAVEL HEALTH SERVICES BY COMMUNITY PHARMACISTS: ROADMAP TO EXPANDING THE SCOPE OF PRACTICE

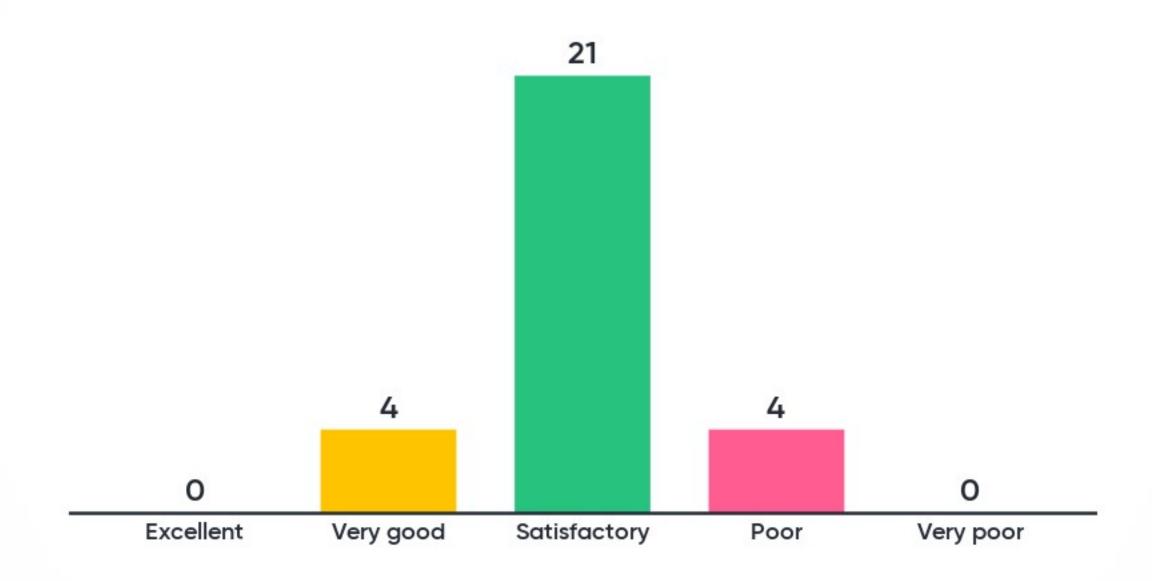
Learning Objectives

- Review the most frequently asked questions regarding travel and immunizations
- Explore how you can integrate more travel services in your pharmacy practice
- Be better prepared to address common questions regarding travel and travel-related vaccines
- Review the pharmacy travel health continuum

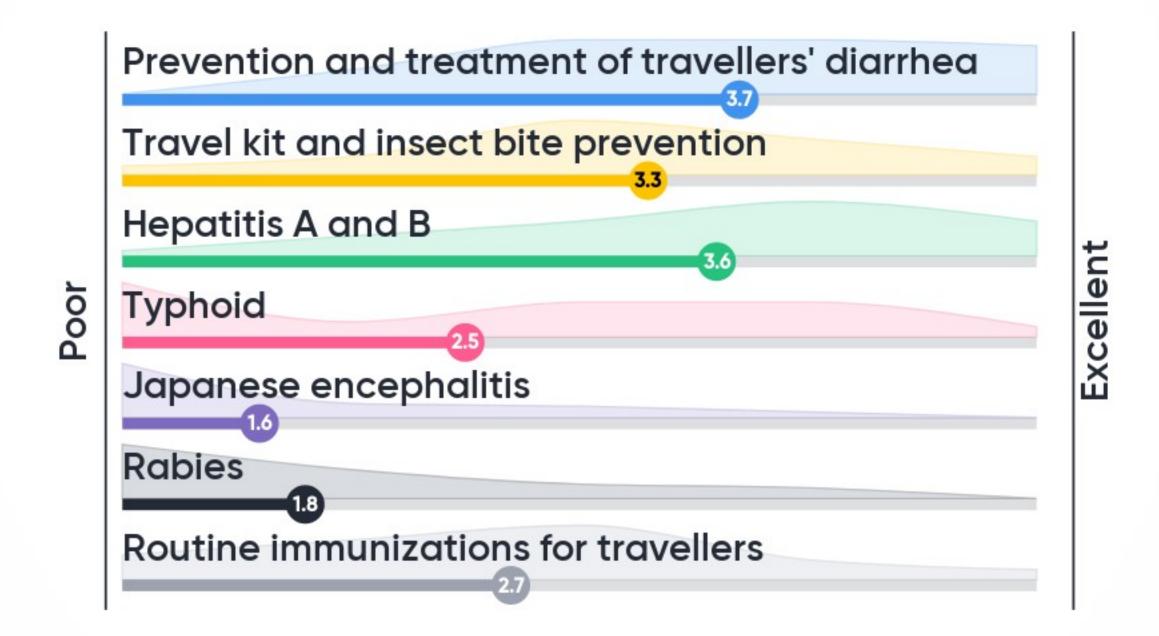
According to Candy Fun House, which is the most popular chocolate in Canada?



How would you rate your current travel health knowledge?



How would you rate your knowledge on the following travel-related topics?



Travel Numbers for you to Consider

78%

Canadians believe that travelling outside of Canada puts them at risk for a number of a vaccine preventable disease

79%

Canadians say they are likely to visit their personal doctor to learn about vaccinations before travelling overseas

52%

Canadians who have travelled and received immunizations for travel

61%

Canadians say they are likely to visit their pharmacyto learn about vaccinations before travelling overseas

31%

Aware that the Government of Canada recommends visiting a travel clinic before travelling

59%

Canadians who received travel vaccines prior to travel to Caribbean, Central/South America

Lack of Immunization and Frequent Travel

- 2,185,000 overseas trips by Canadians in Q4 2018
 - Recreational trips 1,448,000
 - Visiting friends and relatives
 503,000
 - Business (e.g. conference) 164,000



https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=24100 04501&pickMembers%5B0%5D=1.4&pickMembers%5B1%5D= 2.1



Format of the Presentation

Travel-related FAQ's.

The goal is to provide you with the most common questions asked in practice



Topics we are Going to Review

- Travellers' diarrhea
- Cholera & ETEC Diarrhea vaccine
- Hep A/B
- Typhoid
- Routine immunizations

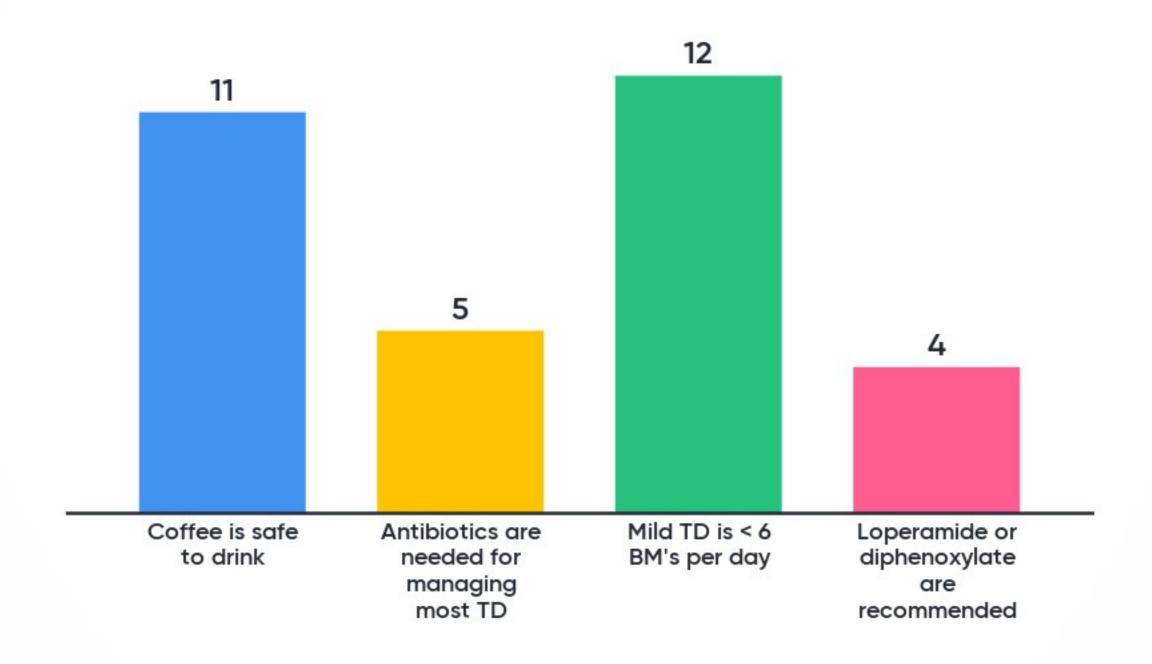
- Packing for a trip
- Japanese Encephalitis
- Travel Health Continuum
- Resources



FAQ's on Travellers' Diarrhea

- What can I eat and drink?
- 2. How should I prevent TD?
- 3. How can I treat TD?
- 4. Should patient's take antibiotics for TD?

Which of the following statements on travellers' diarrhea is TRUE?





What can I eat and drink?

Category	Safest choice	Probably safe	Unsafe
Food	 Hot, thoroughly grilled, boiled Processed and packaged Cooked vegetables and peeled fruits 	 Dry items Hyperosmolar items (jams, syrup) Washed vegetables and fruits (if washed in potable water) 	 Salads Sauces and salsas Uncooked seafood Raw or poorly cooked meats Unpeeled fruits Unpasteurized dairy products Cold desserts
Beverages	 Carbonated soft drinks Carbonated water Boiled water Purified water 	 Fresh citric juices Bottled water Packaged ice (machine made) 	Tap waterChipped iceUnpasteurized milk

How should I prevent TD?

- Prevention of TD would be ideal
- Strategies
 - Food and water selection difficult and not 100% effective
 - Cholera & ETEC Diarrhea vaccine Dukoral®
 - Bismuth subsalicylate
- Bismuth subsalicylate
 - Reduces risk of TD by 50%
 - Must be taken 2 ounces of liquid or 2 chewable tablets QID
 - Commonly causes blackening of tongue, constipation and rarely tinnitus
 - Avoid in ASA allergy, CKD, and gout and with anticoagulants
 - No studies > 3 weeks



How can I treat TD?

Mild	Moderate	Severe
 TD that does not interfere with normally activity Loperamide is recommended first-line (diphenoxylate is not recommended and has not been studied for TD) Rehydration is important. Rehydration tablets can be mixed with potable water 	 Diarrhea that is distressing or interferes with planned activities Loperamide is normally recommended with rehydration Antibiotics can be considered 	 Diarrhea that is incapacitating or completely prevents planned activities; all dysentery (passage of grossly bloody stools) is considered severe NOTE: if there is significant blood in the stools, the traveller should seek medical care Antibiotics should be used for severe TD Loperamide can be used as an adjunct to antibiotics

Riddle MS, Connor BA, Beeching NJ, et al. Guidelines for the prevention and treatment of travelers' diarrhea: a graded expert panel report. Journal of Travel Medicine. 2017;24(suppl_1):S63-S80. doi:10.1093/jtm/tax026

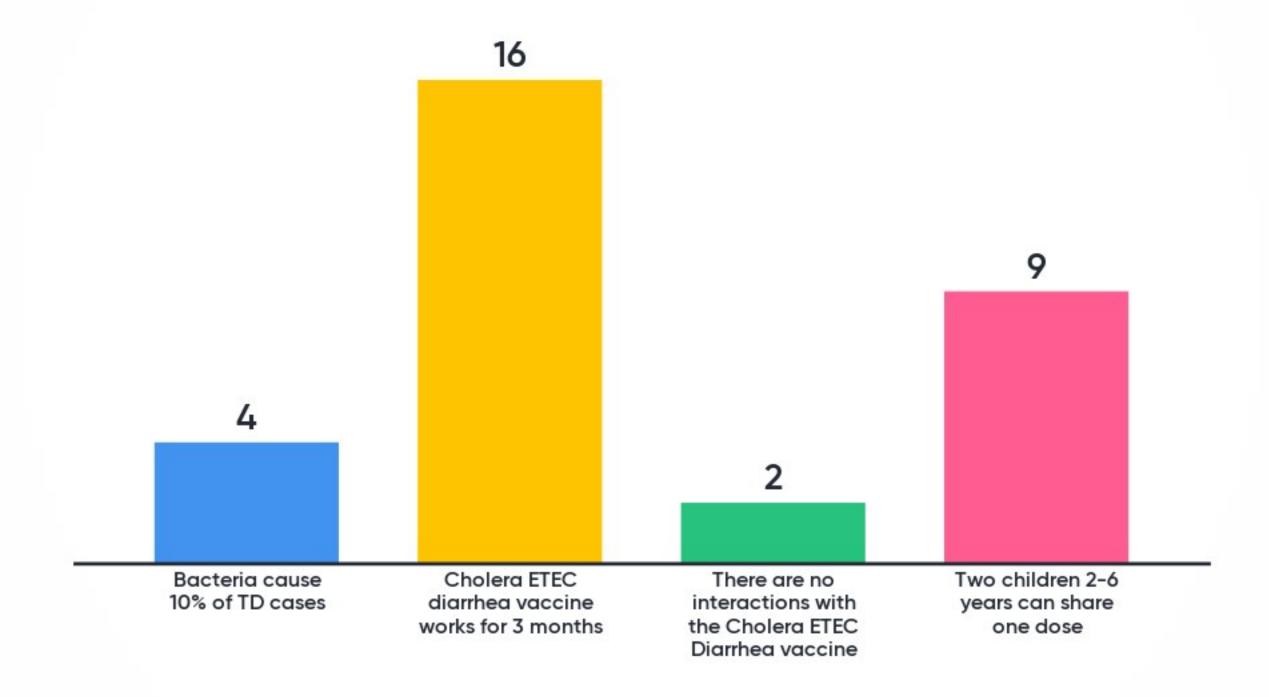
Should patient's take antibiotics for TD?

- Ideally, No
 - Limit exposure except for the most severe cases
- If antibiotics are prescribed for a traveller to only use them when they have:
 - Moderate TD
 - Severe TD
- Antibiotics most commonly used are:
 - Fluoroquinolones increasing resistance especially in South Asia
 - Azithromycin
- Tips:
 - One day of antibiotics may all that is required
 - The traveller should stop the antibiotic as soon as the diarrhea improves
 - Antibiotics can be taken with antimotility treatments like loperamide

FAQ's on Cholera & ETEC Diarrhea Vaccine

- Does the vaccine work and for how long?
- 2. Mixing and administration questions
- Booster or full dose?

Which of the following statements is TRUE?



Does the vaccine work and for how long?

- Bacteria cause 90% of TD
 - ETEC is the most common cause (25-50% of cases)
- ETEC TD Vaccine
 - 50-67% protection against ETEC diarrhea
 - 86% effective against severe episodes of ETEC diarrhea
 - Overall approximately 25% effective against TD
- Not to be used as sole option to reduce TD
- Can reduce the risk and need for antibiotics
- Efficacy against ETEC 3 months after primary series

Mixing and Administration

- People frequently screw this up
 - Mix buffer in 5 ounces of cold water, shake vaccine and add to buffer solution
 - Drink ideally right away (up to 2 hours after mixing)
 - Empty stomach
 - Start at least 2 weeks before travel 1 dose and then another 1 week later
- Can kids share the 1 solution
 - With children 2-6 years, you mix the buffer solution and throw out half
 - Need full dose of vaccine only discarding buffered solution
- Other vaccines
 - Ok with everything except live typhoid vaccine (space 8 hours apart)

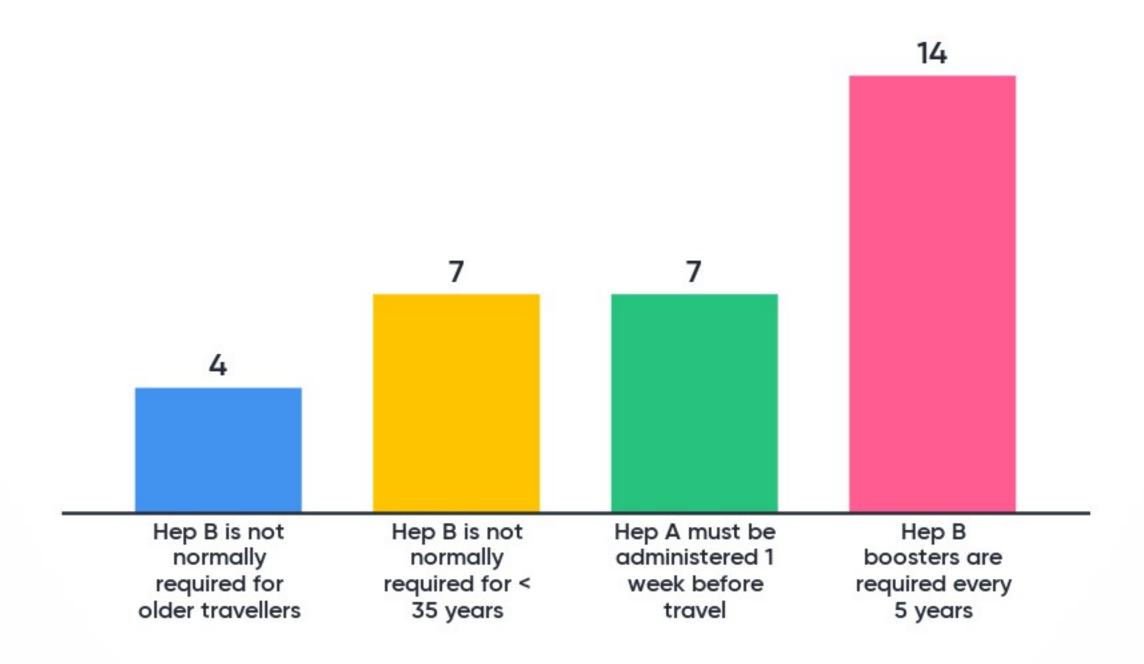
Booster or Full Dose

- Efficacy is for 3 months from the primary series
- Travelling again in 3 months to 5 years
 - 1 booster dose
- > 5 years since last dose
 - Repeat primary series (e.g. 2 doses)
- Cholera
 - Primary dosing 2 doses at least one week apart for adults and children 6 years and older; 3 doses at least a week apart for children 2 to 6 years
 - 1 dose every 6 months
 - If more than 5 years have passed since primary immunization or last booster dose, repeat primary series.

FAQ's on Hep A/B

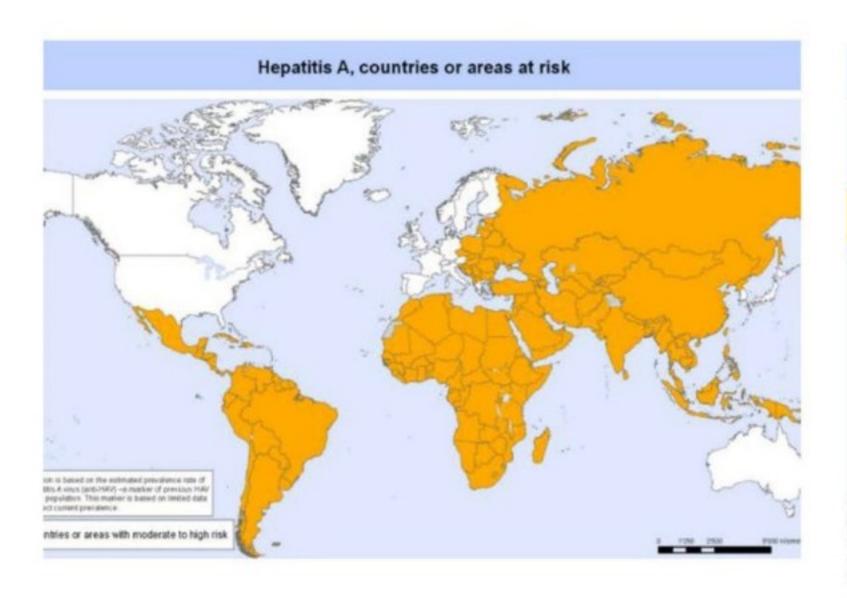
- Hep A/B vaccines for which regions?
- 2. Administration questions
- 3. Boosters?

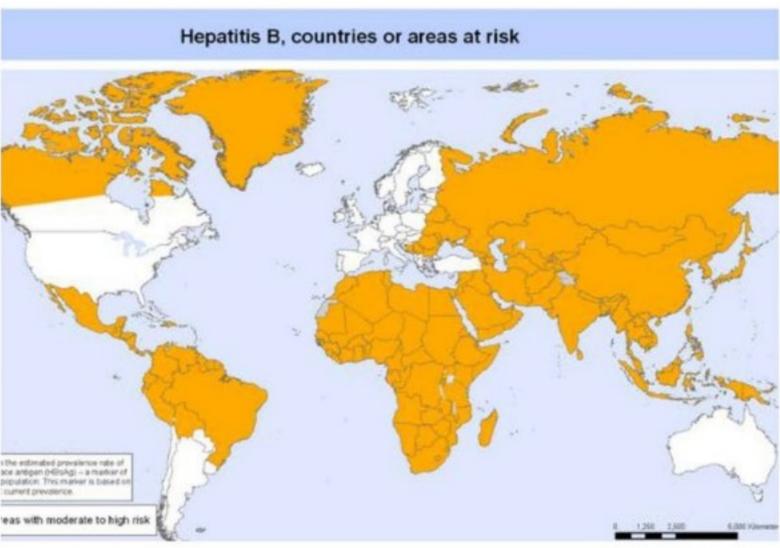
Which of the following regarding Hep A/B vaccine is TRUE?





Hep A/B vaccines for which regions?





Administration Questions

- How soon before travel for Hep A?
 - Up to day of travel and it will work. Need booster for long-term protection
- Rapid or normal schedule?
 - > 21 days can use combo
 - < 21 days consider separating out Hepatitis A and B
- Hep B vaccine in young or older adult?
 - < 35 years of age likely had in school program
 - Older adult
 - No sharing needles, sexual practice, tattoo
 - Most common cause of travel-related health issue is injury and accidents



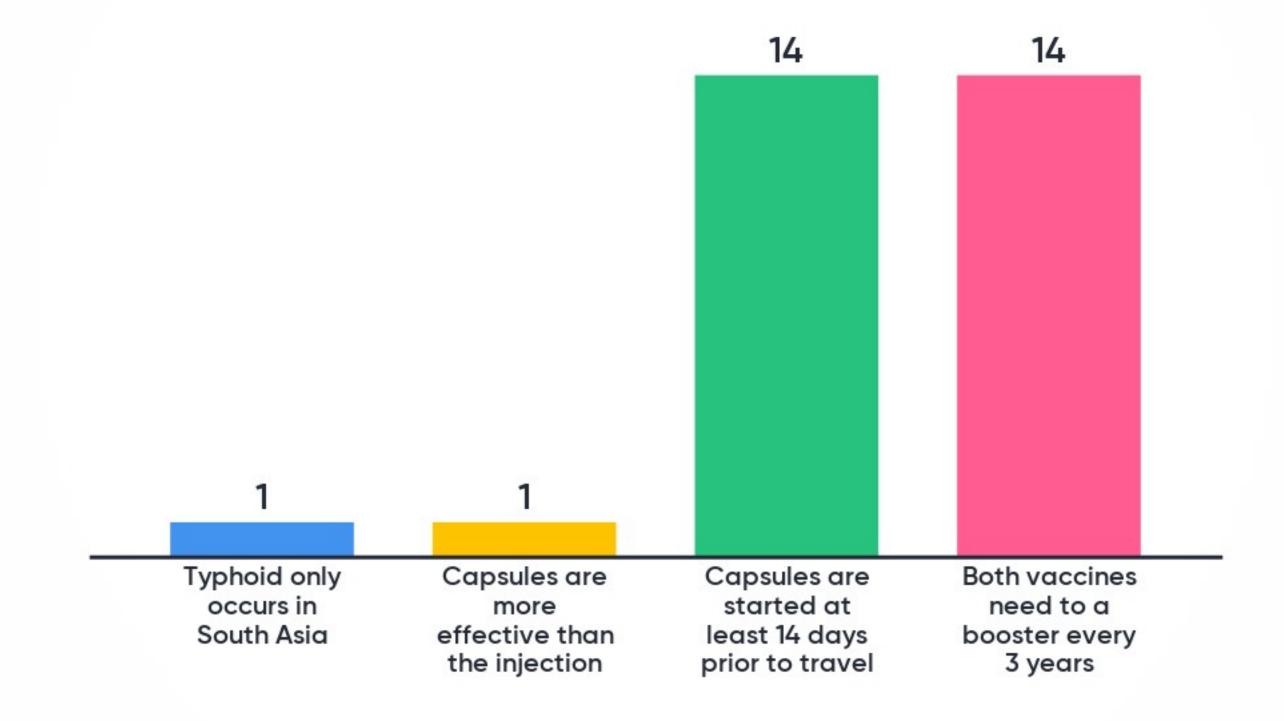
Boosters?

- Boosters for hep A or B
 - NO for most people unless immunocompromised
- No need to check serum anti-HB titres for immunocompetent patients
 - Not sure if there is a correlation between 10 IU/L and protection
- Only normally considered in:
 - Immunocompromised
 - People with chronic kidney disease

FAQs on Typhoid

- 1. Where is it a concern?
- 2. Oral or injection?
- 3. Administration questions

Which of the following on typhoid is TRUE?





Where is it a concern?

- Not just South Asia
- Can occur in many regions of the world
- People immunocompromised, GI conditions or on PPI's at elevated risk



Oral or Injection?

- Both vaccines are effective
 - 50-80% efficacy
 - Polysaccharide injection 14 days prior to travel, booster Q 3 years
 - Live attenuated oral caps 1 cap every 48 hours starting 14 days prior to travel (not in immunocompromised), booster Q 7 years
- Combo with hep A/typhoid
 - Ok, but booster with this vaccine or Hep A vaccine is required at 6-36 months
- It comes down to the patient
 - Do they want another needle?
 - Will they be adherent to the oral dosing?
 - Do they plan to return again?

Administration

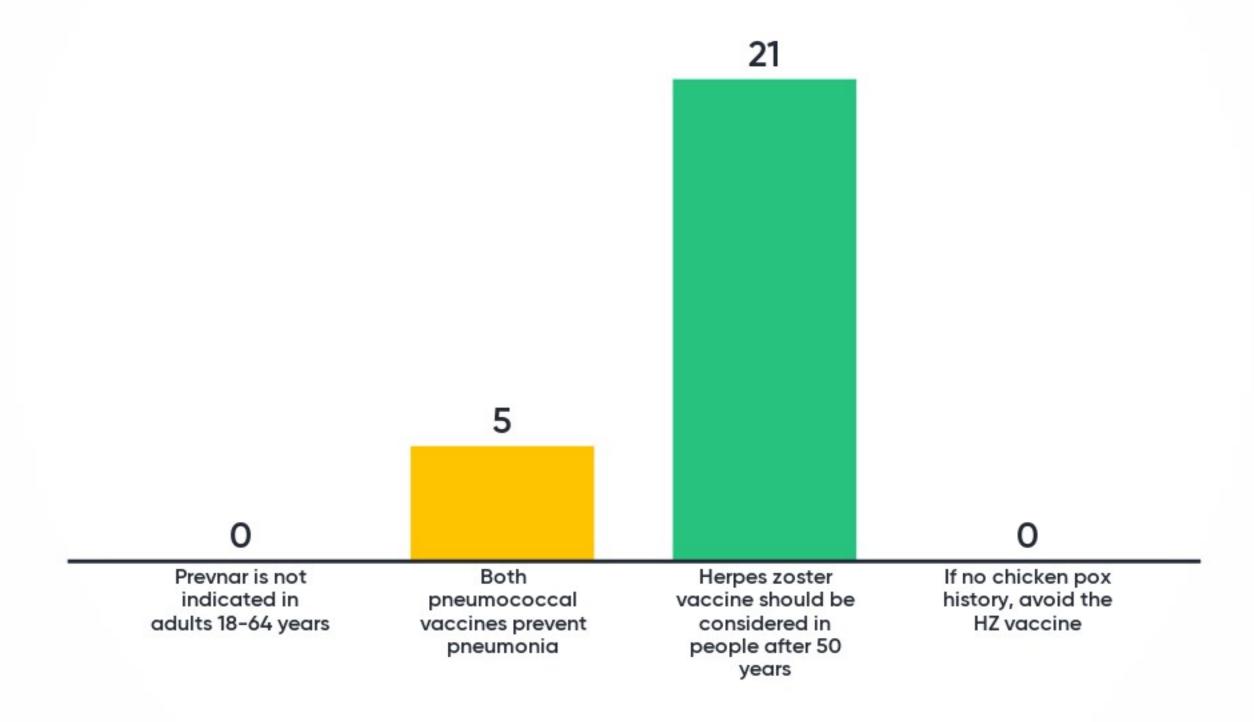
- Administration with other vaccines
 - Live attenuated vaccine ok with all other vaccines, space 8 hours from Dukoral®
 - Polysaccharide ok with all vaccines
- Administration live attenuated capsule
 - 1 cap days 1, 3, 5, 7 starting 14 days before travel
 - 120 mL of cool or lukewarm water on an empty stomach (one hour before, or two hours after a meal)
 - Can the capsules be opened or chewed? No
 - One delayed dose 72 hours between doses versus 48 hours, unlikely to have an impact (finishing 8 days versus 7 days)



FAQ's Routine Immunizations

- 1. Recommended vaccines for adults
- 2. Pneumococcal protection
- 3. Herpes zoster protection

Which of the following is TRUE?





Recommended Vaccines for Adults

ADULT IMMUNIZATION:

What Vaccines Do You Need?

VACCINE	WHO SHOULD RECEIVE IT?	
Tetanus (lockjaw)	everyone, every 10 years	
Diphtheria	everyone, every 10 years	
Pertussis (whooping cough)	everyone, once in adulthood during each pregnancy	
Influenza	everyone, annually people 65 years of age and over, annually people at high risk, annually people at risk of spreading disease such as essential service providers	
Pneumococcal people 65 years of age and over; people 18 to 64 with a specific medical condition or situations putting them at increased risk		
Hepatitis B	people with medical, occupational or lifestyle risks	
Hepatitis A	people with medical, occupational or lifestyle risks	
Meningococcal	people with specific medical conditions and people living in communal residences, including military personnel	
Measles	people who were born after 1970 and who did not receive the vaccine or get the disease	
Mumps	people who have not had the vaccine or the disease	
Rubella (German measles)	people who have not had the vaccine or the disease	
Varicella (chickenpox)	people who have not had the vaccine or the disease	
HPV (human papillomavirus)	females and males 9-26 years of age (may be administered to females or males 27 years and older at ongoing risk of exposure)	
Herpes zoster (shingles)	people 50 years of age and older, including people who have had a pre- vious episode of shingles	
Travel vaccines	varies by destination - consult a travel health clinic, your health care provider, local public health office or https://travel.gc.ca	

Reference: Canadian Immunization Guide. https://www.canada.ca/en/public-health/Services/canadian-immunization-guide.html

Immunization is not just for kids!



https://immunize.ca/adults





Public Health Agence de la santé Agency of Canada publique du Canada

2019-2020 EDITION

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SEASONAL INFLUENZA VACCINE

RECOMMENDATIONS FROM THE NATIONAL ADVISORY COMMITTEE ON IMMUNIZATION (NACI) 2019–2020



WHO SHOULD RECEIVE THE VACCINE?

Everyone 6 months of age and older, who do not have contraindications to the vaccine, especially:

PEOPLE AT HIGH RISK OF INFLUENZA-RELATED COMPLICATIONS OR HOSPITALIZATION

- + All pregnant women*;
- Adults and children with the following chronic health conditions:
 - 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, therapy or both);
 - > renal disease:
 - > anemia or hemoglobinopathy;
 - neurologic or neurodevelopment conditions (includes neuromuscular, neurovascular, neurodegenerative, neurodevelopmental conditions, and seizure disorders [and, for children, includes febrile seizures and isolated developmental delay], but excludes migraines and psychiatric conditions without neurological conditions);
 - morbid obesity (body mass index [BMI] of 40 and over); and
 - children 6 months to 18 years of age undergoing treatment for long periods with acetylsalicylic acid, because of the potential increase of Reye's syndrome associated with influenza.
- People of any age who are residents of nursing homes and other chronic care facilities;
- Adults 65 years of age and older;
- * All children 6-59 months of age; and
- . Indigenous peoples.

PEOPLE CAPABLE OF TRANSMITTING INFLUENZA TO THOSE AT HIGH RISK

- 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;
- Household contacts, both adults and children, of individuals at high risk, whether or not the individual at high risk has been vaccinated:
 - > household contacts of individuals at high risk;
 - household contacts of infants less than 6 months of age, as these infants are at high risk but cannot receive influenza vaccine;
 - members of a household expecting a newborn during the influenza season;
- Those providing regular child care to children 6–59 months of age, whether in or out of the home; and
- Those who provide services within closed or relatively closed settings to people at high risk (e.g., crew on a ship).

OTHERS

- People who provide essential community services; and
- People who are in direct contact with poultry infected with avian influenza during culling operations.

The risk of influenza-related hospitalization increases with length of gestation, i.e., it is higher in the third trimester than in the second.

WHO SHOULD NOT RECEIVE THE VACCINE?

- People who have had an anaphylactic reaction to a previous dose of influenza vaccine;
- People who have had an anaphylactic reaction to any of the vaccine components, with the exception of egg; and
- People who have developed Guillain-Barré Syndrome (GBS) within 6 weeks of a previous influenza vaccination.

SCHEDULE

Children 9 years of age and older and adults should receive 1 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 2 doses of influenza vaccine, with a minimum interval of 4 weeks between doses. If they have properly been vaccinated with one or more doses in the past, they should receive 1 dose of influenza vaccine per season thereafter.

SIMULTANEOUS ADMINISTRATION WITH OTHER VACCINES

All seasonal influenza vaccines may be considered for administration at the same time as, or at any time before or after, administration of other live attenuated or inactivated vaccines.

CANADA.CA/FLU



Pneumococcal Vaccines

What is the difference between the vaccines?	 No, pneu-P-23 is a polysaccharide vaccine that prevents against IPD. It does not reduce the risk of pneumonia Pneu-C-13 has been shown to reduce the risk of pneumonia
Can't we just booster the Pneu-P-23?	 Boosters of polysaccharide vaccines lead to decreasing immune response One time booster of Pneu-P-23 is recommended in highest risk people at 5 years
Why does it say to consider Pneu-C-13 on an individual basis for seniors?	 It is all about pneumonia risk As we age the IPD risk increases, but so does the risk of community acquired pneumonia Pneu-C-13 will reduce the patient's risk of pneumonia
Not sure of year since Pneu-P-23	 Check with the patient's MD, registry, PCC and public health Have to wait for 1 year post Pneu-P-23
Other potential benefits of Pneu-C-13	 Some infectious disease specialists are strongly recommending Pneu-C-13 to reduce the antibiotic burden for pneumonia This effect is not proven in trials but could be significant to antibiotic stewardship



Herpes Zoster Vaccine

Never had chicken pox	 Ok to give, likely was exposed and subclinical paediatric case 	
Previous case of shingles	 Ok to give, wait a year from shingles Does NOT treat acute shingles or PHN 	
Previous dose of Zostavax®	 Can give Shingrix® Zostavax® lasts 5 years, but don't have to wait to give as long as > 1 year post-Zostavax® 	
Immunocompromised	 Live-Attenuated – generally no Inactivated vaccine – ok, but not sure of effectiveness 	

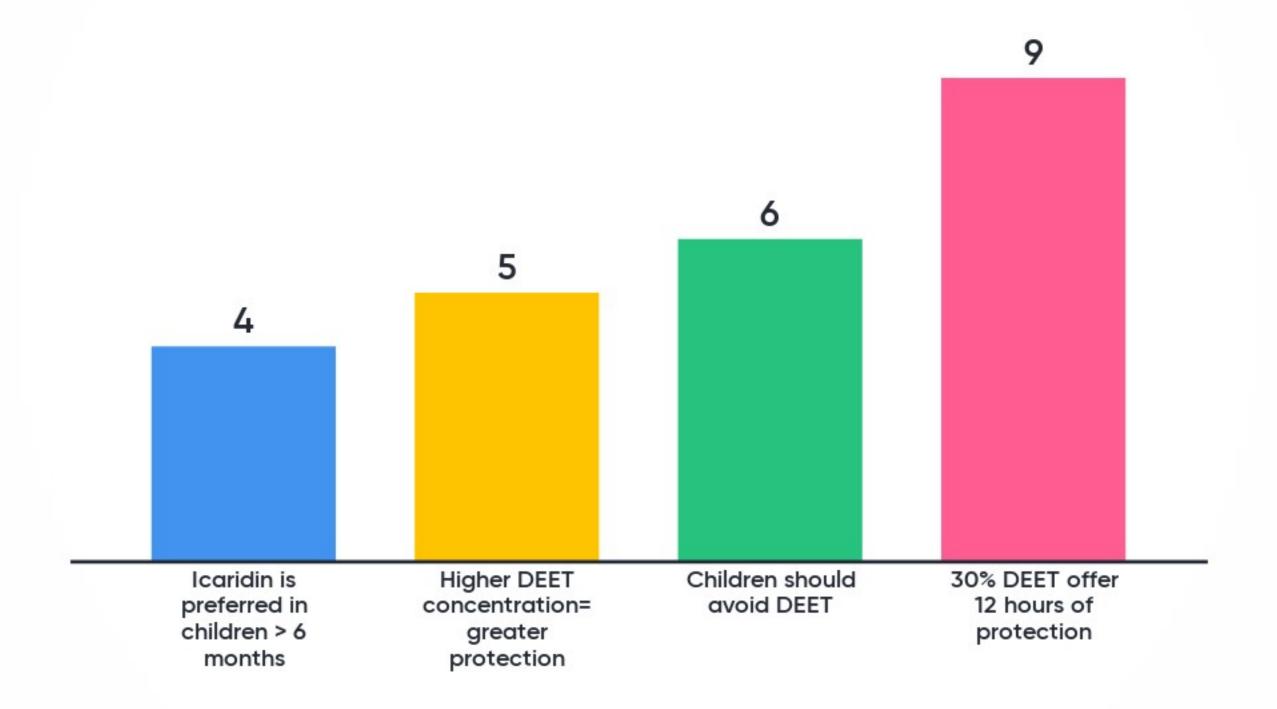
Other Vaccines

- Tetanus-diphtheria
 - Q 10 years for toxoid vaccines
- Acellular pertussis
 - Once in adulthood
 - Pregnancy 27-32 weeks gestation every pregnancy
- Influenza
 - Uptake is far from optimal
 - Strongly recommended for travellers
 - More vaccine options coming to market

FAQs on Packing for a Trip

- 1. What should a travel health kit contain?
- 2. What about insect bite protection?
- 3. What do I need to know about Zika, Dengue and Chikungunya?

Which of the following statements is TRUE?



What should a Travel Kit Contain?

First aid items

- Adhesive bandages
- Adhesive tape
- Alcohol-based hand sanitizer
- Topical antibiotic
- Blister pads or moleskin
- Disposable latex or vinyl gloves
- Gauze
- Packets of oral rehydration salts
- Safety pins and scissors
- Tensor bandages
- Thermometer
- Tweezers

Other items

- Sunscreen
- Insect repellents
- Condoms
- Saline eye drops
- Hydrocortisone cream
- OTC antacids, pain, diarrhea, allergy medications
- Contact card (friend, family, MD, pharmacy)
- Insurance coverage
- Medication review list

What About Insect Bite Protection?

- DEET Concentration = time of protection ≠ level of protection
 - 5% = 2 hours
 - 30% = 6.5 hours
- Icaridin (preferred repellent in children 6 months or older)
 - 20% can be used across this age group
 - DEET is considered as second line in children
- Encourage traveller to wear appropriate clothing (e.g. full length, loose fitting, light coloured)

Adults	Children 2-12 years	Children 6 mo-2 years
20% or more DEET	Up to 10% DEET TID	Up to 10% DEET once daily
as required		

What do I need to know about Zika, Dengue and Chikungunya?

Chikungunya

- Bite from infected mosquito
- 3-28% are asymptomatic
- High fever, joint pain,
 N & V myalgia,
 arthritis, rash
- Joint Sx's are often debilitating
- No specific treatment

Dengue

- Bite from infected mosquito
- 75% asymptomatic
- 5% develop severe lifethreatening disease
- Fever, severe headache, orbital pain, muscle, joint and bone pain
- Blood dyscrasias are serious complication
- No specific treatment

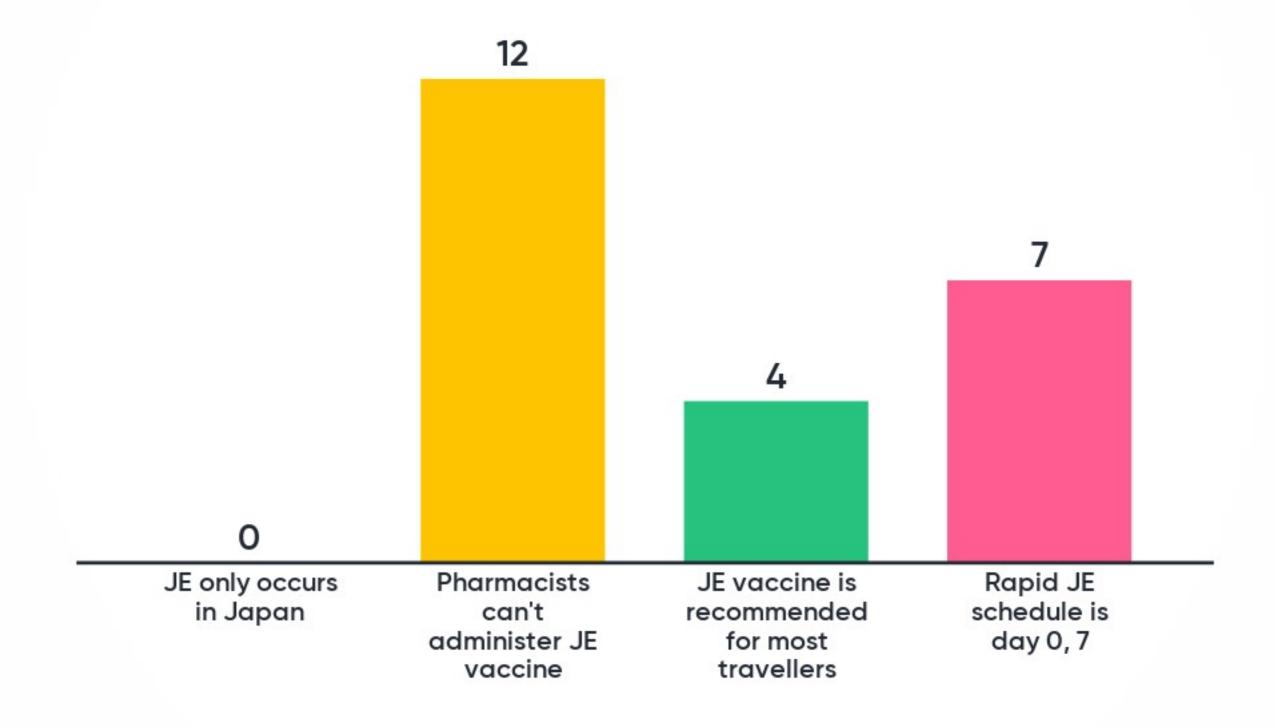
Zika

- Bite from infected mosquito
- 20-50% of people develop fever, myalgia, pruritus, eye pain and rash
- No specific treatment
- Pregnancy:
 - Women & Men wait
 2 months & 3 months,
 respectively after
 returning home
 before trying to
 conceive

FAQ's on Japanese Encephalitis

- 1. Where is it a problem?
- 2. Who should get it?
- 3. Administration questions

Which of the following statements is TRUE?



Where is it a problem?

- Not just Japan
- 50,000 cases per year, 10,000 deaths and 15,000 cases of long-term neurological issues
- Mainly in rural areas
- Mostly asymptomatic (99%)
- Clinical disease is associated with severe sequelae – 20-30% death, 30-50% severe neurological, cognitive or psychiatric consequences



Who should get it?

- ≥ 30 days in rural areas during the season of risk
- < 30 days in rural areas if substantial activity outdoors
- Not recommended for most travellers to the regions if urban travel or daytime rural visits



Public Health Agency of Canada Government of Canada. Statement on Protection Against Japanese Encephalitis. http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/11vol37/acs-1/index-eng.php. Published April 2011.

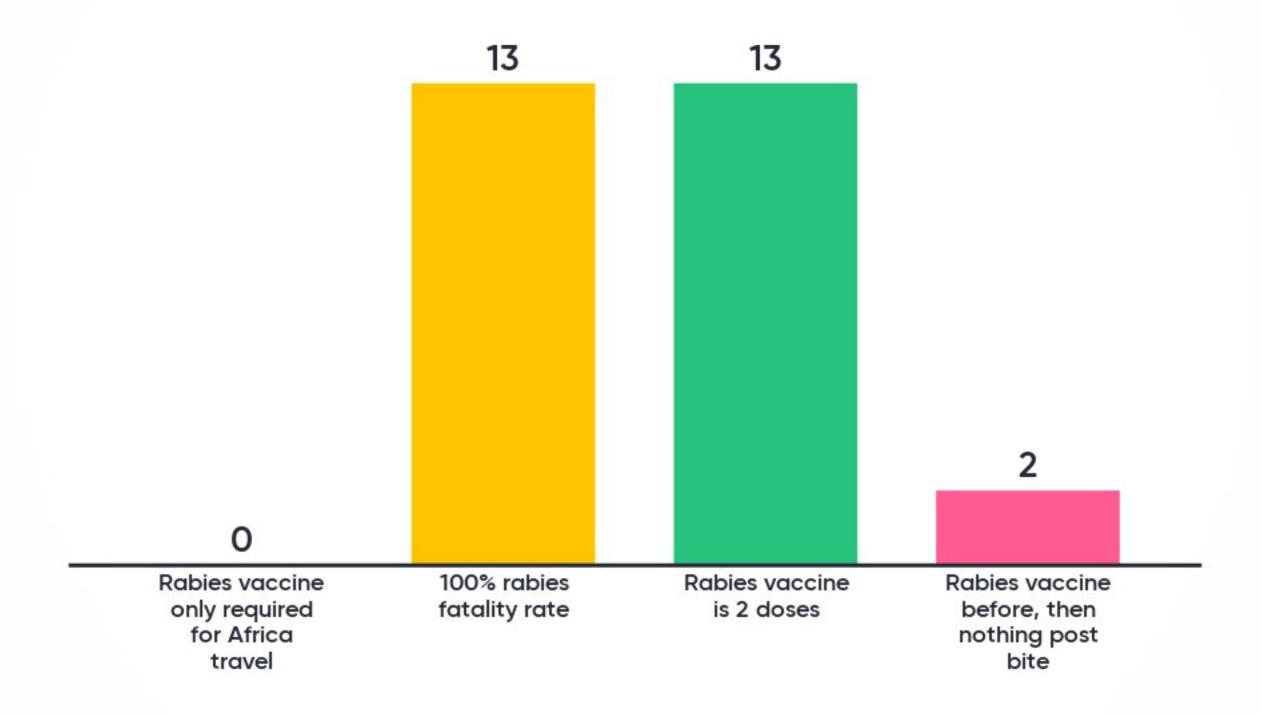
Administration Questions

- Is it a live vaccine?
 - No
- Administration
 - Day 0, 28 10 to 14 days before travel is the standard.
 - Can give day 0, 7 in people aged 18-65 years
- Booster at 1 year after second dose if continued exposure
- Restrictions?
 - Pharmacists can purchase it and administer it

Rabies FAQs

- 1. Is rabies really an issue for travellers?
- 2. Administration questions

Which of the following is TRUE?



Is Rabies Really an Issue for Travellers?

- Virus transmitted from saliva of infected animal through bite, scratch or broken skin
 - May not even see bat bite
- Hard to predict risk for traveller stray dogs
 & wild animals
- Infection is rare in travellers, but ~100% fatality if not treated
- Symptoms start as flu-like and progress to death in 7-14 days



Administration Questions

- Vaccine schedule
 - 1 mL given days 0, 7 and anytime days 21-28
- What if the person is bitten
 - Depends if had vaccine or not
 - Vaccine immune globulin is crucial if no vaccine pre-exposure (limited access)
 - If immunized two vaccine doses (day 0, 3)
- Administration with other vaccines
 - All vaccines can be administered at the same time



The Travel Health Continuum



Pathway on the Pharmacy Travel Services Continuum

Travel Risk factors for clinic travel increase, so does the Extended travel intensity of services travel-related Basic travel care services

- Caribbean/Mexican vacation travel
- Familiar with basic travel and routine adult vaccines
- Have the following vaccines in the pharmacy:
 - Cholera & ETEC Diarrhea vaccine
 - Hep A/B
 - Typhoid
- Sunscreen and insect bite protection
- Work with the family physicians
- Basic travel and vaccine references



Basic Travel

Extended Travel-Related Services

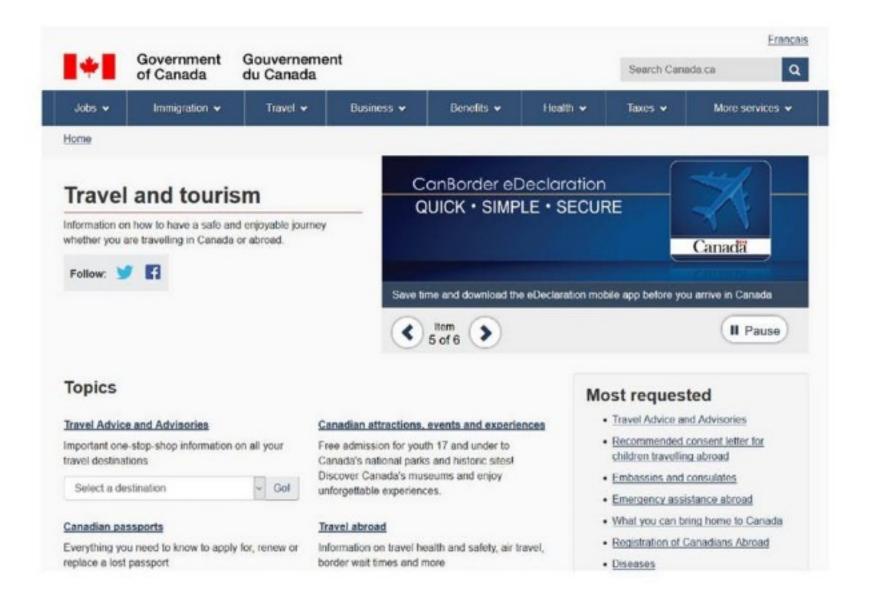
- Beyond basic resort based travel
- Feel more comfortable with vaccine recommendations
- Comfortable with risk discussion with the patient
 - What is the patient's risk of the condition and the need for the vaccine to reduce this
 risk
- More vaccines and concerns
 - Basic travel and routine vaccines
 - Japanese encephalitis
 - Rabies
 - Altitude sickness/motion sickness/flavivirus/alphavirus
- More extensive education on services

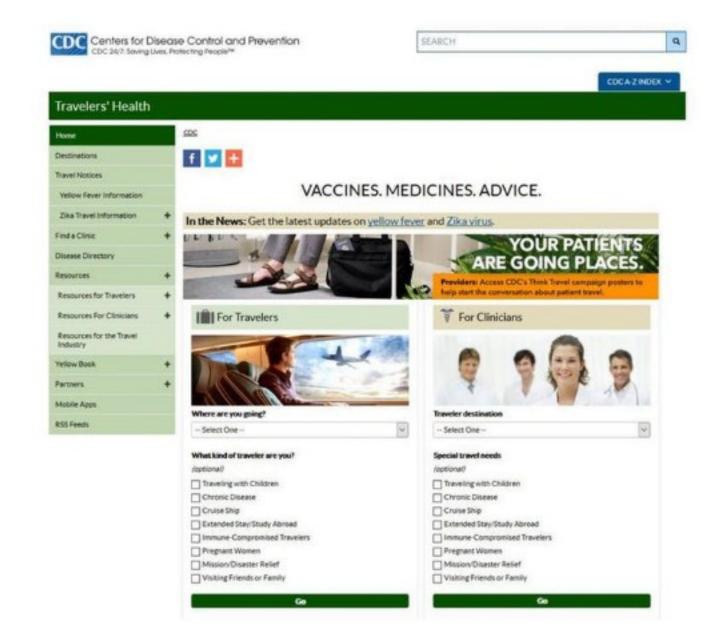
Travel Clinic

- Increased education and specialized certification
- Comfortable with complicated cases
 - Long-term travellers
 - Visiting family and relatives
 - Complicated morbidities or circumstances (e.g. immunocompromised)
- All vaccines and conditions
- Prescribing authority medical directives
- Large commitment to travel services in pharmacy practice



Travel Health Resources



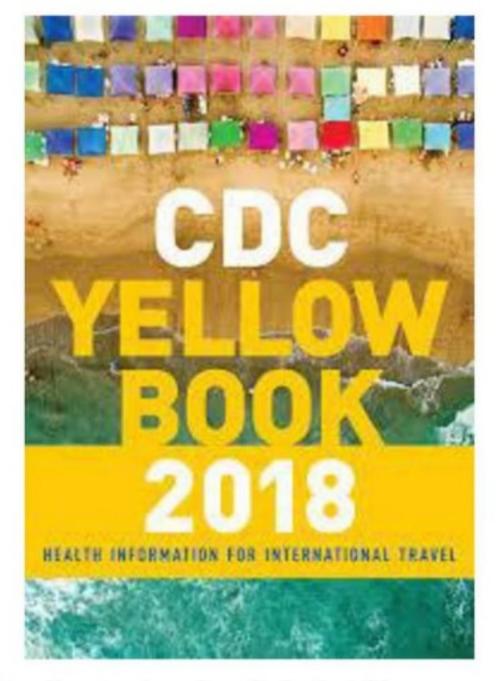


https://travel.gc.ca/

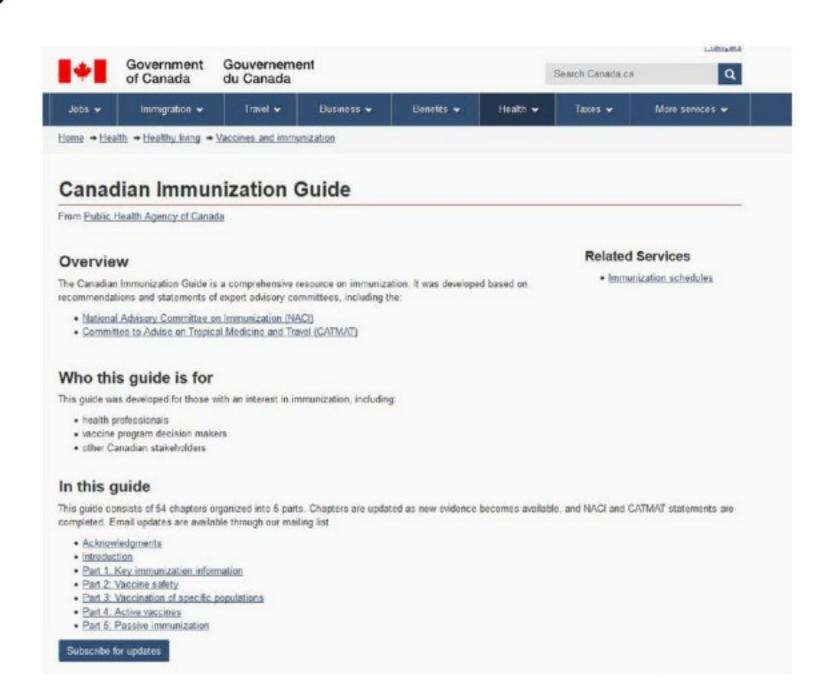
https://wwwnc.cdc.gov/travel



Key Travel Resources



https://wwwnc.cdc.gov/travel/yellowbook/20 18/table-of-contents



https://www.canada.ca/en/public-health/services/canadian-immunization-guide.html



What travel-related topics, programs or tools would help your practice?

Excellent summary! Thank you

Easy to plug in information about destination and get recommended vaccinations for patients

Very informqtive



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