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The Global Health Compass: Steering Your Patients Through Travel Risks and Pandemic Concerns

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Canadian Travel and Primary Care

Canadian-resident trips abroad continued to increase in 2024 and surpassed their 2023 levels by 10.0%.¹ Overseas trips by Canadians increased by 30.9% from 2023 and now exceed pre-pandemic numbers.¹

Although international travellers are an important group for the world economy, they are at increased risk of exposure to infectious diseases while they are outside their home country and may possibly spread these diseases from one country to another.² SARS-CoV-2, Ebola, Zika, and antimicrobial resistant pathogens are examples of health threats whose spread has been facilitated by international travellers.² Climate change is also impacting infectious disease risk.³ Rising temperatures are expanding the regions where vector-borne diseases (e.g., dengue, malaria, Chikungunya, Zika) can thrive, as well as increasing the risk of zoonotic (e.g., Avian influenza) and waterborne diseases (e.g., *Vibrio*, *E. coli*).³

As more Canadians travel, clinicians play a critical role in making travel recommendations. This article will focus on simple recommendations that can be made to reduce travel risks and highlight potential future pandemic concerns.

Five Travel Strategies You Can Make Tomorrow

With the increasing risks for Canadian travellers, primary care clinicians play a crucial role in reducing their patients' risks. To optimize travel health in primary care, a variety of strategies can be implemented in practice, such as:

1. Basic pretravel consultation
2. Basic recommendations for every traveller
3. Primary care travel vaccinations
4. Protection from vector-borne diseases
5. Assessing travel advisories and pandemic preparedness

1. Basic Pretravel Consultation

A pretravel consultation is a dedicated session to prepare travellers for health concerns that may arise during their trip.⁴ During a travel health consultation, the clinician determines the risk based on destination, accommodations, activities, and underlying health conditions.⁴ Given that a full pretravel consultation can take some time to complete, it may not be required for people

who are travelling to popular resort destinations such as the Caribbean or Mexico.

Primary care clinicians can quickly assess travel-related risks, by asking 4 questions and using their knowledge of their patient's health. These questions include:⁴

1. Where are you planning to travel?
2. What are you planning to do while there?
3. What type of accommodations will you have?
4. Have you ever received any travel vaccines?

The goal is to identify any red flags that may require further discussion. Travelling to destinations such as Africa or South Asia carries a much higher risk compared to standard resort destinations. Participating in more adventurous activities and staying in lower quality accommodations also carries a higher overall travel risk.

- **All travel carries some level of risk.⁴ If the traveller has poor health, a complicated travel itinerary or has planned activities that dramatically increase the risk, consider referral to a travel clinic.**

2. Basic Recommendations for Every Traveller

Clinicians can offer recommendations to help reduce the risk for every international traveller (Table 1).

Recommendation	Discussion
Recommend that they pack a travel health kit	<ul style="list-style-type: none"> • Designed to provide the supplies required to prevent illness, as well as handle minor injuries and illnesses • These kits normally consist of:⁵ <ul style="list-style-type: none"> o Basic first-aid supplies o Medications such as hydrocortisone, loperamide, dimenhydrinate, electrolyte pouches, antibacterial ointment, over-the-counter analgesics, gastrointestinal medications, and sunscreen o Any prescription medication. It is important to remind travellers to bring extra medication in case of travel delays and to ensure that all medications are in labelled containers for customs • Detailed travel health kit lists can be downloaded from: <ul style="list-style-type: none"> o Travel health kit (https://travel.gc.ca/travelling/health-safety/kit) o Travel Health Kits (https://www.cdc.gov/yellow-book/hcp/preparing-international-travelers/travel-health-kits.html)
Ensure they have travel insurance	<ul style="list-style-type: none"> • Severe illness or injury abroad could cause a financial burden⁶ • Many travellers assume their home health insurance will cover any health expenses while travelling • Remind travellers to check if they have travel insurance through their workplace, and if not, encourage them to purchase a policy that supports their travel itinerary
Advise caution about what they eat or drink	<ul style="list-style-type: none"> • Food-borne illnesses are a common source of illness among travellers • Basic recommendations can help to reduce the risk. These include: <ul style="list-style-type: none"> o Food:⁷ <ul style="list-style-type: none"> • Avoid raw or undercooked food (e.g., meat, fish, shellfish) • Avoid consuming salads, uncooked vegetables, raw unpeeled fruit, unpasteurized fruit juices, or dairy • Avoid street vendors • Quick recommendation: Hot food is generally safe whereas colder food may be contaminated o Beverages:⁷ <ul style="list-style-type: none"> • Tap water might be unsafe for drinking, preparing food and beverages, making ice, cooking, and brushing teeth • When served in unopened, factory-sealed containers, carbonated beverages, commercially prepared fruit drinks, water, alcoholic beverages, and pasteurized drinks are generally safe • Quick recommendation: Hot drinks are generally safe, whereas iced drinks may not be

Recommendation	Discussion
Basic security and accident prevention	<ul style="list-style-type: none"> • Accidents and injuries pose a major risk • Inform travellers that automobile accidents and water injuries are a major source of health-related issues⁸ • Travellers should be informed about safety and security while travelling, as the risks can vary based on the country, location, and accommodations⁹ • To learn more about the risks of injury and safety while travelling, consider reviewing: <ul style="list-style-type: none"> o Statement on Risk of Injury and Travel (https://publications.gc.ca/collections/collection_2010/aspc-phac/HP3-2-36-13.pdf) o Injury & Trauma (https://www.cdc.gov/yellow-book/hcp/environmental-hazards-risks/injury-and-death-during-travel.html) o Safety & Security Overseas (https://www.cdc.gov/yellow-book/hcp/environmental-hazards-risks/safety-and-security-overseas.html)

Table 1. Basic travel recommendations; courtesy of Michael Boivin, Bsc, Phm, RPH, CDE, CBE

3. Travel Vaccination Primary Care

Several travel vaccines can be administered in primary care. The vaccine recommendations can vary based on the location of travel, planned activities in the country, accommodations, and the time of travel. **Table 2** provides a list of common travel-related vaccines for consideration in primary care.

Disease and Transmission	Symptoms and complications	Populations to consider for vaccination	Vaccine preparation and normal schedule	Comments
Chikungunya virus¹¹ Transmission: Vector-borne from <i>Aedes</i> mosquito	Up to 28% of individuals are asymptomatic Acute symptoms include high fever and joint pain, conjunctivitis, rash, myalgia, nausea, vomiting 5% to 80% of individuals develop persistent joint pain and prolonged fatigue lasting for months or years	Travellers to endemic or epidemic regions Adventure travellers or those travelling long-term Consider vaccination for travellers to areas at risk for Chikungunya. The CDC has an updated list here	For those ≥ 18 years, administer 1 dose of a live attenuated vaccine intramuscularly	Occurs in tropical and subtropical regions Outbreaks do occur, increasing transmission risk The need for a booster has not been established ¹²
Hepatitis A virus^{13,14} Transmission: Fecal-oral transmission through contaminated food or water	Symptoms can range from mild illness to severe disease Clinical manifestations include abrupt onset of fever, malaise, anorexia, nausea, and abdominal discomfort, followed by jaundice	Travellers who are not immune and are visiting developing countries	For those ≥ 6 months of age, administer 2 doses of inactivated vaccine intramuscularly 6–36 months apart	2-doses provide long-term protection (>20 years) Available in combination with the hepatitis B vaccine

Disease and Transmission	Symptoms and complications	Populations to consider for vaccination	Vaccine preparation and normal schedule	Comments
Hepatitis B virus^{15,16} Transmission: Person-to-person with infected body fluids or skin-penetrating procedures (e.g., acupuncture, piercing, tattooing)	Symptoms can include abdominal pain, anorexia, fatigue, fever, jaundice, joint pain, malaise, nausea, vomiting, and dark urine. The overall case-fatality ratio of acute hepatitis B is approximately 1% Chronic infection occurs in <5% of individuals >5 years of age	Travellers who are not immune should be immunized, as Hepatitis B virus is endemic worldwide	For adults ≥19 years, administer 3 doses of inactivated vaccine intramuscularly (days 0, 30, 180)	Long-term protection is provided, and booster doses are not recommended for immunocompetent individuals A rapid schedule is available Available in combination with the hepatitis A vaccine
Japanese encephalitis virus^{17,18} Transmission: Vector-borne from <i>Culex</i> mosquito	99% of individuals are asymptomatic Symptomatic individuals can develop encephalitis, mental health changes, neurological deficits, and parkinsonian syndrome The case-fatality is 20%-30%, but 30%-50% of survivors have neurologic, cognitive or psychiatric sequelae	Travellers visiting rural epidemic areas, especially for trips >30 days People who have low risk tolerance	For adults aged 18-65 years, administer 2 doses of inactivated vaccine intramuscularly 28 days apart	Endemic in Asia and parts of the western Pacific Risk is low for most travellers Symptomatic cases can have severe consequences No antiviral treatments are available An accelerated schedule administered on days 0 and 7 is available
Meningococcal disease^{19,20} Transmission: Direct person-to-person through infected droplets	50% of cases present as meningitis with a case-fatality rate of 10%-15% Approximately 30% of individuals develop meningococcal sepsis 10% to 20% of survivors have long-term sequelae	Travellers to areas where vaccination is recommended (e.g., the meningitis belt of Africa) or required (e.g., Hajj pilgrimage)	A variety of quadrivalent inactivated vaccine (ACWY) formulations are commonly used for travellers. They are administered as a single intramuscular dose 7-10 days before travel Meningococcal B vaccines are also available	Re-vaccination is recommended every 3 to 5 years for those at continued risk

Disease and Transmission	Symptoms and complications	Populations to consider for vaccination	Vaccine preparation and normal schedule	Comments
Rabies virus²¹ Transmission: Virus presents in saliva and normally occurs through the bite of an infected animal	Pain and paresthesia occur at the site of exposure Swallowing and muscle spasms can be stimulated by the sight, sound, or perception of water (hydrophobia). Delirium and convulsions can develop, quickly followed by coma and death	Travellers at risk of direct contact with infected animals, those with considerable exposure to domestic animals, or those spending substantial time in high-risk rural areas	The inactivated vaccine is administered intramuscularly in 3 doses (days 0, 7, 21-28)	Endemic worldwide except Antarctica 100% fatality rate Vaccination simplifies management if an infected animal bites the traveller Educate travellers on the necessary protocol if they are bitten, as they will require additional doses of the vaccine
Typhoid fever^{22,23} Transmission: Fecal-oral transmission through contaminated food or water	Fatigue, fever, anorexia, headache, and malaise are nearly universal symptoms, along with abdominal pain, constipation, or diarrhea Untreated case-fatality rate is 10%-30%	Travellers to low- and middle-income countries, especially South Asian communities Travellers visiting friends and relatives	For those ≥ 2 years of age, administer 1 dose of inactivated vaccine intramuscularly For those ≥ 5 years of age, administer 1 oral capsule on alternate days for a total of 4 capsules of vaccine, taken on an empty stomach	Endemic in Africa, Latin America, and Asia Administer an intramuscular booster every 3 years Administer an oral capsule booster every 7 years

- Always assess the traveller for routine vaccines they may require (e.g., COVID-19, influenza, pneumococcal, respiratory syncytial virus [RSV]) to reduce their risk of illness while travelling.

Table 2. Common travel-related vaccines for primary care¹⁰

on patient factors as well as local resistance patterns.²⁸ If a patient is travelling to a malaria-endemic area, primary care clinicians are encouraged to refer to travel health professionals to ensure the traveller is aware of the risk and to choose the most appropriate treatment option for the trip. The CDC in the US provides recommendations for chemoprophylaxis agents for different travel destinations. These can be accessed at:

- Malaria summary and medication review
- Malaria travel recommendations by country

Other vector-borne conditions include:

- [Dengue virus](#)
- [Zika](#)

All travellers should be encouraged to use an insect repellent to reduce their risk.²⁴ The two recommended insect repellents are DEET and icaridin (20%).²⁵ Icaridin is preferred for use in children.²⁵ Avoiding exposure through the use of long-sleeved clothing and bed nets can further reduce the risk for certain travellers.²⁵

- **Sunscreen can be applied with insect repellents. Sunscreens should be applied first, followed by the insect repellent.**²⁴

5. Assessing Travel Advisories and Pandemic Preparedness

The risk associated with international travel varies due to regional health or security issues. Consider checking for travel advisories prior to leaving. These advisories can be found at:

- Travel advice and advisories by destination (<https://travel.gc.ca/travelling/advisories>)

The COVID-19 pandemic has shown the global impact of the spread of infectious disease. International travel and a changing climate increase the risk of disease transmission between countries.²⁷

At the time this article was developed, the risk associated with avian influenza (H5N1) was unknown. Outbreaks have been occurring in both domestic and wild birds with some transmission to other mammals and humans.²⁶ The risk for travellers remains low at this time, but this situation may change. For up-to-date recommendations, the Government of Canada has developed a website that includes current information:

- [Avian influenza A \(H5N1\): For health professionals](#)

What You Can Do in Practice Tomorrow

Canadians will continue to travel more frequently. There are infectious disease risks in many travel regions and potential pandemic pathogens could further increase this risk.

The recommendations in this article can help identify a traveller's risk and offer strategies to reduce them. Clinicians should consider discussing travel plans with their patients. By briefly discussing their trip, and offering recommendations, including vaccines, clinicians can help to ensure their patients are protected while travelling.

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