

Canadian children who travel abroad: What are the risks?

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A five-year-old boy travelled with his family to Kenya to visit his grandparents. Two years before he was born, his parents had emigrated from Kenya. This was his first visit to the family's home country where they spent time in Nairobi and also travelled 'up-country' to visit extended family. No pretravel advice was obtained; however, the boy's routine immunizations were up to date.

He was well during his trip, but one week after his return to Canada, he complained of headaches and abdominal pain that were associated with a body temperature of 39.5°C. Two days later, he presented to his paediatrician's office with persistent fever. He had vomited once, but had no diarrhea. He had no upper respiratory symptoms and no evidence of rash. His mother said that he was not eating and was sleeping more than usual. On examination, he was noted to be sleepy but rousable; his examination was unremarkable, apart from a heart rate of 120 beats/min. His complete blood count revealed a white blood cell count of $7.8 \times 10^9/L$, a hemoglobin level of 72 g/L and a platelet count of $82 \times 10^9/L$. His liver enzymes were slightly elevated, but his renal function and glucose were normal. His malaria smear revealed 2% parasitemia with *Plasmodium falciparum*. He was admitted to hospital and initially treated with intravenous quinine and clindamycin, followed by oral atovaquone-proguanil, and he made a full recovery.

LEARNING POINTS

- An increasing number of Canadians (more than 7.4 million in 2007) travel internationally, with an estimated 300,000 Canadian children travelling abroad each year (1).
- Although acquired during travel, travel-related illnesses may present either during travel or after return to Canada. Up to 75% of travellers may develop some type of travel-related illness; paediatric travellers account for a disproportionate number of travel-related hospitalizations (2,3).
- Many travel-related illnesses can be prevented with appropriate pretravel advice regarding issues such as injury prevention, required and recommended immunizations, malaria chemoprophylaxis and precautions regarding food, water and insects.
- The recent CPSP survey of travel-related illnesses in paediatrics revealed that 30% of the 614 respondents had diagnosed children and youth with travel-related illnesses during the previous year.
- Travellers who visit friends and relatives (VFRs) are at an increased risk of acquiring travel-related illnesses and have the highest morbidity rates of all travellers (4). They are also less likely to seek pretravel advice.
- A travel history should be obtained from all patients. Additional components of a travel history should include details of the travel itinerary, which help to determine potential exposures and incubation periods resulting in a relevant differential diagnosis. The travel history should include the following:
 - Pretravel advice given and followed;
 - Details on timing, duration and season;
 - Countries and regions visited – 'microepidemiology';
 - Type of travel (rural or urban);
 - Purpose, such as holiday, VFRs, work or school, adventure or ecotourism;
 - Type of accommodations;
 - Ingestion of high-risk food and water;
 - Activities, such as contact with animals or fresh water; and
 - Illnesses during travel.
- Fever, in a returning traveller from a malaria-endemic area, must be considered to be due to malaria until proven otherwise.
- Travel-related illnesses frequently diagnosed by CPSP respondents included malaria, enteric fever, hepatitis A, dengue, diarrheal diseases and parasitic infections.

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- Additional information regarding travel-related illnesses can be obtained through consultation with a local or regional expert in paediatric infectious diseases or tropical/travel medicine or on-line from the following resources:
 - Public Health Agency of Canada. The Committee to Advise on Tropical Medicine and Travel <www.phac-aspc.gc.ca/tmp-pmv/catmat-ccmtmv/index-eng.php> (Version current at February 4, 2009).
 - Centers for Disease Control and Prevention. Health information for international travel <www.cdc.gov/travel/> (Version current at February 4, 2009).
 - World Health Organization. International travel and health <www.who.int/ith/> (Version current at February 4, 2009).
 - Program for Monitoring Emerging Diseases <www.promedmail.org> (Version current at February 4, 2009).
 - Global Infectious Diseases Epidemiology Network <www.gideononline.com> (Version current at February 4, 2009).
- Presently, there are very little data regarding travel-related illnesses among Canadian children. Additional research must be performed to better describe the burden of illness among paediatric travellers, such as the upcoming CPSP surveillance study regarding travel-related illnesses among paediatric VFRs. Future research capacity is also being developed through the establishment of research networks, such as the Canadian Network for Travel-Related infections and Immigrant health in Pediatrics (CaNTRIP).

RECOMMENDED READING

1. Tourism online. A guide to travel and tourism data. <www.corporate.canada.travel/corp/media/app/en/ca/magazine/pastIssues.do> (Click on 'February' and then click on 'Research') (Version current at February 4, 2009).
2. Steffen R. Epidemiology: Morbidity and mortality in travelers. In: Keystone JS, Kozarsky PE, Freedman DO, Nothdurft HD, Connor BA, eds. Travel Medicine. St Louis: Elsevier Science, 2003.
3. Stauffer W, Konop R, Kamat D. Traveling with infants and young children. Part I: Anticipatory guidance: Travel preparation and preventive health advice. *J Travel Med* 2001;8:254-9.
4. Bacaner N, Stauffer B, Boulware DR, Walker PF, Keystone JS. Travel medicine considerations for North American immigrants visiting friends and relatives. *JAMA* 2004;291:2856-64.

The Canadian Paediatric Surveillance Program (CPSP) is a joint project of the Canadian Paediatric Society and the Public Health Agency of Canada, which undertakes the surveillance of rare diseases and conditions in children and youth. For more information, visit our Web site at <www.cps.ca/cpsp>.