



Travel medicine

Movement and health in the new millennium

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"There is nowhere in the world from which we are remote and no one from whom we are disconnected."¹

We live in interesting times. Never before has it been easier for people to travel this planet. It is estimated that each year more than 1 billion people travel internationally by air. Hundreds of millions of others, displaced by fear, famine, and war cross international boundaries on foot.

Clearly the world is changing, and Canada perhaps mirrors this reality better than most. Canada has an immigration rate three times the per capita rate of the United States. Eighty percent of Canadian immigrants are members of visible minorities, many from the developing world. Fifty-four percent of the population in Toronto, Ont, comprises visible minorities.² Canadians are also among the best traveled, with an estimated 3 million to 5 million people traveling internationally each year. More and more of us are seeking exotic destinations to visit, often with little thought as to the potential risks and hazards of our chosen destination.

A resurgence in infectious diseases has occurred worldwide, and virtually every corner of this planet has experienced an infectious disease outbreak of major public health importance within the last decade. With babesiosis in the Canadian blood supply³ and West Nile fever in New York City,⁴ there is clearly no such thing as "geographically restricted diseases" anymore. Now, Canadians can get just about anywhere, contract just about anything, then return home and see their Canadian physicians for management.

This reality of the 21st century means Canadian physicians must be able to recognize travel-related problems, Canadian laboratories must be able to diagnose them, and appropriate therapy for these conditions must exist here. Unfortunately, experience shows that each of these areas remains a problem. For example, in the last few years Canada has "boasted" one of the highest rates of imported malaria in the developed world, with a reported annual rate 10 times

that of the United States.⁵ Despite the relatively common occurrence of malaria in Canada, physicians' recognition of malaria in returned travelers and accurate laboratory diagnosis of malaria were well below acceptable standards.⁶ Almost 60% of Canadians' malaria cases were missed when they presented to their physicians and, in more than half the cases, malaria was missed or incorrectly speciated by laboratories.⁶

Despite an increase in severe malaria cases and a number of fatalities, fewer than 50% of teaching hospitals stocked therapy for severe malaria.^{7,8} Furthermore, pretravel advice to Canadian travelers also remains a problem. In a recent study, more than half of all Canadian travelers to India sought pretravel advice from their family physicians; however, only 7% were prescribed a recommended drug regimen to prevent malaria.⁹ Also, few travelers were informed about effective methods of preventing insect-borne diseases, such as malaria and dengue fever. These and other challenges need to be met in order to better protect Canadian travelers in the 21st century.

Overcoming challenges in travel medicine

The obvious irony facing travel medicine is that, just when the threats of globalization of disease- and travel-related infections are the greatest, funding, interest, and knowledge of these serious health threats appear to be at an all-time low.

Canada probably reflects the globalization of peoples and diseases better than most Western countries. This country and its government should be interested in keeping its citizens healthy both here and abroad. Government policies, however, seem to be at odds with this reality. For example, just as record numbers of cases of imported malaria were being reported in Canada, the Ontario government decided to stop covering pretravel health advice. It is imperative that we keep reminding government policy makers of the shortsighted nature of these decisions and continue demanding increased funding for prevention,

surveillance, management, and research into diseases that represent true global health threats.

During the last decade, an increasing number of Canadians have travelled to more exotic destinations with a greater risk of acquiring life-threatening infections, such as drug-resistant malaria. We need to raise public awareness about the risks associated with travel and how these might best be avoided. Clearly, the goal should be to arm travelers with practical advice to reduce risks so they travel "widely but wisely." This task would be greatly facilitated by support from the travel business. Travel agents and consultants could identify high-risk travelers based on their itinerary and suggest they seek pretravel advice from reputable travel medicine providers.

Unfortunately to date, the travel business has been reluctant to get involved based on the short-sighted perception that this will negatively effect business. We need to correct this misconception and convince them that taking a leadership role in this important public health process could actually "grow" their business not to mention reduce their potential liability.

In addition to educating the traveling public, we need to educate physicians, nurses, and others who provide travel advice and care, and ensure they are providing accurate, up-to-date, and cost-effective information. Unless physicians and nurses are willing to stay current with the latest recommendations they are best advised to refer their clients to centres that are. Fortunately staying current in travel medicine has been made considerably easier with the Internet. Canadian recommendations are evidenced-based and among the best in the world. They can be accessed at www.hc-sc.gc.ca/hpb/lcdc/osh/tmp_e.html. In addition, they can be accessed 24 hours a day on FAXlink by dialing (613) 941-3900. American recommendations are not evidenced-based and differ somewhat from Canada's but are available at www.cdc.gov/travel/.

Canada has a large number of new citizens comprised of immigrant populations. Studies have demonstrated that people from malaria-endemic areas now living abroad are more likely to contract malaria when returning to visit their country of origin. They frequently have misconceptions about their immunity to tropical infections, such as malaria. These people might be reached most effectively by a targeted educational program directed at Canadians originating from malaria-endemic areas and the physicians who care for them. Public health authorities

need to take a leadership role in reaching these high-risk populations.

Travel health priorities

Another challenge for travel medicine practitioners and travelers is keeping sight of travel health priorities. In this "information age" it is easy for both travel medicine providers and travelers to become overwhelmed with data about travel risks, interventions, vaccinations, and prevention and in the process miss the important messages. Caregivers and travelers must focus on problems that are common and potentially life threatening.

More travelers will die from motor vehicle accidents and injuries than from infectious diseases. It is time well spent to remind travelers how to minimize these risks (for example, minimizing motor vehicle accidents by avoiding traveling on motorcycles, overcrowded buses, and at night). With respect to common and life-threatening infections, high-risk travelers to malarious areas need to be carefully counseled on how to best prevent this potentially serious infection by using chemoprophylaxis and insect protection measures. Human immunodeficiency virus and hepatitis A, B, C, and D represent a serious but often avoidable risk. It is important to remind travelers to the developing world that exposure to blood and body fluids might occur not only from unprotected sexual intercourse but also from tattooing, acupuncture, body piercing, and using shared razors. A recent study¹⁰ of blood and body fluid exposures in travelers from Ontario and Quebec showed that approximately 15% experienced blood or body fluid exposure, often via these underappreciated routes.

Finally, with a growing number of licensed vaccines and several more in the pipeline, it will become increasingly important to ensure that vaccines chosen are truly indicated and cost effective. If we overwhelm travelers (especially those on fixed budgets) with long lists of unnecessary immunizations and advice, they might lose track of the really important information or even reject pretravel advice altogether.

Conclusion

In this new millennium, international travel and globalization of disease will undoubtedly increase. As travel care providers, we need access to practical, up-to-date, evidence-based recommendations and cost-effective interventions in order to reduce morbidity and mortality in Canadian travelers. As a country we need to

invest and participate in global infectious disease surveillance in order to monitor, predict, and prevent these diseases in our population. ♦

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References

1. Institute of Medicine. *Emerging infections: microbial threats to health in the United States*. Washington, DC: National Academy Press; 1992.
2. Purvis A. Canada: the changing tapestry. *Time* 1999;May 31:153.
3. Bu Jassoum S, Fong IW, Hannach B, Kain KC. Transfusion-transmitted babesiosis in Ontario: first reported case in Canada. *Can Commun Dis Rep*. In press.
4. Centers for Disease Control. Update: west Nile virus encephalitis—New York, 1999. *MMWR Morb Mortal Wkly Rep* 1999;48:944-6.
5. Kain KC, Keystone JS. Malaria in travellers: prevention and treatment. *Infect Dis Clin North Am* 1998;2:267-84.
6. Kain KC, Harrington, MA, Tennyson S, Keystone J. Imported malaria: prospective analysis of problems in diagnosis and management. *Clin Infect Dis* 1998;27:142-9.
7. Humar A, Sharma S, Zoutman D, Kain KC. Fatal falciparum malaria in Canadian travellers. *Can Med Assoc J* 1997;156:1165-7.
8. Quach C, Kain KC, MacPherson DW, Mendelson J, MacLean JD. Malaria deaths in Canadian travellers. *Can Commun Dis Rep* 1999;25:49-52.
9. Dos Santos CC, Anvar A, Keystone JS, Kain KC. Pre-travel advice and chemoprophylaxis use among Canadians visiting the Indian subcontinent. *Can Med Assoc J* 1999;160:195-200.
10. Kain KC, Correia J, Shafer R, Patel V. Blood and body fluid exposure as a health risk for international travellers. Abstracts of the 5th International Conference on Travel Medicine; 1997 Mar; Geneva, Switzerland.

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