



Nurse Practitioner Healthcare Foundation

Improving Health Status and Quality of Care through Nurse Practitioner Innovations

2647–134th Avenue NE, Bellevue, WA 98005-1813 • 425-861-0911 • Fax 425-861-0907

www.nphealthcarefoundation.org

International Traveler Health—A National Prevention Opportunity

A White Paper by the Nurse Practitioner Healthcare Foundation

Nancy Rudner Lugo, DrPH, NP

The mission of the Nurse Practitioner Healthcare Foundation (NPHF) is to improve health status and quality of care through nurse practitioner (NP) innovations in education, research, health policy, service, and philanthropy. NPHF goals are to expand access to quality care and facilitate professional and patient educational opportunities. In addition, the NPHF engages in new research opportunities, fosters innovative interdisciplinary collaboration, and provides NP resource support to public health policy makers. In that spirit, NPHF periodically addresses relevant healthcare issues.

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Introduction

We live and work in an increasingly mobile and global society. Individuals and families travel to other countries and interact with people from other lands. Protecting a mobile, global society across the lifespan requires that both clinicians and their patients gain increased awareness of the need for travel health precautions. This increased awareness is facilitated by travel health education of clinicians, incorporation of travel health into routine primary care, and easy access to travel health services.

Any traveler may be the infection source who spreads disease across national boundaries, posing a public health threat. Infections are one of many travel health risks, yet most travelers do not seek health guidance before embarking on their trip. Many of them are unaware of the need for travel health preparation, and some are unable to access appropriate travel health services. Prevention and planning can avert many travel-related health problems. Nevertheless, opportunities to prevent travel-related illness and even death have not been fully incorporated into primary care or public health services. Although domestic travel entails risks of its own, this White Paper focuses on the challenges of protecting the health of international travelers. The paper discusses strategies to increase awareness of the need for appropriate immunizations and travel health information. It identifies key concerns and provides recommendations to improve travel health care in the U.S.

Increasing Globalization

The World Tourism Organization reports that, on a global level, 808 million people traveled internationally in 2005.¹ After several years of decline, international travel rebounded in 2005 with an all-time high, suggesting that international travel will continue to increase.^{1,2} U.S. residents made almost 62 million international trips by air in 2004, equivalent to more than 1 trip for every 5 persons in the country.² U.S. residents travel abroad for many reasons. Among U.S. air travelers, 81% go abroad for leisure or to visit friends and relatives, 28% do so for business, and some people travel for both reasons.³ Other travelers go by sea or by land, with or without an official border crossing. With so much international exchange, the importance of greater travel health awareness and accessible services is evident.

Health Risks of Travel

Travel presents a wide assortment of risks that vary with the unique characteristics of each traveler and each trip. Thus, every traveler needs a personal risk assessment and customized travel health advice. Factors determining travel health risks include itinerary, length of travel, style of travel, activities, purpose, health of the traveler, and season of travel. Children, pregnant women, the elderly, and persons with immunocompromised status have more travel health risks than do others not in these categories. Additionally, any chronic, unstable, or acute condition may be aggravated by travel. For example, chronic conditions such as diabetes, asthma, and migraine may be adversely affected by changes in routine, altitude, food, or other environmental exposures.

In general, travel risks are lower in developed countries than in developing countries. However, the potential for problems exists whether one stays in an upscale hotel in an urban tourist area or goes backpacking in a rural region. Likewise, participants in a small gathering have fewer risk exposures than do persons attending a large convention or crowded event such as a hajj or a papal appearance, but any interaction with other people entails risk. Traveling alone carries its own safety risks, and illness may be especially vexing without the assistance of a companion. Forty-one percent of all U.S. residents traveling internationally go by themselves.³ Among persons traveling for leisure or to visit friends or relatives, 36% are alone, and among persons traveling for business/conventions, 61% are by themselves.³

Many travel destinations have endemic infectious diseases that are rare in the United States. At least 23 travel-related diseases are vaccine preventable. Vaccinations against yellow fever, which is endemic in countries in sub-Saharan Africa and South America, are available only at authorized yellow fever clinics (www2.ncid.cdc.gov/travel/yellowfever/) and are required for persons visiting certain countries. At least one country requires all visitors to have a meningococcal meningitis vaccine and all visiting children under age 15 to have polio immunizations. Clinicians need to be aware of the most current immunization information for their patients' travel destinations.

A proactive prevention strategy dictates that recommended immunizations be considered along with required vaccinations to increase the likelihood of a comfortable trip and healthy return. The Centers for Disease Control and Prevention (CDC) recommends that clinicians update travelers regarding routine vaccinations such as diphtheria/ tetanus, hepatitis A, hepatitis B, meningococcal meningitis, measles, pertussis, influenza, and polio.⁴ Other vaccines that may be recommended before travel include those protecting against Japanese encephalitis, rabies, and typhoid.

In addition to immunizations, other preventive measures can keep travelers healthy. Lack of appropriate malaria prevention before, during, and after travel leaves travelers vulnerable. Forty-one percent of the world's population lives in regions where malaria is present. Even though malaria has been eradicated in this country since the early 1950s, the CDC noted that 1337 cases of malaria, including 8 deaths, were reported in the United States in 2002.⁵ All but five of these cases were acquired in malaria-endemic countries. Between 1957 and 2003, 63 outbreaks of locally transmitted mosquito-borne malaria occurred in the United States.⁵ In such outbreaks, mosquitoes bite people who are carrying malaria parasites acquired in endemic areas and then transmit malaria to local residents.

Travelers' diarrhea is the most common illness in visitors to countries with poor sanitation. In the first two weeks of travel, 25% to 90% of travelers to these countries experience diarrhea.⁶ This relatively simple illness can have a profoundly adverse impact on travel. One can imagine how this relatively simple illness can affect travel and how unpleasant it would be to feel ill in another country, trying to manage symptoms in unfamiliar surroundings. The most careful plans for business or recreation can be sabotaged by travelers' diarrhea.

Sexual activities during travel also can introduce risks. It is estimated that between 4% and 19% of travelers engage in casual sex during their trip, and half of the people in this group do not use condoms, raising the risk of hepatitis, HIV, and other sexually transmitted infections. In some European countries, a large number of heterosexuals with HIV infection acquired the disease while abroad.⁷ Clinicians need to remind patients of these risks and to urge anyone engaging in sexual activity with a non-monogamous partner to use a condom.

In addition to the aforementioned risks, travelers may be exposed to threats to their personal safety, transportation-related injuries, mental illness triggered by disorientation in unfamiliar environments, and altitude sickness. Other travel-related risks include food poisoning, snake bites, deep vein thrombosis (from long trips), and exacerbations of underlying or chronic diseases. Discussion of these risks should be part of pre-travel education.

Any health problem that occurs during travel outside the United States can be exacerbated by changes in health insurance coverage, lack of adequate care, and access problems. Serious illness or injury may require a costly medical evacuation and/or assistance from the U.S. embassy. Advance planning and alternate arrangements before departure can provide a safety net. For example, having travel health insurance to cover emergency situations and evacuation costs can mean the difference between life and death.

Most potential travel-related risks can be mitigated with appropriate education, vaccinations, and medications. People can reduce their risks if they understand the need to seek care prior to travel, if they have access to travel services, if they receive the pre-travel care that they require, if their clinicians are aware of current travel safety and health information, and if they receive follow-up care as needed.

Travelers Lack Care; Many Don't Even Know It is Needed Until It is Too Late

One of the U.S. *Healthy People 2010* objectives is "increase the proportion of international travelers who receive recommended preventive services when traveling in areas of risk for selected infectious diseases: hepatitis A, malaria, and typhoid."⁸ Limited data make it difficult to measure our progress in meeting this objective.

Although more data regarding this objective are needed, results of a small survey suggest that most travelers depart without adequate preparation.⁹ Among 404 travelers departing from John F. Kennedy International Airport in New York to destinations that were high risk for malaria or hepatitis A, only 36% had sought travel health advice before departure.⁹ Although more than

half of these travelers had organized their trip at least 1 month in advance, only 17% of them perceived that they had a high risk for hepatitis A. Few travelers received vaccinations before their journey: 11% for tetanus, 14% for hepatitis A, 13% for hepatitis B, and 5% for yellow fever. Awareness of malaria risk was higher (73%) among travelers to malaria-endemic regions, but only 46% of these travelers carried antimalarial medications.⁹

Another airport survey queried European travelers departing for developing countries.¹⁰ The survey showed that whereas 73% of the travelers had sought general information about their destination, only 52% sought specific travel health advice. These travelers perceived hepatitis A as the most probable among the infectious diseases to which they would be exposed, followed by HIV infection and hepatitis B. Despite a generally positive attitude toward vaccines, 58.4% and 68.7% of travelers reported that they did not receive protection against hepatitis A or hepatitis B, respectively.¹⁰

Primary Care Practitioners' Role

The pre-travel visit is an opportunity for educating and preparing travelers. The CDC recommends that international travelers contact a healthcare provider for pre-travel advice at least 4 to 6 weeks before travel in order to obtain current health information, vaccinations, and prophylactic medications (eg, for malaria, traveler's diarrhea). Although the pre-travel visit should occur at least 1 month before travel, even a last-minute consultation can be helpful. The visit should include administration of routine, required, and recommended vaccinations, which are key to preventing illness and even death. In addition, the pre-travel visit should cover the following: travel health kits, information for self-treatment of illness, and advice regarding personal protective measures (use of condoms, waterless hand sanitizers, and barrier protection such as bed nets and insect repellents; and restriction of outdoor activity at peak mosquito times of dawn and dusk).

To provide comprehensive travel-related care, clinicians need to be proactive and thorough. For example, administration of vaccinations without providing patient education is insufficient. In addition, because travel health recommendations change frequently, healthcare professionals need to be sure to have the most current information. The global epidemiology of infectious disease can result in shifting drug resistance and disease patterns. Inaccurate, outdated, or incomplete information may put travelers at risk. For example, many respondents in the Kennedy Airport survey were carrying chloroquine for malaria prevention, but they were traveling to regions where chloroquine resistance was widespread.⁹ Therefore, they were at risk for contracting malaria because they were taking ineffective chemoprophylaxis.

Travel health needs do not end when the trip ends. Returning travelers may present with gastrointestinal illness, skin lesions, respiratory infections, or fever. Fever may indicate a travel-related illness such as malaria, dengue fever, hepatitis A, typhoid fever, or an entity as ordinary as a urinary tract infection. Some illnesses may not manifest for months after travel. Hence, the clinician should ask about travel whenever evaluating ill patients.

Recommendations for Improving Travel-related Health Care

1. Raise awareness of the need for travel health care before, during, and after travel.

- Initiate a comprehensive, multi-tiered approach to travel health education, targeting consumers, healthcare professionals, health information systems, and policy formulation.
- Link travel arrangements with messages encouraging travel health preparation. At the point of travel purchase, travel agencies, airlines, Internet travel sites, and passport-processing centers should encourage travelers to seek out appropriate advice and consult with established resources, such as web links, for comprehensive updated information on travel health needs and immunizations.

On average, travelers make international travel plans 86 days in advance of departure.³ Travelers seek information about their destination from a variety of sources, including travel agencies (40%), the Internet (33%), and airlines (24%).³ Organized groups (eg, study-abroad programs, tour groups, missions, school groups) and businesses should encourage travelers to seek care well in advance of their departure, and facilitate pre-travel consultations. Clear and well-placed travel health reminders linked to all aspects of travel arrangements can raise public awareness regarding the need for pre-travel immunizations, health planning, and safety precautions, and ultimately safeguard the nation's public health. Public service announcements, posters, billboards, and stories in the media can provide critical cues to action for people planning a trip.

2. Incorporate travel health education and assessment into routine primary care.

- Encourage patients to self-identify their travel needs.
- Create an environment of travel health reminders in the practice.

Primary care providers can incorporate travel health information and assessments during routine office visits. Travel questions added to intake and update forms can spotlight the need for travel health counseling. Clinicians can also provide travel information as part of overall health education and prevention.

Primary care offices and clinics can provide reminders, posters, and notices encouraging patients to consult with their healthcare provider if considering international travel. Clinicians can encourage future travelers to self-identify, using signs or buttons with

messages such as “Traveling? Tell me...” Specific questions can be added in the health history to screen for previous or future travel. Clinicians who recognize the important prevention opportunity in travel health can communicate this to patients.

Primary care professionals who are well versed in travel health can provide immunizations and other services. Clinicians who are unprepared or who do not have all the needed vaccines in their office can provide links for their patients to access travel health services. Clinicians who are prepared to provide travel health services can promote the benefits of their service via their patient communication tools (eg, office newsletters, telephonic on-hold messaging). Media advertising of the practice’s travel health services can raise awareness of the need for the service and build the patient base.

3. Increase primary care providers’ knowledge of travel health and safety.

- Include travel immunization content, use of over-the-counter products, and resources for travel health and safety in core curricula for primary care professionals.
- Provide continuing education (CE) opportunities for primary care professionals in the areas of travel immunizations/medications and travel health counseling.

Many travel-related illnesses can be avoided with healthcare professionals’ increased knowledge of travel health care. Core curricula and CE offerings play a key role. Clinicians must be linked with current practice resources, including current travel advisories, immunization requirements, and referral guidelines. Fellowships or in-depth study in travel medicine clinics for healthcare professionals can add another level of travel health expertise.

4. Increase access to travel health services.

- Encourage primary care practices to offer travel health services.
- Use retail health/convenient care settings to provide travel consultations and immunizations.
- Encourage health plans to cover pre-travel consultation visits and immunizations.

Not every community has a travel health center. Thus, clinicians who develop expertise in travel health can be a valuable community resource. Expanding access to travel health services requires the addition of travel health services to existing primary care practices and an expansion of services in community settings. Services must be covered by health plans to ensure that they are accessible and that preventable health problems are avoided.

5. Engage in research on travel health.

Much remains unknown about travelers’ health. The *Healthy People 2010* measure for travel health is provisional, lacking a viable population-based measure. Many studies have had small sample sizes. Studies of travel health knowledge, attitudes, and practices will contribute to the evidence base of clinical decision making, and inform the development of appropriate public health services.

Conclusion

Healthcare professionals play a key role in providing travel health care services. These professionals must keep up to date in global disease trends and resources for travel medicine; thus, they need ongoing education to provide optimal travel health care. They also need systematic avenues to ensure that patients receive the information they need before traveling. A universal policy of including messages encouraging a pre-travel health consultation with the purchase of every international flight ticket would target timely messages to travelers. If such information were routinely and prominently available to each ticket buyer, those in the travel industry would be providing a valuable customer and public health service. By raising awareness of the need for travel health, increasing system capacity to enhance access, and engaging in research to understand and define the scope of need, healthcare providers can improve the overall health of travelers, their communities, and the nation.

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