

# Advising the traveller

Joanna Herman

Dipti Patel

## Abstract

Global travel continues to increase, particularly to tropical destinations that have different health risks from those encountered closer to home. Currently, over a billion people travel annually, with over 65 million visits made from the UK. Seeking pre-travel advice should be an essential part of any trip for a traveller. The key elements of pre-travel advice are health risk assessment, health promotion and risk management; this involves advice on prevention of malaria, travellers' diarrhoea, sexually transmitted infections and accidents, as well as appropriate vaccinations. Higher risk groups of travellers, such as those visiting friends and relatives, those with co-morbidities, pregnant women and very young or elderly individuals, particularly need to be targeted.

**Keywords** Health promotion; health risk assessment; malaria prevention; MRCP; pre-travel advice; travel medicine; travellers' diarrhoea; vaccinations; yellow fever

## Introduction

International travel continues to increase, with >1 billion travellers worldwide now crossing international borders, and >65 million visits made from the UK each year. Although many travellers from the UK visit Europe and North America, there has been an increase in travel to tropical destinations. This places travellers at risk of a variety of travel-related conditions, such as malaria, dengue and other tropical or vaccine-preventable infections, many of which are rarely, if ever, encountered at home. Travellers are therefore an important group to target owing to their movement, the risk of adverse health outcomes abroad and the possibility of importation or exportation of infectious diseases.

However, estimation of disease risk in travellers has proved elusive, with difficulty ascertaining precise data on both numbers travelling to specific locations and incidence of illness in travellers. Despite their limitations, frequently quoted studies estimate the overall risk of morbidity from illness or injury to be between 20% and 70%.<sup>1</sup> Although most illnesses tend to be self-limiting, approximately 5% of travellers require a doctor's attention, 1% require hospitalization while abroad, and many travellers require medical care on returning home. However, the most likely causes of mortality in travellers are accidental injury (e.g. road traffic

**Joanna Herman** MBBS MSc MRCP DTMH formerly at Hospital for Tropical Diseases, London, UK. Competing interests: none declared.

**Dipti Patel** MBBS MRCP DTM LLM FFTM FFOM FRCP is Director of National Travel Health Network and Centre, London, UK. Competing interests: none declared.

## Key points

- There has been an increase in travel to tropical destinations, with subsequent exposure of travellers to malaria, dengue and other tropical and vaccine-preventable infections
- The most likely causes of mortality in travellers are accidental injury or a cardiovascular event, rather than an infectious disease
- Malaria is one of the most common and serious causes of fever in travellers
- Vaccine-preventable diseases are uncommon in travellers
- The key features of a pre-travel consultation are health risk assessment, and health promotion with risk management
- Higher risk groups of travellers include those visiting friends and relatives, those with co-morbidities, pregnant women and very young or elderly travellers

accident (RTA), drowning) or a cardiovascular event, rather than an infectious disease, which accounts for only 1–2% of deaths.

Many travel-related illnesses are preventable by taking sensible precautionary measures, and, for some diseases, by having the appropriate vaccinations and taking chemoprophylactic medications. In the UK, pre-travel advice is given in the primary care setting or at specialized travel clinics, and is usually nurse-led.

## Access to pre-travel healthcare

Surveys of travellers visiting less-developed countries indicate that approximately 50% seek pre-travel health advice. Use of pre-travel healthcare is low because of a lack of concern about health issues related to travel; primary care and the internet were the most common sources of information. The likelihood of seeking pre-travel advice varies in different groups of travellers, with migrants who return to their country of origin to visit friends and relatives (VFRs) being the least likely to seek advice or take precautionary measures. This group has a disproportionately increased risk of acquiring the more common tropical infections compared with other travellers, and they should be targeted specifically for pre-travel advice.<sup>2</sup>

## The travel clinic consultation

The key features of a pre-travel consultation are health risk assessment, and health promotion with risk management (Table 1).

## Risk assessment

Risk of infection varies according to the area to be visited, endemicity of diseases, nature of travel (holiday, business, backpacker, VFR), type of accommodation, anticipated activities and duration of trip. It also varies according to the health status

of the traveller: their medical conditions, current medications, allergies and immunization history.

Most (80–95%) travellers to the tropics undertake short-term visits (<1 month). The remaining 5–20% spend long periods abroad, either travelling or working (e.g. backpackers, missionaries, volunteer workers, placements with the armed forces), or on repeated short-term visits (e.g. businessmen, airline crews). These groups incur different risks and exposures, depending on both individual behaviour and environment, with the long-term traveller at greater risk of acquiring infections endemic in the local population they are visiting. There is also a risk difference between the sexes, with male travellers at greater risk of most disease acquisition, except for travellers' diarrhoea, which is more frequent in female travellers.

Risk also varies according to the geographical area visited. Travellers to Africa have the highest rate of all-cause morbidity and account for the greatest number of cases of *Plasmodium falciparum* malaria. The highest risk of *Plasmodium vivax* and diarrhoeal illness is in travellers to South Asia, while cutaneous leishmaniasis is most common in visitors to Latin America. Furthermore, risk within a country can differ; for example, malaria risk is negligible in Nairobi compared with a significant risk on the Kenyan coast. Travel medicine is dynamic, and both travellers and physicians should be aware of, and respond to, changes in epidemiology of potential infections, including the occurrence of outbreaks.

Recent outbreaks (e.g. Ebola, Zika, yellow fever, Middle East respiratory syndrome), and wide media coverage have alerted travellers to the potential risk of previously rarely encountered tropical infections. However, although the risk of acquiring these infections is low for most travellers, they can have a role in spread of disease, particularly VFRs. Information about outbreaks can be found on various websites including those of the World Health Organization, the National Travel Health Network and Centre, and the Centers for Disease Control and Prevention (Table 2). These websites also offer valuable information for vaccine recommendations, although regional prevalence of specific disease can be difficult to obtain.

Finally, it is important to remember that non-tropical infections account more commonly for the infections that present in returned travellers.

### Health promotion and risk management

Many travel consultations focus on vaccinations, but these can be among the least cost-effective preventive measures in travellers as vaccine-preventable diseases account for <5% of travel-associated morbidity. The main priorities should be given to health problems that are common, preventable, treatable and serious or potentially fatal. These include malaria, travellers' diarrhoea, sexually transmitted infections (STIs) and RTAs. Health hazards that are rare (e.g. cholera, Japanese encephalitis, parasitic infections) should be put into perspective and discussed, based on the individual traveller's risk profile.

Current best practice emphasizes the need for a patient-centred approach and shared decision-making. Therefore, for each risk, the travel medicine practitioner must balance the need for prophylaxis against the realistic risk of infection, and the likelihood of adherence to preventive measures by the traveller. The latter depends on a number of factors including perception of risk, concerns about available preventive measures and treatments, and preferred risk management options.<sup>3</sup> Travellers should know that no intervention is fully protective.

### Malaria (Table 3)

Malaria is one of the most common and serious causes of fever in travellers, occurring while abroad or on return (see Malaria on pages 52–58 of this issue). The risk of malaria is greatest in sub-Saharan Africa (particularly West Africa), intermediate in South Asia (India), and lowest in Central and South America and South-East Asia. However, the risk for acquiring malaria can vary widely from traveller to traveller, from region to region and within countries. Those at particular risk of disease acquisition are long-term VFR travellers, while those at risk of severe disease are pregnant women, travellers with complex co-morbidities and elderly individuals.

Prevention of infection involves understanding the disease process and the 'ABCD' of malaria:

- Awareness of risk
- Bite prevention from nocturnal *Anopheles* spp. mosquitoes
- Chemoprophylaxis
- prompt Diagnosis of infection.

## Key elements of travel medicine

### Health risk assessment

- Health status of traveller – medical conditions, medications and allergies, immunization history
- Health risk of travel – itinerary (rural, urban), accommodation, duration of trip, anticipated activities, mode of transport, travel style (budget/luxury)

### Health promotion and risk management

- Responsible personal behaviour and safety
- Vaccine-preventable illness
- Vector avoidance
- Malaria prevention and chemoprophylaxis
- Travellers' diarrhoea – prevention and self-treatment
- Environmental illness – altitude, heat, swimming, jet lag, prevention of deep-vein thrombosis
- Travel insurance and access to medical care overseas
- Post-travel screening, care and triage of illness (e.g. fever, diarrhoea, rash, respiratory symptoms)

Table 1

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