Tailored advice given during travel health consultations can help people to make informed choices about risk-management strategies.

**Travel risk assessment and risk management**

**In this article...**
- Risk assessment in travel health consultations
- Developing risk-management strategies for travellers
- Useful resources on travel health

**Authors** Hilary Simons is senior specialist nurse (travel health); Claire S Wong is specialist nurse (travel health); both at National Travel Health Network and Centre (NaTHNaC), Liverpool School of Tropical Medicine; Alexandra Stillwell is specialist nurse (travel health), NaTHNaC, University College Hospital, London.


Risk assessment and risk management are fundamental to travel health consultations. Undertaking a comprehensive risk assessment involves gathering information on the traveller and their proposed journey. This information, as well as identifying specific travel-related hazards, should ensure risk-management advice and strategies are appropriate for individuals.

This article outlines the principles of risk assessment and risk management in the context of travel health consultations.

Around 57 million UK residents travelled abroad in the year to December 2011. While the majority of journeys were for holidays (36.4 million), many travelled to visit friends and relations (VFR) (11.4 million) or for business (6.7 million) (Office for National Statistics, 2011).

Many people seek health advice before a trip, and since every traveller and every journey is different, advice has to be tailored. Nurses who provide such advice should be able to undertake a comprehensive risk assessment and understand how to interpret and manage risks identified during consultations (Chiodini et al, 2007a).

Following a step-wise approach, information can be collected about travellers and their journeys and likely travel-related hazards can be identified (risk assessment). With this information, health professionals can advise (risk management) using real-time and evidence-based resources.

Risk assessment helps to identify special risk travellers (such as those with medical conditions, children, pregnant women or older people) and/or those undertaking special-risk travel (for example, long-term, adventure or pilgrimage).

**Information about travellers**
Factors about travellers that should be considered in each risk assessment include: age and sex; medical and vaccination history; and previous travel experience.

**Age and sex**
Young children are more vulnerable to travel-related hazards including accident, infection, animal bite and the effects of temperature extremes. Children are at special risk (see Discussion, page 18) and need specific risk management (Field et al, 2010).

Young men are more likely to indulge in alcohol intoxication or illegal substance use, which can result in accident and injury (Hughes et al, 2011), and experience casual sexual encounters (Bellis et al, 2004).

Security risks are potentially higher for those travelling alone, particularly women. Menstruation can be disturbed by travel, which can cause anxiety; oral contraceptives may be less effective. Women who express a desire to conceive during travel or who plan to travel during pregnancy are at special risk (see Discussion, page 18) and need specific risk management (Field et al, 2010).

Older travellers are at risk of infection because their immune system function has
naturally reduced. They may have missed primary vaccinations, have a suboptimal response to vaccination or be more vulnerable to vaccine adverse events than younger people (Lindsey et al, 2008; Salisbury et al, 2006) (see Discussion, page 18). Disease or frailty can compromise travel plans, and medical care at the destination may be limited or of a poor standard. Older travellers are therefore at special risk and need specific risk management (Field et al, 2010).

Medical history and medication
It is essential to take a good medical history during risk assessment; this should include any medical condition (including emotional or psychiatric disorder), current or recent medications, vaccination history and allergy.

This information will identify special health risks and help in planning risk-management (for example, vaccines and malaria prevention tablets, advice on insulin adjustment across time zones and carrying prescribed medications over international borders). Those with medical conditions that could be aggravated by travel should ideally be assessed by a doctor beforehand; specific risk management of such conditions may be required (see Box 1 and Discussion, page 18).

Previous travel experience
Experienced travellers may have a higher threshold for risk and can influence acceptance and concordance with risk-management strategies. An experienced traveller who has taken few precautions and remained well during previous travel may not be receptive to information on preventive measures.

Travellers may, on the other hand, actively seek advice on reducing risks where previous travel has resulted in a negative health experience.

Identifying problems related to previous travel can be helpful in developing a risk-management strategy.

Information about the journey
Factors about the journey that need to be considered in risk assessments include:

- Destination;
- Departure date and duration of travel;
- Mode of travel;
- Reason for travel (including factors such as planned activities and budget).

Destination
Determining the exact destination(s), including the order of the itinerary, is vital. Nurses need to understand the following to identify travel-related health hazards and plan risk-management strategies:

- Destination geography (including whether the trip is to altitude, coastal, jungle, desert, urban or rural areas);
- Disease epidemiology (where and when diseases occur);
- Current outbreak information.

Information about destination-specific risks is available (Box 1).

Departure date and duration of travel
Travellers should ideally seek advice 4-6 weeks before their journey (Field et al, 2010). This allows opportunities for several visits when travel-related hazards can be identified and risk management discussed and reiterated if needed. Optimum vaccine schedules can be planned and completed, issues on existing conditions can be addressed and malaria chemoprophylaxis (prevention tablets) can be started in good time. However, it is never too late to seek travel health advice and, although last-minute travellers can be challenging, every opportunity should be taken to carry out risk assessment and discuss risk-management strategies with them.

In general, the risk of exposure to

<table>
<thead>
<tr>
<th>TABLE 1. HAZARDS AND RISK MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel-related hazards</td>
</tr>
<tr>
<td>Accident and personal safety</td>
</tr>
<tr>
<td>Road traffic accident</td>
</tr>
<tr>
<td>Drowning</td>
</tr>
<tr>
<td>Accommodation</td>
</tr>
<tr>
<td>Cultural differences</td>
</tr>
<tr>
<td>Environment</td>
</tr>
<tr>
<td>Solar damage</td>
</tr>
<tr>
<td>Extremes of heat and cold</td>
</tr>
<tr>
<td>Dehydration</td>
</tr>
<tr>
<td>Food and water</td>
</tr>
<tr>
<td>Infection</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Vector-borne (including animals)</td>
</tr>
<tr>
<td>Insect bite</td>
</tr>
<tr>
<td>Animal bite</td>
</tr>
<tr>
<td>Airborne</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Sexual health</td>
</tr>
<tr>
<td>Sexually transmitted infections</td>
</tr>
<tr>
<td>Women’s health</td>
</tr>
</tbody>
</table>

• All travellers should be advised to take out comprehensive travel insurance, check the details of the cover and be aware that pre-existing health conditions may be excluded unless they have been declared.
• British nationals travelling or living abroad should consider registering with the Foreign and Commonwealth Office’s LOCATE service, even for short trips. Registered details help embassy staff if an emergency occurs overseas (Box 1).
• All travellers should be up to date with routine vaccinations according to the UK schedule (Salisbury et al, 2006).

For articles on travel health, go to nursingtimes.net/travel
travel-related hazards is greater the longer the duration of travel (Acosta and Wolfe, 2007). Travellers undertaking journeys of long duration (over six months) such as VFR, backpackers, expatriates and aid workers are at greater risk (Field et al, 2010).

**Mode of travel**

Long journeys by aeroplane or motor vehicle can predispose some people to deep vein thrombosis (Watson and Baglin, 2011). Road traffic accidents are a significant cause of injury and death in international travellers, and cause more morbidity and mortality than infectious disease (Field et al, 2010). The World Health Organization (2009) estimates that 1.2 million people are killed and 20-50 million are injured worldwide every year as a result of RTAs. Most of these deaths and injuries occur in low and middle-income countries (WHO, 2009). Motor vehicle drivers, motorbike and pedal cycle riders, passengers and pedestrians are at risk.

Falls on deck or overboard can happen on cruise liners and pose a risk to some travellers, particularly those who have compromised mobility or are frail.

**Reason for travel**

Risks generally depend on associated factors (see above), but some reasons for travel are associated with greater likelihood of exposure to hazards including:

» Adventure – undertaken by natural risk-takers and thrill-seekers who plan to take part in hazardous activities;

» Backpacking – long-duration travel on a low budget to less well developed countries;

» Business – little time for pre-travel preparation;

» Expatriates – long-term exposure to disease risk and culture shock;

» Pilgrimage – close contact with crowds and greater potential for disease risk;

» Sex tourism – exposure to danger and disease;

» VFR – underestimation of risks.

Reasons for travel perceived as lower risk include travel for leisure, particularly where it is well organised, on a set itinerary and undertaken within a set time. However, people undertaking short organised trips still need advice, particularly on sexual behaviour, accidents and infections.

Travellers often wish to undertake new activities such as scuba-diving, bungee jumping and white-water rafting; such activities may be poorly supervised, have substandard equipment and increase the risk of injury or death. There are specific medical contraindications to scuba-diving (UK Sports Diving Medical Committee, see medical standards at http://uksdmc.co.uk).

It is probable that luxury-end travellers will be at less risk than those on a restricted budget, and will have access to clean drinking water, sanitation, air-conditioning and mosquito nets (although this cannot be assumed and all travellers should be advised on risk management).

Budget travellers, who can be at greater risk of hazards generally, sometimes need to make choices and prioritise risk-management strategies; they should be guided during risk assessment to make the best choice, for example, on whether to have the Japanese encephalitis or the rabies vaccine where the cost of both is prohibitive.

**Risk-assessment tools**

Risk-assessment tools or checklists can be used to guide consultations and prompt questioning and record details of risk-management strategies. They can be designed by a travel health provider or adapted from templates (Field et al, 2010; Chiodini et al, 2007; TRAVAX, www.travax.nhs.uk).

**Travel-related hazards**

The following are needed to plan an individual risk-management strategy:

» Traveller and journey information;

» Identifying travel-related hazards (see Table 1 – but note it is not exhaustive);

» An estimate of the risk of encountering such hazards (not always an exact science, but best evidence and real-time resources help; see Box 1).

**Risk communication**

Risk should be communicated in a clear and understandable manner and should be a two-way process (Thomson et al, 2005), between adviser and traveller.

Risk communication is a specialist skill and requires careful use of terminology. For example, the term “high risk” will be interpreted differently person to person.

Also, advisers should not influence communication with their personal attitude to risk. By listening to traveller concerns about travel-related hazards and understanding their perception of risk, a risk-management strategy that is acceptable to the traveller and to which they are more likely to adhere can be developed.

**Conclusion**

Risk assessment and risk management are essential to travel health consultations. The information gathered helps health professionals to tailor advice to individual needs. Communicated well, this advice can enable travellers to make informed choices about risk-management strategies. NT

---

**References**


FCO LOCATE: tinyurl.com/FCO-LOCATE

International Society of Travel Medicine. Global Travel Clinic Directory. tinyurl.com/ISM-clinic

International Association for Medical Assistance to Travellers (IAMAT): http://iamat.org/index.cfm

NaTHNaC. Outbreak surveillance: www.nathnac.org/countrysearch.aspx

NaTHNaC. Country information: tinyurl.com/nathnac-country

TRAVAX (subscription needed): www.travax.nhs.uk

World Health Organization: www.who.int/en

---

**Box 1. Resources**