Health Protection Scotland

NHS National Services Scotland

Travel Health Guidance For Schools

Produced by the Travel and International Health Team

(TRAVAX)

Version: 1.1

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1. Introduction

School excursions are an integral part of the educational experience, enabling children to have the opportunity to undergo experiences not available in the classroom environment. In recent years there has been an increase in school excursions overseas to countries where health hazards may be present. In addition, school exchanges with countries in the developing world, which may comprise extended visits abroad, are also on the increase.

The Scottish Executive has published guidance on outdoor excursions 'Going out there: Scottish framework for safe practice in off-site visits' [1] – and this should be consulted in the first instance. The aim of this 'Travel health guidance for schools' document, is to provide additional practical advice on health issues for those going on an overseas excursion, especially for those intending to visit a country where health hazards not found in the UK exist. Advice and information on health considerations to be included in the planning stage of overseas excursions will help organisers, parents and pupils alike, and lead to a more consistent and effective approach to healthcare for school travellers.

Crucially, this guidance does not take the place of an individual travel health risk assessment which must be carried out by a qualified health professional for each person travelling. General practitioners and practice nurses are well placed to offer an initial consultation, but in some instances, referral to a specialist travel clinic may also be advised.

Feedback on this guidance and its application is welcomed. Please send this to: Mrs Lorna Boyne at: lorna.boyne@nhs.net

[Note that this contact cannot reply to individual travel health enquiries].

2. Why the need for specific guidance for school parties?

It may be argued that travel health advice for school groups is not dissimilar to that aimed at other travelling groups. However, enquiries to the Travel and International Health (T&IH) team at Health protection Scotland (HPS) for example from school excursion organisers and head teachers seeking guidance, highlight that there is often confusion regarding travel health preparation for school excursions. This coupled with an increase in travel-related illness such as diarrhoeal illness and schistosomiasis in returning school parties[2], suggests that there is a need for specific advice for schools.

2.1. Using the guidance

This guidance has been produced primarily for those planning school excursions abroad. Much of the information and advice is also relevant to parents and pupils. The HPS T&IH team produce two online resources on travel health, TRAVAX (http://www.travax.nhs.uk/) which is available to healthcare professionals and fitfortravel (http://www.fitfortravel.nhs.uk) which is available to the general public. The information and advice on both TRAVAX and fitfortravel are consistent with and complement one another, although they are produced for different audiences.

Throughout this document, where relevant information or advice is available on fitfortravel this will be clearly indicated in the text as in the following example:

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/malaria.aspx

3. Timelines for preparation

Provision of reading material for parents and pupils should be distributed as far in advance as is reasonably possible to allow time for proper consideration prior to completion of any necessary paperwork, consent forms etc. required by the educational authorities and schools.

Excursions that include any of the following are likely to need more time for travel health advice and preparation, including vaccinations:

- travel to a tropical destination
- travel to a developing country
- travel to a malarious area
- travel into remote areas
- travel to high altitude (2400m and above)
- prolonged travel (one month or more).

The needs of individuals within a group must also be considered and anyone with special health requirements such as disability or underlying medical conditions will need additional time for preparation.

Attendance at healthcare facilities, whether general practice or specialist travel clinics, need to be planned. As with any other healthcare consultation, it cannot be assumed that appointments will be readily available at the most convenient time for pupils. Most appointment times at health facilities take place during office hours, so pupils and staff will likely need time out of school hours to attend.

For individual travellers, it is generally agreed that 6 - 8 weeks is the minimal time, from the initial health consultation, to allow for advice and immunizations to be given. For group travel, longer timelines are preferred.

Where vaccinations are needed, this often requires attendance at several appointments to complete a schedule. Although adverse reactions to vaccines are rare, it is preferable that vaccines are given out-with school examination time to ensure minimal disruption.

4. Roles and responsibilities

Local authorities have a responsibility to provide written guidelines for heads of establishments regarding health and safety for excursions[1]. In terms of responsibilities around health, many others also have a role to play, including:

- the head teacher and excursion organiser
- parents
- pupils themselves
- general practitioners and practice nurses
- specialist travel clinics including yellow fever vaccination centres.

In an ideal scenario, the head teacher and with excursion organiser should provide general written health guidance (such as this) along with any additional known information available about the specific proposed trip. It would be useful at this initial stage, and well in advance of travel, to provide guidance on timelines for travel health preparation. Ideally this information could be given at a briefing meeting with parents and pupils.

While parents will be asked to give / sign consent for their child to go on an excursion, they will not be required to give consent for any health preparation including vaccination, where the child is considered by the health care professional capable of making their own decisions. Most healthcare facilities accept ‘implied consent’ rather than insisting on written consent, whereby attendance for treatment is considered sufficient consent. Although not essential, it may be useful for parents to accompany their child to pre-travel health appointments, so that they are aware of discussions and any decisions made.

Pupils will be advised to make an initial appointment with their own GP or practice nurse. The level of involvement in travel preparation provided in general practices varies greatly. Some practices provide all of the advice and care needed for travel patients and others provide only the basic level of care and refer on for more specialist attention.

Referral to a specialist travel clinic is likely for travel to tropical, developing or remote destinations and when very specific advice is needed. Where a yellow fever vaccine or vaccine certificate is needed, this can only be given at a Yellow Fever Vaccination Centre (YFVC) – this is because administration of yellow fever vaccine is bound by International Health Regulations and there are legislative restrictions on who is authorised to issue the certificates.

Most travel related illness is not preventable through vaccination or chemoprophylaxis, and a good deal of the travel health consultation will be taken up with provision of travel health advice. The responsibility for following this advice ultimately lies with the pupils who will need to make adaptations to their day to day behaviour in order to avoid illness while abroad. Further information on this follows.

5. Costs

The cost of travel health preparation can be significant (sometimes running into hundreds of pounds) and should be considered in overall cost calculations so that parents are aware at the outset. It will not be possible to give a definitive total cost for travel health in advance, as not all parents and pupils will decide to have all vaccines that may be suggested. In addition there is variation in the cost of vaccinations which are available only on private prescription.

The following is a summary of charges in **the NHS setting**:

- consultation and advice are free
- administration of vaccines is free
- a charge can be made for provision of a yellow fever vaccination certificate
- vaccines usually provided free on the NHS: hepatitis A; typhoid; combined hepatitis A and B; combined hepatitis A and typhoid; diphtheria/tetanus/poliomyelitis; *cholera (*only if deemed significant cholera risk by healthcare professional)
- vaccines which may be provided free on the NHS **or** charged for privately: hepatitis B; meningococcal ACWY (only where clinical need identified by healthcare professional)
- vaccines usually charged for privately: yellow fever; rabies; Japanese encephalitis; tick-borne encephalitis
- antimalarials are charged for privately.

In **the private setting**, parents should expect to pay for all aspects of care including the initial consultation fee and advice.

In addition to any ‘kit’ required for the excursion, pupils may be advised to take some travel health products with them. These can further add to the cost of a trip but can be invaluable in terms of health protection. The following are the most commonly used products and each will be explained in more detail in other sections later:

- sunscreen
- insect repellent
- mosquito net
- water purification tablets or filter
- first aid kit.

Many of the above items can be purchased easily online from specialist travel health outlets (see Section 21.1. Travel health equipment suppliers).

6. Group risk assessment versus individual risk assessment

At some point early on in the health consultation process, an individual travel health risk assessment should be carried out by a qualified healthcare professional, for each person travelling. While it is useful for the whole group to be given some general guidance on what may be advised, the final decision e.g. on which vaccinations to have, is the result of discussion between the individual patient and health advisor.

It is useful for excursion organisers, parents and pupils to realise that advice given, including vaccine and malaria recommendations may vary among individuals. Travel health advice is not a ‘one size fits all’ scenario, and variation in advice is to be expected. The individual travellers approach to risk - whether a ‘risk taker’ or ‘risk avoider’ - will also influence the final outcome.

During the consultation, the following information will be needed about the trip:

- destination(s) – with some detail
- departure date
- length of stay
- modes of transport
- purpose of trip and planned activities
- quality of accommodation
- financial budget
- health care standards at destination
- travel health insurance provisions / coverage.

It is most useful if the trip information is provided, with as much detail as possible, by the excursion organisers, so that all pupils have the same information.

The following information will also be needed for each individual, and it is this information that may result in different advice and recommendations being made:

- age and sex
- medical history including: past and present; relevant family history; current health status
- medication
- known allergies
- previous travel experience
- previous vaccine history
- special needs.

7. Immunisations

Following the risk assessment, the health adviser will make a recommendation on whether vaccines are advised and if so which ones. The following is not conclusive, but may help with understanding why some vaccines are recommended in some circumstances. It is useful to consider vaccine recommendations under the following headings:

- vaccines advised in the UK
- commonly used vaccines
- vaccines used in certain circumstances
- vaccines that are only advised in limited circumstances.

7.1. Vaccines advised in the UK

Routinely individuals in the UK are vaccinated against numerous infectious diseases, unless they choose to *opt out* of vaccination under the UK National immunisation schedule. The GP or practice nurse will be able to tell this from vaccination records.

Depending on the age of the traveller, boosters of some of these vaccines may be needed prior to taking a trip abroad[3]. Boosters commonly advised include **poliomyelitis/tetanus/diphtheria** which can be given in one vaccine, and **measles/mumps/rubella**, which can be given as MMR.

7.2. Commonly used vaccines

The most commonly advised vaccines for travel are **typhoid and hepatitis A**. Both infections are common in many popular travel destinations, and are spread through contaminated food and water, poor sanitation and poor hand hygiene. The vaccines can be given singularly or they can be given in combination if both are advised[4].

7.3. Vaccines used in some circumstances

Additional vaccines that are most likely to be advised include the following:

- **hepatitis B –** this infection is spread through blood and body fluids (in the same way as HIV, but is much more infectious and therefore easier to contract); although sexual transmission is the main mode of transmission, the infection can be spread e.g. through blood spillages in the event of an accident, or through intervention with unsterile medical equipment such as needles and syringes, or through close contact with infectious individuals such as in the hospital setting. Vaccination against hepatitis B may be advised for those who may be at risk because of intended activities (e.g. for some volunteers), or for adventure travel (where accidents may pose a risk), where access to good medical facilities may be difficult, or for prolonged travel in a country with a high prevalence (see Section 16. Sexual health issues and blood borne viruses)

- **meningococcal ACWY –** this infection is common in some countries such sub-Saharan Africa; it is spread by droplets through the air. The disease may be transmitted from healthy individuals who carry the bacteria without knowing. Vaccination may be advised for those going to high risk areas, where prolonged close contact with local people may be anticipated – this could include a school exchange where close contact is unavoidable
- **rabies –** rabies is found in warm blooded animals in many parts of the world and is typically spread to humans by an animal bite. Vaccine may be advised for those who are likely to have contact with animals in risk countries. It is also advised for those travelling into remote areas and where access to medical facilities might take more than 24 hours. This is because preventative treatment for rabies, following an animal bite, ideally should be initiated within 24 hours (see Section 15. Animal bites and rabies prevention)
- **yellow fever –** this infection is spread through mosquito bites in parts of Africa and South American (mainly rural areas). This is also the only vaccine preventable infection that has an official certificate requirement for entry into certain countries and for crossing borders. When needed, this needs to be obtained in a yellow fever vaccination centre[4].

7.4. Vaccines that are only advised in limited circumstances

- **cholera –** cholera is spread mainly through contaminated water, but also through contaminated food and poor hygiene practices. The risk for most travellers is extremely small because the bacteria that cause cholera can be easily killed e.g. through water purification and good hygiene practices. Many travellers over-estimate their risk of contracting cholera and the vaccine is often requested even when the risk is very small. Good advice around food and water hygiene and sanitation is more beneficial, as this will protect against other infection risks that are more common than cholera (see Section 13. Food and water advice)
- **japanese encephalitis –** this infection is spread through mosquito bites in parts of south-east Asia (mainly rural areas). The risk is generally thought to be very small for short term visitors to risk areas and vaccine is usually advised for those on prolonged visits or in special situations where exposure may be increased (e.g. being primarily located next to farm areas or paddy fields)
- **tick-borne encephalitis –** as the name suggests, this infection is spread through the bite of an infected tick, found mainly in specific rural regions of Eastern Europe and Russia. Unlike mosquitoes, ticks cannot fly, so exposure to ticks is reliant on direct contact with vegetation such as long grass in tick habitats. Vaccine is normally restricted to those camping or taking part in outdoor activities in risk areas

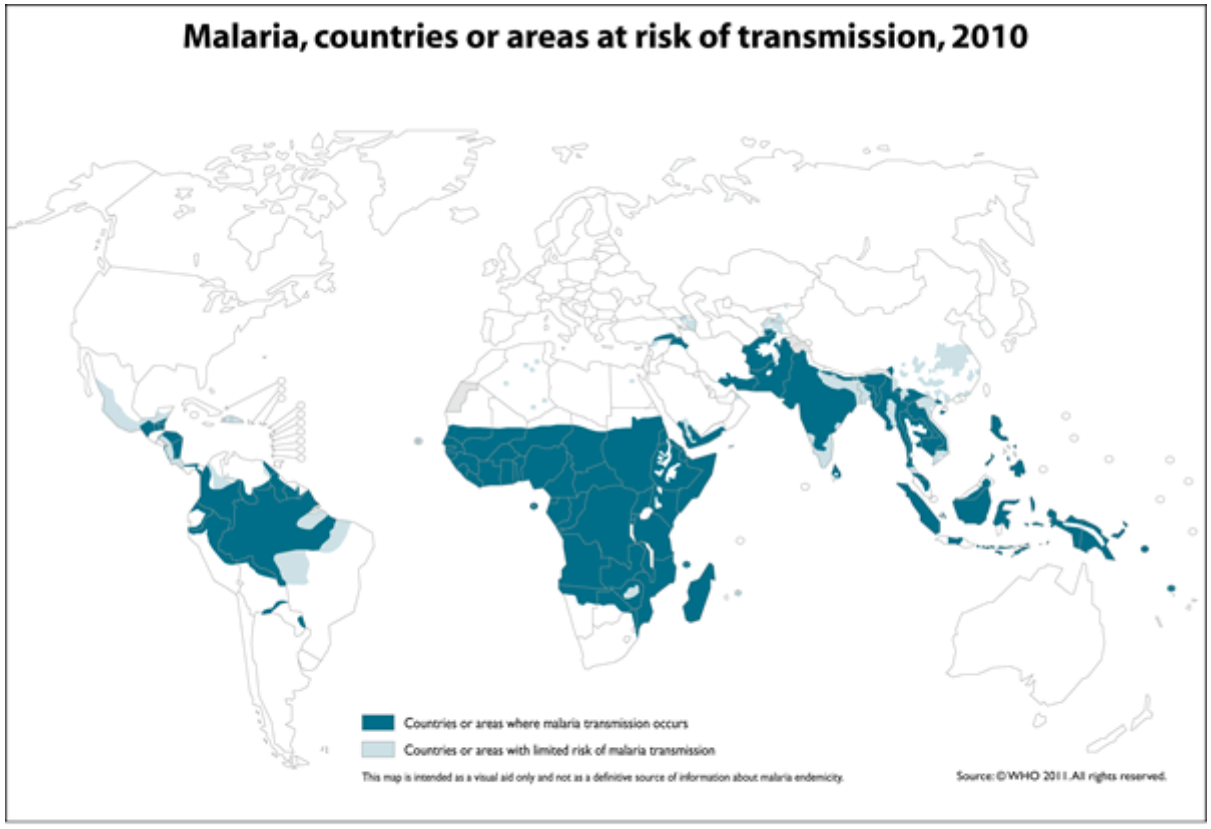
- **tuberculosis –** the risk of tuberculosis varies in different countries across the world. The infection is spread mainly through the air from an infectious individual and exposure relies on close, usually prolonged / household contact. Vaccination against tuberculosis is with BCG vaccine and is only advised for those at highest risk and rarely for anyone over the age of 16 years[4].

The above information is only a very condensed guide and the healthcare professional will take into consideration many other factors and use their own expertise and judgment to make the best recommendations.

8. Principles of malaria prevention and prophylaxis

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/malaria.aspx

Malaria is a serious and sometimes life-threatening illness. It is spread through the bite of a specific female mosquito and the risk varies both between and within countries. The map below shows the main areas where transmission takes place[5]. One of the key aspects of the travel risk assessment will be to determine any potential malaria risk and the health advisor may ask several questions about this.



Map reproduced with permission of and acknowledgement to WHO

Some types of malaria are more serious than others and the health advisor will need detailed information about the trip itinerary in order to be able to determine the risk. The main principles of malaria prevention include the following:

- being **A**ware of the risk
- knowing how to prevent mosquito **B**ites
- taking antimalarial tablets as advised and where appropriate (**C**hemoprophylaxis)
- knowing when someone may have malaria and when to seek advice and prompt **D**iagnosis and treatment.

This simple formula is known as the **A, B, C, D of malaria protection**[6].

8.1. Awareness of risk

The healthcare professional will utilise various resources to help them to determine the risk of malaria. Where there are multiple destinations or a complex itinerary, this can be quite time consuming. Different types of malaria exist in different parts of the world – the most serious form of infection is caused by *P.falciparum* malaria, which is principally, but not exclusively, found in Africa.

8.2. Prevention of mosquito bites

Mosquito bite avoidance measures are important for anyone going to a malaria risk area (see Section 14. Insect bite avoidance).

8.3. Antimalarial chemoprophylaxis

Where there is a significant malaria risk individuals may be advised to take antimalarial tablets (known as chemoprophylaxis). There are several different types of tablets and an individual recommendation will be based on the following:

- the type of malaria present
- the extent of malaria present
- whether there is any malaria drug resistance

the most suitable tablets for the individual based on age, medical history, personal preference etc.

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/malaria.aspx#malariadrugs

Whether tablets are taken every day or once per week, and the length of time that they need to be taken for varies. Likewise, potential side effects and costs of the tablets also vary, and this is best discussed at an individual level where a specific antimalarial is being recommended. Further information on individual antimalarials can be found on fitfortravel[7].

8.4. Prompt diagnosis and treatment

Some types of malaria are potentially life-threatening and serious illness can develop within 24 hours. It is therefore essential that any sign of the illness is picked up immediately so that a diagnosis is made and prompt treatment is commenced.

The signs and symptoms of malaria can vary, but any fever that occurs 7 days or more after being in a malarious area, must be treated as possible malaria. Diagnosis of the disease is made with simple blood tests, but these must be taken and assessed by an experienced person who knows what to look for. Provided a diagnosis is made quickly, treatment should be uncomplicated if commenced without delay, and usually involves taking additional oral medication. Treatment is usually carried out in hospital. If there is a delay, treatment may be more complex, can involve a more prolonged stay in hospital, and may not be effective.

Key Message: If there is any suspicion that someone may have malaria – seek professional assistance without delay.

Malaria can occur up to one year after leaving a malaria area, although the most serious forms of disease usually occur within the first month (see Section 20. On return).

9. Psychological issues

The Scottish framework for safe practice on off-site visits[1] states that during the preparation stage of an excursion, organisers and leaders need to consider the suitability of potential participants to take part and that where the safety of an individual or others cannot be guaranteed, then further specialist advice should be sought. This is relevant when considering the psychological suitability of candidates to undertake certain overseas trips. While short-term and longer-term travel can offer enriching and broadening experiences, there are some people for whom the stresses of travel prove detrimental to psychological health[8].

9.1.Cultural exchanges and volunteers

Trips that involve cultural exchanges or volunteering are more challenging from a psychological perspective, as a degree of cultural integration is required. This can be difficult for those who lack experience or are poorly prepared. Without adequate preparation, vulnerable people can feel depressed and wish to ‘give up’ and go home. Commonly recognised stressors include language barriers and problems with communication.

Factors that can reduce stress include:

- having previous experience or knowledge of different cultures (including if passed on by others e.g. people who have previously undertaken a similar trip/exchange)
- being well-prepared
- holding realistic expectations
- understanding the language
- working with a supervisor or mentor
- having a clearly defined role
- having good physical and psychological health[8].

Preparation is vital and the more information that can be imparted prior to travel overseas the better. Individuals with underlying psychological or behavioural problems warrant special attention during the preparation stage. Anyone with serious psychological issues may need input from a specialist before acceptance onto an excursion. There may be circumstances where an individual is deemed unsuitable to take part in an excursion and organisers must also consider the impact that an individual can have on the hosts when making such decisions.

9.2. Antimalarials and psychological issues

Although generally considered safe, certain antimalarials are not suitable for people with underlying psychological problems, including depression. This will be taken into consideration by the health advisor during the pre-travel risk assessment.

10. Underlying health problems

With careful planning and good preparation, it is feasible for most travellers with underlying medical conditions to travel safely. There are a few conditions where travel to certain areas or a particular type of travel is not advised, and others where additional advice and preparation may be needed.

The following advice is useful for anyone with an underlying medical condition who is travelling:

- seek professional advice as far in advance of travel as possible
- ensure that it is possible to obtain comprehensive travel health insurance that covers the medical condition
- carry a letter from the nurse or doctor outlining your medical condition and any medications that you take
- ensure that you have enough medications and any equipment that may be needed (e.g. monitoring equipment, needles and syringes etc.) for the entire trip
- if flying long-haul, ensure that you have enough medication and equipment in hand luggage for the journey; if crossing time zones, seek advice about adjusting the timing of your medications
- for individuals who take regular medications, the decision on whether they administer their own medication or have it administered to them, needs to be made in advance[9]
- for certain medical conditions where administration of medication can be life saving, individuals should consider wearing a Medic Alert bracelet or similar.

The following information is a summary guide only – travellers with any underlying medical condition must seek professional and individual health advice.

10.1. Allergies

The main concerns for the traveller with allergies are:

- triggers for allergic reactions are known and avoided where possible
- emergency treatment and equipment is easily accessible if needed
- a responsible accompanying person knows what to do in the event of an allergic reaction.

Previous allergic reaction to vaccination, latex, eggs, or multiple allergies, may be of significance if travel vaccines are needed, and this should be discussed during the pre-travel consultation.

10.2 Asthma

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/advice-for-travellers/asthma.aspx

The main concerns for the traveller with asthma are:

- the individual is well enough to take the trip
- asthma is well controlled
- sufficient daily medication is carried for the entire trip
- emergency supplies of medication are available if needed
- a responsible accompanying person knows what to do in the event of an acute asthma attack.

Additional expert advice should be sought if a proposed trip includes travel:

- to an area with high levels of pollution
- to a cold climate
- at high altitude
- to remote areas
- to areas with poor medical facilities
- where strenuous activities are planned.

10.3. Diabetes

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/advice-for-travellers/diabetes.aspx

The main concerns for the travellers with diabetes are:

- the individual is well enough to take the trip
- diabetes is well controlled
- sufficient daily medication is carried for the entire trip
- emergency supplies of medication are readily available if needed
- insulin is properly supplied and stored
- insulin is transported in hand luggage in aircraft so that it does not freeze in the hold

- if flying long-haul, enough medication and equipment is available for the duration of the journey; if crossing time zones, advice about adjusting the timing of medications may be needed
- a responsible accompanying person knows what to do in the event of a hypo or hyperglycaemic attack
- sunburn is avoided and appropriate foot wear is worn to prevent skin infections.
- Additional expert advice should be sought if the proposed trip includes travel:
- to remote areas
- to areas with poor medical facilities
- where strenuous activities are planned.

10.4 Epilepsy

The main concerns for the travellers with epilepsy are:

- the individual is well enough to take the trip
- epilepsy is well controlled
- sufficient daily medication is carried for the entire trip
- emergency supplies of medication are readily available if needed
- a responsible accompanying person knows what to do in the event of a seizure.

Additional expert advice should be sought if the proposed trip includes travel:

- to malarious areas where antimalarial tablets are recommended
- to remote areas
- to areas with poor medical facilities.

10.5. Immunocompromised

Individuals can become immunocompromised:

- with serious medical conditions such as cancer or HIV (human immunodeficiency virus)
- following treatment for cancer
- with long term kidney problems
- if their spleen has been removed
- during pregnancy
- when taking certain medications such as steroids.

Individuals who are immunocompromised may be advised not to travel to:

- countries with yellow fever or malaria
- tropical or developing countries with increased risk of infection
- areas where medical facilities are absent or poor
- remote areas.

The main concerns for the immunocompromised traveller are:

- they may not be able to have all recommended vaccines such as yellow fever
- some vaccines may not work well enough to give good protection
- they are more susceptible to infectious diseases
- any infection picked up may be more serious than in a healthy individual
- treatment of illness is more difficult
- they may not be able to obtain travel health insurance.

For all other medical conditions, or where there is any doubt, seek professional advice as early as possible.

11. Medical care abroad

Access to medical care abroad affects almost every aspect of the planning of a trip. As has been suggested in the previous section, travellers with particular medical conditions may not be suitable to undertake certain trips, if ready access to safe medical facilities cannot be guaranteed.

For remote travel, actual access to a health facility can be a problem, and for some destinations the quality of healthcare may be a major issue. While medical facilities may be available, these may be of a lesser standard than we expect in the UK. Modern medications, treatments and equipment may not be readily available and staffing levels may be low. In addition, the efficacy of medications may be questionable (is it what it says it is?) and the safety of medical equipment may be in doubt (i.e. have reusable items been sterilised?).

Unfortunately, areas where access to good medical facilities is difficult, often tend to be places where additional health risks are also found. The following all merit special consideration regarding access to health care:

- developing countries
- remote areas
- high altitude
- rainforest
- desert regions.

11.1. Pre-travel preparation

Additional vaccines that may be advised where quality of or access to medical care is in doubt, including hepatitis B and rabies (see Section 7, Section 15. Animal bites and rabies prevention, and Section 16. Sexual health issues and blood borne viruses).

Given the severity of malaria and the potentially life-threatening nature of P.falciparum malaria – remote travel into areas where P.falciparum is a high risk, is generally not advised for school groups. Consideration must also be given to excursions where *travel through* a risk area is planned *prior to* going into a remote area (the reasoning being that malaria could develop during the remote part of the trip where medical care cannot be accessed). This needs to be carefully planned when considering the itinerary.

11.2. Immediate first aid

The decision on whether fist aid provision should be available within the group needs to be made by those overall responsible for the excursion and the Visit Leader. Anyone providing first aid should be properly trained.

11.3. First aid and medication kits

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/advice-for-travellers/first-aid.aspx

It may be useful for individuals to carry their own basic first aid kits. These might include the following:

- any regular medications* that need to be taken
- simple oral analgesia*
- elastoplasts
- blister treatment pads
- lipsalve with sunblock
- antihistamine cream
- antiseptic cream
- antiseptic or iodine cleansing solution
- cotton wool balls.

[*Whether individuals are allowed to administer their own medications needs clarification in advance[9].]

Any other medications or treatments deemed necessary should be carried by a responsible adult or first aider. If a first aider is appointed on behalf of the group, a first aid kit may be taken on behalf of the whole group. The content of this kit will depend on the type of trip being taken and ailments likely to occur, but also the knowledge and capability of the first aider who should only work within his/her own level of safety. If a third party is involved with the excursion, and additional medical expertise is available, then the capacity of the kit may be expanded. This needs to be assessed for each excursion.

For more serious emergencies, emergency procedures should be followed as per the 'Going out there' framework[1]. It should be noted, that this guidance does not account for procedures where emergency care is unavailable, so this needs additional contingency planning.

12. Health insurance and repatriation

The Visit Leader is responsible for ensuring that suitable insurance arrangements are in place for the excursion[1]. It is of paramount importance that any group travel insurance covers all individuals, including those with special needs or underlying medical conditions. Full disclosure of these and any planned unusual activities is required for travel insurance to be valid when needed.

Some countries within the European Economic Area (EEA) have a Reciprocal Healthcare Agreement with the UK and visitors may be entitled to reduced-cost, sometimes free, medical treatment. Each individual needs to apply for their own European Health Insurance Card (EHIC) available from post offices, by telephone (0845 606 2030) or online through NHS Choices / EHIC[10]. Producing an EHIC when needed at point of care, may make provision of care easier – however, the agreements do not cover the cost of repatriation or routine monitoring of pre-existing conditions therefore additional health insurance is still needed.

Health insurance must cover medical emergencies costs including repatriation. Group organisers should pay particular attention to arrangements for repatriation and emergency medical evacuation if travelling into remote areas.

13. Food and water advice

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/advice-for-travellers/food-and-water-precautions.aspx

Travellers' diarrhoea (TD) is the most common ailment to affect travellers. While this can be something of a nuisance, and is most often a short and self-limiting illness, it can ruin a trip and can cause distress particularly where individuals have to cope with the illness in an unfamiliar environment or with basic toilet facilities. There are also some more serious forms of TD that can require treatment on return and can cause longer term problems.

The mainstay of advice regarding TD is prevention. The principles of prevention include:

- ensuring that water sources are safe
- making sensible food choices
- taking additional precautions with hygiene.

13.1. Ensuring that water sources are safe

In many countries the safety of tap water cannot be guaranteed.

- water should only be drunk when you are sure of its purity
- do not drink unsafe water without boiling, chemical purification or using a reliable filter (see Section 13.2. Water purification)
- this also applies to water used for making ice cubes and cleaning teeth
- bottled water is usually safe, as are hot tea and coffee.

13.2. Water purification

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/advice-for-travellers/water-purification.aspx

There are three main methods for purifying water:

- **boiling –** this is the most effective method where water is boiled for three minutes. This relies on access to boiling utensils such as a kettle or cooker. Water purified in this way should be covered until drunk to avoid recontamination

- **halogens (and chemicals) –** chlorine, silver and chlorine dioxide, can be used. These kill most bacteria but chlorine dioxide is more effective at killing cysts and viruses and is therefore better. [Note that iodine is no longer advised as a halogen in accordance with EU guidelines]
- **filtration –** filters are useful with 'brackish' water such as that from rivers and streams, as they filter out particulate matter. The pore size of the filter determines the extent of effectiveness and there are a variety of filters available with prices that vary accordingly. Some filters also include chemical purification to increase their effectiveness.

When choosing a water purification method, read labels carefully, as not all are suitable for use overseas. Effectiveness, ease of use and affordability will all be factors in determining the most suitable choice.

13.3. Making sensible food choices

The following guidance is helpful but may seem rather restrictive. While it may not be possible to follow all of this advice all of the time, reducing the number of potential exposures to contaminated food is advisable:

- do not drink unpasteurised milk
- cheese and ice cream are often made from unpasteurised milk and when in doubt, these should only be bought from larger, well established retailers where quality can usually be assured – in some countries they should be completely avoided
- meat should be freshly prepared, thoroughly cooked and eaten hot whenever possible
- leftovers or food that may have been exposed to the air for any length of time should be avoided
- fish and shellfish can be hazardous at certain times of the year, even if well cooked - when in doubt it is best to avoid
- vegetables should ideally be eaten when thoroughly cooked
- salads should be avoided as these are easily contaminated by soil or flies and are difficult to clean
- fruit should be peeled as the skin can be contaminated by flies and insects
- if using street vendors, where possible, choose food that is freshly cooked to a high temperature and served immediately while still hot.

13.4. Taking additional precautions with hygiene

More care and attention needs to be paid to hygiene:

- wash hands prior to handling or eating food
- always wash hands after using the toilet
- hand-washing facilities may be poor or unavailable so carry hand / ‘baby’ wipes or sanitising hand-gel
- ensure that clean dishes, cups and utensils are used; use alcohol wipes to clean them if necessary.

Even with the best of care with food and water and the most scrupulous attention to hygiene, TD can still occur.

13.5. Treatment of Travellers’ diarrhoea

TD is usually a self limiting illness i.e. it will resolve without specific treatment. The most important aspect of treatment of TD is to prevent dehydration. TD is rarely dangerous, but dehydration that goes unchecked can become serious, especially in the very young, the very old, or those with underlying medical conditions.

If diarrhoea continues for more than 3 or 4 days, or if accompanied by vomiting and the individual is becoming dehydrated, medical advice should be sought. Medical advice is also needed where there is blood and / or mucous in the diarrhoea.

14. Insect bite avoidance

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/advice-for-travellers/insect-bite-avoidance.aspx

Many infections are spread through insect bites and very few can be prevented with vaccination or medication. Different insects spread different diseases. The following is a summary of some of the most serious or common insect-borne infections but there are too many to mention all:

Insect	Disease	Vaccine available?	Insect biting time
***Anopheline* mosquito**	malaria	no	night
***Aedes aegypti* mosquito**	yellow fever	yes	day
	dengue fever	no	day
	chikungunya fever	no	day
***Culex* mosquito**	Japanese encephalitis	yes	dusk
***Ixodes* tick**	Tickborne encephalitis	yes	day
	Lyme disease	no	day
sandfly	leishmaniasis	no	night

The mainstay of prevention of insect-borne infections is through prevention of insect bites. The best ways to do this are by:

- using clothing as protection
- using reliable and tested insect repellent
- sleeping under a mosquito net
- room protection.

14.1 Using clothing as protection

Covering up with clothing is one of the best ways to protect against insect bites. This can be unpopular for those who wish to ‘get a tan’ or fear becoming too hot. If we consider the clothing that indigenous people wear in countries where insect-borne infections are common, such as Asia and Africa, they naturally cover up their skin for protection.

Clothing need not be thick and heavy: light garments made from linen and cotton are very effective. Small insects can bite through clothing that is tight against the skin so

loose clothing is better. Where there is likely to be significant exposure to biting insects (e.g. in the rainforest or during a jungle trek), additional protection is afforded by impregnating clothing with a pyrethroid insecticide, such as permethrin, as these kill many insects on contact. Permethrin dipping kits can be obtained from outdoor specialist shops and online (see Section 21.1. Travel health equipment suppliers).

14.2. Insect repellents

There are many insect repellents available but none are as effective as DEET

(N, N-Diethyl-m-tolumide), which has been scientifically tried and tested over the years. If DEET is unavailable or cannot be used, there are alternatives, but DEET should be first choice for areas where malaria is present unless there is a good reason not to use it.

14.3. DEET

DEET has been around for 50 years is available in concentrations of 20 – 100%. The duration of protection varies:

- 20% lasts for 1 – 3 hours
- 30% lasts for up to 6 hours
- 50% lasts for up to 12 hours
- 100% is useful for spraying onto clothing.

In very hot climates, DEET may need to be reapplied more frequently if it is removed through sweating.

Where sunscreen and DEET are used together, uses sunscreen first then apply DEET. DEET can cause damage to synthetic materials such as contact lenses, some plastics and nylon.

14.4. Mosquito nets

Mosquito nets provide excellent protection against mosquitoes and other biting insects. Not only do they help prevent the spread of diseases, they help ensure a good nights' sleep and greatly reduce the number of insect bites which can become very itchy and lead to local skin infections. The effectiveness of nets is greatly increased if they have been impregnated with a pyrethroid insecticide, such as permethrin. Most mosquito nets are already impregnated when purchased, but if not this can easily be done with a dipping kit.

There are many different shapes and sizes of nets to fit different needs:

- **bell shaped nets –** available in double and single sizes; can be used indoors and outdoors*; usually come with hanging kit; take a little time to hang
- **wedge shaped nets –** usually only single sizes; small, easy to carry and very light; one single hanging point; can be used indoors and outdoors*
- **box shaped nets –** suitable for staying in one location for a while; more room inside the net; several hanging points so takes time to hang; not easily portable; indoor use only; available in double or single.

*Nets that are suitable for outdoor use will say so on the packaging.

Inspect nets regularly for holes and repair if found. Nets need to be tucked under a mattress or sleeping bag to prevent insects from getting underneath – this is less important with nets that are treated with pyrethoid.

14.5 Room protection

Rooms that are air-conditioned are considered sealed, with windows being kept closed, making it more difficult for insects to enter. Where air-conditioning is available, mosquito nets may not be needed. In some developing countries, electricity is supplied by generators which are switched off at night. If this is the case then air-conditioning cannot be relied upon.

Window and screen shutters should be checked for holes and kept closed at night to prevent insects from entering. Pyrethoid products that can be plugged in or candles that emit vapour when lit, are helpful, but not greatly effective.

15. Animal bites and rabies prevention

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/advice-for-travellers/animal-bites.aspx

UK residents tend to be rather complacent about risks from animal bites, mainly because we have not had a significant rabies problem for many years. However, most countries in the world do have a problem with rabies in animals, so certain groups of travellers need to consider this.

Rabies is an infection that affects warm blooded animals, including bats. The infection is transmitted to humans through the saliva of an infected animal, usually through a bite. There can be a risk in certain unique environments such as bat caves, through inhalation of bat saliva, but primarily the risk is through *animal bites*.

15.1. Pre-travel advice for travel to a country where rabies is present

Countries are classified according to rabies risk, from 'no risk' to 'low risk' to high risk'[11]. ***If a school excursion is being planned where direct contact with animals is expected (e.g. working in an animal sanctuary) then it would be ill advised to do this in a country with a high rabies risk.***

If travelling to a country where there is a rabies risk, the following advice is prudent:

- avoid all contact with animals
- do not pet, stroke or feed animals
- you cannot tell by looking at an animal whether it carries rabies virus or not
- do not assume that domestic animals and pets are rabies free
- any animal bite should be treated as a possible exposure
- if bitten by an animal, carry out immediate first aid and seek professional advice urgently (see Section 15.2. What to do if bitten by an animal).

In addition to the above, certain groups may be advised to have pre-travel rabies vaccine including those:

- where contact with animals is likely
- travelling into remote areas where access to medical facilities may be difficult
- travelling to areas where medical facilities may be absent or poor.

A recommendation for pre-travel rabies vaccine for an entire group may be made, but the final decision will lie with the individual and the healthcare professional during the pre-travel risk assessment. When pre-travel rabies vaccine is recommended, this will normally be a course of three vaccines given over one month (on days 0, 7 and 21 or

28). The patient will usually pay for the vaccine privately and this can be quite expensive. The vaccine used in the UK is safe and effective and causes few side effects.

15.2. What to do if bitten by an animal

The treatment following an animal bite depends on whether pre-travel rabies vaccine has been given, but the initial first aid of the bite is very important regardless of whether vaccine has been given or not. This includes:

- copious flushing with running water for as long as possible (at least 10 minutes). The purpose of flushing is to remove the saliva, so use any fluids available to do this if running water is not available
- do NOT scrub
- if alcohol or iodine are available apply after flushing
- make way to a hospital or clinic as soon as possible for a professional assessment (if not previously vaccinated, this is a medical emergency)
- the healthcare professional will assess whether rabies vaccine should be given, and treatment with *rabies immunoglobulin may also be needed, if available. [*rabies immunoglobulin is derived from blood products and may be advised for a bite classified as ‘high risk’ following assessment as it offers some protection quickly; this is not always available in many countries and there may be a risk of the transmission of blood-borne viruses in some sources of immunoglobulin].

15.3. Treatment where appropriate pre-travel rabies vaccine has been given

- first aid as above
- attend a hospital or clinic as soon as possible
- two further doses of rabies vaccine may be needed
- rabies immunoglobulin will **not** be needed.

15.4. Treatment where appropriate pre-travel rabies vaccine has not been given

- treat as a medical emergency
- first aid as above
- attend a hospital or clinic as soon as possible, ideally within 24 hours
- a schedule of five doses of rabies vaccine may be advised
- rabies immunoglobulin may also be advised, if available.

15.5. Animal scratches

Even though rabies is transmitted through the saliva of an infected animal, animal scratches may pose a risk and still warrant attention and assessment. Carry out first aid as above and attend for a professional assessment as soon as possible.

Concern about any potential rabies exposure can evoke anxiety in patients, so follow up on return home is recommended.

16. Sexual health issues and blood borne viruses

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/disease-prevention/sexually-transmitted-and-blood-borne-infections.aspx

Data from the wider population shows that exposure to sexually transmitted infections (STIs) and blood-borne viruses (BBVs), including HIV and hepatitis B, is increased in people who travel[12]. Numbers of imported cases of STDs and BBVs is on the *increase* in the UK and Scotland. Research into the behaviours of travellers who become infected with and STIs or BBVs, rarely shows that individuals travelled with the *intention* of allowing themselves to be exposed.

As risk of exposure to STIs and BBVs can vary, it is useful to look at sexual health issues and risk of BBVs separately.

16.1 Sexual health issues

The subject of sexual health is an important topic that needs to be addressed during the preparation stages of a trip which involves teenagers and young adults. General issues that should be considered:

- it is recognised that travellers take risks abroad that they may not take at home – this includes sexual risks
- opportunities may arise on an overseas excursion that make sexual encounters easier (either among the group or with locals)
- any sexual encounter without the use of barrier protection is risky
- in some countries, commercial sex is very common and even encouraged
- younger people who lack experience may be seen as ‘easy targets’ by commercial sex workers
- it is not always obvious who commercial sex workers are and they may be present in everyday environments such as hotels, bars, cafes and on beaches
- use of recreational drugs and alcohol can lead to risky sexual behaviour.

The group organisers may draw attention to these issues and give guidance on acceptable behaviour with this regard. Open discussion around sexual health should be encouraged and the appropriate forum for this needs consideration. Sexual health should also be discussed during the individual pre-travel health consultation with the healthcare professional.

16.2 Blood-borne viruses

Blood-borne viruses are transmitted through contact with blood and body fluids. The main mode of transmission of BBVs is through unprotected sexual intercourse, but there are many other ways that BBVs may be spread to travellers. The risks vary depending on factors such as the incidence of BBVs in the countries to be visited and activities that may predispose to exposure.

Risk activities include:

- unprotected sexual intercourse
- anything that may increases the risk of an accident
- travelling in badly maintained vehicles and on poor roads – this can be difficult to avoid and road traffic accidents are common in travellers
- dangerous or close contact sports where blood can be spilled or splashed
- close contact with infected individuals in a setting where blood can be spilled or splashed e.g. in a hospital
- attending to a bloody injury such as a bloody nose, without wearing protection such as gloves
- any procedure where skin is punctured with an instrument (such as body piercing, tattooing and acupuncture)
- any procedure where the skin may be cut such as shaving hair[13].

In addition anyone with an underlying medical condition that could need medical intervention while abroad may be more at risk.

16.3 BBVs in the health-care setting

Issues around access to medical care abroad have already been mentioned (section 11.), as has the importance of medical insurance that includes repatriation. There are some circumstances where using available medical facilities at the destination may be unavoidable, e.g. following an accident when medical intervention is needed immediately. Although this is the ‘worst case scenario’, reliable data from travel insurance companies shows that accidents are the second most common reason for repatriation of travellers (second only to cardiovascular problems). This gives rise to concerns over the use of medical equipment such as needles and syringes, which may be re-used. Hepatitis B and (less so) HIV may be transmitted in this way, in countries where the infections are common.

16.4 Prevention of BBVs

Being aware of and avoiding risk situations is paramount. There is no way of knowing if an individual that one encounters is infected with a BBV or not. The safest attitude to take is that taken by healthcare professionals who have contact with blood and body fluids on a regular basis:

- assume that everyone could potentially be infected with a BBV
- take no exposure risks
- any potential exposure should be assessed by a healthcare professional.

This is known as ‘Standard Precautions’.

Not all exposures can be avoided however. Although there is no vaccine against HIV, vaccination against hepatitis B should be considered.

17. Sun and heat

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/advice-for-travellers/sun-exposure.aspx

Sunbathing can be pleasurable and having a suntan may be seen as a status symbol. This is the case even more so with teenagers and young adults. It is widely recognised that exposure to sun, especially ultraviolet A and ultraviolet B (UVA and UVB), can cause significant changes in the skin cells and lead to premature ageing and the development of skin cancer including melanoma. Skin cancer is on the increase in the UK and is often attributed to one or more episodes of sunburn in early life.

It can be very difficult to persuade younger people to take precautions in the sun, especially if there is a desire to obtain a tan. Sunburn is not only potentially dangerous, it can be very painful, it can cause blistering, and it can become infected and need medical attention.

17.1. Preventing sunburn

- clothing gives good protection against sunburn and covering up with light loose clothing where possible is advisable in hot sunny countries
- for exposed skin, a broad spectrum sun-screen that protects against UVA and UVB should be used; sun-screen with a sun protection factor (SPF) of *at least* 15 should be used (30 or over is better)
- sunscreen needs to be applied liberally and reapplied frequently (every two hours), more often if swimming
- extremities are more prone to burning so take particular care with e.g. ears, nose, and feet
- check the expiry date of sun-screen as it can go out of date
- if simultaneously using insect repellents, put sun-screen on first and repellent on second as sun-screen needs to be absorbed into the skin
- use lip-salve with sun protection on lips
- a wide brimmed hat gives good protection to the head and shoulders and can help to prevent over heating
- protect eyes using sunglasses that filter UVA and UVB[14].

17.2 Heat precautions

- It can take some time to acclimatize to a hot climate. Making some simple adaptations can reduce the risk of heat exhaustion which can be very unpleasant:
- if possible allow some time for acclimatization especially if the excursion involves working in a hot climate
- it is best to stay out of sunlight during the hottest part of the day, usually between 11am and 3pm – this is why siesta is common in many hot countries
- use clothing as protection (as before)
- drink plenty of fluids
- if urine becomes dark then fluid intake needs to be increased – this is a good indicator of hydration status
- take advantage of air-conditioning where possible
- a hand held personal fan can be invaluable when it is not possible to escape the heat – traditional and small battery operated fans are easily available.

17. 3 Heat exhaustion and heatstroke

Heat exhaustion and heatstroke can both be avoided with careful planning and this is the best approach.

Symptoms of heat exhaustion include malaise, feeling tired, dizziness, feeling faint, headache and fatigue. Treatment is through rehydration with water and other fluids – note that salts often need to be replaced too, so water alone is not always sufficient. Rehydration sachets are available but a simple rehydration solution can be made using, for example, soda, salt and lime juice. Spraying the face and body with a water-spray, or sponging down will help as will use of a fan.

Heatstroke is more serious whereby symptoms of overheating do not reduce with the methods above. Medical attention is needed with rehydration using intravenous fluids. Other additional cooling measures such as using ice packs to reduce the body temperature may be required.

17.4. Prickly heat

Prickly heat is a common complaint in hot and humid climates - it particularly affects children. It is caused by the sweat glands becoming congested and this leads to an unpleasant prickly sensation usually affecting the neck, chest and back. This may be accompanied by a rash and blisters. Regular showering and bathing can help, as can application of calamine lotion or zinc and castor oil cream for the itch.

18. Schistosomiaisis

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/disease-prevention/schistosomiasis.aspx

Schistosomiasis (also known as bilharzia) is a parasitic worm infection that humans acquire when skin or mucous membranes come into contact with infected fresh water. The infection is found mainly in Africa, but also in the Middle East, the Caribbean, parts of South America and parts of South-east Asia. For the risk in individual countries, check specific country advice pages on fitfortravel (http://www.fitfortravel.nhs.uk). Known infected areas include Lake Malawi, Lake Victoria and the river Nile.

Water that is infected with schistosomiasis is usually shallow, slow moving and contains underwater plants where snails live (e.g. streams, lakes, ponds and irrigation systems). Infection is not found in seawater or chlorinated swimming pools.

18.1. Transmission of schistosomiasis

The parasitic worm that causes schistosomiasis spends half of its lifecycle in fresh water and the other half in a human host. Humans who are infected with schistosomiasis excrete eggs in urine and faeces into fresh water. The eggs hatch and go through a lifecycle that includes snails. The snails then excrete microscopic cercariae which are able to penetrate intact human skin and mucous membranes.

Once a human is infected, adult worms develop and live in the blood vessels near the bladder or bowel. The adult worms lay eggs which eventually reach the stools or urine where, if excreted back into the water, the cycle begins again.

Individuals become infected when they come into contact with infected fresh water through:

- swimming or paddling
- diving or snorkelling
- taking part in other water sports e.g. canoeing, water skiing
- ingestion of infected water through drinking
- bathing or showering in water that has come from an infected source.

18.2. Schistosomiasis and school parties

Many school parties from Scotland visit areas where schistosomiasis is present, including some of the African lakes and Lake Malawi in particular. In recent years, a number of Scottish school groups returning from areas where schistosomiasis is present have been tested for schistosomiasis infection and up to 62% of them have been infected[2].

As the number of school parties going to areas where schistosomiasis is present increases, it is important to ensure that excursion organisers are clear about the real risks of infection and know how to prevent it.

18.3. Prevention of schistosomiasis

There is no vaccine or tablet that protects against schistosomiasis so prevention is based on avoiding exposure.

Local information about the risk of schistosomiasis in a particular area may be inaccurate or misleading. This is because the livelihood of many local people depends on tourism in the area, and there is no desire to deter visitors by highlighting the risk.

Prevention is dependant on:

- determining whether there is a risk in an area to be visited during the preparation stage
- not relying on local information on the risk of infection upon arrival at a destination, no matter how convincing
- choosing accommodation carefully – hotels and lodges close to known infected water sources may use these sources as water supplies e.g. for showers
- avoiding all contact with infected water, including swimming and water sports
- ensuring that water for consumption is safe (see Section 13.2. Water purification).

The following are **prevention myths** and cannot be relied on:

- infection is not spread in deep water where there are no snails
- infection is isolated only to certain parts of lakes, streams etc.
- brisk towelling after exposure prevents infection
- use of insect repellents prevents infection (most repellents are water soluble).

18.4. Symptoms and consequences of schistosomiasis

Usually there are no symptoms when infection occurs, but some people develop an itchy rash as the cercariae penetrate the skin – this is known as ‘swimmer’s itch’. In about 3% of infected people, a rash and fever develops about 8 weeks after infection. This is called Katayama fever and is caused by the immune reaction to eggs circulating in the body.

Most people remain unaware that they are infected for months or years but there is a risk of serious illness, including bladder cancer and liver damage, many years later. It is not known whether these serious late consequences of infection occur in people who have had only light exposures to schistosomiasis (e.g. one or two trips to Lake Malawi with exposure to the lake water), but they do occur in people who are frequently infected. To be safe, current advice is to test and treat *all* of those who may have been exposed.

18.5. Testing for schistosomiasis

Any individual who suspects an exposure, should contact their GP about 8 weeks after the last possible time they may have been exposed. The infection is diagnosed by taking a blood test, and by testing urine and stool samples. The tests look for the presence of eggs in stools and urine and the presence of antibody to the eggs in the blood. It takes about 8 weeks from the time of infection for the adult worms to start to produce eggs, so tests taken before this time are unlikely to show the presence of infection.

18.6 Treatment of schistosomiasis

If any of the tests are positive, treatment with a drug called Praziquantel will be offered. Treatment with Praziquantel is taken as tablets in one day, half of the tablets in the morning and the other half in the evening. Side effects from the drug are very rare. A single course of tablets is generally considered a cure for schistosomiasis.

Key Message: Although the treatment for schistosomiasis is relatively uncomplicated, best advice is to avoid exposure in the first place. There may be long term consequences for anyone who becomes infected and is not tested and treated.

19. Travel at high altitude

fitfortravel advice
http://www.fitfortravel.nhs.uk/advice/advice-for-travellers/altitude-and-travel.aspx

Travel excursions that involve travel at high, or even very high altitude, are becoming more common. The following is a classification of what is meant by high altitude:

- **high altitude –** is anywhere above 2400m and below 3658m e.g. Bogota, Quito and Cuzco
- **very high altitude –** is anywhere above 3658m and below 5500m e.g. La Paz, Mount Kenya, Mount Kilimanjaro and Everest base camp
- **extreme altitude –** is from 5500m and above.

Issues that need consideration prior to travel at high altitude include:

- increased exposure to sun and ultraviolet light (see Section 17.1. Preventing sunburn)
- the climate can be cold especially at night
- access to medical care may be difficult (see Section 11. Medical care abroad)
- there is a risk of Acute Mountain Sickness (AMS).

19.1. Acute Mountain Sickness (AMS)

Atmospheric pressure decreases with altitude. Although the percentage of oxygen in air remains the same, the barometric pressure reduces and the amount of oxygen that gets into the lungs through breathing and the amount of oxygen in the blood is reduced. This is known as *hypoxia* and it is the body's' response to hypoxia that causes acute mountain sickness.

19.2. Prevention of AMS

AMS is common at high altitude and more than 50% of travellers who go to 3500m or above will be affected. There is no way to predict who will be affected. The **main way to prevent AMS is through gradual ascent** – it is unwise to travel rapidly from sea level to high altitudes.

There is some evidence that use of a drug called acetazolamide (also known as Diamox) can reduce the chance of AMS occurring. This is not given to all travellers to high altitude as a matter of routine, and the decision on whether it should be taken or not is for the individual and the advising healthcare professional, and not the excursion organisers. Where appropriate, it can be prescribed by a physician.

19.3. Symptoms of AMS

Symptoms of AMS can be mild or severe and are often unpleasant. Common symptoms include:

- dizziness
- fatigue, flu like symptoms
- headache
- irregular breathing during sleep
- loss of appetite nausea and/or vomiting
- palpitations
- swelling of the face, hands and feet
- breathlessness.

Key Message: If symptoms of AMS arise then ascent must be stopped. If symptoms do not resolve then a rapid descent is required. If ignored, AMS is a potentially life-threatening condition.

19.4. Treatment of AMS

The key to treatment of AMS is to descend to a lower altitude. Over and above this, the actual medical treatment of the condition is too complex for the purposes of this document. If an excursion is planned to an area of high altitude, at least of the team leaders should have prior experience of travel to high altitude and know what to do if someone develops symptoms of AMS. In addition, specialist pre-travel health advice should be sought in advance.

Key points:

- seek specialist advice if travelling to an area of high or very high altitude
- one of the group leaders should have prior experience of travel to high altitude
- the key to prevention of AMS is gradual ascent
- group members must report symptoms of AMS to the group leader
- if ignored, AMS can rapidly become a potentially life-threatening condition
- rapid descent is the key to treatment of AMS.

20. On return

While most travellers have no significant health problems while they are away or on their return, some may experience health problems which require medical care, and others may have no symptoms or signs of disease but may have been exposed to infections while they were travelling which require diagnosis and treatment to prevent later complications.

20.1. Malaria on return

If the group has been to a malarious area, and a student complains of being unwell on their return, they should be urgently sent to their GP or attend accident and emergency department. They will be asked to give a detailed history of the country and region visited, the activities undertaken and the antimalarial chemoprophylaxis (if any) taken.

Although malaria classically presents with a fever, headache and feeling generally unwell, it can present with almost any symptoms, including diarrhoea and ‘flu-like symptoms. It can be a very serious, even fatal disease.

Malaria usually presents within 1- 3 months of return from a malarious area, but it can be as long as 1 year. Travel to a malarious area must be mentioned to the GP or other health professional whenever the traveller presents for medical care (see Section 8.4. Prompt diagnosis and treatment).

20.2. Diarrhoea on return

Many travellers experience diarrhoea and it is usually self-limiting and does not require drug treatment (see Section 13.5. Treatment of). However, if the diarrhoea persists on return, if there is any fever, or blood or mucous in the diarrhoea, or if it is associated with weight loss, then the individual should see their GP. Some organisms that cause persistent diarrhoea, need specialist follow up at an infectious diseases clinic, but this is not common.

20.3. Screening returning travellers with no symptoms

Some infections cause no obvious symptoms but should be diagnosed and treatment offered, if present. Schistosomiasis is an example of this (see Sections 18.5. Testing for schistosomiasis and Section 18.6 Treatment of schistosomiasis). If you think that any student has been exposed to schistosomiasis infection, they should be advised to see their GP at least 8 weeks after their possible exposure so the appropriate tests can be carried out.

21. Other sources of information.

The following resources are reliable and regularly updated:

- **fitfortravel:** http://www.fitfortravel.nhs.uk/home.aspx
  The public access website from HPS, which gives information on all aspects of travel health which is consistent with the information on TRAVAX (used by healthcare professionals)
- **Foreign and Commonwealth Office**:
  https://www.gov.uk/government/organisations/foreign-commonwealth-office
  Includes information about services that are available for UK citizens while they are overseas.
- **NHS Choices – Reciprocal Health Agreements:**
  http://www.nhs.uk/nhsengland/Healthcareabroad/pages/Healthcareabroad.aspx
  Information on reciprocal health agreements within the European Community and applying for the European Health Insurance Card (EHIC) online.
- **Diabetes UK:** http://www.diabetes.org.uk/
  Useful advice on all aspects of travelling for those with diabetes, including information on availability of insulin brands abroad etc.

21.1. Travel health equipment suppliers

Equipment for sterilising water and water filters can usually be purchased at outdoor sports, camping and adventure shops. Chlorine preparations can often be obtained from local pharmacies. Insect repellents are also available from local pharmacies and supermarkets, but availability can vary depending on the time of year. Mosquito nets and first aid kits are generally more easily available from specialist outlets.

Online suppliers include:

- **Itchyfeet:** http://www.itchyfeet.com/
- **Nomad:** http://www.nomadtravel.co.uk/
- **Purpleturtle:** http://www.purpleturtle.co.uk/index.html
- **SafariQuip:** http://www.safariquip.co.uk/
- **The Hospital for Tropical Diseases:** http://www.thehtdshop.org/default.aspx
- **Tiso:** http://www.tiso.com/
- **Travel With Care:** http://travelwithcare.com/
- **WorldWideNets:** http://www.worldwidenets.co.uk/

[Health Protection Scotland does not necessarily endorse the suppliers listed above].

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