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Editorial

In this issue we continue our policy of including material on Global Health with a number of articles that are related to this concept including a description of a new MSc in Global Health and an anthropological essay on Local Understandings of Illness and Disease. Both of the student articles discuss the local implications of HIV and another reflects on WHO involvement in Burma during the 1970s, It is no coincidence therefore that the up-coming BTHA conference on the 1st October 2001 is directly concerned with the issue of Global health and a consideration of the longer term traveler, being held this year at the London School of Hygiene and Tropical Medicine.

Larry Goodyer

Report from the Chair

CHANGE OF SECRETARIAT

We are sad to say good bye to Diane who has held the position of BTHA Secretary for 6 years. Diane has worked very hard for the Association and we would like to take this opportunity on behalf of all the members of the BTHA to thank Diane for her help, advice and support through the last 6 years.

Mina Sedani will be taking over Diane's role from the 1st July, 2011, providing secretarial support to the BTHA.

Please find below Mina's details and the new contact address for the BTHA. Please note both our email address and telephone number remain the same.

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Julie Gallagher

Asplenia

G Kassianos

Introduction

The spleen has an important role in removing bacteria and parasitised red cells from the circulation. It also produces proteins, such as properdin and tuftsin that have a role in complement activation and opsonisation, respectively. The effect of splenectomy is most apparent as a loss of phagocytic function and a depletion of marginal zone B cells that produce specific antibody. Loss of specific antibody production also increases the risk of infection by encapsulated bacteria. This is because the phagocytic function of the spleen normally involves clearance of microorganisms, such as encapsulated bacteria and protozoa.

After splenectomy, there is a reduction in circulating IgM memory B cells, which have a significant role in the production of natural as well as specific IgM antibodies. The latter are important in the early control of infection due to encapsulated bacteria. These IgM memory B cells originate in the splenic marginal zone B. Cells from this zone can rapidly respond to T-cell-independent polysaccharide antigens such as those in bacterial capsules. This in turn, activates the innate and adaptive immune systems.

Splenectomy has been estimated to carry a lifetime risk of overwhelming sepsis of up to 5%, although the risk is probably highest in the first 2 years after splenectomy and higher in children than in adults.[1]

Patients with surgical or functional asplenia (patients after bone marrow transplantation, with sickle-cell disease and some haemoglobinopathies) have reduced clearance of encapsulated bacteria, such as the pneumococcus, from their bloodstream. Splenectomy removes the splenic macrophages that filter and phagocytose bacteria and other blood-borne pathogens. After splenectomy, overwhelming infection can follow, caused most often by the encapsulated bacteria *Streptococcus pneumoniae* (90% of all cases of 'overwhelming postsplenectomy sepsis'), *Haemophilus influenzae* type b and *Neisseria meningitidis.* More than half of those infected die as a result of such overwhelming post-splenectomy infection. Other pathogens such patients are at risk from are *Psudomonas aeruginosa, Escherichia coli, Enterococcus species,* Capnocytophagia carnimorsus, group B streptococci, protozoa infections including babesiosis (a tick-borne protozoal disease with similar manifestations to malaria), and *Plasmodium* that leads to malaria. Such a complication is common in the first two years after splenectomy but it is not unusual for it to occur in later years. Among splenectomised patients, the incidence of this complication is put at 0.18-0.42% per year, with lifetime risk of 5%.

In order to avoid infections after splenectomy, specific measures need to be taken:

- antibiotic prophylaxis;
- prompt treatment of infections;
- education about the condition and its management;
- card or bracelet or pendant should be carried to indicate asplenia;
- appropriate and timely immunisation.

Immunisation

Before splenectomy, patients should receive pneumococcal, H. influenzae b, and Meningococcal serogroup ACWY conjugate vaccines (check that the child has not already received these) and seroconversion should be checked before the surgical procedure. If immunisation was not performed before splenectomy, it should be carried out after the operation. Asplenic individuals respond poorly to polysaccharide vaccines. Antibody levels are lower than in hosts with a spleen and wane more rapidly.

All patients with anatomical splenectomy or functional asplenia should be considered for the following vaccines.

- ***Pneumococcal polysaccharide vaccine (PPV)***
  If not given before, it should be given as soon as possible after the operation and before discharge from hospital. Boosters are needed every 5–10 years as indicated by antibody titres. Asplenic patients with lymphoproliferative disorders or sickle-cell anaemia may require reimmunisation earlier, after 3–5 years. The recommended pneu mococcal antibody post splenectomy is >40 u/mL. Because pneumococcal antibody levels may decline rapidly in some high-risk groups, GPs should consider monitoring these antibody responses, perhaps two to five years (the test can only be undertaken in a few centres). Some patients (e.g. patients with Sickle cell anaemia and lymphoproliferative disorders), in fact, may need reimmunisation earlier than the recommended 5–10 years. Such a decision may be made on the basis of antibody levels.

- ***H. influenzae b vaccine***
  In the case of a child, check that the vaccine has not already been given. The need for boosters is still unclear.

- ***Meningococcal C Conjugate vaccine (MenC)***
  Check the patient's immunisation status. Hib and MenC are given in the combined vaccine Menitorix® (Hib/MenC) To prevent meningococcal disease, the Meningococcal polysaccharide ACWY is no longer recommended. Instead, the DH recommends we use the meningococcal conjugate ACWY vaccine (MenACWY);

Asplenia *continued*

- ***Influenza vaccine annually***
  Children and adults previously unimmunised against pneumococcal infection and due to under go splenectomy or commence immunosuppressive therapy, such as chemotherapy and radiotherapy, are at increased risk of pneumococcal disease. They should be immunised according to their age as per UK recommendations. If fully immunised and under 5 years of age, provided one year has elapsed since completing the immunisation course, these children should be given an additional dose of the pneumococcal conjugate vaccine (PCV).
  It is important to follow the DH recommendations as regards to the timing of pneumococcal immunisation in relation to the splenectomy operation or the commencement of chemotherapy or radiotherapy and avoid vaccination during chemotherapy or radiotherapy. These recommendations for unimmunised children and adults are summarised in table 1. Where an elective splenectomy is planned, ensure the child has received Hib and MenC vaccinations as well as pneumococcal vaccination, as early as possible. Table 2 shows the immunisation schedule of individuals with asplenia or splenic dysfunction but also immunosupression, or complement deficiency, according to the DH *Green Book.*

Table 1. UK DH recommendations for the timing of pneumococcal immunisation in relation to splenectomy and/or immunosuppressive therapy, in unimmunised children and adults.

Procedure	Ideal time for vaccination **before** the procedure	Minimum time **before** the procedure	Minimum time **after** the procedure
Elective Splenectomy	4 to 6 weeks	Up to 2 weeks	
Chemotherapy or Radiotherapy	4 to 6 weeks	Up to 2 weeks	
Not practicable to vaccinate before Splenectomy			At least 2 weeks
Not practicable to vaccinate before Chemotherapy or Radiotherapy			At least 3 months after completion of therapy

Antibiotic prophylaxis
In children, the risk of infection after splenectomy is high enough to justify a tablet of phenoxymethylpenicillin (penicillin-V 125 mg up to age 5 years, 250 mg from 6 years onwards) twice daily. If cover for *Haemophilus influenzae* b is needed, amoxicillin can be given instead, at a dose of 125mg up to 5 years and 250mg for those over 5 years of age, twice daily. Prophylaxis should be continued for life, or at least until their sixteenth birthday. Patients who are allergic to penicillin should take erythromycin.

Ideally, postsplenectomy patients should take prophylactic penicillin (or erythromycin) for life. On the other hand, not many patients are willing to comply. In adulthood, by 2 years after splenectomy, the risks of overwhelming infection are much reduced to the point that prophylaxis in those who do not comply could be reserved for the most vulnerable (those with malignant haematological disease or immunosuppression). The adult prophylactic dose is: penicillin-V 500 mg twice daily or amoxicillin 250–500 mg twice daily.

Patients who are unwilling to take regular penicillin should be made aware of the risks and supplied with penicillin/amoxicillin to take immediately at the onset of suggestive symptoms.

Give the patient a splenectomy leaflet and a card to carry. Consider recommending a Medic-Alert bracelet or pendant.

Recommendations for Travel
Prophylactic antibiotics are taken irrespective of whether the patient has been fully immunised. If a patient is not taking antibiotic prophylaxis, he/she should do so during periods of travel and should keep a therapeutic course of antibiotics in reserve. The pro-

Table 2: Immunisation schedule with conjugated vaccines in individuals with asplenia, splenic dysfunction, immunosupression, or complement deficiency - according to the DH Green Book. "Age' indicates the age of patient at which asplenia or splenic dysfunction or immunosupression is acquired or when complement deficiency is diagnosed.

Age	*Month 0*	*Month 1*	*Later*
< 2 years (first presenting)	According to national routine childhood schedule (including Hib/MenC & PCV3 boosters	At least 1 months after Hib/MenC & PCV3 boosters: Single dose of MenACWY	After the second birthday: Additional dose of Hib/MenC & single dose of PPV
>2 years & <5 y (previously had PCV7	Hib/MenC booster PCV13	MenACWY (single dose)	PPV (at least 2 months after PCV13)
>2 years & <5 y (previously had PCV13	Hib/MenC booster PPV	MenACWY (single dose)	
>2 years & <5 y (unvaccinated or previously partially vaccinated with PCV7)	Hib/MenC booster PCV13 (1st dose)	MenACWY (single dose)	PCV13 (2nd dose) & (at least two months later) PPV
>5 years (regardless of vaccination status)	Hib/MenC PPV	MenACWY (single dose)	

phylactic dosage of phenoxymethylpenicillin – penicillin-V is as follows: children aged 1 month to 2 years:- 125 mg every 12 hours; aged 6 to 12 years: 250 mg every 12 hours; aged 12 to 18 years and adults: 500 mg every 12 hours. The prophylactic dosage of amoxicillin: children aged 1 month to 5 years:- 125 mg every 12 hours: 5 to 12 years:- 250 mg every 12 hours; 12 to 18 years and adults:- 500 mg every 12 hours.

A local doctor should be consulted immediately should infective symptoms of rigors, malaise or pyrexia occur. Local medical advice is very important because of a high incidence of penicillin-resistant pneumococci in a number of countries and, of course, malaria and other pyrexial disease in endemic countries.

Asplenic patients should be warned that they should avoid animal bites, especially dog bites as these can transmit the bacteria Capnocytophaga canimorsus, which can lead to septicaemia and death if not treated early and appropriately with co-amoxiclav or erythromycin. They should avoid tick-borne protozoal infection such as babesiosis. Babesia species is a red cell parasite that occurs along the eastern seaboard of the USA and in some parts of northern Europe.

Asplenic patients should avoid travelling to malaria-endemic areas, especially areas where falciparum malaria predominates. Such travellers are at particular risk of severe malaria. They should consider avoiding travel to malarious areas and in particular to coastal West or East Africa, where transmission rates of malaria are high. Strict adherence to the appropriate prophylaxis for the area being visited and avoidance of mosquito bites are essential.

The DH provides an information sheet and a patient card for asplenic and hyposplenic patients. This can be obtained from:

- England: Department of Health Publications tel: 08701 555 455, email: dh@prolog.uk.com
- Wales: Welsh Assembly Publications Centre tel: 029 2082 3683, email: assembly-publications@eales.gsi.gov.uk
- Scotland: Public Health Division 1, Health Department, Scottish Executive tel: 0131 244 2241

George Kassianos FRCGP, FESC.

Reference:

1 O'Neal B.J. & McDonald J.C. (1981) The risk of sepsis in the asplenic adult. Ann. Surg. 194, 775–8].

Frail, Disabled and Handicapped Travellers

I B McIntosh

THE PHYSICALLY FRAIL, DISABLED AND HANDICAPPED TRAVELLER

The majority of older travellers are relatively fit and aged between 65 and 80 years, with cruise ships often having a preponderance of senior passengers.

Population trends indicate an increasing number of people living to 80 years and over. Many will have enjoyed previous global travel, or visits to relatives far afield and desire to venture abroad again. A considerable number of elderly travellers have some measure of physical incapacity. A minority will be physically disabled and be dependent upon walking aids and wheelchairs. Individual disabled travellers have successfully undertaken journeys to some of the world's most remote places. The determined, goal-orientated, physically challenged can and do make remarkable global voyages. In western society, holiday-making and travelling have become civic rights. Handicapped people however frequently find this "civic right to travel" difficult to implement. Mobility barriers, unpleasant social-communicative contacts with non-disabled people and discrimination act as disincentives.[1] If they can overcome health and transportation hazards, international travel can widen restricted horizons and bring rich individual reward. Travel health professionals can facilitate the ease and comfort of the journey.

Some of the less able, intent on world travel suffer from loss of essential faculties and physical impairment due to stroke and chronic arthritis, or major joint surgery. Poor balance adds to mobility difficulties. Despite frailties most can travel where they will, with adequate preplanning and preparation. Some even find that transfer to a drier, sunny environment improves symptoms and enhances motility. Physical handicap is not an insurmountable barrier to international journeying but, the need for cautious, anticipatory travel planning and medical assessment is a vital pre-requisite, if these travellers are to relocate in safety.

Pre-travel consultation

Most will benefit from pre travel health consultation. Proposed route, transportation mode and destination are major considerations in determining the additional hazards of travel presenting to handicapped people. The health professional should be aware of the difficulties which can present to the disabled traveller, especially if wheel chair bound.

Gradually, access improvements are being made for travellers with disability who wish to holiday abroad. Ease of travel for these people revolves round the foreign location, local transport and accommodation facilities and the nature of the disability. The travel industry is slowly endeavouring to accommodate the needs of the less than physically perfect and their incapacity should not preclude desired international travel. However, increasing age is accompanied by increased incidence of stroke, Parkinson's disease, disabling arthritis, loss of function and faculties such as deafness and sight.

Inadequate, or non-existent, facilities for those physically disadvantaged are the norm in Third World and impoverished countries, and over much of Eastern Europe and Asia. Some societies are psychologically unprepared to recognise the special needs of those functionally disabled and may even positively discriminate against those who are physically incapacitated. Sometimes, individuals suffering severe physical frailty, functional disability and handicap should be advised to restrict foreign travel to countries best equipped to accommodate their needs.

Countries with the best facilities for the disabled are:

United Kingdom and Ireland
Scandinavia
Northern Europe
Republic of South Africa
New Zealand
Australia
Hong Kong and Singapore
North America including the United States of America and Canada[2]

This does not mean that these countries present no problems for travellers, but there is state provision for those with functional incapacity. Psychologically too, the populations of these countries are likely to react positively in support of individuals with physical limitations. At local level in all countries, however, there may be failure to provide the support necessary to maintain the smooth progress of the physically challenged en route, or in transit. In some countries such as the United States of America antidiscrimination laws may inadvertently act to this groups disadvantage e.g. early flight boarding restrictions in some States.

Disabilities

Handicap and disability can be divided into categories such as visible and non-visible conditions, ambulatory and non-ambulatory with drop-foot,

resulting from stroke, a visible, ambulatory condition and deafness a non-visible one. Public support is more likely to be offered for the former as the disability is obvious.

Pretravel documentation

The majority of world travellers leave the UK by air. People with acute and chronic conditions should complete and submit to the chosen airline in advance of the trip, the Medif form, as an indication that they are a passenger with special needs. The international air transport association has produced MEDIF and FREMEC cards for completion by disabled, potential passengers. Part 1 of the MEDIF, the 'INCAD? is a record of current incapacity to be completed by the passenger. Part 2 requires completion by the passenger's doctor. For most permanently disabled people, a medical report on current state is needed to permit airline transportation. The completion of a FREMEC form does not eliminate the need for prior notification of the disability for flight requirements, but can be used to ease transit for frequent airline passengers. This data transfer is wholly dependent on accurate completion of questions by the patient and on patient willingness to complete the form in the first place. Many elderly patients and those who are physically incapacitated still present to airlines without having completed the forms and airline agents can refuse onward transportation. Prior notification of physical incapacity before a flight is essential to ensure appropriate support is available on the day of travel. Blind persons and people dependent upon walking aids and wheelchair transport will also have to advise transportation staff, at train and bus stations and ports, of their special needs in transit, boarding and disembarking

DEAFNESS

Deafness is non-visible, strongly age-related and probably the most prevalent physical impairment in the old. About one-third of those over 75 years of age are affected to some degree and 20% over 80 years require hearing aids.[3] The older, deaf traveller runs the risk of missing important travel announcements at airports, rail and bus stations which may mean missed connections, but can be serious in the event of an emergency. Elderly travellers often switch off hearing aids when inundated by the cacophony of noise inseparable from busy transport transit points. Many people, whether they are hearing, deaf or have tinnitus, find that flying can cause pain or discomfort in ears, and temporary hearing loss

If travelling alone, the elderly very deaf person should inform the transport carrier and agencies of the need for special consideration. Couriers and travel stewards need to be briefed to keep a watchful eye upon them and ensure that there is adequate visual display information available. Many international airports now have special phone links for the hard of hearing, which use microcomputer technology. Deaf people can type in queries on a special telephone link and receive a typed reply in response.

Train travel for deaf and hearing impaired passengers has improved considerably with the introduction of new rolling stock and disability training for many front line staff.

When buying a ticket from the booking office at most major UK and European train stations, it is usually possible to amplify sound via an induction loop system, with the switch set to the 'T' setting on the hearing aid. Most public address systems in airports should have induction loop facilities, Text phones and public telephones with amplification and induction loops should also be available. Staff at the airport information desk should be able to tell you where to find these.

Vision Support services for blind or visually impaired people at airports on request include someone to:

- meet and guide through check-in, baggage check and customs controls
- advise personally when plane is boarding if in a 'silent airport'
- help boarding of the plane and stow any luggage

At a security search, impairment should be explained to airport security staff and bags should be repacked in a specific order, so that essential items can be located.

Guide dogs should be allowed to travel free of charge, in the passenger cabin.

LOSS OF VISUAL ACUITY

Quarter of a million of the UK population is registered as blind or partially-sighted and 2 million have some sight loss with three quarters of the group over 65 years of age.[3] Nearly 90% of older people wear spectacles and studies suggest 20% of 80 year olds are unable to read newsprint even with prescribed spectacles. Cataract and age-related macular deterioration occur in 20 to 40% of persons between 65-74 years with glaucoma affecting 20 % of others.[4]

Hypertropia – (far sightedness) where the point of focus lies behind the retina is the most common refractive defect, ***Myopia*** – (near sightedness) occurs where the point of focus is in front of the retina.

Presbyopia – an error in the refractive abilities of the eye - is a hypertropia for near vision. It develops with advancing age and results from a physiological change in the accommodative mechanisms by which the focus of the eye is adjusted for objects seen at different distances. The lens gradually becomes less pliable and eventually cannot accommodate in response to the action of the lens muscles, with a resultant failure to focus well for near vision. Remedial action is possible by wear of corrective spectacles.

Frail, Disabled and Handicapped Travellers *continued*

Cataract may be caused by senile degeneration, with gradual, painless loss of vision. If the opacity is in the centre of the lens, short sightedness develops early and a presbyopic person may discover that they can read without glasses. The condition is treatable with corrective spectacles and surgery, with cataract surgery most frequently performed surgical operation in western society.

Senile macular degeneration is a leading cause of visual impairment in the elderly and there is no known predisposing factor.

Many older people now spend long vacations, in countries with near constant high intensity day time sunlight. These two factors may see a rise in cataract formation and macular degeneration. One cause of cataract is oxidation which can be due to light damage and there are reports of increased cataract incidence in parts of the world exposed to strong sunlight for long periods.[5]

Light radiation reaching the eye passes to the retina and the macular part of it in particular, where it is absorbed by photoreceptors, usually protected from the harmful effects of light wavelengths in the ultraviolet range of visible light. With age the efficacy of the protection declines. Wearing good quality sunglasses is recommended for older people who venture into strong sunlight particularly when abroad. Wrap-around glasses offer best protection.

Logistically visual disability accounts for fewer travel problems than might be expected. Blind people are not welcome on sea voyages because of inherent shipboard dangers, but cannot be excluded from shipping. In many countries guide dogs cannot accompany blind passengers on external flights across borders, without the dog undergoing lengthy quarantine. In countries such as UK and USA, "Seeing Eye" dogs are permitted to ride in the cabin of the aircraft with the disabled owner.

Blind passengers using canes are usually allowed to retain them by their seat on aircraft, but stringent application of security regulations sometimes means that canes are taken away by over-zealous authorities. Swiss airports regard walking poles as offensive weapons and will not permit them into the cabin of the aircraft.[6] Stewardesses will normally provide information regarding seat row position and guide a blind passenger to appropriate seating and toilet facilities. Airlines exclude blind persons from sitting in exit row seats to ensure the safety of aircraft and passengers. Some discriminatory airlines are alleged; to refuse to allow blind persons to sit at emergency exits, insisting they sit in rear of the plane and requiring persons with dog guides to sit in bulkhead seats, and blind persons to pre-board, or be sequestered in a special holding area prior to boarding, or be subjected to special safety briefings and emergency instructions to wait until other passengers have deplaned before attempting exit. Many of these however seem sensible safeguards to benefit all passengers.

Ensuring safe travel in elderly, blind and partly sighted people may require travel with a sighted companion. For educational and other purposes, blind passengers can travel with an escort at reduced rates on British internal flights. Sound health in the travel companion is important.

CASE HISTORY

The companion to a blind person fell on the first day of a rough weather cruise breaking the left arm and right clavicle. She found it impracticable to guide the blind person around and he was confined to the cabin for the remainder of the cruise.

The introduction of modern rolling stock, better station facilities and staff training has improved the experience of travel by train for disabled passengers but it is important give advance warning to the railway company before the journey to allow support to be put in place. Modern rolling stock often has automated announcements advising station approach. A member of staff should assist train ascent and descent. On many trains,[7] there are Braille buttons for opening doors as well as toilets. The train will also have external doors that contrast with the body and interior hand rails of a contrasting colour, to help visually impaired passengers.

Major stations, such as those in cities, will have audio announcements, as well as visual screens, informing passengers of arrivals, departures, platform numbers and any delays that may occur. Many platforms now have a tactile edge near the running line to let blind and visually impaired passengers know that they are close to the railway line. Unfortunately these refinements which ease travel for the impaired will not be available in train travel across many other parts of the world.

PHYSICAL AND LOCOMOTOR DISABILITY

Arthritis and hip replacement may restrict access to trains, aeroplanes and coaches, and the confined space of long-haul flights may create severe cramps and spasm in fixed limbs.[8] Loss of joint mobility may result in difficulty in accommodating limbs to the narrow confines of the aircraft cabin. Cramped legs may increase the risk of development of deep vein thrombosis. Poor balance and postural instability, a feature of ageing, adds to the risk of falls which are a common occurrence in older passengers in the unstable environment on cruise ships.[9] Passengers should be advised to pre-book aircraft, coach and train seating, where practicable some weeks before departure, to take advantage of seat positions with additional leg space. They should avoid seating next to the body of an aircraft, facing bulkheads and where it is impossible to recline seats. The obvious seat positions where there is extra space, at emergency exits, are denied to the elderly and the incapacitated as airline regulations

stipulate that only the fit can occupy this seating, only allocated 24 hours before travel. However, an aisle seat has much to commend it for elderly travellers, as this allows extension of at least one limb into the passageway and eases exit from seating for exercise and toilet purposes.

Ships without lifts can prove an insurmountable hazard for those with fixed knees and hip deformities. Stairs and companionways can be narrow and steep on board ship, and seven to ten deck levels are commonplace. Transit of these areas in a swaying vessel is likely to cause falls in elderly people. Those with spastic limbs from stroke disease may also find similar restrictions to those suffered by the arthritic when travelling by sea or air.

Management

- Purchase of 'executive' or 'club class' tickets to acquire extra leg room, if affluent.
- Buying entry to executive lounges where feet can be elevated and exercise taken before and between flights and until a late call to emplane.
- Exercise limbs and avoid venous stasis and possible pulmonary embolism in restricted seating on a protracted airline or coach journey.
- Use of constrictive pressure stockings on protracted trips.
- Use of a walking pole for additional support.

Locomotion difficulties from imbalance and disabled limbs create difficulties on stairs, long walkways, on lurching companionways and decks, with a real risk of falls and fracture in older passengers. Passengers should consider the facilities, lift availability and the suitability of a cruise ship for their particular needs, as carefully as choice of cabin. Older ships have fewer lifts, limited disabled occupancy cabins and steep stairs, but newer ships have wide passages and stairways and many open spaces with a dearth of handrails. Access to life boats and emergency disembarkation should also be considered as lifts are rendered inoperative in the event of fire or flooding.[9]

INCONTINENCE PROBLEMS

Toilet access and continence are topics rarely considered by travel agents, but exercise the mind of many intending older travellers. The question of toilet access en route and on holiday is a prominent travel related anxiety.[10] UK or foreign travel brings inevitable restrictions on toilet access and variable toilet facilities. Abroad these are often coupled with limited water supply, inadequate sanitation and poor hygiene. This prospect can be daunting for those with good bladder control. It can inhibit the will to travel in those with urinary problems, fearful of possible loss of bladder control and urinary embarrassment, while in the public domain. Senescence per se does not cause incontinence, although ageing can affect the lower urinary tract and predispose to it. Some degree of occasional or regular incontinence is common among elderly people with up to 71% of those living in the community being affected. Estimates suggest that there are l million sufferers within the UK, the majority being citizens over the age of 65 and most being women.[11] Many are too embarrassed to discuss their functional disturbance and surveys have shown that only 1 in 5 is prepared to discuss this problem with a health professional. The affliction causes many to avoid far travel from home.

The mildly affected, sometimes pressurised into travel by spouse or offspring, may allow their fears to surface at pre-travel interview. The cause, in absence of a surgical disturbance, is usually due to bladder instability resulting from an uninhibited neurogenic bladder, which gives rise to urge incontinence, or sphincter weakness giving stress incontinence.

Several management procedures can relieve symptoms, bring control, or make the condition sufficiently manageable for the individual to travel without undue concern.[12] These should be instituted in the months prior to travel.

Those with normal bladder function, but with other physical disabilities may also meet with functional toilet difficulties while travelling in foreign countries. Poor locomotion or transport abilities, imbalance and lower joint stiffness, or rigidity are likely to create problems in toilets commonly met in transcontinental travel. Toilets, traditional to the host country, may cater for only those who can squat unaided over a plumbing fixture no more than a tiled hole in the ground.

Frail, Disabled and Handicapped Travellers *continued*

In continental Europe and the UK. where sanitary wear may be more conventional, toilet seats may also be absent. The ability to hover over a toilet bowl, or perch upon porcelain, in the absence of toilet rails and wall supports, is a skill often beyond the ability of the old, with arthritic joints and poor spinal function. Even if older women can manage this functional procedure, there is a 21% reduction in normal urine flow rate and 19% increase in residual urine volume in the crouching position resulting in the need for further toileting shortly.[13] This, associated with poor renal clearance and the possibility of dehydration and infection on a visit to a tropical country, may lead to serious urinary tract problems sufficient to ruin the vacation. At best, the women with urinary anxieties on a coach tour will be inhibited by the queue to reach the toilet and the line of women waiting impatiently for entry while she micturates.

In aircraft, trains, ships and coaches accessing toilet accommodation in a lurching, swaying conveyance can risk loss of balance and a fall. Grab handles may be at a premium in the convenience, seating may be too low for the less agile and floors can be awash making bladder relief a dreaded experience. Aircraft cabin staff can assist passengers to the toilet, but food handler status pre-empts them from providing assistance in the toilet, a consideration some disabled passengers fail to appreciate. The peripheral siting of rest rooms in stations and airports can also defeat elderly people faced with a long walk to find relief. Inadequately signposted loos are another traveller's hazard and communication difficulties can add to the trauma of the search. The difference between senora and senore is none too obvious to the linguistically challenged. Public toilets are rare in developing countries and when available are frequently poorly maintained and unhygienic. Toilet paper and hand-washing facilities are luxuries denied to much of the world's populace. Free toilet access is rare and toilet guardians will deny access no matter how great the need for entry, in the absence of appropriate coinage of the country.

Coaches in Eastern Europe and developing countries are likely to be without facilities and cramped for space. Onerous demands placed on the bowel by gastroenteritis, the scourge of travellers, with diarrhoea and frequent defecation needs, can further add to individual discomfiture when voiding facilities are inadequate.

Advised of the paucity and variation in toilet facilities common to foreign travel, the elderly traveller can usually, with sensible preparation, overcome many of these sanitary deficiencies. The informed doctor advising older patients on healthy travel can also help minimise problems relating to feared or actual incontinence.

The disorder is frequently neglected, poorly evaluated and ineffectively treated by family doctors. Improved bladder control can enhance the quality of life and can encourage travel. Fundamentally, the condition is due to over or under activity of detrusor function, or sphincter dysfunction, involving internal or external sphincter, or a combination of both.

Infections, medications, loss of muscle tone, and diabetes are other relevant features in elderly women.

Males suffer less from incontinence but they too can have urinary problems which can spoil a foreign holiday. Urgency from prostatism demands immediate access to a toilet, often denied by the waiting queue in long haul aircraft. Difficulties are likely to relate to prostatic hypertrophy and acute retention. Exposure to cheap wines and spirits often available abroad and on aircraft can lead to excessive alcohol ingestion and acute retention if the prostate is enlarged. Prolonged intervals between bladder voiding due to transit delays and lack of toilet access can precipitate inability to urinate. This may only result in painful embarrassment and the inconvenience of a trip to a casualty unit if the journey involves a UK coach tour, but abroad it may have more serious consequences.

CASE HISTORY

A fit, retired 67 year old school teacher on a coach tour to Devon from Scotland suffered an acute retention when his much-delayed coach, devoid of a toilet, was held up in a traffic jam on the motorway. He was admitted to an emergency unit, was catheterised and advised to have a trans-urethral resection. This was done shortly after admission, the operation was successful and he was fit enough to catch his coach on its return journey north.

Another 72 year old was less fortunate. He had always wanted to view the Himalayas and on this holiday of a life-time he finally reached Kathmandu. Unable to resist the call of the mountains, he arranged a few days trekking in the Himalayan foothills. The second night out from base, he suffered an acute retention. A passing medic in another trekking group was asked to help. In the absence of a catheter, the retention was relieved by the passage of a stethoscope tube. Although this brought immediate relief, he developed a urinary infection, became pyrexial, then dehydrated. He had to be evacuated back to the capital and, in the absence of wheeled transport, was carried out of the high valleys on the back of a Sherpa

Travel Plans

porter. Even in hospital his convalescence was protracted and he was very relieved to ultimately return to NHS care and subsequent operation.

Management
The pre-travel consultation allows nurse or doctor to tactfully explore with the patient any apprehensions regarding continence. If none are admitted the opportunity should be taken to advise on the variability of access and the quality of toilet facilities likely to be met in international airports and different countries, stressing the inadequacy of those in the third world. An information hand-out can reinforce instructions. Acquisition of passenger leaflets from British Airport Authority airports, detailing toilet access, should be advised.

Elderly American ladies, on the 'Blue Rinse' route through the States, travel with a clutch of paper toilet seat covers, a precaution more appropriate to antiquated washroom fittings in Europe than in the USA and a safeguard which could be appropriate for other elderly travellers abroad. One old lady patient, an intrepid traveller to far-away places and very familiar with the uncrowned toilet bowls of foreign parts, actually carries her own light-weight, plastic toilet-seat cover with her on her travels!

Ensconced within the tight confines of an aircraft or coach toilet, the old are likely to come to little harm, but traversing aisles and passages in ships on choppy seas or in lurching planes, trains or buses, they run the risk of falls and fractures. Use of a folding walking pole should be suggested, for accessing toilet accommodation on moving transport.

Given enough time before travel, those with occasional incontinence, or regular disturbance, can often be helped to overcome the problem, or make it manageable during travel. Patients may have to be coaxed into giving details of frequency, urgency, nocturia, dribbling and involuntary voiding with coughing and sneezing. These features help identify urgency and dribbling incontinence and provide pointers to management.[14,15] The nurse can obtain the history with the use of simple questionnaires on bladder control .The doctor should make a physical examination of pelvis, rectum and vagina to identify any specific causative factor and referred to the appropriate specialist consultant.

Most patients will be female and urinary tract infections, atrophic vaginitis, cystocoele and rectal overloading have to be considered and treated if found. Prostatism requires a rectal check and PSA investigation. Review of diuretics, hypnotics and sedatives is required. An MSU should be checked for infection and glycosuria. Patients should be encouraged to keep diary records of toilet demands and frequency, urinary volumes and number of incontinence pads used.

All too often no specific correctable cause will be found, but bladder retraining exercises and drug therapy can still help many of these potential travellers.

Causes of urinary incontinence
1 Detrusor instability - when the bladder muscle or detrusor contracts uninhibitedly - giving rise to urge incontinence, frequency, enuresis and stress incontinence.
2 Urethral sphincter incompetence – where urethral resistance is decreased and stress incontinence occurs.
3 Both conditions can coexist. Both frequently respond to treatment which needs to be instituted at least three months before departure on holiday

Treatment
If detrusor instability is not due to a neuropathy, bladder retraining is recommended. Retraining instruction involves emphasis on voiding at certain times and holding on for as long as possible. Stress incontinence can respond to pelvic floor exercises which young elderly individuals can tackle and practise with success. The traveller who suffers episodic symptoms of instability with stressful events e.g airport transit, aircraft take off , can be given a musculotrophic drug such as oxybutynin as it had a short half-life, Drug treatment of overflow incontinence is not very successful.

If there is little benefit from drugs, exercises and retraining, the provision of adequate incontinence aids such as Kanga pants and incontinence pads may make short and medium distance travel a practicality for those determined on global travel. Urisheaths, catheters and leg bags can be managed successfully en route by older patients, as long as intellectual impairment does not impair good control.

HISTORY
History taking by nurse or doctor should include:

Questions on:	destination and transportation
Discrete enquiries:	have you any worries about toilet access on the journey?
	do you have to get up at night ?
	do you sometimes not make it to the toilet?
	do you leak urine when you exercise, sneeze, run, cough,?
	do you have problems actually emptying the bladder?
Investigations:	Mid stream specimen of urine (organisms, sugar albumen)
	Prostatic specific antibody test
Advice:	Possibility of – limited facilities – no wash-hand basins, toilet paper, toilet seats, toilet bowls, wall supports, grab handles, privacy.

Non-availability on airside of customs and immigration, during protracted holding manoeuvres before

Frail, Disabled and Handicapped Travellers *continued*

aircraft landing/take off, and in developing countries.

Preparation: hand luggage carriage of toilet paper, toilet seat covers,incontinence aids, appropriate continence-inducing drugs.

Examination by doctor (if incontinence admitted) Vaginal and rectal examination to exclude infection, atrophy, cystocoele, rectal over-loading and prostatism.

Prescription: Prescribe oxybutinin twice daily as a trial, at least 3 weeks before departure, or if the problem is anxiety-related, to be taken before the stressful event.

Stress incontinence: Instruction in pelvic floor exercises with the patient taught to practise interrupted micturition every time she goes to the toilet and to carry out the exercises 8 times per day. A large number of sufferers can be cured if they carry out this regime.

Urge incontinence: secondary to bladder instability. Bladder drill and retraining is highly successful in compliant patients. Patients are allowed only to go to the toilet at certain times, which are progressively lengthened every two days.

WHEELCHAIR TRAVELLER

Wheel chair travellers face access problems with most transport and accommodation in over-seas travel.[16] They must consider aircraft size, ramp access wheel chair carriage and transit stopovers. The latter should be a major consideration as transit points on long haul flights may utilise an airport in the Middle East or the Gulf states with few aids for the disabled traveller. It is vital that at no point in long haul travel with transfers that a small plane is used on a feeder service. Most large international airports now have adequate rampage and wheelchair access and this is true of the majority of cruise ships. Coaches and trains however, even on conventional tours and routes have variable ease of access. Trains stations often mean dependency upon lifts which may or may not be operative. Between-deck lifts on ships may not be available in rough weather, or emergency situations, such as fire. British law makes it an offence for providers of goods and services to provide inferior service to a disabled person because of their disability. The Act on Accessibility (1999) to transport, applies only to new trains from 1999 and coaches from 2000. and does not apply to air and sea travel.

Careful ,early pre-planning and organisation will smooth the way to a safer journey. Competition between travel services ensures variability and medical counsellors should be prepared to discuss the benefits of 'shopping around' in ensuring that passage is made with the most caring carrier.

Air travel

Prior to purchase of a flight ticket the wheelchair bound should complete the appropriate forms requested by airline management – Incapacitated Passengers Handling Advice (INCAD) form and/or a Medical Information Form (MEDIF (see chap.7) In smaller airports, wheelchair access and provision may be inadequate or non-existent xvi At these locations disabled passengers may have to be manually lifted from the aircraft down steps by airport employees. Large airliners now carry skychairs – on board wheelchairs which expedite movement to the toilet.

Personal transportation of a lightweight wheelchair is advised even when passengers are accustomed to a battery operated one. As they are easy to store on board. Electric chairs are unwieldy heavy vehicles and carriage of batteries is often restricted by airlines. The carrying of electric wheelchairs is allowed An electric wheelchair will be classed as a dangerous material on account of its battery being considered a hazard. A wheelchair powered by a battery that could spill must have the batteries entirely removed. Batteries that cannot spill, do not have to be removed from the chair .Airlines must carry mobility equipment free of charge but many airlines only allow one wheelchair per plane.

The physically handicapped may have to consider travelling with a companion to expedite transit changeovers and provide en route support. Some airlines, charge a nominal fee only for the carriage of such a travel supporter. To travel alone the passenger should be capable of moving from a passenger seat to an on board wheelchair, as cabin crew are prohibited from lifting passengers in and out of seats.

For safety reasons, airlines are entitled to require that the disabled person travels with a companion if not self-reliant.

To travel by air alone, the traveller must be capable of:

- unfastening seat belt
- leaving seat and reaching an emergency exit unaided
- donning an oxygen mask and lifejacket

- understanding safety briefing and instructions given by the crew in emergency.
  If help is required for feeding, medication or toilet, a travel companion is needed.

Every airport in the UK now offers free assistance for disabled passengers to reach and leave planes. This applies to visible and non-visible disability.

RECOMMENDED AIRLINES

Air Canada: This airline provides good support within the airport and assistance on board, with regularly checks to ensure all is well. On most flights, extra seating is available at no extra cost if needed due to disability. Service animals are allowed provided they can sit at the feet without protruding into the aisle.

Continental Airlines: The airline offers special seating arrangements and on board assistance, including help for those with mobility problems whether or not they use wheelchairs. They welcome service animals and have a special onboard kennel to make them more comfortable.

EasyJet: EasyJet will arrange assistance to get to plane-side with a lift up any steps in a carry chair if necessary. Some support is available onboard but there are no aisle wheelchairs. Safety instructions are provided separately for visually impaired and hearing impaired passengers. Service animals can only travel on domestic flights.

Quantas: Quantas, provides full support from the moment of arrival at the airport, will lift you in and out of seat if needed, and arranges early boarding. Service animals are welcome and, if a carer is needed both customer and carer travel at reduced rate.

Virgin Atlantic: This airline provides a good support service for visually impaired and hearing impaired passengers and passengers with mental disabilities who choose to travel alone. There's limited support for mobility impaired people, with spacious adapted toilets on longer flights.

Service animals are welcome to travel in the cabin on most major routes. Airlines must carry mobility equipment free of charge. Disabled travellers must advise the airline when booking the flight with details of wheelchair or scooter, particularly if a powered wheelchair or scooter. Seating on board an aircraft has to meet air safety regulations. The wheelchair will be stored in the hold of the plane.It is usually possible for the passenger to stay in their wheelchair until plane-side before transfer to an on-board chair,.an easy task if there is an air bridge connection..If the plane is parked away from the terminal, passengers will to use a flight of stairs to board, or a scissor lift, If the wheelchair has to be specially packed, it may be necessary to transfer into an airport chair at check-in, especially if a powered wheelchair or scooter.

Under European law, disabled people and other people with reduced mobility have legal rights to assistance when travelling by air. Airlines are not obliged to fly disabled passengers who are flown at their discretion. There are only two specific reasons why they may deny flying access. The first is if there may be a danger to other passengers. The second consideration is the risk of requirement for urgent medical attention which could force flight diversion.

Medications

A chronically ill and infirm person is allowed to take all medicines needed onto the flight, even if that means exceeding the usual security allowance for liquids. These should be in their original containers with liquids packed separately in a clear plastic bag. Extra water can be carried if needed for health reasons. Prescription liquid medications and other liquids needed by persons with disabilities and medical conditions include:

All prescription and over-the-counter medications (liquids, gels, and aerosols) including petroleum jelly, eye drops, and saline solution for medical purposes; Liquids including water, juice, or liquid nutrition or gels Life-support and life-sustaining liquids such as bone marrow, blood products, Frozen items are allowed as long as they are frozen solid when presented for screening. If the liquid medications are in volumes larger than 3.4 ounces (100ml) each, they may not be placed in the quart-size bag and must be declared to the Transportation Security Officer. A declaration of content can be made verbally, in writing, or by a person's companion, caregiver, interpreter, or family member.

Declared liquid medications and other liquids for disabilities and medical conditions must be kept separate from all other property submitted for x-ray screening. Repeat prescription forms for the medication should be carried with a ist of medications and preferably a note as to their need signed by the family doctor.

Frail, Disabled and Handicapped Travellers *continued*

Coach Travel

Pre-enquiry must include availability of a mechanical wheelchair lift, or employees willing to manually assist passenger and whether the wheelchair can be secured to the floor,the passage permits transfer from wheelchair to seat and there is access to on boared toilet? Novice travellers must be aware that in many parts of the developing world tourist coaches will have no toilet and be cramped for space. Local buses if available,will be grossly overloaded, with a scramble for seats at each stop.

Train Travel

There may not only be a gap between platform and carriage but many continental trains have carriage doors raised high above ground. Porterage is now rare at many stations. On board toilets can be squalid, unhygienic and with flooded floors. Assistance may be only a bell press away, but speedy aid is dependent on the cooperation of a conductor often many coaches away.

Cruise ship travel

Many of the large ships have excellent disabled passenger cabins and adequacy of between deck lifts but older ships still suffer from passage, toilet access and stair obstructions. Transfer to shore by ships tender is still common with ladders to be negotiated on and off the ship. Gang-planks can be steep and even in benign weather, negotiating broad ship spaces can be challenging. In rough weather wheelchairs can be tilted over.

Despite many advances in access to airports and stations aircraft, trains and coaches in the developed world, travelling with a wheelchair remains a challenge and transport services are not user friendly. In the developing world and many foreign parts the experience can prove daunting with vagaries that the best of planning cannot anticipate. Safe world travel is however feasible for most elderly disabled people guided to realistic goals, on carefully preplanned individualised journeys. Travelling with a supporter alleviates many problems in transit but their health is also a consideration.

CASE HISTORY

A severely disabled lady accompanied by her spouse was travelling to the Arctic on a cruise ship accommodated in a disabled person's cabin. She required assistance feeding, toileting and getting to bed. Halfway to Greenland the husband had a severe heart attack and had to be helicoptered to the distant mainland. The wife was left bereft of care. Medical and nursing staff coping with a norovirus outreak could not help, nor were cruise staff permitted by regulation to give intimate support. Goodwill and ad hoc temporary arrangements provided basic feeding and toilet assistance until she too was flown out on a casualty evacuation flight to Norway in a very expensive repatriation exercise.

Summary

- World travel is feasible for elderly disabled people on customised journeys.
- Counsellors must guide towards realistic goals and anticipate problems.
- They should consider travel with a healthy spouse or independent supporter.
- They should be directed towards support organisations for further advice on travel arrangements.
- Safe travel in the frail elderly and handicapped passenger demands careful pretravel planning, competent medical assessment, sound counselling and a user friendly transport mode and destination.

Within acceptable parameters, world travel need not be out of reach for those with physical and functional limitations. It can expand restricted horizons and be a worthwhile venture.

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DISABLED TRAVELLER INSTRUCTION LEAFLET

Ten Tips for Healthy Travel

The ease of travel for a person with a disability depends upon destination, transport and accommodation facilities, .Plan and prepare in advance before travel abroad.

Plan ahead

1 ***Discuss with travel agent*** accessibility of transport and accommodation, especially if using a wheelchair. If you require assistance for a flight you will be required to complete an Incapacitated Passengers Handling Advice? (INCAD) form. The second part of this form Medical Information Form? (MEDIF) needs to be filled in by your Doctor if you have a medical condition.

2 ***Seek advice early*** for immunisations, malaria prevention, health education, fitness to fly certificate, medical facilities in destination country.

3 ***Acquire medical insurance cover,*** making sure emergency repatriation is included and maintenance or replacement costs for physical aids, mobility or medical equipmentare included.

4 ***Prepare for the journey:*** How do you plan to get to the airport, access transport, store of aids or equipment, obtain assistance, order special diets, access toilet facilities on aeroplane, train or boat?

5 ***Carry any medication*** required in hand luggage for journey and destination. Carry prescription repeat forms and list of medications and doctors letter for injections. Wear a medicalert bracelet if appropriate

6 ***Maintain hydration*** Before departure by plane, boat or train, do not reduce fluid intake to reduce the need to go to the toilet. It is important, particularly for flying, that you maintain fluid intake.
7 ***Do leg exercises*** during journeys when sitting a long time.
8 ***Confirm destination arrangements:*** How will you be met and who will meet you at the airport if you need assistance.
9 ***Carry names of contacts*** and telephone numbers of contacts at destination should plans go astray.
10 ***Carry a language phrase book*** and learn key assistance phrases before departure.

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CHECK LIST FOR TRAVELLERS WITH EXISTING HEALTH PROBLEMS

- Arrange a full medical check up several weeks before departure.
- Ensure adequate and inclusive medical insurance cover including repatriation.
- Consider whether the special form should be completed to advise transport agents of disability before departure by air.
- Advise airlines of special medical, dietary and mobility requirements.
- Re-assess medication before departure. Drug review should pay special attention to diuretics, insulin, hypnotics, H2 antagonists, anticholinergics, anti epileptics and interactions with anti-malarials.
- Adequate medication should be carried in the hand luggage.
- Be aware of special risks of high altitude and, climate extremes.
- Consider the need for supplemental oxygen if potential respiratory problems in aircraft.
- Consider adjustment of food intake and insulin dosage if diabetic.
- On long haul flights endeavour to exercise legs as often as possible and avoid staying immobile for long periods.
- Be aware that medical ,transport and toilet facilities en route and at destination may be of poor standard.
- Disabled cruise passengers should check the adequacy of medical and access facilities before booking.

Useful Contacts

The Disabled Living Foundation – information on flying and travel advice. 380-384 Harrow Road, London W9 2HU. Tel 0171 289 6111.
The Royal Institute for the Blind – information on tape for flying and travelling. 224 Great Portland Street, London W1N 6AA. Tel : 0171 388 1266.
Royal Association for Disability and Rehabilitation (RADAR) produce information for disability and travel.12 City Forum, 250 City Road, London EC1V 8AF. Tel: 0171 250 3222.
Heathrow Airport – Free guide to facilities Traveller's Information Special Needs.
Tel 0181 745 7495.
Extensive Advice on Travel for the Disabled at Disabled Travel – www.disabledtraveladvice.co.uk

Resources

Health Advice for Travellers. Department of Health – Available free from post offices. Contains basic travel health advice, recommended immunisations, information about travel insurance and entitlement to medical treatment in the European Community www.direct.gov.uk/DisabledPeople/TravelHolidays AndBreaks

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National Suppliers of Medical Goods

Travel Medical Centre Ltd. Provide Sterile Injection. Kits (with Intra-fusion drips) Charlotte Keel Health Centre Seymour Rd Eastern Bristol BS5 0UA
Homeway Promotions Ltd Provide Range of Travel Goods
The White HouseLittleton Winchester Hampshire. SO22
Industrial Pharmaceutical Service Ltd. Provide Travel Sterile Packs only. Bridgewater RdBroadheath Altrincham Cheshire WA14 1NA
Philip Harris Medical Ltd. Provide Travel Aid Kit with sterile syringes, dioralyte
SafariQuip AccessibleGuide.co.uk/FreeGuide

Frail, Disabled and Handicapped Travellers *continued*

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Local Understandings of Illness and Disease, and the Impact on Disease Control Programmes

J Davies

Public health and disease control programmes undertaken in continents such as Africa and Asia can meet with varied success. Often this is not because of lack of good intent, money or even good science, but failure to take into account local understandings, hierarchies and allegiances to traditional beliefs and its actors. This is especially true when there is a pluralistic medical system, where both biomedical and traditional medical ontologies vie for the control of the people and interpretations of illness events often based on post-colonial thinking.

This article will look at examples in both continents where disease control programmes have proved difficult to implement and sustain, due to an ignorance of the local understanding of the illness by the delivering authorities. It will also show how research by ethnographic methods can work with the biomedical model to increase the success of a disease control programme.

Malaria is the biggest single cause of mortality worldwide especially in Africa where it is estimated that between 700,000 and 900,000 people mainly children under five die of the disease per year (WHO Media Centre 2010). However this could well be an underestimate as it is difficult to obtain accurate figures because many febrile illnesses are treated as malaria without proper diagnosis and many children will die of malaria having no access to hospital treatment or diagnosis. Malaria is also prevalent in other countries such as India.

Over the past years many malaria control programmes have tried to reduce the morbidity and mortality rate from the disease and yet it is still on the increase. This essay will look at two different approaches in India and Africa to reduce the burden of malaria on the people.

The Malaria parasite is spread by the female Anophiline mosquito; she requires a blood meal every time she matures a batch of fertilized eggs. The blood meal often comes from a human as the obligatory species. It is during this meal that the sporozoite stage of the parasite migrates from the salivary gland of the mosquito and enters the victim resulting in malaria, if the human has no acquired immunity. At the same time malaria gametes can be transferred to the mosquito from that person infecting the mosquito which allows the life cycle of the *Plasmodium* parasite to continue.

Treating people who harbour the malaria parasite, to eliminate the 'reservoir', is impossible because of the enormity of the cost and the political and logistic problems it poses. As a result many malaria control programmes are aimed at reducing the number of mosquitoes i.e. the vector, and reducing the ability of the vector to bite.

In 1960 the World Health Organisation (WHO) unrolled a programme to eradicate malaria worldwide by a programme of spraying DDT, a residual pesticide, in order to eliminate the vector. However logistical and political difficulties caused the programme to fail. (WHO 1961). Ethnographic research may have helped in some countries where suspicion and clashes with local beliefs may have allowed more sensitive delivery of the programme. However the residual effects of DDT and its harm on the wildlife also helped to negate the effectiveness of the programme.

Nonetheless, local programmes of vector control using insecticide treated bed nets have also met with limited success. Drawing on a study done in tribal areas of Orissa India (Jambulinam 2008) based on the knowledge that properly used bednets can reduce the incidence of malaria by up to 50%, and overall mortality in the under- fives by as much as 70% (Alonso *et al.* 1991), a programme of supplying free treated bednets to a number of villages was rolled out.

However problems were encountered with the programme as local understanding of the causes of malaria varied. Some believed that mosquitoes were not involved but that the disease could be caused by drinking or wading in dirty water, by overwork, by too much sun exposure, or by irregular meals, and with 38% professing no knowledge of causation. These causes were also given by people of Tanzania, when asked the same question. (Hausmann Muela 1998). Not surprisingly there was a direct relationship between understanding that mosquitoes were the cause of malaria and the successful use of the bednets.

Bednets required retreating with the insecticide every 6 months or so and although the bednets were provided free, in the study in India the treatment had to be paid for. This payment was beyond the means of many people and the ones who paid did so out of fear that they might lose other welfare benefits.

So here was a clear case where the science was sound but the social research and marketing was poor. There is no doubt that prior ethnographic research would have increased the success of the programme by running an education programme alongside the bednet distribution and assessing the beliefs of the people first so the programme could have been delivered with greater sensitivity.

The majority of deaths from malaria occur in the under-fives as the children are vulnerable after the passive immunity from the mother has faded. Therefore malaria control programmes have been targeted at the under-fives because the majority of children who survive in an area where malaria is

Local Understandings of Illness and Disease… *continued*

endemic will develop some immunity.

Of the five malaria parasites known to affect humans *Plasmodium Falciparum* is the species that accounts for the greatest mortality. The mortality is a result of the unique way the 'schizont' stage of the parasite develops in the red cells and causes the red cells to become irregular and sequestrated. The irregular cells then clog the small arterioles starving the recipient organ of blood and therefore oxygen. Therefore it can be seen that the presenting symptoms of malaria may be many and varied depending on which arterioles are blocked. For example if the arterioles feeding the kidney are blocked renal failure can ensue, and if those feeding the gut are blocked then diarrhoea and vomiting can ensue. Blocking the arterioles in the lungs can cause severe breathing problems and if the arterioles feeding the brain are blocked the patient may have fits and loss of consciousness leading to death, a complication commonly known as 'cerebral malaria'. Also the destruction of red blood cells and the trapping of red cells in an enlarged spleen, present during the development of immunity, can lead to severe anaemia.

Problems in the rapid treatment of malaria can arise when there is a pluralistic medical tradition. The different presenting symptoms of malaria can allow the symptomatology to be interpreted in different ways, as the ontologies of biomedical and traditional medical practitioners compete for control of the people and their illness. For example, whereas a biomedical doctor would be suspicious that convulsions and coma could be caused by malaria in Tanzania, this may be interpreted by traditional healers as something completely different, *degedege*. This dual interpretation can be confusing to a mother whose child is seriously ill with malaria, causing her to delay visiting the hospital for treatment, and reducing the chances of her child surviving.

In Tanzania where witchcraft is common, convulsions, *degedege* and the presence of anaemia and a large spleen *bandama* are seen to have supernatural causes (Hausmann Muela 1998). This requires the mother of a child to seek help 'protection' from a traditional healer before going to hospital. Whereas they understand 'normal' malaria *homa*, any symptom that deviates from fever with its associated malaise and myalgia is given a causation derived from traditional beliefs.

The mother may reason that the cause of the convulsions or coma may be due to witchcraft. This may not be directed at the child, but is a direct effect of spirits sent by witches aimed at another member of the family because of envy or revenge. The convulsions are interpreted as *degedege* a traditional illness. There is little doubt that most of the convulsive states are the result of 'cerebral malaria' (Langwick 2007). However traditional healers argue that the needles used to treat malaria can also bring on *degedege* and possibly cause a fatal outcome (Langwick 2007), another argument that often makes the mother take her sick child to the traditional healer first.

There is a fundamental difference in the understanding of the curative cultures. The traditional healer seeks to 'toughen' the exterior body to prevent penetration by spirits, whereas the biomedical doctor looks inside the body to find parasites to eliminate. The healer, whose focus is more on the body, does not have to show the spirits or eliminate them, only prevent them entering.

Malaria parasites can be difficult to detect, even though malaria is present. The failure to find them in a blood film therefore reinforces the belief in a supernatural cause. The spirits *manjini* can do two things. Firstly they can mask the parasites so that the hospital will not be able to detect them on microscopy, not an unusual occurrence as it can take three successive blood films before parasites are identified, and secondly, the *manjini* can cause an illness that mirrors the symptoms of malaria, but is not true malaria, which also explains why parasites may not be detected even though the child displays all the symptoms of *homa*.

Another reason for parasites not being detected in a blood film is the use of anti-malarial drugs given before a hospital visit, as these can eliminate the developing parasite in the red blood cells. Unless the treatment course is completed it will not eliminate the disease. The danger is that failure to detect the parasites under the microscope again, favours the diagnosis of 'witchcraft' and the biomedical treatment is therefore stopped while a traditional cure is sourced.

The traditional medicines and herbs used in the treatment of *degedege* are bitter. It is believed that too much 'bitter' causes the blood to boil (Hausmann-Muela 1998). Drugs that biomedical doctors use to treat malaria such as quinine and chloroquine are also bitter. Therefore, to prevent an 'overdose' of bitterness, western medication may be stopped or reduced allowing the disease to remain or recur. The failure of treatment and recurrences of the symptoms will lead to the suspicion of a supernatural cause.

It is also believed that *Majini* can cause the elimination of western medication by vomiting or toughening the skin to prevent needles entering or causing them to break, thus necessitating a visit to the witchdoctor before visiting the hospital.

Therefore, because the symptoms of 'severe complicated malaria' can be interpreted as a traditional illness, it allows the traditional healer, *mganga*, to be a major player in the treatment of the sick child, often delaying curative biomedical treatment. Even though, in Tanzania, educational programmes allow the people to have a good understanding about the aetiology of malaria, it does not answer the question 'why me?' In a culture where beliefs in witchcraft are strong and suspicion and superstition are prevalent, the people turn to witchcraft to answer those questions.

Hausmann Muela (1998) gives an example in her paper when she tells of a woman that understands that mosquitoes spread malaria but wants to know 'who sent that mosquito'. A theme I shall return to later.

There is also a battle of the ontologies for the control of the people and their illness. The traditional and long held beliefs, around *degedege*, belong to the traditional healer and the observation of parasites in the blood is the domain of the biomedical doctor. While it is important for the two medicine cultures to work alongside one another in order to preserve the pride and ego of all players, there is the potential that the traditional system can cause serious and possibly fatal delay in treatment.

The ethnological research suggested the promulgation of two messages. Firstly, not completing the course of biomedical treatment may lead to recurrence of malaria, and secondly, taking malaria medication before a hospital visit may temporarily eliminate the parasite from the blood preventing the diagnosis. However ethnographic research suggests that the main cause of poor treatment-seeking behaviour may be economic because of the lack of money or the lack of time due to agricultural work (Hausmann-Muela 1998 Langwick 2007).

In another example, of the conflict between two competing medical cultures, Heald (2002) describes how HIV/AIDS, in Botswana, has been reinterpreted as *tswana* a traditional disease, and a progression of other venereal diseases. 36.1 million people are estimated to be living with HIV/AIDS in sub-Saharan Africa (UNAIDS 2000). Against this background a disease control programme was launched in Botswana.

Botswana is one of the richest countries in Africa largely due to both the diamond mines at Orapa, and a relatively stable government with a small population of 1.4 million people. It has a well run health service and has the enviable ability to be able to provide anti-retroviral drugs to sufferers of HIV/AIDS. However it is still the case that 50% of 15 year olds will die of AIDS or AIDS related illnesses. There was an exceptional rise in people with HIV/AIDS with the number doubling between 1992 and 1997 and 43%-50% of pregnant women testing positive for the virus. During ethnological work it was discovered that HIV/AIDS was not necessarily seen by some of the people as a new disease, but rather a new presentation of an old traditional disease, *tswana*.

HIV/AIDS was initially described by the government as mainly a disease of white homosexuals and therefore was ignored for some time by the local population (Heald 2000). The language of AIDS was always that of Western science and biomedicine which excluded the traditional healers and marginalised them within the management of the disease. Even the government slogan ABC," Abstain, Be faithful and Condomise" was written in 'white man's' English rather than Setswana the traditional language. However further ethnological investigation revealed deep flaws in this strategy. It was not understood that in Botswana kinship, discourse around sexual matters was not encouraged and that advocating the use of condoms was seen as an invitation to promiscuity causing a backlash that saw the condom as a cause of HIV/AIDS.

In Botswana there are many spiritual churches that support the traditional healers, *Tswana* doctors. These traditions are normally hostile to western medicine. In Botswana, females are more likely to follow the churches with their spiritual healers whereas males are more likely to follow the traditional healers. (Hausmann Muela 1998). Most of the traditional medical cultures rely on diviners, throwers of bones, to diagnose and treat illnesses. It is true that the majority of people use the well established western medical facilities (Seely 1973). However western medicine offers a treatment regime but does not explain the underlying reasons why the person contracted the disease. A view reflecting similarities in the example of 'the directing of the mosquito' mentioned above and a point made by Evans-Pritchard (1976) in his book 'Oracles, Witchcraft and Magic among the Azande'. The traditional beliefs offer a rationale for the contracting of an illness and explains the chance nature of illness in terms of witchcraft, which may be as a result of anger, moral misdemeanours or breaking taboos. This view of witchcraft is reinforced when western medicine fails to cure or prevent HIV/AIDS.

Some traditional healers blamed AIDS and the breakdown of traditional culture and loss of traditional values on the white man. Pills, condoms and contraceptive coils related to the HIV/AIDS programme were seen as symbols and tools promoting this change. The spread of HIV/AIDS was a white man's way of reducing the population, a view almost certainly born from colonialism and a theme I shall return to later.

The traditional healers have an understanding of HIV/AIDS and venereal diseases that does not totally match the Western model and although it is believed that venereal diseases are spread by sexual intercourse, it is believed that they can mutate for example gonorrhoea after a time can become syphilis harboured secretly in the woman, or that it is intercourse with the wrong woman at the wrong time that causes the disease rather than the transfer of an infecting organism. Examples of causes could be breaking the taboos around not having intercourse in the three month period following birth, or intercourse after an abnormal birth before ritual cleansing. This view of the aetiology of HIV/AIDS locates the blame firmly in the woman. Man's role serves only to transmit the 'pollution' from one woman to another.

Another belief explains how the health of the body can be weakened, allowing the contracting of

Local Understandings of Illness and Disease… *continued*

HIV/AIDS, and how wearing a condom can create that weakness. In Botswana, the traditional understanding of the body is of a tube full of blood, the blood needs to be kept thin, red and flowing. During the union between a man and his wife, blood, semen and vaginal fluids need to be mixed to create a 'good' blood flow, which maintains health. Preventing such 'flows', as when wearing a condom, creates blockage and causes bad health and disease such as AIDS. (Heald 2000).

The ethnographic research revealed something far deeper than just the mistrust of western tradition which may be a reaction to colonial days and its reinterpretation of the disease. It revealed a society where the poor and uneducated saw their traditional culture being eroded accompanied by a loss of power of the elders and chiefs, and the loss of power of men over women. The increase in diseases like HIV/AIDS, the rise in teenage pregnancies and the breakdown of traditional social structure, especially the loss of control of women was blamed on supernatural causes, confirming the belief that witchcraft must be to blame and therefore propelling people towards traditional healers.

There was also a new order of wealth developing in Botswana producing envy and suspicion, the very conditions that encourage the use of witchdoctors to avenge differences. It is clear that if the HIV epidemic is to be halted, an 'African' understanding of the disease needs to be considered both in a political sense and in a practical way that allows the western message to be understood.

Footnote:

When I was working in Botswana in 2005 I had occasion to speak with the health minister regarding HIV/AIDS. She told me of a new HIV culture that was developing. In Botswana all people who are HIV positive receive anti-retroviral drugs and regular hospital follow up. Also they receive a state pension. It is believed, by the people, and it may be true, that the survival rate amongst that group is greater than that of the local, uninfected, population. There is now a culture where young people are now purposely infecting themselves with HIV to achieve 'citizenship' of this group. One girl told me; 'my boyfriend 'dumped' me because I was not infected with the virus and therefore I was no good to him'.

Other well meaning health campaigns in Africa have failed because of the lack of 'local' understanding. In her paper (Feldman-Savelsberg 2000) describes a programme of vaccination against tetanus for young girls in Cameroon in 1990.

The anti-tetanus vaccination of young girls produces anti-bodies in future mothers which would protect their unborn babies against tetanus. Tetanus is a fatal disease caused by an infection with the tetanus bacteria which neonates can acquire from dressing the umbilical cord with ash or cow dung.

The poorly advertised and explained campaign caused panic because it was thought that the vaccine was being used to sterilise young women. This view may be a result of post-colonial thinking following the French vaccination campaigns against smallpox and efforts to eliminate sleeping sickness and leprosy. There was also confusion when the vaccination and birth control campaigns were linked erroneously. 'Superstitions and rumours arising from misconceptions and miscommunications emerging from a clash of interests and perspectives' (Geertz 1973) caused the campaign to be cancelled. It was unfortunate that the anti-tetanus campaign was announced concurrently with the Government's contraceptive campaign. In the minds of the people the two became linked, a suspicion reinforced by the fact that only females were offered the vaccine. There were also political struggles between various churches and the government which increased the suspicion. Rumours spread initially that the vaccine was 'bad' and unhealthy, and, when the anti-abortion groups became involved, rumours began to circulate that the vaccine made girls sterile. Soon the suspicion that the vaccine was 'sterilising' spread throughout the whole country.

There were differing perspectives on the vaccination campaign. The health workers had a mission. They were following an ideal, to vaccinate 80% of young girls and reduce or eliminate neo-natal tetanus in line with the Universal Child Immunisation Programme. Their zealous approach to achieve their target rode rough-shod over local sensibilities. The girls' perspective came out of misunderstanding and ignorance. The education programme prior to the vaccination was poor and only 18% of girls remembered that the vaccine was against tetanus (Feldman-Savelsberg 2000). The girls felt they were being forced to have the vaccine and had to submit to authority otherwise they would have their education withdrawn. Also, in one school, the gates were locked in order to make sure all pupils were vaccinated. This created panic as they thought they were being forcibly sterilised by the vaccination. The fear of being rendered sterile forced 10% of the vaccinated girls to consult a biomedical doctor for reassurance and many took medications they thought would neutralise the vaccine. Some believing that they were now sterile failed to continue to use contraceptive measures. Others sought pregnancy in order to reassure them that they were not sterile. As a result during the following two years there were many extra unwanted pregnancies and the abortion rate increased significantly (Heald 2007).

Rumour was described by Allport and Postman (1947) as 'A specific proposition for belief, passed along from person to person, usually by word of mouth, without secure standards of evidence being present' (1947:ix) This was certainly the case with this campaign and, in the end, rumour and suspicion halt-

ed the campaign. In a way this was not surprising as, historically, rumours of sterilising and poisoning in sub-Saharan Africa are not uncommon. For example in 1990, residents avoided smallpox vaccination as it was thought to be poisonous (White 1995). Smallpox vaccine was also rumoured to be a plot to collect blood and bewitch the African labour force (Packard 1993). Five years later it was rumoured that vaccines were a way of producing bottled babies thus dispensing with the need for African women (White 1997). Also the people equated the injection with the way witchdoctors can introduce substances into wombs (Feldman-Savelsberg 1999).

So with little pre-campaign education and old symbolic beliefs surfacing, it was not surprising that the uptake of vaccine was poor. As a result, five years later, only 13% of girls were vaccinated against tetanus (WHO 1996) and confidence in vaccination was undermined as was trust in the health personnel. This caused health workers to be stoned when they entered villages (Van Geldermalsen 1991). Again prior research into sensitive areas of relevant beliefs by ethnography and education might have increased the success of the vaccination campaign and upheld the trust of the health workers.

In conclusion, I have considered four different disease control programmes in India and Africa and how success was tempered by ignorance, superstition, rumour and traditional beliefs. In all cases there were themes which were shared. Pluralistic medical traditions with different interpretations of illnesses caused confusion amongst the people. This was further fuelled by a battle for control of the illness and the patient as traditional healers tried to relocate themselves and their relevance, while western biomedicine tried to take over their traditional role. Common sensitivities were uncovered, such as control or loss of fertility, much of which relates to post-colonial thinking and could have been predicted with ethnographic research.

There were two other themes. Firstly there was a lack of prior education programmes to explain the aims of the medical interventions in a culturally sensitive way. Secondly, the limitations placed on health control programmes by the economics of the state and the family. It is to be hoped that, in future, addressing these problems by a partnership between medicine and anthropology will allow health intervention programmes to meet with full success.

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Anaphylactic Reactions in Travellers

I Mackay

World travellers are exposed to health risks which may not be met at home and anaphylactic reactions are more likely in a foreign environment. Eating unusual foods and dining in strange restaurants and locations can put the unwary traveller at higher health risk. Emergency response to this eventuality may not be as immediate as anticipated in Europe. Health professionals and first aid may be far distant, when adverse anaphylactic reaction requires immediate intervention to prevent fatal outcome. Travellers with hypersensitivities and those who have survived severe generalised, or systemic, anaphylactic reaction should be advised of risk, precautions and emergency treatment in pre travel consultation.

Case History

A thirty year old male passenger travelling by air to Singapore enjoyed the in-flight meal of fish and lobster. He suddenly became breathless, had severe abdominal pain, was extremely nauseated, sweaty, had a racing pulse and felt he was going to die. He vomited profusely, collapsed and recovered consciousness after 15 minutes. Considering the symptoms were due to food poisoning, he did not identify the possible trigger for his distress and failed to appreciate the seriousness of the event. In Indonesia a week later, he consumed lobster bisque. Within 15 minutes he became very ill with respiratory and cardiac symptoms and unconsciousness occurred. Fortuitously, he was treated almost immediately in a hospital nearby.

Anaphylactic reaction to lobster was diagnosed and he was given an adrenaline injection. Advised to avoid shellfish he inadvertently consumed a small amount of crab-enhanced gravy in a restaurant while travelling in the USA and immediately suffered cardiac and respiratory arrest and coma. A potentially fatal event, his life was saved by prompt CPR and adrenaline administration from a neighbouring diner, a doctor. On this occasion the patient had been unaware of the dietary food risk to which he had been exposed.

World travel brings exposure to exotic meals containing fish, shellfish and nuts often previously unfamiliar to tourists and their consumption can bring dangerous consequences. Holiday locations favour sea coasts and sea food restaurants tempt the vacationer. Luxury shellfish are affordable and many gorge on them which may result in food poisoning and serious anaphylactic reaction. Small amounts of potentially dangerous allergens are added to conventional food dishes abroad creating a hidden trap for the diner and a life threatening hazard to the hypersensitive, even when they scrutinise menus. Travellers should be aware of these health hazards. The hypersensitive should be identified at pre travel consultation and instructed on appropriate travel precautions and immediate treatment.

Anaphylaxis is an extreme and severe generalised, or systemic, hypersensitivity reaction affecting the whole body, often occurring within minutes of exposure to the allergen, although it may occur hours later. Common causes include foods such as peanuts, nuts from trees (e.g. almonds, walnuts, cashews, Brazils), sesame, fish, shellfish, dairy products and eggs. Non-food causes include wasp, or bee stings, natural latex (rubber), antibiotics, and medications. Extreme exercise can trigger a severe reaction in some people, either on its own, or in combination with other factors such as food or drugs (e.g. aspirin). When no cause can be found for anaphylaxis, it is termed idiopathic with perhaps 25% of all episodes are so classified. Many of those affected have underlying allergy or asthma conditions.[1]

Allergic reactions, including the extreme form anaphylactic shock, occur because the immune system reacts inappropriately in response to the presence of a substance wrongly sensed as a threat. Anaphylactic reaction results from the sudden release of chemical substances, including histamine, from cells in blood and tissues. Release is triggered by reaction between the allergic antibody and the allergen, causing the anaphylactic reaction. This mechanism is so sensitive that minute quantities of allergen can cause a reaction. The released chemicals act on blood vessels to cause swelling in mouth and skin. There is a fall in blood pressure. In asthmatic people, the effect is mainly on the lungs. Route of trigger entry can affect timing of response. Fatal food reactions can cause respiratory arrest in half hour, whereas deaths from intravenous medication can occur within five minutes.[2] Anaphylaxis often produces signs and symptoms within seconds to minutes of exposure to an allergen. Some reactions may develop later (>30 minutes after exposure). Symptoms can progress rapidly unless promptly treated. A second reaction may occur in 1 to 72 hours (usually within 8 hours) after initial recovery despite no further exposure to the trigger. This is known as a biphasic reaction and it can occur in up to 20% of all anaphylactic reactions

Presenting symptoms

- generalised flushing of the skin
- raised rash anywhere on the body
- a sense of impending doom
- swelling of the throat and mouth
- difficulty in swallowing or speaking
- heart rate alteration
- severe asthma
- abdominal pain, nausea and vomiting
- a sudden feeling of weakness due to hypotension

- collapse or unconsciousness

All these symptoms may not be experienced, but a history of exposure to a known allergen makes anaphylaxis likely, when three criteria are present:

1 The sudden onset and progression of symptoms.
2 Life threatening airway, breathing or circulation problems.
3 Skin and/or mucosal changes.

Assessment

The Resuscitation Council[3] recommends an ABCD approach to assessment with consideration of:

A. Airways
B. Breathing problems -breathlessness and wheeze
C. Circulation problems -signs of shock and hypotension, confusion, loss of consciousness.
D. Disability due to hypoxia and decreased brain perfusion with change in consciousness.
E. Erythema with diffuse or patchy red skin rash and urticaria

Anaphylaxis is highly likely when any one of the following 3 criteria is fulfilled:

Criterion 1. Acute onset of an illness (minutes to several hours) with involvement of the skin, mucosal tissue, or both (eg, generalized hives, pruritus or flushing, swollen lips-tongue-uvula). Because the majority of anaphylactic reactions (>80%) include skin symptoms, it was judged that at least 80% of anaphylactic reactions should be identified by criterion 1 – even when the allergic status of the patient and potential cause of the reaction is unknown. However, cutaneous symptoms might be absent in up to 20% of anaphylactic reactions in children with food or insect sting allergy.

Criterion 2 and 3:

AT LEAST TWO OF THE FOLLOWING:

that events occur rapidly after exposure to a likely allergen for that patient (minutes to several hours). In patients with a known allergic history and possible exposure, criterion 2 should provide ample evidence that an anaphylactic reaction is occurring.

respiratory compromise (eg, dyspnoea, wheeze-bronchospasm, stridor, reduced peak expiratory function, hypoxemia).
reduced blood pressure or associated symptoms of end-organ dysfunction (eg, hypotonia [collapse], syncope, incontinence).
persistent gastro-intestinal symptoms (eg, cramping abdominal pain, vomiting).

People at high risk

Those who have suffered a bad allergic previous reaction should anticipate a future reaction is likely to be severe. Asthma and allergies are often associated. When foods such as nuts, seeds, shellfish and fish are concerned, even mild symptoms should not be ignored by asthmatics, because future reactions may be more severe.

Allergic triggers

Stinging insects eg, honeybees, fire ants, yellow jackets, yellow hornets, and paper wasps.
Less commonly, biting insects eg, mosquitoes, ticks, and flies.
Medications and Foods.

Cross-Reactivity

Cross-reactivity is a phenomenon that occurs when a food that does not itself contain any allergens is tainted with an allergen during processing or cooking. There is highly allergic cross-reactivity among different types of fish, meaning that people with allergies to one type of fish are likely to have, or to develop, allergies to others. This is because of a protein (parvalbumin) that is present in many fish. For this reason, most people with an allergy to one fish are advised to avoid all fish (including eel and shark). Grills are an notorious source of cross-contamination because food is generally placed directly onto grill grates and moved with one spatula or set of tongs.

Nut Allergens

Allergic reaction to nuts can progress rapidly to anaphylaxis. Peanut allergy is responsible for more fatalities than any other type of allergy. Strictly avoiding nuts, including peanuts and tree nuts such as cashews and walnuts, and food containing nuts is the only way to prevent a reaction. Many products unsuspectedly contain nuts including: Peanuts and Tree nuts. Examples are:

Cold-pressed or processed groundnut (peanut) oil. Peanut butter and flour. Hydrolysed plant and vegetable protein. Almonds. Brazilnuts. Cashews. Chestnuts. Filberts. Hazelnuts. Macadamia nuts. Pecans. Pine kernels. Pistachios. Walnuts. Marzipan. Almond paste. Nougat. Nut butters (such as cashew butter and almond butter) oil, paste (such as almond paste). Nut extracts (such as almond extract). Ground nuts. Nougat. African, Chinese, Thai and other ethnic dishes. Biscuits, sweets, pastries, cakes and other baked goods. Grain breads. Ice cream. Frozen desserts. High-energy bars. Cereals and granola. Salad dressing.

Shellfish Allergies

Lobsters, langoustines, crab, squid and mussels are powerful allergens and are often involved in cross reactivity when contact of the shellfish on a preparation slab or near other fish can cause an allergic response.

Fish allergens

Pollock, salmon, cod, tuna, snapper, eel, and tilapia are among the fish that commonly trigger fish aller-

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gies. Fish allergies are similar to shellfish allergies in that they are more likely than many food allergies to start during adulthood and less likely than other allergies to be outgrown. Fish allergies are often quite severe.They are linked to an increased risk of severe asthma in adult patients. Fish has been linked with the oral allergy syndrome in which the mouth itches or tingles after eating an allergen and occurs in people with occupational contact with fish.

Parasite Allergens
Anisakis simplex. This fish parasite is considered a major allergen and, like fish allergies, can cause severe allergic reactions including anaphylactic shock. While Anisakis larvae can be killed by freezing or cooking, they can still trigger allergies after being killed.

Foods Commonly Containing Fish
- Caesar salad dressing. Worcestershire sauce.
- Ceviche (fish or shellfish "cooked" in an acidic citrus marinade]. Caviar. Gelatin. Cioppino.
- Nampla (Thai fish sauce). Bouillabaisse. Fumet (fish stock)

There are recorded instances of inhalation reactions due to aerosolized fish proteins, so people with fish allergies should avoid hibachi-style communal grill restaurants if fish is on the menu. Seafood restaurants and sushi bars are high risks for cross-contamination due to the close proximity of fish and non-fish items. Another source of potential cross-contamination is frying oil. If fish has been fried in oil, people with fish allergies should avoid eating any other food fried in the same oil.

Differential diagnosis
Fainting (vaso-vagal attack) is most likely to be confused with anaphylaxis. Key differences are that in a fainting episode, there is a slow pulse, cool and pale skin, no hives or difficulty breathing Other conditions, such as heart attacks, blood clots to the lungs, septic shock, and panic attacks may have to be considered.

Treatment
Adrenaline [sometimes named "epinephrine"] is of prime importance and the Resuscitation Council[3] advises that it be given to all patients with suspected anaphylactic reaction and life threatening features. Pre-loaded adrenaline injection kits called "epipen" are available on prescription for those at risk.

Adrenaline acts quickly to constrict blood vessels, relax smooth muscles in lungs, improve breathing, stimulate the heart and stop swelling around the face and lips. The best site for injection is the anterolateral aspect of the middle third of the thigh using a needle long enough to penetrate into the muscle. If there is not a prompt clinical improvement, the dose can be repeated after a five minute interval and prior to hospitalisation.

Intramuscular injection of adrenaline can be given through light clothing such as trousers, skirts, or stockings. After 10 to 15 minutes, if symptoms are still significant, another dose of adrenaline can be given. Oxygen therapy if available can be life-saving. Intravenous fluids, steroids and antihistamines may be given but these are often not helpful initially and do not take the place of adrenaline. Because biphasic reactions are unpredictable and may occur at anytime (including while administering immunotherapy; it is important that there be a post therapy observation period.

Prophylaxis
Anti-Allergy injections may be suggested to people with wasp, yellow jacket, hornet, honey bee, or fire ant reactions. This form of treatment gives 98% protection against the first four insect reactions, though somewhat less protection against fire ant reactions. An epipen should be carried by those at high risk and their colleagues and siblings instructed in its use if the person becomes comatose.[4] Patients at highest risk for anaphylaxis should carry two doses of epipen.

Skin tests
Skin tests can be performed at least 3 to 4 weeks after an anaphylactic reaction. They may determine the presence of IgE antibodies and identify anaphylactic reactions triggered by food, medications, and stinging insects. In a skin prick/puncture test, a positive result is indicated by a mean wheal diameter of 3 mm or greater. Challenge tests help predict the clinical reactivity to anaphylaxis triggered by food and medication but are time consuming and costly.

Effects of heavy exercise
Heavy exercise can cause anaphylaxis.[5] Exercise-induced anaphylaxis (EIA) usually occurs with prolonged, strenuous exercise. Conditioned athletes such as marathon runners are the most likely to be affected. The reaction may occur while exercising shortly after eating a meal, after eating specific foods (for example, lettuce, shellfish, or celery) or after taking aspirin. It appears as though food or aspirin 'loads the gun and exercise pulls the trigger'. Early symptoms are usually flushing and itching, which may progress to other typical symptoms of anaphylaxis if exercise continues. Pre-medication with antihistamines or other drugs does not consistently prevent EIA. Exercise avoidance is the most effective treatment. An epipen is more useful in preventing a recurrent delayed reaction

Avoidance strategies with Fish and shellfish Allergies:
Some types of restaurants are riskier than others because of cross-contamination issues, or because a high percentage of dishes on the menu may include shellfish. These include seafood restaurants and sushi

bars (which may store fish and shellfish in very close proximity, or which may use the same knives on both types of seafood), Cajun restaurants, and Chinese restaurants that specialize in seafood. Be wary, too, of sharing tapas with friends, as many traditional tapas include shellfish and sharing dishes could be a major cross-contamination risk. The safest restaurants are strict kosher restaurants and dedicated vegan or vegetarian restaurants, which forbid shellfish. Diners at risk should advise onsite staff about allergies and about cross-contamination concerns

Shellfish in American Cuisine:
In addition to dishes like fried shrimp, surf'n'turf, or steamed mussels that clearly indicate shellfish, several traditional American dishes are made with shellfish. Cioppino, a soup s made from seafood and other shellfish. Cajun specialties like gumbo and jambalaya are usually made from shellfish, and seafood muffaletta sandwiches may be found in coastal areas.

Shellfish in Latin American Cuisine:
Shellfish is not as prevalent in Mexican and Central American restaurants as in some other cuisines, but some restaurants do serve enchiladas or tacos with shrimp fillings, or shrimp versions of traditional Snapper Veracruz. Brazilian and Peruvian cookery features more shellfish, especially ceviche (fish or shellfish "cooked" by marinating it in citrus juice). Be wary of any Latin American dish with "mariscos" in the name, as this is the Spanish word for "seafood."

Shellfish in French and Western European Cuisine:
Shrimp, prawns, lobster, and other shellfish feature prominently in French food and in the cuisine of the Mediterranean. French dishes served "al' prior to hospitalisation Americaine" comes with a topping of lobster; likewise, "crevettes," on a French or Continental menu always indicate shrimp. Italian cuisine may feature mussels or shrimp. Greek cuisine, likewise, features a lot of fish but comparatively little shellfish beyond octopus.

Shellfish in Middle Eastern and Indian Cuisine:
Shellfish is not a prominent part of Middle Eastern cooking. However mussels or other steamed shellfish may be on the menu. Many Indian restaurants are vegetarian and therefore safe. Cuisine from Goa, with its strong Portuguese influence, is more likely than others to contain shellfish.

Shellfish in East Asian Cuisine:
Most popular East Asian cuisines – Vietnamese, Thai, Chinese, Japanese, and Malaysian – include shellfish as a major part of their menus, Hong Kong hot pots frequently include shellfish, though vegetarian and meat-based varieties do exist. In addition to asking about shellfish in the dishes themselves, be aware of the possibility of shellfish in condiments, stocks, and other hidden sources. Chinese dried shrimp, Thai kapi and namprik, and Vietnamese mam tom are among the condiments and sauces that always include shellfish.[6]

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Ian Mackay is a retired GP. with a special interest in allergies and travel.

Emergency Aid, Evacuation and Repatriation

A Melrose

World travellers are encouraged by health professionals and the travel industry to invest in appropriate and adequate health insurance protection for the duration of the sojourn abroad. Some ignore the risk of illness or injury and travel, uninsured. Others depend upon EC Health Card protection in countries of the European Community and hope to avoid medical mishap elsewhere. Those with travel health insurance assume provision of immediate first aid, prompt transfer to hospital and efficient repatriation when in need overseas. Insured or uninsured, the traveller may find that immediate medical and nursing assistance and evacuation to good medical facilities falls far off expectations.

Location, transport, terrain, communications language and resources determine the actual response to sudden trauma and illness. Organisational/linguistic/ management skills and financial resources may determine outcome. With insurance provider response organised in a distant country and often a continent away, arrangements may be disjointed. Default or failure will fall upon the patient when ill or injured, or on a travel companion at a time of maximal stress.

Case History 1

A middle aged man was travelling in a small party through Tibet when he developed chest pain. They were located 2 days distant from Lhasa, where support facilities were available. The nearest hospital was 8 hours of difficult travel to Nepal. The wife endeavoured to contact the British insurer, but could not reach the company due to poor telephonic communication. The husband died and the only way she could reach the insurer was by using a mobile phone to converse with the parent company in the USA who relayed the message on. The British contact then had to liaise with the British embassy in Lhasa. Long extended dysfunctional arrangements followed to finally permit the body to be taken with the group through the mountains into Nepal. A potentially survivable medical condition ended in tragedy, with much psychological trauma to the bereaved and the accompanying group.

Immediate access to emergency services and treatment may be delayed in developing countries and even along the Mediterranean littoral much favoured by tourists. Clinic and hospital access can be logistically difficult and repatriation a psychologically fraught exercise particularly in the uninsured. Chance is likely to determine quality of care received by the patient and even the fully insured individual traveller may experience less than optimal immediate care.

The comprehensively insured global traveller reasonably anticipates that all needs will be met if health emergency arises en route or at overseas destination.

The insurance policy appears to offer immediate and direct access to the insurance company by telephone, with staff organising prompt, efficient and optimal emergency treatment and appropriate, protected return to Britain. In the majority of cases the system works and the injured and ill receive good care and sometimes even better attention than NHS provisions. However all travellers should be aware that the immediacy of ambulance pick-up, first aid response, evacuation, and hospital admission, may be far from ideal, with treatment failures and difficulties in repatriation to home.

Case History 2

A young man had just arrived in a Turkish sea side resort and sought to telephone his mother to announce his safe arrival. He had an epileptic seizure in the narrow confines of a public telephone box and injured himself. The first emergency vehicle on the scene took him semi conscious to the state health clinic. There his fractured clavicle was diagnosed, but it was only two days later, when transferred by the insurer to a private hospital unit, that his fractured spine was discovered.

Many vacationers travel without consideration of disease and trauma risks in the overseas location. Few check on health resources available to local populations and access to available health facilities. These will often be the only facilities available to the foreigner and become a major consideration when emergencies occur. Holidaymakers give much attention to hotel and beach facilities and scant regard to availability of emergency aid, doctors, nurses, clinics and hospitals This neglect can put them in peril and may determine whether a patient survives serious medical incident.

Case History 3

Two holiday makers were bedded in adjacent beds in a Greek Island hospital. Both had suffered serious cardiac events on the same day. The only difference between them was that one was fully health insured. He had been promptly admitted to hospital by private ambulance, had immediate treatment and a by-pass operation and was being repatriated with an attending physician 7 days post operatively. The other man had to wait for a very delayed public ambulance service to respond. He was taken to the nearest clinic which had few resources and no attendant doctor. After much further delay he was transferred by hire car to the nearest hospital. There a diagnosis was made, but he had no funds to pay for treatment. He had remained on bed rest in the interim, faced with a daily bill for accommodation and sustenance. Doctors would not provide him with "fit to fly corroboration and he could not return to Britain by air.

Relatives were desperately endeavouring to have him repatriated to the UK by land ambulance, a fatiguing and expensive prospect. Failure to acquire a EC Health Card and/or travel health insurance protection had endangered his life.

Those with comprehensive travel health insurance may be lulled into a false sense of health protection and sanguine expectations which can be unrealistic. The ill and injured can only expect the best that local resources provide. With many popular vacation locations being far from major health centres, their immediate access can defeat organisational skills of insurance staff operating in the UK. Well insured travellers, to Western Europe, Scandinavia, major cities and well populated areas of the developed world, can reasonably expect the standard of immediate care experienced in Britain. It is unrealistic to expect urgent medical attention to meet the same criteria elsewhere.

Favoured remote holiday locations in Greece, Turkey, the Balkans and Eastern Europe will not meet the minimal expectations of unwell British vacationers, a consideration appreciated by the unfortunate only when they are exposed to shortfalls in health provision. Immediate medical response is unlikely, treatment may be delayed and linguistic problems can make communication difficult.

The immediate evacuation of the patient and transfer from those rural and remote areas often frequented by adventurous travellers can prove a feat of endurance. In mountain areas of Nepal the incapable will be transported on a porter's back, or will be expected to walk to the nearest road. In India the majority of road accident patients are transported to hospital in the first passing service bus. On a safari, a jeep, Landrover or truck will be commandeered for patient transport. On cruise ships, a tender, or helicopter will transport the patient ashore. These can prove hazardous operations exemplified by the recent death of a 73 year old woman on a stretcher which fell into the sea during ship to launch transfer. She was dropped into icy Arctic water, was afloat for 5 minutes before rescue and died from hypothermia exacerbating her diabetes.

Case History 4

A German tourist was involved in a road traffic accident in the interior of Grenada. Badly concussed and with probable brain injury, he was left at the roadside in the care of local villagers. There was no local transport and helpers could not afford a taxi. A passing group of tourists contributed to a fare on a mini bus charter to get him to hospital in the capital.

A pregnant woman with abdominal pains had to be transported from Victoria Falls in a truck when severe weather precluded air transport and a desperate four hour journey got her to a hospital unit short on medications and equipment.

Insurance policies demand that the company be advised forthwith of the urgent situation so it may organise appropriate local assistance. Mobile telephones and internet access have eased this prerequisite, but location may dictate use of the public telephone system which can prove a major communication hurdle. Insurance staff will invariably seek a number to return the call which creates more difficulties and tenuous communications. Emergency evacuation to good first aid care can prove almost insurmountable. When location, terrain and weather are adverse, a comprehensive health insurance policy provides scant protection in such situations as communication failure means it will not kick in until the patient has reached a health resource with good world communications

The insurers must agree to hospital admission and medical input for the claimant and it is wise for this to be recorded on paper. Many private hospitals abroad will not accept patients without assured fee payment or funding in advance. Immediate response crews seek evidence of insurance from the patient before transporting them to medical aid and in its absence the patient will be committed to the state run emergency units which are overburdened, and long waits for care are common. High Alpine emergency teams only respond to insured skiers and climbers and evacuation from mountain mishap will depend on this protection.

The EC Card does not provide repatriation cover and some policies will also exclude this protection. Many who do not read the small print in the policy travel unaware of this deficiency. The provision of an accompanying nurse and doctor on a long return air journey home can be beneficial to patient and family carer and can ease transit through airports. Airlines may insist that the patient be accompanied by a health professional before they will grant carriage. Flight delays, rerouting, and cancellations all impinge on the repatriated invalid. Self organised repatriation is a demanding exercise often beyond the capacity of patient and traveller and adequate insurance protection will ease this process. Repatriation from foreign hospital via land ambulance, air, and UK patient transfer can be fatiguing and problematic for the ill person. Insurance companies usually organise the use of business class flights and lounges to ease the trauma of repatriation.

Summary

- The travel health uninsured can meet with difficulties if ill abroad and risk sub optimal emergency care.
- The comprehensively insured traveller should be realistic about quality of care they can expect.
- Health care policies should include repatriation.
- All travellers should consider carefully the emergency health resources they are likely to meet

Emergency aid, evacuation and repatriation *continued*

while overseas. They should be aware of the limitations of insurance policies which can only provide the best local care available

- Location, terrain, climate and resources determine whether emergency aid will meet NHS standards.

Allan Melrose. Air repatriation physician and expiditioner.

BOOK REVIEW

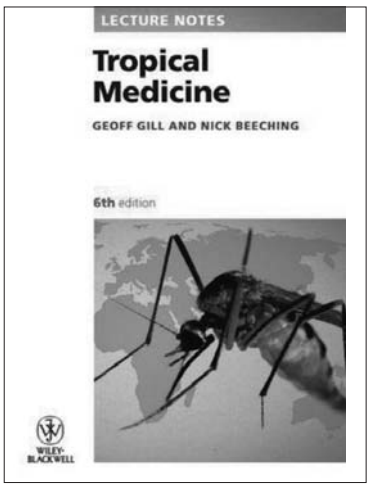
Lecture Notes, TROPICAL MEDICINE

6th Edition. 2010. Eds: Geoff Gill, Nick Beeching.

Pbk.410 pp.

Publishers : Wiley-Blackwell.

ISBM: 978-1-4051-8048-1



A large part of Travel Medicine deals with giving good pre-travel health advice, based on an adequate Risk Assessment for each traveller. This includes advice on appropriate vaccinations and malaria avoidance measures, as well as information on other diseases, - and on accident prevention while abroad. This is particularly relevant to travellers visiting developing and tropical countries. An in depth knowledge of tropical diseases is usually not required. However a basic knowledge of Tropical Medicine is certainly useful, both to the adviser, and to the traveller, especially for those going on short term missionary or Aid assignments. For long term travellers to tropical areas a knowledge of infectious diseases and other possible hazards would prove valuable.

Lecture Notes in Tropical Medicine is an ideal reference book for this purpose. Now in its 6th Edition it has developed, since its first edition in 1981, to a very informative, and user friendly text. It is presented in paper back and although it is compact in size, and has 400 pages with fairly small font size, it is easy to read and very well laid out on good quality paper. The two editors, Geoff Gill and Nick Beeching are well known in Travel Medicine circles, and there are over 20 contributors, mostly based in the Liverpool School of Tropical Medicine. Following a list of these contributors, and four pages of useful abbreviations of terms used throughout the book, and a list of new drug names, ***'Tropical Medicine'*** is divided into three main Parts:- 1) A General Approach to Syndromes/Symptom Complexes: 2) Major Tropical Infections and, 3) Other Tropical Diseases. The first eight chapters include Gastro-Intestinal, Respiratory, Neurological and Dermatological Presentations, as well as dealing with Anaemic and Asplenic patients, and a Syndromic Approach to STDs.

This is a book on Tropical Medicine so the Major Tropical Diseases section contains chapters on infections which are important on a global scale, but do not necessarily rate as highly in prominence as diseases affecting the average traveller. However Malaria and Schistosomiasis are well covered in this section and there is a very comprehensive Chapter on HIV, along with good coverage on TB, Leishmaniasis, Onchocerciasis and filariasis, Trypanosomiasis and Leprosy. Throughout this section, as well as throughout the whole book, there are many disease distribution maps, tables and algorithms, as well as line drawings and microscopic slide illustrations. There are many glossy photographs to complement the text. Diseases which *are* prominent in Travel Medicine, are included in Part 3 under appropriate headings: Gastrointestinal, Respiratory, Neurological, Fever and 'Miscellaneous'. There is particularly good coverage of Dysentery and the various presentations of Hepatitis. There is a Chapter dedicated to Dengue and Yellow Fever, and comprehensive chapters on Rabies, Meningitis, Arboviruses and Viral Haemorrhagic Fevers. Each chapter follows a general pattern of: Disease Description, Epidemiology, Life cycle where appropriate, Clinical Features, Investigation and Treatment. The 'Miscellaneous' section includes topics such as Tropical Ulcer, Cutaneous Larva Migrans, Strongyloides and Fungal Infections. There are Chapters on Bites and Stings, Non-Communicable Diseases- ie, diseases which occur commonly in this country as well:- Cardiovascular Diseases Diabetes, , Asthma and Cancer, and final chapters on Refugee Health and Symptoms of Malnutrition. Accessing any topic or chapter in this book is made very easy by consulting the 22 pages of the Index. This includes reference to tables, charts, maps and photographs which are quickly located by the use of bold print.

I would recommend ***Lecture Notes on Tropical Medicine*** to all Travel Health advisers – Nurses and Doctors, as well as to Medical Students on electives and especially to long term travellers in the Tropics. It should be readily assessable during the Travel Consultation. It is very good value at £24.00 – or less, on Amazon!

Reggie Cooke.

Physical Impairment and Global Travel

M Stewart

Cerebral palsy at birth left me with permanent left sided weakness, loss of motor function in the left leg, poor coordination and disturbed balance. Despite these physical limitations, I was functionally mobile by the age of 3 years with the aid of special walking boots, pelvic supports and leg callipers. These mobility aids permitted attendance at a conventional school although physical activities were obviously restricted.

I have always had a yearning to travel the world and made my first independent air journey, aged 12, from Johannesburg to Capetown to visit grandparents. As an unaccompanied minor I was packaged, posted and guarded by airline staff from airport to airport. The journey was uneventful although the trip took 4 hours in a DC10. At that age I was small enough to be carried by willing airline employees down awkward steps and over tricky transfers. This success encouraged travel even further afield and boarding school in Kimberley meant many flights.

Before airline security came to dominate air travel, passengers boarded the flight as they would a bus or train with little ceremony and often very haphazardly. Access to aircraft could be problematic with inadequate steps, an absence of ramps and narrow doorways, but only short distances separated book-in booth to departure point. Assistance for disabled passengers was variable and either highly systematised, disorganised or unavailable but flexible staff organisation surmounted any mobility problems.

International travel is now more fraught for the disabled passenger although most airlines and airports have well publicised systems to aid the physically disadvantaged. Long walkways, a multiplicity of stairs, elevators, escalators and ramps confront every traveller. Entrances to many planes are 2 floors above the tarmac and domestic, international and transit airport areas can be a mile apart, linked by train, tram, tunnel and tortuous routes. These obstacles to access can try the physique of the strongest traveller and are beyond the endurance of the less able.

Preflight requests for in-transit conveyance to, from and between aircraft are usually met in large international airports, but one is at the mercy of unknown personnel and systems can, and do, breakdown or fail. Wheelchair-bound travellers, like baggage, can be forgotten and misrouted, or the need for toilet provision and accompanied support may be overlooked. Aircraft rerouting due to bad weather or labour dispute may mean landings in small airports with scant transit provision for able passengers far less the disabled. Large airliners flying south over Africa occasionally reroute to places like Kigali in Rwanda where a 747 is likely to be met by 2 or 3 minibuses for transfer of 350 passengers across a large airfield to the buildings. Air travel is never without the spice of adventure for the disabled voyager.

Meet and assist procedures for the disabled provided by many airlines work well most of the time, but there can be language and communication problems. Delegated handlers and equipment provisions often leave much to be desired. Wheelchairs can be ancient with warped wheels, inadequate braking provision and illusory padding. These may seem minor gripes, but to sit for 3 or 4 hours in the corner of a transit lounge in such a vehicle can interfere with the circulation, promote pressure sores and leave a permanent travel scar on the novice traveller. Although wheeled from point to point in the circuit, the need to maintain contact with the disabled passenger to permit toilet access is sometimes forgotten. Independence on a personally adapted or electric wheelchair in the home environment does not ensure that the same measure of independence can be maintained with inadequate apparatus in the controlled frenzy of a vast international airport. I have been left beyond reasonable bladder comfort periods by thoughtless airline personnel who had wandered off on other ploys.

Left to one's own devices accessibility to wide "Disabled" toilets may prove a challenge. They may be poorly signposted, be locked with no instruction as to the whereabouts of the keys or may be totally absent. In some African and Asian countries access may be denied by a zealous employee intent on charging for entry to the facilities. Once aboard the aircraft toilet use is free and the availability of sky chairs has made reaching the toilet an easier process for the severely disabled.

Early boarding and the use of access hoists has made aeroplane boarding easier but sometimes the very regulations designed to help the physically impaired, work to our disadvantage. In the United States federal laws against discrimination prevent public announcements of early boarding arrangement for those with mobility problems making a mockery of arrangements to ease the inevitable problems inseparable from the melee of mass boarding times.

Inter airline transit may mean coach, minibus and train transfer where potential difficulties for the disabled have not been anticipated. Train travel often means major challenges in circumventing stairs to reach the departure platform in places like Britain. Joining and leaving the train at certain stations may be utterly impracticable, calling for a degree of careful preplanning before departure. Access may only be possible via a baggage elevator, permission may not be granted for insurance reasons, or depend upon some employee responsible for the keys and who is invariably not immediately available. Wheelchair travellers with British Railways often have to travel in the baggage van and there may be no communication

Physical Impairment and Global Travel *continued*

between the van and the driver or guard. It is all too easy to be carried past the station of disembarkation. I travelled successfully however on the luxury Blue Train from Capetown to Pretoria and later by steam train on to Bulawayo, Victoria Falls and the wonderful Zambesi Falls.

I found that careful preplanning and good organisation could overcome many of these difficulties. Travel routes and modes had to be carefully checked out long in advance of the proposed trip. With careful cautious preparation and anticipation of potential problems could often be avoided or the effects lessened. Early requests for disabled transfers and advance advice to airlines, coach firms, rail and shipping companies with pre-booking of personal transport for transit points have made journeys to the South Pacific, Antarctica, Australia, South America and Europe possible. I was caught out once when the ship from Puerta Arenas to Buenos Aires offered no disabled transfer facilities.

Crew support and ingenious adaptation on my own part saved the trip from becoming a personal disaster. I ensure that transit and hotel accommodation is booked well in advance with hotels and rooms carefully checked for good access to rooms, toilets and public areas. I also check that willing assistance to surmount my walking difficulties will be at hand. Some far-sighted hotels now have especially designated paraplegic or disabled person assistants and the same is increasingly true of cruise ships.

Safe travel depends upon:

- Advance planning regarding accessibility of transport and accommodation, especially if a wheelchair user.
- An 'Incapacitated Passengers Handling Advice' (INCAD) form will be required if embarking on a flight. The second part of this form 'Medical Information Form' (MEDIF) needs to be filled in by the General Practitioner if there is an underlying medical condition. A fitness to fly certificate may also be required,
- Consideration of medical facilities in destination country and medical insurance cover, including maintenance or replacement costs for physical aids, or mobility equipment.

Monica Stewart is a disabled world traveller.

Useful Contacts

The Disabled Living Foundation: 380-384 Harrow Road, London W9 2HU.
Tel 0171 289 6111 Flying and travel advice.

The Royal Institute for the Blind: 224 Great Portland Street, London W1N 6AA. Tel : 0171 388 1266. Information on tape for flying and travelling.

Royal Association for Disability and Rehabilitation (RADAR): 12 City Forum, 250 City Road, London EC1V 8AF. Tel : 0171 250 3222. Disability and travel.
Heathrow Airport Tel 0181 745 7495: Free guide to facilities 'Traveller's Information Special Needs.

African Oyster Trust

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Health Care of a Travelling Documentary Film Crew

J Moore

As a geological feature, the River Nile is unequalled in its rich history. From the Delta through to its various sources, it has been home to great civilisations, an inspiration to explorers, a physician's casebook and the backdrop for countless films. So it was with great excitement that I joined a production crew filming some of the less well known aspects of this great river.

For the expedition medic this trip presented the opportunity to practice the full scope of travel and expedition medicine in a wide range of environments.

The pre-trip phase read like a travel medicine exam:

"Seven members of a film crew are planning an expedition to the following countries; Egypt, Sudan, Ethiopia, Uganda and Rwanda. They will be away for two 3 week periods during which they will be staying in diverse accommodation and undertaking a variety of activities. Evaluate their current vaccination status and make recommendations as to what is required for the forthcoming trip, including recommendations about malaria prophylaxis." "NB. They are leaving in 2 weeks"

A pre-production briefing allowed for timely health advice regarding some important risks. In addition to health issues, we had a brief from specialists in security and hostage negotiation. The latter was not mentioned to my wife until our safe return. An oft used quote from Stanley's 'The Dark Continent' describes expedition morbidity experienced in the Congo resulting from animal trauma, malaria, dysentery and violence. Although knowledge, skills and technology have improved these, risks remain, especially across this great continent.

So, with jabs in the arm and knowledge in the head, six crew members and a presenter left Heathrow with about 500kgs of kit, a dose of trepidation, balanced with considerable excitement. Although initially the expedition was through mostly developed areas this did not prevent one quite debilitating diarrhoeal illness requiring specialist follow-up. As with most gastrointestinal illnesses acquired abroad, the exact aetiology remains unknown but certainly reinforces the claim that travel broadens the mind, empties the wallet and loosens the bowels.

From Aswan south however gastro-intestinal problems appeared behind us, due no doubt to our fastidious use of soap and water and attention to diet. Unfortunately it is almost impossible to eliminate this illness on expedition and as the medic I seem to traditionally be the first to suffer. The team's major nemesis was undoubtedly the intolerable heat. However, it was not until filming in an underground tomb, where sweat was prevented from evaporating and clung to our bodies like a dusty paste did the crew really understand the level of water they were losing minute by minute. I wonder how many times we encourage patients 'drink more fluid' but fail to explain that a lack of perceptible fluid loss does not mean a lack of fluid loss?

Any keen photographer will know that the best time for shooting is either at sunrise or sunset, the cooler times of the day. The days spent filming during the heat of the day meant as expedition medic I become expedition camel – trotting back and forward between cameraman, sound engineer, director and presenter in a vain attempt to keep them hydrated and at 45 degrees wasn't long before individuals start getting tired, dizzy and grumpy – not necessarily in that order.

One of the greatest risks on expedition is transportation. Although there have been vast improvements in the quality of African roads, this is not matched by the quality of vehicles using them. There were several occasions where how we failed to hit either a pedestrian/car/cart/cow remains a mystery. Roadside wreckage served as a constant reminder that arriving late in this world is better than early in the next and solace from the dangers of travel could not be attained even when flying between countries. When a Rwandan pilot prevents passengers from boarding a plane because it's overloaded, you can guarantee he has already pushed the payload to the limit. What was slightly more worrying though is a Rwandan pilot succumbing to pressure from passengers to fly the plane and agreeing only if "...all the large men sit at the front". "Oh and we haven't got enough seats so the muzungu cameraman will have to sit up between the pilot and co-pilot". I have never before paid so much attention to a safety briefing.

All the countries travelled through presented individual health issues. Uganda was no exception and whilst mosquito bites were avoidable to a greater or lesser extent, tsetse flies remained persistent. It wasn't just the tiny animals which gave cause for concern either. Walking alongside a two tonne white rhino made me thankful I'd spent my childhood years climbing trees. Health promotion at this point took the form of ensuring everyone could run faster than someone else.

Standing beneath the mighty Murchison Falls was humbling, as we thought of the great explorers who had risked life and limb to get to that same spot. Our journey had taken 20 days, in stark contrast theirs over 400 without modern transport, GPS, modern medical kits, the luxury of back-up and no promise of return. Seldom do individuals realise the courage and determination these explorers had in setting out to

Health Care of a Travelling Documentary Film Crew *continued*

search for places found only in folklore.

From here we made a brief stopover at Jinga, regarded for many years as the source of the Nile, before heading into Rwanda.

Rwanda is arguably and unfortunately most well known for the 1990's genocide where, in 100 days approximately 800,000 people were slaughtered in a well orchestrated tribal uprising. One could not help but be moved by the personal accounts recalled in Kigali's genocide museum, set in grounds home to the remains of approximately 10,000 victims. Although our filming focused on the Nile, the stories of people's lives unquestionably made us look at this great river in a different light. Accompanied by Cam McLeay our final few days were spent along the shores of Lake Kivu, a beautiful volcanic lake bordering Uganda, Rwanda and the Congo. In 2005 Cam and two friends piloted three tiny boats from the Nile Delta to our ultimate goal high up in the Nyungwe National Park – the longest source of the White Nile.

Contrary to Emergency Department work, where we selfishly delight in the buzz gained from exciting trauma, my aim on expedition was to return having practiced as little as possible. Not as a result of reluctance or laziness, but because on expedition even the most simple medical problems can rapidly become major issues. Prevention is better than cure by far and I would argue that, the best skills UK expedition medics can leave the UK with are having great foresight and intuition. Knowing where things are likely to go wrong and intervening accordingly saves much pain and suffering.

This modern 4000 mile journey had taken us a mere nine weeks and exposed us to the absolute wonder of this beautiful continent. We had been privileged to walk amongst some great cultures, partake of enthralling ceremonies and witness the sun rise and set across awe inspiring landscapes. And other than a few souvenirs the only bug we returned with was the one which causes itchy feet and an insatiable need to return.

James Moore RN BSc (Hons) Dip TravMed Dip TN MFTM RCPS (Glasg) FRGS

Murchison Falls

In the News

SHIP Travel
The Passenger Shipping Association, the cruise trade body, states that 650,000 British people set sail from a UK port in 2010, ten per cent more than the previous year. The number of UK cruise passengers is expected to top 1.7 million this year. Two new and refurbished ships will be launched this year, with more ships sailing directly from the UK.

Lost Overboard
A 73 year old British Woman passenger was lost overboard from a cruise ship in Norwegian waters. The victim, a diabetic, was being transferred from the ship to a rescue launch. When the stretcher was being transferred in heavy seas off the Arctic Circle in Norway, it slipped from the crews' hands. She fell into icy water and was swept away from the ship. It took 5 minutes to rescue her and, suffering from hypothermia, she died in hospital.

Hijack Threat
Rolls of razor wire coiled along a cruise ship's rails give the clue that it is embarking on a potentially hazardous cruise. Besides the festoons of razor wire, there may be strings of electrified metal beer kegs. Cruises through the Arabian seas near Somalia and Yemen, cross the pirate infested waters of the world's most notorious corridor for hijackings. Pirates, using fast skiffs, operate from mother ships. They intimidate target vessels into slowing down or stopping by firing small arms or rocket propelled grenades at them. 460 ships have been attacked since 2005, and 172 have been hijacked. Only four of them have been passenger ships. Sixteen victim's lives have been lost.

HIGH ALTITUDE HEALTH CHALLENGE
The 1200 mile road entry from China into Tibet has now been supplemented by a new railway line. Tourism is responsible for 15% of Tibet's economy with 6.82 million tourists in 2010. The capital, Lhasa, lies at an altitude of above 12,000ft and visitors may suffer from altitude sickness. The first five-star hotel has been opened in the capital with four more to be opened in the next few years. Each room is equipped with oxygen apparatus for those who become hypoxic.

ANAPHYLAXIS – RESUSCITATION COUNCIL UK GUIDELINES
Anaphylaxis is defined as a severe, life threatening, generalised or systemic hypersensitivity reaction. Anaphylaxis can be triggered by a variety of things, with food being particularly important in children and medical products being much more common triggers for older people. Identifying anaphylaxis:

Anaphylaxis is likely when all of these three criteria are met:

- Sudden onset and rapid progression of symptoms.
- Life threatening airway and/or breathing and/or circulation problems.
- Skin and/or mucosal changes (flushing, urticaria, angioedema).

How to treat anaphylaxis:

- Call for an ambulance.
- Give adrenaline intramuscularly – the most important action.
- Monitor and repeat if required, while waiting for the ambulance.
- Give high flow oxygen if available, while waiting for the ambulance.

Many health care professionals who work in primary care worry about making the wrong diagnosis. However, the Resuscitation Council [RC] recommends that, if anaphylaxis is suspected then adrenaline should be given to all patients with life-threatening features. If these features are absent but there are other features of a systemic allergic reaction, then carry out careful observation of the patient and provide symptomatic treatment.

TICKS IN THE UK
There is an increased risk of diseases carried by ticks infecting people and animals in the UK. A species of tick, Dermacentor reticulates, normally found in Continental Europe has been discovered in the UK for the first time. They are thought to have arrived here because of climate change. It is a major disease vector in Europe and is now established in southern England. Investigations suggest that the risk of infestation is far higher in dogs than previously thought. This has serious implications for the incidence of tick-borne disease. Dog ticks can be carriers of a number of diseases, including Lyme disease, which can damage the human heart and nervous system.

The research, published in the Journal of Medical and Veterinary Entomology, studied 3,500 dogs treated by 173 veterinary surgeries. At any one time, 14.9 per cent of dogs were infested with ticks. Retrievers, setters and spaniels, terriers and pastoral breeds were found to be the most susceptible. Longer-haired breeds were more susceptible than short-haired varieties. The study also mapped the location of the cases of the most common tick, Ixodes ricinus, These were in South-west England, East Anglia and north-east Scotland.

DISABLED AIR TRAVELLERS
A disabled woman has successfully sued Ryanair after her husband had to carry her in a 'fireman's lift' on to a plane when the flight crew refused to help.

The 57year old woman who suffers from multiple sclerosis and uses a wheelchair, was left waiting half an hour on a runway at Luton Airport after the special lift she had booked failed to arrive. The Ryanair crew

In the News *continued*

refused to help her on to the plane after claiming it was unsafe for them to carry disabled passengers, because it might "damage their backs". Northampton County Court ruled that the budget airline had breached contract and broken disability discrimination laws. The industry has agreed to improve access for disabled people by delivering better information on accessible travel. England's recent publication "At Your Service" which gives simple advice regarding care of disabled customers.

INSURANCE

Many travel insurers won't offer cover to those aged 65 and over, and those that do, increase the premium sharply as soon as that age is reached. The rate varies between companies but commonly doubles at 65 and then continues to rise with age, higher price bands cutting in every five or ten years of age. They reflect the increased risk and size of medical claims amongst the elderly. If taken ill because of a condition that has not been declared when the insurance was purchased, the insurance claim will not be paid. The insured must inform the insurer if a new condition develops during the period covered by the insurance. Typical conditions might be high blood pressure, diabetes or cancer. Only a handful of insurers offer multi-trip policies for the over 75s. Some companies offer special policies for cruising holidays and have a higher age limit than standard travel insurance e.g.

All Clear Insurance (0845 250 5250; www.allcleartravel.co.uk) offers cover to "all ages".

Avanti Travel Insurance (0800 066 5604; www.avantitravelinsurance.co.uk) can cover those up to 85.

Flexicover (0800 093 9495; www.flexicover.co.uk) has no age limit on single trip policies, and its annual multi-trip insurance goes up to the age of 85.

Freedom Insurance (01223 454290; www.freedominsure.co.uk) policies have a maximum age of 85 for a single trip, but 75 for annual policies.

Intune (0800 022 3192; www.intunegroup.co.uk) is owned by the charity Age UK, which represents Help the Aged and Age Concern combined. It offers all types of single-trip and annual policies with no upper age limit.

Saga (0800 015 8055; www.saga.co.uk) sells policies to those over 49 only, but there is no upper age limit.

MALARIA

According to the Health Protection Agency [HPA], the number of people in Britain who have contracted malaria has risen by 30% in two years, with 1,761 cases reported in 2010 compared with 1,495 in 2009 and 1,370 in 2008. Eighty five per cent of cases – 850 out of 997 with information available – had not taken preventive measures. Over the last 10 years about half of all cases of malaria reported in Britain have been seen in people who travel to West Africa and India. In 2010, almost 40 per cent of British residents who contracted the disease had visited either Nigeria or Ghana. The HPA figures for the UK show a big increase during 2010 in malaria caused by Plasmodium falciparum in travellers who have been to or arrived from The Gambia. There were 59 cases in all, with 45 in November-December (compared to six in the same period of 2009). Information was available for 29 of these cases. 26 had taken either inappropriate anti-malaria tablets or none at all and the data included three travellers who had taken either herbal or homeopathic remedies. Travellers to The Gambia and other destinations with malaria risk should use effective malaria prevention methods, including chemoprophylaxis.

GASTROINTESTINAL ILLNESS

The HPA reports that the highest risk countries for gastro-intestinal illness in British travellers are India, Thailand, Pakistan and Morocco with Egypt topping the list. With no vaccine available, it stresses advice on preventative measures regarding food and water and personal hygiene:
www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb.C/1287146186602

RESUSCITATION UPDATE

Every five years the Resuscitation Council UK Guidelines for Cardio – pulmonary Resuscitation [CPR] undergo a major revision and now emphasises:

Calling for help

When calling for help, whether from a colleague or the ambulance service, should ask for an automated external defibrillator (AED) at the same time, to ensure early defibrillation, then start Chest compressions.

Chest compressions are often undertaken with insufficient depth and at the wrong rate, therefore in adults aim to compress the chest to a depth of 5-6cm at a rate of 100-120 per minute. With children follow the same rate and with a depth of one third of their chest.

Rescue breaths should now be delivered over one second as in normal breathing rather than two seconds as taught previously. This should also minimise disruption to the chest compression.

Stopping CPR

Studies have shown that checking for breathing in cardiac arrest patients is prone to error, especially as agonal gasps are often misdiagnosed as normal breathing. Therefore once CPR has been started, you should not stop unless the patient starts to show signs of regain-

ing consciousness (such as coughing, opening their eyes, speaking or moving purposefully) and starts to breath normally.

Oxygen is not recommended for use in basic life support with patients who do not have a secure airway (apart from a drowning victim) as there is no evidence to suggest its benefit. It actually may lead to interference in chest compressions.

Regurgitation of stomach contents is common during CPR. If this happens then turn the patient away from you on their side and allow the vomit to drain away, removing any residual debris from their mouth with your fingers, and immediately turn them back to continue CPR.

The scientific evidence to support early defibrillation is overwhelming. The delay from collapse to the delivery of the first shock is the single most important determinant of survival.

IBM

Scenarios from the NaTHNaC Telephone Advice Line

A Stillwell

The National Travel Health Network and Centre (NaTHNaC) is funded by the Department of Health, England and operates in partnership with the Hospital for Tropical Diseases (London), the Liverpool School of Tropical Medicine, The London School of Hygiene and Tropical Medicine and the Health Protection Agency Centre for Infections.

The telephone advice line service provides detailed information for health professionals advising travellers with special needs or complex itineraries. The line operates Mondays to Fridays between the hours of 9am – 12pm and 2pm – 4.30pm. Queries are answered by the team of specialist nurses, with provided medical cover. For more information on NaTHNaC refer to the website at www.nathnac.org

Scenarios from the queries to the advice line might prove informative to health professionals and so a selection has been included below. With all travellers it is essential to complete a risk assessment. This involves finding out some details about a) the traveller, including; past and current medical history, previous vaccines and malaria chemoprophylaxis and b) the trip, including; date of departure, length of time away, the countries to be visited and the areas within those countries (i.e. urban, rural, coastal, altitude), type of accommodation. Any planned activities (i.e. adventure sports, disaster relief/aid work, visiting family and friends). Advice for health professionals on how to conduct a travel health risk assessment is available at: http://www.rcn.org.uk/publications/pdf/travel_health_medicine.pdf

Scenario One

A 47 year-old male is travelling in three weeks time to Iwo State in the east of Nigeria for six weeks. His father is very ill and it is essential that he travel. His past medical history includes severe hay fever, type II diabetes, sleep apnoea, severe migraine, gastric reflux, malaria on his previous visit to see his parents, six years ago. For the past five months he has received weekly desensitisation injections against hay fever. Then two weeks ago he had a short course of oral prednisolone 20mg/day for 5 days for an acute flare-up. His other regular medication is insulin and metformin, omeprazole, migraleve and fexofenadine.

Could his immune system be compromised by the desensitisation injections and the short course of steroids and therefore should he receive yellow fever vaccine? The consultant allergy specialist has already said that it is acceptable to proceed with yellow fever as a live vaccine. What malaria prophylaxis is recommended?

There is a risk of yellow fever in all areas of Nigeria[1] and vaccination is recommended. The advice of the on-call consultant was sought to help answer these questions. Non-systemic corticosteroids, such as aerosols, intra-articular or topical preparations, do not cause immunosuppression. As a guide immunosuppression in adults should be considered in those who have received more than 40mg per day for more than one week.[2] Therefore the recent short course of prednisolone would not be considered an immunosuppressive dose. These are simply guidelines for health professionals and the opinion of the traveller's specialist consultant should also be sought, so it is useful that in this case this has already been done.

Malaria is known to be a risk in all areas of Nigeria.[3] He should be advised that insect bite precautions should be taken[4] and promptly report for urgent investigation any symptoms during the trip or for one year afterwards. The options for malaria prophylaxis would be doxycycline, atovaquone/proguanil or mefloquine. There are no known contraindications to doxycycline or atovaquone/proguanil; however he needs to be aware of the possibility of oesophagitis with doxycycline, in case of complication with his current diagnosis of gastric reflux. Doxycycline should not be taken concurrently with antacids due to risk of reduced absorption of doxycycline. If mefloquine is chosen a trial of one tablet per week over three weeks should be completed to check for tolerance. There are no listed contraindications or precautions for individuals with migraine against taking mefloquine.

This man is a high risk traveller due to his complicated medical history and medications that he takes. He should be advised on general considerations such as how to carry medication whilst travelling,[5] prevention of food and water borne diseases[6] and traveller's diarrhoea.[7] His diabetes specialist may also be able to advise on transportation of insulin (needles and blood lancets), carrying copies of his medical history and medication, how to organise food whilst travelling and how to obtain travel insurance. Patient organisations such as Diabetes UK may also be able to help (see Links).

Scenario Two

A 34 year-old female will be returning home to her family in Serbia with her one year old son. They will travel in one weeks time (May 2011) and stay for four weeks. Both are fit and well. The child has not yet received his routine MMR vaccination, would this be recommended before departure at such short notice?

Many countries in Europe continue to report serious outbreaks of measles in 2011.[8,9] Between January

and February 2011 there were 53 laboratory confirmed cases in the UK,[10] with travel overseas an important factor in the transmission of disease.[11] Serbia reported large epidemics of measles in 1986, 1989, 1993 and 1997.[12] The current outbreak was first reported in December 2010,[12] initially in the Roma settlements and has subsequently spread to the general population. Suspected and laboratory confirmed cases have been reported from several areas of the country predominantly in the capital city Belgrade in the north and the municipality of Leskovac in the south.

The caller was advised to discuss the risk of measles with the mother of this child and recommend that he has MMR vaccine as soon as possible before departure. The mother should ensure that he returns for the second dose. This is normally from three years four months to five years of age and before school entry. However UK guidelines state that MMR vaccine can be given at any time from three months after the first dose.[13] This would be worth considering if they intend to travel to Serbia again before he is due the dose at pre-school age.

It was also recommended that the health professional check if the mother has previously received vaccine. Individuals born between 1970 and 1979 (this lady was born in 1977) may have been vaccinated and exposed to disease during childhood, however if not they should be offered vaccine if considered to be at high risk of exposure.[13] If they have received incomplete or no protection, two doses of MMR vaccine may be necessary one month apart. It would not be possible to complete two doses before this trip if leaving in one week, in which case she would be recommended to see the health professional after return to the UK for a second dose of vaccine because they travel to Serbia to visit family, there is a likelihood that they will go again in the future.

Further advice on measles risk during travel can be found on the NaTHNaC website (see Links).

Scenario Three

A 59 year-old female is travelling for 10 days to Phuket in Thailand for her son's wedding in a month's time. PMH lymphoma and brain tumour. She has regular episodes of fitting. Medication is diamorphine and diazepam. The caller does not think she is well enough to travel. What would we advise?

This lady is a high risk traveller due to her medical history; however she is clearly determined to go on the trip and should be advised accordingly. Travel health professionals should ensure that travellers are informed of the risks during their trip, so that they can make appropriate choices. Health professionals may express their concern in such a situation, but in most cases it is not appropriate to say *'you cannot travel'*. This is a choice to be made by the traveller.

Airline passengers with regular seizures should be advised of the restricted availability of health care facilities in-flight.[14] Many of the elements of international travel have the potential to lower the individual's seizure threshold, i.e. fatigue, delayed meals, hypoxia and disturbed circadian rhythm.[14]

Compliance with regular medication is crucial and the medication should be easily available in the hand luggage.[15] The Thai authorities are very strict about transportation of some drugs. This lady may find it useful to have someone who knows about her condition to travel with her. She may wish to inform the airline about her condition when booking the flight; airlines have the right to refuse to carry passengers with conditions that may have serious consequences during a flight.[16]

Recommended vaccines would include diphtheria/tetanus/polio booster if necessary, hepatitis A, typhoid, hepatitis B (in case of need for medical treatment). She should be recommended to obtain travel health insurance and advised about food & water hygiene,[6] management of traveller's diarrhoea,[7] insect bite avoidance.[14]

Scenario Four

A 25 year-old female is travelling to Brazil. She will fly to Rio de Janeiro for two days and then go on to Chapada dos Veadeiros National Park in the north of Goias state for a 12 day wildlife viewing holiday and then return to Rio de Janeiro for one day before returning to the UK. The departure date is in three weeks time. The traveller has ulcerative colitis and her current medication is prednisolone. She is on a six week reducing dose course, tailored by the specialist gastroenterologist which started at 30mg per day and has reduced by 5mg per week. She is currently taking 15mg per day with the intention of completing the course in three weeks. Can she receive yellow fever vaccine?

This region of Brazil forms part of a protected Unesco World Heritage Site as it contains one of the world's oldest and most diverse tropical ecosystems.[17] The advice of the on-call physician was sought to answer this query.

There were several issues causing concern with this query;

- the on-call physician was uncomfortable to recommend yellow fever vaccine due to the recent course of steroids and the possibility of immunosuppression causing a severe adverse reaction to the vaccine, although she did not feel that there was a clear cut contraindication
- the definition of immunosuppression in adults is ill-defined (most information is on short courses in higher doses, rather than on longer, lower dose courses)[2]
- it may be acceptable for the traveller to receive the vaccine, but the consequences of adverse events are severe
- the traveller may not mount a good immune

NaTHNaC *continued*

- response to the vaccine due to immunosuppression
- advice should be sought from the specialist gastroenterologist
- travel to that region of Brazil unvaccinated is not recommended. Confirmed cases of yellow fever were reported from Goiás relatively recently in 2007 and 2008[18] and it is thought that active disease is still present
- would she consider delaying her trip? Once the course of prednisolone is completed she may be able to receive yellow fever vaccine after an interval of three months,[2] following the advice of her specialist.
- she could have problems travelling between Rio and the national park without a valid International Certificate of Vaccination or Prophylaxis. The authorities are being vigilant about internal travel to the yellow fever risk areas, in an attempt to curtail spread of the disease into the urban areas.

Scenario Five

A 26 yr-old male is travelling to South Africa (Kruger National Park) and Mozambique for a 15 day safari holiday in 3 days time. He is currently feeling unwell and is undergoing investigations. Provisional diagnoses include viral hepatitis, Epstein Barr virus or infectious mononucleosis (glandular fever) following a positive Paul Bunnell test three days ago. One month ago he reported being ill for one week. Three lots of blood tests have been taken over the last month; three weeks ago his Liver Function Tests were grossly elevated. His consultant liver specialist reported that he expected levels to be almost normal by the departure date. He has no jaundice, no diarrhoea, no abdominal pain and is much improved over the last 3-4 days. He and his male partner are having their civil wedding ceremony the day before departure and this trip is their honeymoon. What would we advise regarding vaccines and malaria prophylaxis?

The advice of the on-call physician was sought to answer this query. This gentleman is a high risk traveller as he has a current ongoing infection which is not yet clearly defined. It would be good to have a firmer diagnosis before departure; blood tests may need to be repeated now. Sexually transmitted infections need to be considered. Administration of vaccines should be delayed until the last minute – only diphtheria, tetanus, polio, if more than 10yrs since last booster, should be considered at this stage. It would not be recommended to have hepatitis A vaccine at this stage because of the provisional diagnosis of viral hepatitis.

There is a significant risk of malaria in the Kruger National Park, South Africa and throughout Mozambique.[3] He would be recommended to have atovoquone/proguanil® for prophylaxis and exercise insect bite avoidance measures.[4]

General advice about prevention of food and water-borne diseases should also be given[6] and how to manage traveller's diarrhoea.[7]

There are issues around obtaining travel health insurance due to a current acute illness. It is not appropriate to recommend a particular company to provide travel health insurance. Travellers should be advised to shop around and check the policy details for what is covered. Individuals with current medical problems will have to pay a higher premium for insurance as they are at greater risk of needing assistance. However, medical care without insurance can be extremely expensive and may be delayed until funds are provided; a situation worth avoiding.

The issue of sexual transmission to or from his partner has to be considered. If his partner is currently well, investigations could be delayed until their return home. Further discussion on this will be required.

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Links
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CASE REPORTS

Reports from the Tropical Medicine Bureau

A selection of reports issued by the Tropical Medicine Bureau of Ireland

G Fry

Readers should note that the information given in these reports is gathered from a number of sources throughout the world and the Tropical Medicine Bureau cannot check each one for accuracy. They are of a very general nature and given purely to assist in the overall healthcare of the overseas traveller. They must not be used in place of a detailed medical consultation under any circumstance

The major source of the material is as follows:
ProMed: http://www.promedmail.org>

These and other reports are available on the Tropical Medical Bureau web page facility at www.tmb.ie

Date: Wed 30 Mar 2011
Source:
News.com.au [edited]
http://www.news.com.au/rare-mosquito-borne-murray-valley-encephalitis-virus-returns/story-e6frea6u-1226030401979?from=public_rss

A rare disease [virus] not seen in humans in South Australia [SA] for 35 years has been detected in Lower Murray region birds. Health officials said the Murray Valley encephalitis virus was spread by mosquitoes, with the last reported case in SA in 1974. The state's chief medical officer, Paddy Phillips, yesterday [29 Mar 2011] said the vast majority of people who became infected had no symptoms or only mild symptoms. "In about one in 1000 cases, symptoms can worsen, with increasing confusion, headaches, drowsiness, neck stiffness, tremors and seizures," he said. The disease has no specific treatment or vaccine.

[TMB: There may be a number of reasons for the increasing reports of a variety of mosquito borne diseases from Australia during the past months but the recent flooding will have increased the humidity and created an ideal breeding environment for these prolific and rather unwelcome creatures. Travellers need to be reminded of the need to continuously prepare against mosquito bites while travelling through Australia and to remember that sometimes the clinical picture of a condition like Ross River fever or Dengue Fever or Murray Valley Encephalitis may not be easily recognised by doctors working outside this area.

See http://tmb.exodus.ie/generaladvice.asp?id=3 for advice on avoiding insect bites.]

INDIA
ProMed Newsgroup
05/04/2011 14:57:00

Major Measles outbreak in Indian city of Hydrabad

Date: Mon 4 Apr 2011
Source:
The Times of India [edited]
http://timesofindia.indiatimes.com/city/hyderabad/Alarming-rise-in-measles-cases-in-city/articleshow/7859830.cms

The city of Hydrabad has witnessed a major measles outbreak in the last 3 months, pushing the total number of cases to an alarming 345 against 279 last year [2010]. What's more, several children, who were vaccinated against the infection, figure in this measles headcount. Surprisingly, the itchy rash did not spare even 40 and 50 year olds. District health officials said that outbreak investigations carried out twice during February and mid-March 2011 all over Hyderabad turned out to be positive. "There was a spurt in the number of cases during January, February, and mid March [2011]. A total of 15 cases were reported last week (21-27 Mar 2011). However, the numbers have shown a decline since the onset of summer," said Dr B L Veena Kumari, district medical and health officer. Authorities at the Fever Hospital said that they have seen 5-6 cases a day in the last couple of months as against the normal 1-2 cases. "Around 95 per cent of the cases are of children," said Dr G Vinod, assistant professor, Fever Hospital. Doctors at private hospitals who also saw an unusual flow of such cases said this outbreak was unexpected. "Measles is not common among adults, but last month [March 2011], we have come across around 8-10 cases," said Dr Aftab Ahmed, physician, Apollo Hospital, Secunderabad.Doctors said that measles symptoms include cough, running nose and itchy eyes similar to the flu, with increased eye irritation. These symptoms will last several days and are followed by a rash starting on the head and progressing down the body. On an average, 9200 children at the age of 9 months are being vaccinated against measles under the National Immunisation Programme every month in the city. Most of the children who got the infection this year [2011] were in the age group of 5-12 years, said officials. Now, authorities say that a study is being conducted in Andhra Pradesh to find out why measles is occurring among vaccinated children and elders as well. "After the study, we will send a report to the central govern-

ment requesting that a 2nd dose be given to children at the age of 18 months," said Dr G Srinivasulu, district immunisation officer.

[TMB: Measles is a highly contagious respiratory disease which commonly occurs in outbreaks among unvaccinated children. However, as seen in this Indian outbreak, adults may also feature as their previous antibody cover may have dropped to unprotective levels as the years pass. It is also worth mentioning again the part that, over the past decade, the MMR scare has left many teenagers without this essential cover as they reach a particularly risky time of their lives (social exposure, backpacking trips, university life etc). Those undertaking long haul travel can very easily be exposed (as was reported on a New Zealand flight recently) but also backpacking accommodation and the use of crowded local transport (over packed mini-taxis) can also be at a seriously higher risk than most 'standard' 4* to 5* travellers. The vaccine is typically given on two occasions about one month apart giving most adults about 98% protection.]

NORWAY
ProMed Newsgroup
26/02/2011 23:52:00

13 cases of Tularaemia reported from central Norway

Date: Mon 21 Feb 2011
Source:
Norwegian Institute of Public Health [in Norwegian, machine trans., edited]
http://www.fhi.no/eway/default.aspx?pid=233&trg=MainLeft_5588&MainArea_5661=5588:0:15,1787:1:0:0:::0:0&MainLeft_5588=5544:88471::1:5569:1:::0:0 >;

So far in 2011, 13 cases of tularemia have been reported in people living in 5 municipalities in More og Romsdal and Sor-Trondelag [in central Norway]. In 2010. a total of 21 cases of the disease across the country were reported. Tularemia, sometimes called hare plague, is a bacterial disease that every few years causes local outbreaks among rabbits and rodents, particularly in lemmings. Humans can become infected through direct or indirect contact with sick, dead, or disease-carrying animals.Tularemia can also be transmitted through contaminated drinking water when animal tissue has contaminated the water source. The disease can also spread through the bite of such animals and by inhalation of dust with infected feces or urine.

[TMB: This is mainly a disease of animals (a zoonosis) but can cause serious consequences for an infected human. Most commonly transmission occurs through close contact with an infected animal (humans either inhaling or ingesting bacteria) but tick and mosquito bites have also been linked to this illness. In the TMB database we also have reports from USA, Spain, Germany, Thailand, Russia, Iran and Georgia as well as Italy. An infected patient may present with many different forms of the illness including enlarged lymph glands, sore throat, flu symptoms, skin lesions, chest infections and a severe form of blood poisoning. The disease usually comes on quite quickly (2 to 5 days) and, though these patients require antibiotic treatment, relapses can occur. Having this outbreak in central Norway shows how important it is for attending doctors to be aware of international health issues as they assess their patients perhaps many hundreds or thousands of miles away from where the individual would have contracted the disease.]

INDONESIA
ProMed Newsgroup
20/01/2011 08:47:00

Another Australian diagnosed with Legionnaires' disease from Bali

Date: Wed 19 Jan 2011
Source:
Government of Western Australia, Department of Health [edited]
http://www.health.wa.gov.au/press/view_press.cfm?id=957>

The Department of Health has been notified of a 4th Western Australian diagnosed with legionnaires' disease following travel to Bali since December 2010. Acting chief health officer, Dr Andy Robertson, said while the exact source of the disease remained unknown, all the Western Australians recently diagnosed had stayed at the Ramayana Resort and Spa Hotel in Central Kuta. "The Indonesian Government has been advised of the Australian cases by the Australian Government, and is working with the World Health Organisation to investigate the possible source of the disease," Dr Robertson said. Dr Robertson said the early symptoms of legionnaires' disease are typically similar to severe 'flu-like' illness. "Early symptoms may include fever, chills, muscle soreness, headaches, tiredness, reduced appetite, and diarrhoea, along with dry cough and breathlessness," Dr Robertson said. The Department of Health is advising Western Australians who have recently returned from Bali, and have developed flu-like symptoms within 10 days, to contact their GP. "Legionnaires' disease is treated with specific antibiotics, and while most people recover, some people may develop severe pneumonia requiring hospitalisation." Legionnaires' disease most often affects middle-aged and elderly

Case Reports *continued*

people, particularly those who smoke or who have lung disease, diabetes, kidney disease, or a weakened immune system. "Legionella pneumophila" is a type of bacteria commonly transmitted by the inhalation of water droplets from contaminated warm water environments such as: air conditioning cooling towers in large buildings and evaporative air conditioners; showers and warm water systems; spa pools; misting or droplet sprays, and fountains. Legionnaires' disease cannot be caught from other people or from animal contact.

[TMB: Unfortunately Bali has become big news within the travel medicine community over the past year for all the wrong reasons – see next report. At least 130 are reported to have died from Rabies since the current outbreak began just over 12 months ago but now a number of Australian tourists have been confirmed with Legionnaire's Disease following their return home from their holiday on this idyllic island. Unfortunately Legionnaires Disease is a well recognised disease among travellers and especially those staying in air conditioned facilities as may be found in the better class hotels. The disease is air-borne and can very easily be contracted – even from very minimal exposure. The somewhat less severe form of the disease (Pontiac Fever) is still very debilitating and can be linked to deaths where the diagnosis is delayed. There are a number of other respiratory viral illnesses to which travellers may be at risk including the normal Influenza group (typically nowadays we talk about H1N1 'Swine Flu') and also Pertussis ('Whooping Cough"). However for the backpacker in particular a parasitic disease process may need to be considered when a persistent cough is a presenting feature. Many of the intestinal parasites have a phase of their life cycle where the larva moves through the chest tissues on their path towards the intestine. This can lead to a distinct wheeze in the affected individual and can last for a very significant period of time. Travellers should be reminded that any sickness in the weeks or months following their time abroad should be considered as a 'travel related problem' and investigated with that in mind.]

INDONESIA
AGENCE FRANCE-PRESSE
23/01/2011 23:31:00

Nusa Penida Islands (close to Bali) on Rabies Alert

Date: Sat 22 Jan 2011
Source:
Bali Discovery Tours [edited]
http://www.balidiscovery.com/messages/message.asp?Id=6688

The District government of Nusa Penida in the Klungkung regency of Bali has declared an "extraordinary situation" (status kondisi luar biasa) for rabies for the island group located a short distance form Bali's southeast shore. The district of Nusa Penida includes the islands of Nusa Gede, Nusa Ceningan and Nusa Lembongan. The "extraordinary situation" alert was issued after the recent death of 2 local residents from rabies. Prior to these deaths, officials and local resident assumed the islands had escaped the epidemic of rabies taking place on nearby Bali. Quoted in Beritabali.com, the head of the Bali Heath Office, Dr. Nyoman Sutedja, declared a rabies alert for Nusa Penida on Mon 17 Jan 2011. He expressed concern for the 17 dog bite cases that have occurred in past months that went untreated in the mistaken assumption there were no infected dogs on the island. Calling for a ban on the movement of dogs between the island and the outside world, Sutedja said hilly geography of the islands complicated efforts to control rabies. He also said that dogs carrying the virus may be sheltering in the caves found in the hills of the islands.

[TMB: Control of the Rabies outbreak on Bali is progressing at a slow pace but the risk still exists and travellers need to be constantly aware of the problem. Avoiding all animal contact is essential but where this occurs it may be very difficult to access adequate vaccine supplies on the island itself. Travellers would therefore have to move to another location such as Singapore to obtain essential treatment. This can be very costly and also disrupting to their travel plans. The recommendation for all travellers to Bali to have received their pre-departure vaccination cover against Rabies is based on the fact that this will provide excellent cover but also they would then only require much less therapy if any exposure should occur.]

CPD REVIEWS

Strategies for HIV Prevention and the potential for a vaginal gel

K Laing

Since the first public report of AIDS on the 5th of June in 1981 and the subsequent identification of the responsible retrovirus, the world has watched the unfolding pandemic.[1,2,3]

Major breakthroughs have been made in HIV treatment but a cure seems a long way off and the role of prevention is still paramount.[3]

Recently released study data suggests the drug Tenofovir, used as a vaginal gel, could have a role in preventing male to female HIV-1 transmission.[4] Is this intervention the mythical silver bullet we have been waiting for or will it fail to have a practical application?

The Epidemic

It's estimated that around 60 million individuals have been infected with HIV worldwide with approximately 25 million deaths.[2,3] Despite education programmes and barrier contraception, the numbers continue to rise.[2,3] It's estimated that for every two people starting treatment, a further 5 become infected with the virus.[2,3]

In sub Saharan Africa it's estimated 22.4 million people are infected with HIV.[2,5] In 2008, there were 1.9 million new infections and 2.9 million people receiving anti-retroviral therapy (ART). However, a staggering 6.7 million might benefit from ART.[2,3,5] Clearly, with the shortage of ART, prevention is still the key to disease control.

Considering regional modes of transmission is vital when considering prevention strategies. In Sub Saharan Africa, HIV is predominantly spread via sexual contact and mother to child transmission.[2,3,5] However, in Eastern Europe and Central Asia, where there's been a 66% increase in those living with HIV from 2001 to 2008, there's a high prevalence among injecting drug users (Ukraine 38.5-50.3%, Russian Federation 37%).[5] Prevention strategies focusing only on sexual transmission are inappropriate.

Strategies for the future

Few trials have shown success in preventing HIV transmission.[3,4] However, 6 randomised control trials suggest further work is needed on.[3,4]:

1 Male Circumcision
2 Vaccination
3 STI Treatment
4 Antiretroviral Microbicide

Each approach has shown statistically significant results, however, none have shown 100% protection.

As discussed above, the relevance of prevention strategies vary locally with the predominant modes of transmission. With sexual transmission, the rates of male to female transmission (1 in 200 to 1 in 2000) v. female to male transmission (1 in 700 to 1 in 3000) vary, therefore, a strategy targeting the former will have a greater impact potentially.[6] Also, if women are protected in this way, it will reduce mother to child transmission.

Male Circumcision

When combined, three randomised control trials conducted in Africa (2002-2006) reported an overall 57% reduction in HIV acquisition (range 51% - 61%).[7]

Circumcision is believed to reduce HIV infection rates[8]:

1 Foreskin hosts abundant numbers of HIV target cells (Langerhans' and dendritic cells, CD4+ T cells and macrophages).[8]
2 The inner preputial mucosa consists of unkeratinised cells leaving it vulnerable to HIV infection.[8]
3 During intercourse, the foreskin is retracted over the shaft thus, exposing it to vaginal/cervical secretions, menstrual blood etc.[8]
4 Trauma in the form of microtears can occur during intercourse. The frenulum is particularly vulnerable and microtears provide a route of access for the virus.[8]
5 Uncircumcised men exhibit higher rates of genital ulcer disease, again, providing routes of entry.[8]

Success was shown only in reducing female to male infection with no significant results in the reduction of male to female transmission.[7,8] One of the benefits in this strategy is that circumcision is a single, lifetime prevention measure.[8] Following these results the WHO/UNAIDS recommended male circumcision be part of the HIV prevention package listing 13 countries in East and South Africa where this should be implemented as a priority8. Each country had high HIV prevalence, low circumcision rates and generalised heterosexual epidemics.[8]

The aim was to achieve 80% circumcision prevalence in target populations within a set time period. However, to date, in most cases this target hasn't been achieved.[8]

One important consideration when implementing this strategy is regulating who, where and how the circumcision is carried out.

Currently in Africa, circumcision is mostly carried

Strategies for HIV Prevention… *continued*

out in the community by traditional medical practitioners. These practitioners are unlikely to be qualified to western standards and it's unlikely that procedures are carried out using sterile equipment. There's the risk therefore, that instead of protecting people, many, including babies and young children, may be put at risk of contracting HIV during the procedure itself. Also, anaesthesia may not be available. Should a procedure be recommended which may not be carried out humanely which also potentially puts individuals at risk of infection? Clearly, regulation of the procedure and training of practitioners is important as well as its success as an HIV infection preventative strategy.

Vaccine

With effective treatment, it's possible to suppress patient viral load to undetectable levels, reducing infectivity.[9] Although risk is reduced, 100% protection isn't offered to a HIV negative partner.[10] Common thinking is that a vaccine is the only way forward.[1,9]

More than 25 years on from identification of the virus, a vaccine eludes us. Vaccine development is a firmly established science, but the nature of this virus causes a hurdle that science cannot yet overcome. Main difficulties:

1. No significantly large population identified who've developed resistance to HIV through natural immune response therefore, protective immune parameters not observed.[10,11]
2. Identification of immunogens leading to broad, long lasting immunity yet to be established.[10,11]
3. Antigenic drift – one of the main obstacles in vaccine development. Virus mutation rate is exceptionally high making it difficult to create one vaccine giving universal protection against all clades and strains.[10,11]
4. Limitations of animal models. Although valuable information has been gained from animal models, there are differences in the viruses themselves (HIV vs. SIV) that could affect vaccine development. Although the gene Vpr is found in both viruses, its function differs greatly.[10,11] Some HIV strains do cause disease in primates. However, they appear to be generally resistant to the CCR5-tropic primary isolates responsible for most human infection suggesting both the viruses themselves and the host immune response can differ. Therefore, for effective vaccine development, human trials are necessary.[10,11]

The virus' natural ability to evade the hosts' immune response poses a problem in vaccine development.[10] The viral envelope is most accessible to the host immune system but has evolved to go unnoticed.[6,10] Key portions of proteins can be masked, including CD4 and co-receptor binding sites.[6,10] The envelope itself is conformationally active, hiding antibody and B-cell recognition structures during virus-receptor binding.[6,10] It's also been suggested that decoy mechanisms can be employed by the envelope to divert attention away from critical proteins required in virus – host binding. Displaying proteins likely to evoke an immune response on non-vital areas of the envelope, the virus protects binding sites from attack.[10,11] Gp120 can undergo conformational change and be masked by a carbohydrate cloak allowing escape immune system detection.[6,10,11]

There has yet to be a confirmed case of natural immune clearance of HIV. A vaccine would aim to prime the immune system in preparation for challenge by the virus. However, if the immune system has never been known to have the ability to neutralise HIV infection, is a vaccine possible?[10]

It's been suggested that the vaccine should stimulates multiple components of the immune response - the approach that current vaccine development has taken including the recent Thai vaccine trial.[9,10,11]

The trial recruited 16,395 subjects (16-30 years old), deemed at community risk of infection, and was set up as randomized and double-blinded.[9] Vaccinations were given over 24 weeks and subjects were followed up for 3 years.[9]

At 42 months, 14,672 subjects had completed the trial and were sero-negative.[9]

Of the subjects who completed the trial, 132 had contracted HIV (56 - vaccine group, 76 - placebo group).[9] Of these, 7 subjects were later excluded as it was found they were infected between the HIV test and administration of the 1st vaccination.[9] Using the Kaplan-Meier test, vaccine efficacy was 31.2% (95% CI, P= 0.04).[9] This result was deemed to be significant however, only moderately.

Viral load in subjects who contracted HIV despite receiving the vaccine was virtually identical to those who received the placebo.[9] This was considered worrying as it would be expected that viral load should be at least reduced.

Despite obvious difficulties in HIV vaccine development, the success of the Thai trial has delivered hope that a future vaccine may be possible.

STI Treatment

Several trials have taken place looking at STIs and HIV transmission risk. A Tanzanian study (1991-1994) reported success in reducing HIV infection in men who attended programme meetings to manage syndromic STI (adjusted IRR = 0.48, 95%CI 0.24-0.98, P=0.04).[7] However, these results have never been replicated.[7] One suggestion as to why this is the case includes the subsequent provision of superior HIV prevention advice in later trials giving better protection to future control groups.

Antiretroviral Microbicides

Trials of Microbicides have been undertaken since 1987 investigating their potential in HIV prevention. Until September 2010, no positive results were yielded. Microbicides are aimed at preventing HIV infection in women and are particularly important strategies in parts of the world where women are disempowered.[4] Presently, 70% of HIV positive individuals reside in Sub Saharan Africa with women disproportionately affected (60%).[4] 90% of new child infections also occur in this region, many from mother to child transmission.[2,3,4] Protecting women against HIV protects both the individual and her future children.

Women's vulnerability to HIV in sub-Saharan Africa stems from their greater physiological susceptibility to heterosexual transmission and the severe social, legal and economic disadvantages present.[4,5] A Lesotho study reported that the severe HIV epidemic experienced is likely to be due to the sexual and physical violence experienced by women in the country with 47% of men and 40% of women stating that women have no right to refuse sexual intercourse.[5] Women are unable to negotiate condom use or monogamy giving them little control over their HIV status.[4,5] The availability protection that women can use without the necessary compliance of their partner is paramount.

The Centre for the AIDS Program of Research in South Africa (CAPRISA) published results of the 004 trial in September 2010, which focussed the effectiveness and safety of a microbicide, Tenofovir gel.[4]

The gel is inserted vaginally 12 hours before, and again, within 12 hours after intercourse.[4] Efficacy was determined by compliance rates. In high adherers (>80%) HIV incidence was 54% lower than the control arm.[4] In intermediate adherers (50-80%) and low adherers (< 50%), HIV incidence reduction was 38% and 28% respectively.[4] Overall, there was 39% reduction in HIV incidence.[4] The protective effect exhibited was irrespective of sexual behaviour, condom use, STI co-infection or urban/rural differences.[4] Importantly, of those individuals who did seroconvert, there was no indication of Tenofovir resistance.[4]

Overall, this microbicide heralds an important step in HIV prevention. For the first time, a prevention strategy is available to a sector of the community which previously was at the mercy of its male counterparts, empowering women to protect themselves and their families.[4] This strategy doesn't however offer a quick fix – it's an on-going strategy which must be used for every sexual encounter. Obviously, compliance issues are important in the efficacy of the strategy in the long term. As too is the on-going availability of the product to the individual. Each dose of the microbicide costs around 30 cents (USD) so per sex act, using 2 doses for 100% compliance, this will amount to 60 cents (USD).[12] Will governments in developing countries be willing to absorb this cost and make available the product for general use? Many governmental positions in Africa are held by men – will a potentially expensive prevention strategy, only protecting women, be considered important enough to invest in? If women have to buy the product themselves, this will make it an unviable option for many.

Conclusion

It's clear there's still no one single method (beyond abstinence) offering 100% protection.

It's therefore appropriate that a prevention package be implemented which involves various strategies as a combined method of HIV prevention.

When considering which strategies should be involved, along with efficacy, other considerations must be taken into account including cost, practical community application, local attitudes and product availability.

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Prepared as a component of a Student Selected Course in Travel Medicine and Global Health.

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CPD Reviews *continued*

Avoiding occupationally acquired HIV infection while on medical electives abroad with special reference to Malawi

N Lapraik

Background

It is estimated that 'sixty to seventy per cent of British medical students (approx. 2400-3000) a year spend their electives in developing countries abroad. An elective programme can offer students a high quality of experiences involving personal, professional and clinical challenges. It can allow them to develop clinical skills whilst gaining insight into how medical procedures are undertaken abroad. It also allows students to work within unfamiliar settings and at times under adverse conditions. Although foreign electives on the whole are encouraged and have gained popularity there are ongoing risks faced by medical students and healthcare workers of which some are increasing. One such major risk factor is the possibility of acquiring HIV infection particularly in developing countries where there is a high prevalence.

It is therefore essential to be aware of these dangers and students must be educated in blood-borne virus transmission and appropriate infection control measures. Additionally, students should be updated on current guidelines for HIV post exposure prophylaxis (PEP).[1] They should have a well informed knowledge and understanding about how PEP works and its effectiveness which can vary according to circumstances as well as understanding specific risk factors that can lead to HIV acquisition.

Malawi as an example of a country where there is a potential risk

Malawi is a small country located in southeast sub-Saharan Africa. This developing country has a high population density resulting in healthcare facilities being strained. It is estimated there is around one doctor for every 50,000 people.[2] Since 1994, when Malawi became democratic, it has steadily become more popular for electives from Western countries. Its beautiful scenery, relative safety and a chance to make a valuable contribution allure many.

Overall it has poor health statistics with life expectancy at birth being only 49 years for males and 51 for females in large part due to a high infant mortality rate.[3] A BMJ archive also states that 'prevalence of HIV in some areas is thought to be more than 30% (with a population average of 16%)'[4] and UNICEF indicated that in 2010 there were around 930,000 people living with HIV.[5] The numbers of cases of HIV are mainly monitored through surveillance at antenatal clinics. It is estimated that HIV prevalence in urban adults (23%) is nearly twice as high as when compared with rural adults (12.4%).[6] A study conducted in 2004 indicated that the South of the country had almost double the number of HIV cases than the North and Central regions.[6] These statistics mean Malawi is considered to be one of the world's HIV hyper-endemic areas since its first documented case in 1982.[6] It is thought that the majority of hospital admissions are due to HIV and its complications. The Queen Elizabeth Central Hospital (QECH) in Blantyre, the largest in Malawi, estimates its HIV prevalence among inpatients to 'range from 36.0% in the surgical wards to 70.0% in the medical wards'.[7]

As a result undergraduate elective students and health workers from overseas are now normally advised before departure on safety precautions and on the availability and use of PEP 'starter packs' in case of accidental exposure.[3]

In 2004 the government in Malawi launched a nationwide initiative allowing PEP availability for its own health care workers. This followed a study conducted at the QECH in 2003 showing the benefits of anti-retrovirals and PEP. Subsequently, a PEP service was set up in the Department of Medicine and is available 24 hours a day, 7 days per week.[7] However, it has been argued that this resource should not be used by students coming from resourceful rich nations since it uses up limited local supplies of PEP.

The views of doctors in Malawi on the role of PEP are similar to those in the UK. They acknowledge its importance due to the high prevalence of HIV, particularly in hospital inpatients, and the high incidence of occupational injuries. However, awareness by healthcare workers regarding availability is much lower than in the UK. Also in Malawi a common deterrent from reporting an occupational injury and receiving PEP is the fear of being found positive and losing their job. Despite this reports of occupational injuries had risen 5-fold compared to 2003.[7] However, expatriate elective students generally seek advice and consider PEP more frequently than local healthcare workers after an injury. While occupational injuries to elective students are similar to the UK, these occur at a much higher frequency in Malawi due to poorly implemented infection control measures, poor equipment and less supervision by a trained physician.[8]

Consequently, cumulative risk is a concern when students are repeatedly exposed to possibly HIV infected blood-body fluids.

The most common occupational injury recorded by healthcare workers in Malawi is a needle stick accounting for 76.3% of all reported injuries.[7] Many of these involved hollow needles with a higher risk. Malawi also has higher proportion of patients with AIDS and high viraemia levels often because they have not been taking anti-retro viral therapy. As a result an injury where these patients are the potential source of infection may result in higher risk.

The types of student electives vary depending upon students interests. Rotations within different departments in the same hospital come with varying risks of HIV. There is higher exposure if students work in emergency departments, as this may involve pressurizing circumstances and in surgical and obstetric units. Some advise against student rotations in these situations and most agree students should not be performing any invasive procedures in these circumstances, in the UK such procedures would not be allowed. Research electives carry lower risks if patient contact is kept to minimum and care taken when handling samples. However, in rural areas, electives are frequently undertaken within smaller primitive settings where medicine is more generalized leading to higher risks due to, lack of supervision, poorer working conditions and lack of health and safety guidelines. PEP may not be as readily available.

The undergraduate medical curriculum in Malawi and UK differs significantly. In Malawi 4th and 5th year students provide services directly for patients – it is common practice for students to perform caesarean sections and lumbar punctures. UK students are likely to be unfamiliar with these procedures potentially leading to a higher risk of injury – it is also considered unethical to practice in this way, untrained and unqualified. Students must recognize their professional limitations and also be alert to inadvertently getting into a position where they feel under pressure, to participate in such procedures. Some medical schools advise students to clarify to their host institutions in advance that they should not be exposed into risky situations. Also travel insurance including emergency repatriation could be invalidated if students are injured assisting procedures beyond their competence.

Prevention of HIV infection and role of post-exposure prophylaxis (PEP)

The most important aspect relating to HIV protection is knowledge and awareness of how HIV infections spread. It is important that undergraduates are aware that all countries carry a potential HIV risk although not at the high-risk levels found in regions like sub-Saharan Africa. It is essential students are educated about blood-borne viruses[9] including various ways transmission may occur, including sexual, blood-blood and blood-body fluid exposures. Such exposures may occur due to percutaneous injury but also when infected body fluids or blood comes in contact with mucous membranes or broken skin not just in a clinical environment.[10] The risk of occupationally acquiring HIV from a percutaneous injury increases if the injury is deep, the needle is hollow and comes from a vein or artery or if blood is visible on the device.[11] It is essential medical students are taught basic infection control practices and to implement universal precautions to reduce exposure.[12]

In an event of an injury occurring the student should know how to reduce transmission by encouraging free bleeding around wound area and not abrading surrounding skin when washing with soap and water. Antiseptics may also damage local skin defences.[11] This information is essential to health and safety wherever students are studying and should be provided by all medical schools within the undergraduate curriculum.

In the UK if a significant occupational injury occurs with potential to transmit HIV the healthcare worker/student, after immediate counseling and a risk assessment may be offered post HIV exposure prophylaxis (PEP).[13] In addition, ongoing counseling and advice is readily available as standard practice including a repeat HIV test at three and six months after exposure and monitoring for side effects.[10] This approach may however not be the normal practice in other countries visited by elective students.

PEP was introduced in the early 1990s. It is widely used due to the serious professional and personal implications HIV infection poses, despite there not being solid scientific evidence that it is effective in preventing infection in this situation. Similar combination multi-drug therapy is used as treatment by HIV positive patients to lower HIV viral load and raise the CD4 lymphocyte count. In the absence of trials in the PEP situation there are various options: Combivir® (zidovudine plus lamivudine) was one of the first to be used. However the Health Protection Agency's latest guidelines recommend 4 drugs for 'maximum protection; Truvada® (tenofovir and emtricitabine (FTC) plus 'Kaletra®' (lopinovir and ritonavir).[1]

In order to be effective PEP should be started within 72 hours, as it is estimated that it takes 24 hours for the virus to reach local tissue and lymph nodes and around 5 days to reach peripheral blood.[10] The earlier PEP is commenced the more likely it is to be effective. It is important to remember that seroconversion rates for HIV following occupational exposure without PEP are already very low: 3/1000 for percutaneous exposures and 1/1000 in mucocutaneous exposures.[11] This is because HIV is a RNA virus therefore it degrades quickly outside the human body.

The efficacy of PEP is still unknown as it is unethical to conduct controlled case studies. However,

Avoiding occupationally acquired HIV infection… *continued*

zidovudine alone has been shown to reduce infection risk by around 80% when used in animal experiments and in mother to child transmission studies.[7] There are several possible reasons for PEP failure and these include; resistant HIV strains, delayed initiation, course incompletion and exposure to a large inoculum.[10] A full course of PEP should last 28 days; however the courses are not completed. One UK study indicated that only 16% of healthcare workers who received PEP complete the full course.[14] This may be due to unpleasant side effects which include: diarrhoea, malaise and nausea. Also the source patient may have been confirmed to be HIV negative after consenting to a HIV test although there is a 'window' period when a patient can be infected but seronegative.

In less developed countries PEP is often unavailable[13] for reasons including limited resources and funding. Consequently, British medical schools frequently advise students travelling to high prevalence HIV areas to carry a PEP starter pack and know how to use it. The Health Protection Scotland website for health care professionals TRAVAX (and its companion public version 'Fit for Travel') contains a useful advice sheet for those considering carrying PEP.[13] A 'starter pack' provides anti-virals for five days after exposure which allows students time to travel home for drug and blood test monitoring and counseling including advice on their future sexual behaviour. This approach can have implications for the local health community in the host country when local health workers who run the same HIV risks are unable to obtain PEP.

PEP is an expensive drug costing around £150 or more for a starter pack11; this is a significant cost for students who already are funding their own electives. Beware that PEP bought privately may results in it being supplied to individuals who do not need it. **If students have concerns and/or are considering carrying PEP with them on their elective they must seek further advice on what drugs to take and how to use the medication, which could be from their own doctor or health centre but more likely from a local infection or tropical diseases specialist unit. This is especially important if their medical school does not provide its own special advice and counselling.**

Conclusion

This article highlights that carrying PEP starter packs should be considered by students travelling to HIV hyper-endemic areas for their electives. To date no cure for HIV has been developed therefore precautions and prevention remain the only way forward in reducing exposure of the virus when working in clinical settings. This report has reinforced the message that there are various risk factors for HIV and that education on blood borne viruses and infection control measures should be introduced early in the medical curriculum.[15] Medical schools should centrally provide and coordinate advice enabling students to undertake electives safely and successfully. It is also important that students acknowledge their own responsibility in researching electives thoroughly to ensure risk factors are kept to a minimum and all hazards have been explored.[16]

It should be stated that potential risks during foreign electives should not deter students from travelling abroad as valuable contributions can be made.[17] The wealth of experience and fulfilment gained could be an experience of a lifetime and carried throughout future medical careers.

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Prepared as a component of a Student Selected Course in Travel Medicine and Global Health. Reviewed by: Dr. Eric Walker, course supervisor and Dr. Kitty Smith, Health Protection Scotland.

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RESEARCH

Estimation of the dose of Insect Repellent applied to exposed skin

L I Goodyer, S Patel

Introduction

Bite avoidance measures are an important strategy for travellers to minimise the risk of contracting insect born diseases. It is advised that an insect repellent is applied to exposed areas of skin to avoid mosquito bites and should be particularly used when going out after dusk in malaria endemic areas.

The Advisory Committee for Malaria Prevention (ACMP) currently recommend that diethyltoluamide (DEET) at a concentration of 50% is used when visiting malaria endemic areas. A key factor determining longevity of the repellent before reapplication is the applied dose, usually estimated as mg of active ingredient (ai) per cm^2 of skin. According to well established mathematical models[1,2] the length of protection from a DEET repellent increases exponentially with applied dose reaching a plateau at around $2mg/cms^2$ of active ingredient. It is reasonable therefore to aim for application concentration of $1\text{-}2mg/cms^2$ ai to give an adequate level of protection in most circumstances, so that frequent reapplication is not required. To achieve such a dose from a 50% solution of DEET would require a reasonably generous application such that the skin felt wetted by the product.

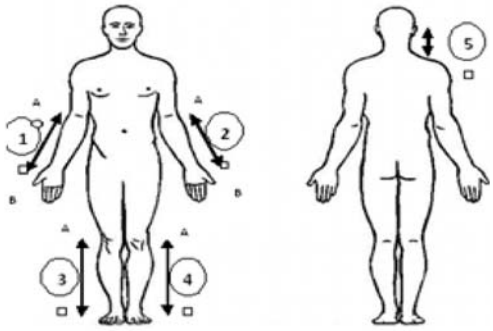
There have been few studies that have examined the amount of repellents applied by travelers in normal use. One study conducted by Goodyer and Thrower[3] assessed the amounts applied by travelers both in a simulated environment in the UK and in field studies amongst tourists in India and Kenya . This was conducted using the repellents purchased by the travelers and assessing application to the arms and neck.

This pilot study focuses on the use of repellents applied to various parts of the body including the legs, face, neck and arms. It also explores any differences between application using a spray or lotion.

Method

Twelve final year pharmacy students were recruited and gave consent to take part in the study. As this is viewed as a pilot study subjects were not selected for any particular characteristic such as age, gender or previous experience of using repellents. They were asked to attend the sessions wearing short trousers and short sleeved shirt .The body surface area of various parts of exposed skin was estimated as shown in figure 1 and 2.

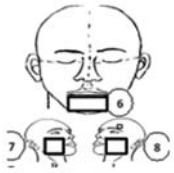
Figure 1
Measurement of Body surface area of limbs



Surface area = $^1/_2$ (a + b)

a: circumference of the top half of the arm, leg or neck to which the repellent is applied (cms)
b: circumference at bottom half of the arm, leg or neck to which the repellent is applied (cms)
h: height of arm, leg or neck to which the repellent is applied (cms)

Figure 2
Surface area of face
Measured as an area of the sum of three rectangles as indicated in diagram



At the beginning of the session subjects were asked to imagine they were about to go out in the early evening when visiting a malaria endemic area and apply an insect repellent as per the instructions on a bottle of commercially available repellent spray, which they were asked to read. They were then given a spray bottle containing 50% ethanol/water and asked to apply this as per the instructions. They were additionally advised to not apply near the eyes or spray directly into the face. Subjects first applied the solution to one arm and the bottle weighed before and after use. This was repeated after application to a leg, neck and face. The subjects repeated the same procedure but using a solution delivered from a squeeze bottle, after being shown instruction from a lotion repellent product.

This study was approved by the De Montfort University ethics committee.

Estimation of the dose of Insect Repellent… *continued*

Results
The mean and standard deviation of the applied dose of solution is shown in table 1. Data was analysed using PASW 18 statistical software.

A one-way repeated measure ANOVA was conducted to compare the amount of solution applied to each of the four body areas. For the spray there was a significant effect for body area($p<0.0005$). The difference between amount applied to the leg and arms failed to reach significance ($p= 0.38$), Similar results were obtained for the lotion ($p<0.0005$), multivariate partial eta squared = 0.948), though additionally the difference between face and neck failed to reach significance ($p=0.166$).
Differences between spray and lotion were explored by a paired t-test and the amount applied using the lotion was greater for all body areas ($p<0.005$)

Table 1
Applied dose of 50% ethanol solution

	Mean applied dose mg/cm2 (Standard Deviation)		
	Arm	Leg	Neck
Spray	1.37(0.62)	1.13 (0.35)	1.92 (0.67)
Lotion	1.97 (0.85)	1.61(0.5)	2.94 (0.79)

Discussion
In term of the amount applied to different areas of the body it seems logical that the larger the potential surface area there would be a tendency to achieve a lower final dose concentration mg/cm² e.g. only one or two applications from a spray or lotion would be needed to cover the neck compared to the leg. This hypothesis seems to be born out from the data in this study where the order of concentration was face>neck>arms>legs, although the difference between arms and legs failed to reach statistical significance.

From table 1 the mean applied dose from a spray would not achieve the optimal 1-2mg/cms² a.i. range on either the arms or leg if DEET 50% had been used i.e. the figures in the table would be halved. For the neck and face region adequate levels of repellent are achieved. The dose applied by the use of a lotion is higher for all parts of the body compared to the spray. Some individuals were observed to actuate the spray into the hands for application to the arms and legs whereas others sprayed directly onto the skin surface. The latter method would involve a proportion of the spray not hitting the skin surface so that the dosage may be an underestimate for these individuals. Certainly it appears more likely to achieve a generous application of the lotion by pouring the liquid into a cupped hand before applying to the skin. If the fairly common 20% products are used then the target range would not have been met.

Thrower and Goodyer estimated a mean applied a.i of around 0.5mg/cm² for the arm and 0.7mg/cm² for the neck for 50% DEET products, which is broadly in agreement with the findings for spray application in this study. They found no significant difference between formulations but only 4% of the subjects used a lotion formulation compared to 52% using the spray and most of the others used a solid stick or roll on. It is possible that as only two formulations were used in the present study differences between them could be more readily detected.

This study is limited by the small number of subjects and that this was a simulation rather than observed directly in the field. For instance, Goodyer and Thrower found a higher arm application dosage in field studies in tourists visiting Kenya compared to a simulation in the UK, although the arm dose was still suboptimal. If visiting a malaria endemic area travelers are encouraged to wear long sleeved shirts, though in practice it is likely that many would find this to be too uncomfortable in hot climates. Short trousers are also likely to be worn during the daytime when mosquitoes such as *Aedes sp.* may bite. A further confounding variable is that the subjects knew they were being observed which may motivate to apply higher dosages.

Conclusion
This small pilot study does indicate that travelers are likely to apply suboptimal doses of repellents to the arms and legs using a spray formulation and that higher doses can be achieved with a lotion. Neck and face application appears to be adequate. Further work is needed in field conditions to explore these findings.

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JOURNAL WATCH

Edited by M Townend

MALARIA

The incidence of malaria in travellers to South-East Asia: is local malaria transmission a useful risk indicatior?
Behrens R, Carroll B *et al* appeared in the Malaria Journal last year (Malaria Journal 2010, 9:266doi: 10.1186/1475-2875-9-266) and can be found online at http://www.malariajournal.com/content/9/1/266.

The study gathered information on local malaria transmission in SE Asian countries from 2003 to 2008 and compared it with malaria surveillance reports on travellers to SE Asia from the USA and 12 European countries over the same period. Mean malaria rates in SE Asia varied from 0.01/1000 in Korea to 4/1000 in Laos. 608 cases of malaria were reported in travellers during the study period, of which 27.3% were caused by P falciparum, the largest number being acquired in Indonesia, Thailand and Korea. Of the SE Asian countries, the only countries with an incidence of malaria in travellers of more than 1/100,00 travellers were Burma (Myanmar), Indonesia, Cambodia and Laos. In Vietnam, China, Thailand, Malaysia, Philippines and Korea the incidence of malaria in travellers was less than 1/100,000. The conclusion of this study was that the intensity of malaria transmission in a country did not correlate with the risk of travellers acquiring malaria. The importance of this study is that recommendations about malaria prophylaxis are often made on the basis of the level of malaria transmission within the country concerned, but this study recommended that it would be more appropriate to uses a threshold of 1 case/100,000 visits by travellers as a basis for recommending malaria chemoprophylaxis.

The authors state that such a method would minimise the use of chemoprophylaxis for low risk exposure for travellers to SE Asia.

Pyrethroid resistance in African mosquitoes: what are the implications for malaria control?
Ranson H, N'Guessan R *et al* appeared in Trends in Parasitology xx (2010) 1-8.

This is an important paper, as pyrethroid compounds are an essential part of strategies for malaria eradication and vector control such as insecticide-treated bed nets and indoor residual spraying. The paper examines the many different ways in which resistance to pyrethroids can develop. It concludes that pyrethroid resistance is widespread in malaria vectors across Africa, and that there have been dramatic increases in malaria resistance alleles in Anopheles gambiae, the principal malaria vector in much of Africa, in recent years. The implications of these findings for malaria control and eradication in Africa are at first sight very worrying, but the paper also states that the formation of the Innovative Vector Control Consortium in 2005 is leading to possible further developments in both active insecticide ingredients and formulations of existing compounds, though such new products are probably still many years from the market.

Can piperonyl butoxide enhance the efficacy of pyrethroids against pyrethroid-resistant *Aedes aegypti?*
Binghma G, Strode C *et al* (Tropical Medicine & International Health doi: 10.1111/j.1355-3156.2010.02717.x)

Whereas the previous paper cited looked at the question of increasing resistance to pyrethroids used in vector control, this paper looks at one of the possible ways in which such resistance might be overcome. The study investigated the efficacy of the pyrethroid deltamethrin (DM) alone and with the addition of piperonyl butoxide (PBO) against two strains of Aedes aegypti, one resistant to and one sensitive to pyrethroids. The study concluded that the use of PBO in conjunction with DM increased the mortality of mosquitoes above that achieved by DM alone, and that synergists such as PBO may have an important role to play in the future design of vector control products.

Taking on malaria in the Amazon
Fraser B www.thelancet.com, Vol 376 October 2 2010).

In addition to the environmental damage done by logging operations in the Amazon rain forest, mining and logging operations are increasing the spread of malarial mosquitoes throughout the Amazon. Malaria is less of a problem in the 21 countries in which it is found in Central and South America and the Caribbean than it is in Africa and the bulk of it is caused by *Plasmodium vivax*. In many South American countries vector control had almost eliminated malaria but since the 1990s there has been an increase in cases. Malaria cases increase in numbers when forested land is cleared for mining, logging and farming, but fall to near zero if the land is successfully replaced by pasture. When logging camps are established men leave their homes to join the camps, acquire malaria, which may often be asymptomatic, and return to their homes to infect the local mosquitoes, resulting in wider spread of malaria. This interesting article looks at some of the ways in which these problems may be tackled, including prompt diagnosis and treatment, and vector control including control of mosquito

Journal Watch *continued*

breeding sites, insecticide treated bed nets and indoor residual spraying. Other methods that have been or are being tried out include genetically engineered malaria-resistant mosquitoes and the RTS,S malaria vaccine. One authority is cited as stating that the most promising method of controlling the spread of malaria in South America is likely to be a transmission-blocking vaccine, though most important of all is likely to be free diagnosis and treatment of malaria, together with ensuring that patients complete the treatment regime to eliminate liver stages of the malaria parasite.

Advising on travel during pregnancy
Hezelgrave NL, Whitty CJM, Shennan AH, Chappell LC
BMJ 342: 14 May 2011: 1074-78

This review paper in the BMJ was based on a search of PubMed and the Cochrane Library using the keywords "travel", "travelling", "flight" and "flying" together with "pregnancy" and "ante-natal". The authors also searched the National Institute for Health and Clinical Excellence (NICE), the Royal College of Obstetricians and Gynaecologists and the American Congress of Obstetricians and Gynecologists for published articles and guidelines. The result is a comprehensive review of travel restrictions in pregnancy, risks of travel during pregnancy and pre-travel advice for pregnant women.

The paper examines the risk of potential adverse outcomes of travel during each of the three trimesters of pregnancy. It points out that whilst travel is not necessarily a risk in itself for the pregnant woman, travel makes management of complications such as miscarriage and ectopic pregnancy in the first trimester, and premature labour in the third trimester more complex and difficult, with the middle trimester carrying the lowest risk of complications.

Risks of air travel such as venous thromboembolism, exposure to radiation and low oxygen saturation during air travel are discussed, as are risks from communicable diseases such as travellers' diarrhoea and malaria. It goes on to discuss the type of pre-travel advice to be given to women according to their stage of pregnancy, including advice on travel vaccinations, and stresses the importance of adequate travel insurance. Finally it makes a brief reference to potential problems in the returning pregnant traveller. The practical recommendations made in this paper can probably best be summarised by the points contained in its text boxes and tables as follows:

Typical gestation guidelines for air travel in uncomplicated pregnancies
- Up to 28 weeks: unlimited
- After 28 weeks: carry a doctor's letter confirming due date and that pregnancy is uncomplicated
- Up to 32 weeks: flying permitted in multiple pregnancies
- Up to 36 weeks: flying permitted in single pregnancies

Indications for caution before travel
(potential risk in brackets)
- Unknown location of pregnancy (risk of ectopic pregnancy)
- Recent invasive procedure e.g. amniocentesis (risk of miscarriage)
- Severe anaemia or haemoglobinopathy (foetal hypoxia at low oxygen pressure)
- Multiple gestation (pre-term delivery)
- Gestational hypertension (pre-eclampsia)
- Foetal growth restriction (foetal compromise)
- Placenta praevia (serious haemorrhage)
- Previous pre-term delivery (recurrent pre-term delivery)
- Maternal heart disease (decompensation)
- Chronic hypertension (Severe hypertension, pre-eclampsia, foetal growth restriction, placental abruption)
- Diabetes (hypoglycaemia/hyperglycaemia, adjusting insulin timing)
- Epilepsy (seizures)
- High risk of thrombosis (thromboembolic event)

RCOG recommendations for flight deep vein thrombosis prevention
- Aisle seat to facilitate movement
- Mobilise every 30 minutes
- Avoid dehydration
- Increase water intake
- Limit caffeine and alcohol intake
- Consider compression stockings for flights > 4 hours
- Consider low molecular weight heparin if other risk factors, e.g. obesity, previous DVT, if not already on thromboprophylaxis

Travellers' diarrhoea
- Prevention
  - Meticulous hand washing and food hygiene
  - Use boiled or bottled water (theoretical risk of foetal toxicity from using iodine for water purification)
  - Avoid raw food e.g. vegetables not washed in water known to be safe

Treatment
  - Oral rehydration with rehydration salts or sugary drinks
  - If not responding, consider treating atypical pathogens e.g. giardia, amoeba, cryptosporidia after stool examination; ensure safety of chosen medication in pregnancy

- Early recourse to IV fluids if not responding to oral rehydration

Pre-travel assessment
- Assess the pregnancy
  - Has the woman considered gestation-specific risks?
  - Are blood pressure, antenatal progress to date and ultrasound normal?
  - Are there acute symptoms or signs (bleeding, uterine activity, pain)?
  - Are the risks of antepartum haemorrhage, pre-term labour and pre-eclampsia low?
- Check history or previous problems in pregnancy
  - Have risks of recurrence been considered?
- Check pre-existing or additional medical conditions
  - Is acute deterioration likely during travel?
  - Is the woman carrying appropriate documentation?
  - Does she have adequate supplies, e.g. medication and needles, can they be replaced, is she crossing time zones?

Travel vaccinations in pregnancy
(Considered safe)
- Hepatitis B
- Polio (injectable)
- Diphtheria
- Tetanus
- Immunoglobulin (measles, rabies, hepatitis A, hepatitis B)
- Influenza

Consider if benefit outweighs risk
(no evidence of harm)
- Hepatitis A
- Japanese encephalitis
- Rabies
- Yellow fever (live attenuated vaccine)

Avoid unless high risk of exposure
- Polio (oral – live attenuated vaccine)
- Typhoid (injectable)

Contraindicated
- MMR (live attenuated vaccine)
- Typhoid (oral – live vaccine)

Finally the authors list what they consider to be the still unanswered questions such as whether frequent flyers have an increased risk of miscarriage, the extent to which the risk of thromboembolism is increased by flying during pregnancy, whether the risk of pre-term labour can be accurately predicted before travel, whether the risk of pre-eclampsia can be accurately predicted and whether the NHS should bear the cost of additional investigations relevant to flying during pregnancy. There is also a useful list of resources for both health care professionals and pregnant women.

This is a useful summary of current knowledge and practice regarding travel during pregnancy and should be read by all health care professionals who either regularly of occasionally advise pregnant travellers.

Resistance to first-line tuberculosis drugs in three cities of Nigeria
Lawson L, Yassin MA, Abdurrahman ST, *et al*
Tropical Medicine & International Health.
Article first published online: 12 MAY 2011
DOI: 10.1111/j.1365-3156.2011.02792.x

527 smear-positive sputum samples from patients in the cities of Abuja, Ibadan and Nnewi in three different geopolitical areas of Nigeria, were cultured and sensitivity to streptomycin, isoniazid, rifampicin and ethambutol was assessed in 428 samples

8% were found to be multi-drug resistant (MDR), and this was found to be strongly associated with previous treatment. There was no association between MDR and HIV co-infection.

This paper demonstrates the emergence of MDR tuberculosis in Nigeria, a worrying trend in view of the possibility of both national and international spread of MDR tuberculosis, especially in African countries in which there is a high prevalence of HIV seropositivity. It has enormous implications for health care systems in African countries where second-line drugs may not be available or affordable, and for the health of those travellers such as medical, nursing and aid workers and NGO personnel who come into close and prolonged contact with local populations. The authors stress the importance of developing a good drug susceptibility test, routing monitoring of drug susceptibility and improved systems for the delivery of and adherence to first and second-line treatment.

Efficacy of Chloroquine and Sulphadoxine-Pyrimethamine either alone or in combination before introduction of ACT as first-line therapy in uncomplicated plasmodium falciparum malaria in Jalpaiguri District, West Bengal, India
Mullick S, Das S, Guha SK *et al*
Tropical Medicine & International Health.
Article first published online: 12 MAY 2011 DOI: 10.1111/j.1365-3156.2011.02799.x

Recently artemisinin combination therapy (ACT) has been introduced into India in place of chloroquine as first-line therapy for all cases of *Plasmodium falciparum* malaria, whereas previously chloroquine was used in areas with chloroquine sensitive *P falciparum.* The

Journal Watch *continued*

authors conducted this study on 300 patients with P falciparum malaria to assess the efficacy of Chloroquine (CQ), Sulphadoxine-Pyrimethamine (SP) and Chloroquine plus Sulphadoxine-Pyrimethamine (CQ+SP) before the launch of ACT.

They found the overall failure rate of CQ to be 61% and that of SP to be 14%, both well above the WHO recommended cut-off point of 10% for a change of drug policy. This study highlights the diminishing usefulness of chloroquine as a treatment for *Plasmodium falciparum* malaria. SP fared better, but again fell short of WHO recommendations, though CQ+SP had a failure rate of only 8%, below the WHO cut-off point by only a small margin. These results appear to justify the choice of ACT as first-line therapy for *Plasmodium falciparum* malaria in India.

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EDUCATION COURSES

MSc Global Health, Brighton and Sussex Medical School

S L Bailey

The demand for formal education in the cross-disciplinary field of global health appears to be rising among health and non-health professionals. The development of the MSc Global Health at Brighton and Sussex Medical School (BSMS) was triggered initially by medical student demand: increasing exposure to global health short courses and extra-curricular activities (in Brighton most commonly through Medsin and Friends of Médecins Sans Frontières) sparked interest; rising national competition for existing global health intercalation options and a desire to remain in Brighton precipitated demand.

The need for highly trained professionals in the field of global health is rising, including those from a health and a non-health background. In the 21st century, improving health and achieving equity in health is one of the world's greatest challenges. At a time of unprecedented integration and interdependence of economies, environments, societies and cultures, global processes interact with national, through to local and personal factors to impact the health of individuals and populations. Trained professionals equipped to recognise and respond to these global health challenges are and will increasingly become essential.

The parent Universities of BSMS (University of Brighton and University of Sussex) recognised this match of demand and need and in 2010 responded in support of the emergence of an MSc in Global Health. An MSc rather than an intercalated BSc was opted for specifically in order to facilitate the simultaneous training of health with non-health professionals. An intercalated BSc normally restricts intake to medical students only; an MSc widens the potential intake to all interested individuals who hold a Bachelor degree whilst also welcoming local and external medical students who have the equivalent (successful completion of three years of undergraduate medical study). Not only does this reflect better the demand and need for appropriately trained global health practitioners, it facilitates a deeper learning experience through the sharing of perspectives between students.

The MSc Global Health at BSMS aims to develop students' understanding of global health determinants and their potential solutions in order to produce individuals who are equipped to contribute to the improvement of health and the achievement of equity in health worldwide. The course brings together experts from disciplines within and beyond the health sciences to deliver a vibrant programme that appeals widely, covering topics including: poverty, inequalities and health; cultural understandings of health and healing; emerging infectious diseases; global disease burden of infectious and non-communicable disease; climate change and health, and the relationship between disease, globalisation and global governance. The MSc is a modular taught course, comprising 5 taught modules and a dissertation. The course adopts dynamic and interactive teaching methods, using case studies alongside current evidence and insights to facilitate students' understanding of global health issues. Students are encouraged to be self-directed and manage their own learning through making use of the wide range of available learning resources at BSMS. The dissertation allows students to develop an area of expertise through the in-depth focus on a topic of their particular interest.

This course is delivered as a partnership between the University of Brighton (UoB) and the University of Sussex (UoS). Three taught modules and the dissertation form the core component of the course. The 'Global health principles' module (taught at BSMS) provides the foundations for the study of global health and develops understanding of the diversity of factors that can impact the health of individuals and societies. 'Global disease burden' (taught at BSMS) enables students to explore the spectrum of ill health globally. Attention is paid to socioeconomic and environmental causes and solutions rather than clinical science. 'Research methods and critical appraisal' (taught at the Institute of Postgraduate Medicine, University of Brighton) facilitates students to develop their knowledge and understanding of research methodologies and to increase their ability to critically appraise research papers. The dissertation module enables the student to develop an area of expertise through designing, undertaking and reporting a research project on a topic of their particular interest, based in the UK or overseas.

Two further modules are chosen from a range of optional modules. 'Global politics of disease' (taught at the School of Global Studies, University of Sussex) begins to theorise the ways in which diseases and globalisation are becoming increasingly linked, and analyses economic, political, social, legal, and security challenges that diseases pose for contemporary world politics. 'Cultural understandings of health and healing' (taught at the School of Global Studies, University of Sussex) draws upon theories, concepts,

MSc Global Health *continued*

and approaches in medical anthropology to interrogate the concept of 'health' in its diverse formulations. 'Values, ethics and politics in public health' (taught at the Department of Sociology, University of Sussex) encourages students to engage with questions about the ethics and politics of public health at an international level by exploring different forms of 'value'. 'Critical perspectives in Global Public Health' (taught at the Department of Sociology, University of Sussex) provides theoretical, conceptual, historical and critical understandings of public health practices and health promotion initiatives, with a focus on cross-cultural contexts.

The MSc can be taken as a full-time course over one-year or as a part-time course over longer. Options for shorter study for the intermediate awards of post-graduate diploma and postgraduate certificate are also available.

The career opportunities following the course are varied: the course aims to develop students' skills to work as global health practitioners, policy makers or researchers including within health systems, governments, non-governmental organisations and international health and development agencies.

Further information can be found on the BSMS website www.bsms.ac.uk and the facebook page http://on.fb.me/bsmsglobalhealth.
Enquiries can be made to globalhealth@bsms.ac.uk.

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Two-day Travel Health and Immunisation Course Accredited by the Royal College of Nursing. Venues throughout the UK

Introduction
The first ever TREC Course was held in Glasgow in January 2000, and since then has travelled the length and breadth of the UK and Eire. Currently over 2750 nurses and doctors have attended for 2 days of travel-health education.

Background
In 1990, after 10 years of working and travelling abroad, Sheila Hall was employed as the practice nurse in a small Glasgow surgery. To this generation of nurses was being delegated many additional responsibilities, including advice and vaccinations for travel, but education and training within this field was scarce. Dr Eric Walker, a consultant in infectious diseases and well-seasoned traveller, had recognised the need for travel-health education, introducing study days, short courses and ultimately collaborating with Glasgow University to develop diploma and degree courses.

Following successful completion of these training opportunities, Sheila became involved with delivering education to other health care professionals and TREC was established as a limited company in 2000. First-hand experience of having worked in general practice enabled her to develop a common sense foundation course, which addressed the needs and fears of nurses facing the same Travel Health dilemmas.

The Courses

- **Aim –**
  The aim of this course is to raise awareness and understanding of travel-health issues, and to enable participants to access accurate and up to date information necessary for providing proficient travel health care.

- **Learning Outcomes –**
  - Know how to access and use relevant and up to date sources of information available in the travel health field.
  - Understand the principle and importance of risk assessment and be able to apply this in practice.
  - Have a good general knowledge and awareness of travel health issues, thereby enabling delivery of appropriate health advice for travellers.
  - Recognise relevant disease risks within geographical areas and be aware of potential transmission, symptoms and treatments.
  - Understand the principles of immunisation and be able to recommend appropriate vaccines.
  - Have an understanding of malaria and appreciate the importance of prevention, including chemoprophylaxis.

- **Course Content Summary –**
  - Introduction to Sources of information.
    Examining and discussing the broad selection of reference sources available.
    Using travel health related web sites and how to use the information appropriately.
  - **Immunisation –**
    A review of immunology, immunisation in general, types of vaccines & administration guidelines.
    The British immunisation schedule and how this relates to travel health.
    Use of Hepatitis B vaccine in a travel health setting.
  - **Risk Assessment –**
    Emphasising the importance of structured risk assessment.
    Identification of travel-health risk factors.
    Travel health consultations and documentation.
  - **Malaria –**
    An overview of malaria – types of malaria – geographical risks.
    Importance of bite prevention, chemoprophylaxis and patient education.
  - **Other Insect and Animal Borne Infections –**
    Infections encountered by travellers
    An overview of transmission, symptoms and any available treatment.
    Prevention of illness and available vaccines.
  - **Food and Water Borne Infections –**
    Types of infection and transmission risks for travellers.
    The importance of food hygiene, water purification and sanitation in the prevention of water borne illnesses.
    Use of relevant vaccines.
    Treatment of travellers' diarrhoea.

Two-day Travel Health and Immunisation Course *continued*

- **Case Studies –**
  Group work designed to correlate the knowledge gained during the course by planning advice and immunisation schedules.

Course Structure

The course is delivered over two days, providing structured teaching sessions, discussion, and the opportunity to share ideas and experiences with other practitioners.

Statement of Completion

Students who attend the full course will be awarded a certificate of course attendance.

Who should benefit?

The course is designed for health professionals who are possibly new to the field of travel health and immunisation, or wishing to update and expand their current knowledge.

It is predominantly attended by nurses working in general practice (nurse practitioners, practice nurses, treatment room nurses) but also occupational health staff, school nurses and Ministry of Defence personnel.

In the UK, nurses have been at the forefront of travel-health care provision, but over the years many GPs have joined the TREC course, aware of the need to support their nursing colleagues.

The most recent generation of applicants are pharmacists, keen to extend their role and provide an accessible and professional travel-health service.

Further information

The TREC website contains further course information and is constantly updated with current course dates, availability and online registration forms. www.TRECtravelhealth.co.uk

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COMMENT

WHO Country Health Planning BURMA 1979 – tale from the past

D Drucker

From my earliest experience in non-affluent developing countries I was aware that the seemingly sophisticated planning meetings bore little relationship to what was received and implemented at the village level. In Indonesia I had commented on how external consultants asked for basic statistics and information while their national counterparts were embarrassed to acknowledge that they had no existing way of systematically collecting these. I witnessed how such requests led to long night hours during which professionally-sounding intelligence and numbers were invented.

My experience has been that top-down planning methods have self-defeating outcomes. Such plans in the course of implementation undergo significant seachanges before reaching those for whom they have been planned. Frequently they never actually reach down to them at all. For example:

A World Health Organisation (WHO) Geneva based planning/research group had arrived in Nepal to test out new concepts of methodology for Country Health Planning. In contrast to what had been called the "disease palaces" focus of health services in relatively affluent urban centres, WHO policy was then to promote Primary Health Care in poor rural areas. In 1975, Health was being conceived as a multidisciplinary matter and not just the responsibility of Ministries of Health.

So it was that the WHO group had called on the Minister of Agriculture to discuss such things as irrigation and water resources providing breeding grounds for mosquitoes/malaria and such like. Apparently on the wall above the Minister's desk was a map of Nepal covered with red dots (somewhat like measles?). On enquiry the Minister explained that the dots represented the JTAs that 'covered the country'. JTAs? Junior Technicians in Agriculture. Their job was to regularly visit the villages and provide support in terms of improved methods, seeds, fertilisers, herbicides etc. (In Nepal such village workers had boot allowances as they spent much time reaching areas where there was no other transport for villagers other than their own legs).

The WHO group suddenly had the idea that here, already in place, were community level officials already in place and respected by the villagers. Why, to begin with, invent a new (and finance requiring) cadre for health inputs when possibly the JTAs as potential multi-purpose workers might be assisted to gradually introduce public health advice and the eventual establishment of village health workers?

At that time I was in Nepal implementing the Mobile Training Scheme (MTS). MTS was a United Nations regional project which I had been instrumental in creating, intended for Nepal, Afghanistan and Laos. Knowing of my MTS's work[1] in attempting to structure and service village- level planning (bottom-up) the Nepal Country representative of the WHO telephoned and asked "David, what do you think of the idea of training the JTAs in some basic health matters as the first step in introducing Primary Health Care in the Himalayan villages"? I had replied "Never mind what I think, give me a few days and I will tell you what we KNOW".

For security and other purposes, outsiders entering villages were ordinarily required to declare themselves to the "Pradhan Panche" (head man). MTS had instituted a requirement for the 50 or so village-based "Secretaries"[2] under training at that time to maintain a daily diary which included recording all outside official visitors, who they were, why had they come, what had villagers thought of them, and what if anything happened as an outcome of the visit.

Although our 50 diaries did not 'cover the country' in any respectable survey sense, we did come up with a 100% finding that no one had ever seen a JTA in their villages! Some villages had claimed to have seen a Yeti (The "abominable snowman) but no JTAs. We joked that if anyone ever saw a JTA perhaps we could secure a Conservation Order on such a rarity!

This just illustrates the vast gaps of perception from top to bottom and most certainly from bottom to "them" (us) up above. Despite much recent talk of "community participation" such gaps continue to exist. How MTS then, and in activity since, was designed to tackle such firmly established hierarchical structures is a long and on-going story.

However, later with the WHO in Burma 1979, I thought that perhaps with its authoritarian-type government with its declared "Burmese Way to Socialism", along with the competence and confident conviction of our planning team, the situation might be different. Nevertheless, there remained a disturbing question in my mind between expectation at our deliberations, and the reality. This reservation was dramatically fed by an incident that I wrote about privately and confidentially:

The hospital buildings were made of timber, the window frames and glass were in disrepair; the pointed roofs made of corrugated iron rusting away. The buildings are raised on stilted piles, perhaps two and a half feet above the bare ground. The space provides

WHO Country Health Planning BURMA 1979 *continued*

a cool flow of air between the floor and the monsoon-sodden earth.

At noontime, from a window, I noticed a small knot of people staring under the building at what at first sight looked like a bundle of soil-coloured rags. The bundle was human, emaciated, with protruding scarred legs, all awful skin and clearly visible bone. The arms were no better and ended in stubs where once fingers had been, the face leonine, thick and contorted, with the lips drawn back over wide teeth, grinning without humour and features contorting as the teeth ground. Leprosy. I went back to our meeting and called attention to this horror; I was assured that action would be undertaken. (The group I was working with are mainly medical men and we are busy planning Primary Health Care country-wide.)

I returned nearly two hours later. Passers-by occasionally peered at the man; children played some kind of skipping game nearby. Again I drew my colleagues' attention to the man's plight. In the course of the afternoon two saffron-robed monks stopped and stared for a while, shading their faces with fans lest they look upon a women spectator holding a baby on her hip and another clinging at her coloured sarong. Apart from these occasional viewers, others passed without pause.

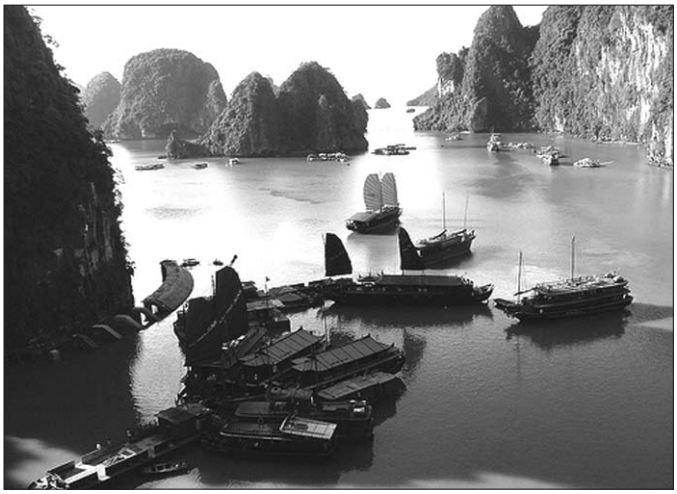
By three-thirty various speculations took place. "Perhaps he has been dumped by relatives when he was not given admission to the hospital..." At least the bucketing monsoon rains did not stream down upon him and even the hungry pi-dogs seemed not to have the initiative to sniff at such unsavoury matter, though their cotton-reel backbones almost puncturing their mange could be seen scavenging on every awful garbage pile in the city. Talk turned to the problems of disposing of cadavers. "It's a police job, perhaps there has been foul play or he was knocked down."
"He was alive at 12.30," I said. Someone offered to make a phone call. I continued to look out from my second-storey window at the still bundle with its cramped legs and outstretched arm, with that truncated palm turned up to whatever heaven existed under the floor of that rotting building.

At 4.30, although I had seen no one approach to make any close inspection, someone arrived to report, "He isn't dead yet." At ten minutes to five our planning the health care for the people of the country came to an end for the day and our huge battered black 1958 Chevvy swung out of the gate. Inside the hospital grounds the misery continued. The discarded one had perhaps not moved at all, but was more sunken compared to five hours earlier, although how that was possible I marvelled. The teeth still visible did no longer grind; snot in green gangrenous festoons hung from the distorted nose, half obliterating the mouth from where it was joined by another gelatinous stream. The face was half turned to the earth and the non-hand still seemed to make a resigned supplication which continued unanswered.

I had repeatedly called attention to this gob of humanity - he had once been somebody's child - but I did nothing more but privately grieve. It was gone this morning and I went back to my planning.

The gothic colonial cathedral spire, all grey crenulations above the red brick is opposite; the towering golden Shwe Dagon Pagoda pierces the rain-filled sky... back to our planning... from on high"

David Drucker Social Scientist/Psychiatric Social Worker (APSW) at that time employed by WHO S.E Asia Regional Country Health Planning team.

References:

1 Mantras and Medicine for Development: A Panchayat Village Level Task Group Approach to Primary Health Care D. Drucker July 1975.
2 Secretaries typically had had no more than six years of elementary education and their main qualification was to be able to read and write (which frequently the Pradhan Panche could not) and to attend to village records required by the government administration.