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From the Editorial desk

The advent of the silver anniversary of this publication gives cause for retrospection. I published my first article "Ladies of the Veil" when aged 18 and ensuing years saw regular contributions to "GP" magazine, "Pulse" and Glasgow Medicine. Later an interest in high climbing brought a seminal research paper with data on climbers on Kilimanjaro and Mount Kenya published in the British Med Journal, which helped pioneer the use of acetazolamide as a standard prophylactic for altitude sickness.

This writing experience was useful when I became editor of Scottish Medicine and Travel Medicine International – the latter for many years the sole journal in its field. With its demise there was a niche for a replacement. Travel Medicine was yet to become a discipline, but with the inauguration of International Society of Travel Medicine and British Travel Health Association, interest in travel related disease and trauma was stimulated. Our association was embryonic and doubts were raised in the executive committee about viability of a journal, but having helped nurse the Journal of Travel Medicine through its infancy, I felt there was support for our own venture. This Journal was born in 2000, to stand the test of time and gain national and international status.

First produced annually in A5 format, it soon became biannual and of standard journal format. A prime objective was to educate members and health professionals in the sound practice of travel-related medicine with readable, easily-assimilated content and encourage new writers and provide space for small research reports. Peer-reviewed columns have covered a wide range of topics, many neglected by more illustrious professional journals. Coverage has always been global and we pre-empted the change in the association title, with articles on common and esoteric topics from Antarctica to Mongolia. On a shoe-string budget, we have met all dead-lines and thank a small group of writers who have consistently provided support and material. Journal content is archived and accessible to all on our website www.bgtha.org. We are pleased to have moved into

colour illustrations with this volume and are grateful to Monument Press for the quality of print and tolerance in coping with late submissions.

So much for the past, younger readers lean heavily on the web for learning and time-presures make writing a travail. Few have the pleasure of seeing their work in print. Acquiring journal content becomes a greater challenge with every issue. The support of members of today will determine whether it will continue and on-line publication is inevitable to constrain costs. It is an unfortunate fact that, other than for vaccine and drug company-orientated topics, there remains a singular lack of research across the broad spectrum of travel-related medicine. We suffer from a lack of research-based data to support advice and recommendations given daily in travel health clinics. There are fewer good research reports from general medical and nursing practice than 20 years ago and this reflects on material for potential publication in the research section.

The Chairman has alluded overleaf to the need for members to contribute to ensure the continuing success of the journal and this is paramount. We welcome and support new writers. The bank of contributors is miniscule and input from others is essential. With about 800 personal literary publications on file, my resourcefulness is in decline. It is time for change, innovation and new ideas. Impassioned pleas for contributors have met with limited success in the past, but the future lies with you the reader. Rally to the call and ensure a golden anniversary for this journal.

Iain B. McIntosh
Editor in Chief



Editorial

This year I attended the Conference of the International Society of Travel Medicine (CISTM) held in Quebec, Canada. The plenary sessions, workshops and seminars were of a very high standard covering just about every aspect of Travel medicine and a report of some selected sessions is given in this edition of the Journal. One of the discussion points this year was the large number of Pharmacists who attended CISTM, particularly from Canada. This follows recent changes in legislation, especially in Alberta, which allow pharmacists to operate a travel vaccination services. The increase in pharmacy provision also mirrors the situation in the UK where most of the large pharmacy multiples and many independent pharmacies offer travel health services. The number of pharmacies providing such services represents almost an 'explosion' of provision in the last two years. In March I presented an overview of community pharmacy provision in the UK at the joint Faculty of Travel Medicine/ Royal Pharmaceutical Society conference in London. In the majority of pharmacies

antimalarials can be obtained without a prescriptions via patient group directions and increasingly vaccinations for travel are also be administered in many pharmacies. This certainly will be of benefit for improving accessibility and represents a move away from the traditional service delivered by a practice nurse in a GP clinic. Not only pharmacies but also other private travel clinics seem to be increasing provision in some parts of the country. This has many implications in terms of the consistency of the quality of service experienced by travellers in these varied settings, and opens up the debate around the future role of the NHS in such provision.

Larry Goodyer
Editor

Chairman's Welcome

I would like to welcome all our readers to this celebratory 25th edition of our Journal. From a relatively humble beginning as a small A5 format publication, it has progressed to its present state as a journal that can stand proudly alongside any other journal of travel medicine. Over the years we have published a wide variety of original papers, review articles, anecdotal material, topical items, book reviews and reviews of what is being published in other relevant journals, from authors both in the UK and from much further afield. Much of its success has been due to the untiring efforts of its original editor, Dr Iain McIntosh, now Editor in Chief of BGTHA publications, and later to its current editor, Professor Larry Goodyer, and my sincere thanks go to them for the high standards that they have set and have continued to achieve. My thanks are also due to our many authors at home and abroad, and to the members of the BGTHA Executive Committee who have supported the editorial team by stepping in and contributing articles when other authors have been in short supply.

Producing a high quality journal is one of the flagship activities of BGTHA in its service to members, but the BGTHA Journal has a wider audience than our members alone. Copies have been placed in academic libraries and are eagerly snapped

up when distributed from BGTHA stands at conferences and other meetings, forming a valuable source of publicity for our Association and its activities. The Journal is also available on our website, free of charge to members and at a modest charge to non-members, and some past editions are now being made available free of charge to all. For members only, in the Member Area of the website, a searchable database of most past editions and some other BGTHA publications is available as a valuable information resource for our members. We cannot, however, continue to produce a journal of such quality without suitable material to publish. I would, therefore, urge all members and other readers to consider writing for us. You all have your own areas of particular knowledge and expertise, and your own experiences of travel and of memorable patients that you have encountered which could form the basis for a case study. Please write about them for us. You do not need to be an experienced author, and we will be happy to help you to produce your article. This is your journal, and we need your help to continue to produce it.

Mike Townend
Chairman, BGTHA



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Cultural clashes have enabled an epidemic: an anthropological look at Ebola in Guinea

Olivia Cartwright

Introduction

Case zero, the first official recorded case of Ebola in the current outbreak, was a two year old child in Guinea who died in December 2013.¹ Eight months and nearly one thousand deaths later, the World Health Organisation declared an international public health emergency and 'extraordinary event.'² Despite the subsequent worldwide response, the virus spread to ten countries, spanning three continents, with Guinea, Sierra Leone and Liberia in West Africa the worst affected.³ Although trends show a decline in numbers of new cases with the epidemic thought to be well past its peak, Guinea saw a significant spike in Ebola cases in mid-May 2015 with 27 new confirmed cases in one week, almost a four-fold increase from the previous week.⁴ With the death toll far surpassing 10,000 and continuing to rise, questions must therefore be asked as to why the epidemic was recognised but not controlled.⁴

Failure to contain Ebola is multifactorial. Health infrastructure in Guinea is minimal, being the 13th poorest country in the world with less than 2% GDP spent on public health.⁵ There is just one physician per 10,000 people and healthcare practitioners are often reticent to work with Ebola owing to infection risks with often inadequate provision of protective equipment.⁶ Additionally, coincidental outbreaks of measles and meningitis have put further pressure on the under resourced healthcare system (see figure 1).⁷

between the state, Westerners, biomedical humanitarian aid groups, and the people have been overlooked in health strategy, and ultimately enabled the spread of Ebola in Guinea.

What is Ebola?

In order to understand the Ebola epidemic, relevant information on the virus is summarised below:

Origin: Fruit bats are natural hosts of Ebola and thought to be the vector for first transmission to humans.⁸

Transmission: Human-to-human transmission is the prevalent mode of spread, through direct contact with the bodily fluids or organs of an infected person or corpse. The virus can also spread through contact with contaminated objects.

Asymptomatic and recovered people are non-infectious. However, Ebola is present in semen up to 7 weeks after recovery.⁸

Incubation: 2-21 days.⁸

Infectiousness: 'Extremely infectious': only a minuscule amount of virus required to cause a full-blown infection.⁹

Treatment: Supportive only, no cure or vaccination

Mortality rate: Estimated at 50% in the current epidemic.⁸

Cultural Beliefs Which Impact on Ebola Control Another Interpretation of Ebola

Guinea's culture embraces interpretations of disease very different to the biomedical model. Guinea is home to 24 different ethnic groups with numerous frameworks through which disease is understood.¹⁰ Whilst biomedical ideas are accepted in some parts of Guinea, the belief that disease is a punishment or warning is common, e.g. amongst Kissi, Guerze and Kouranko speakers. More specifically, these groups believe that disease follows from either a social fault, whether intentional or not, or a curse.¹¹

There are two types of social fault; one relates to the 'natural order of things,' and the other relates to specific ancestors. For the Kissi speakers, an orderly world is one in which people, animals and crops reproduce and transition to death in their separate and correct places. For example, animals must only reproduce and die in the bush, crops in the fields, and people in the village. Therefore, if a couple has intercourse in the fields, this would disrupt the natural order and the perpetrators would be expected to develop reproductive illnesses. The crops would also be affected through drought or disease.

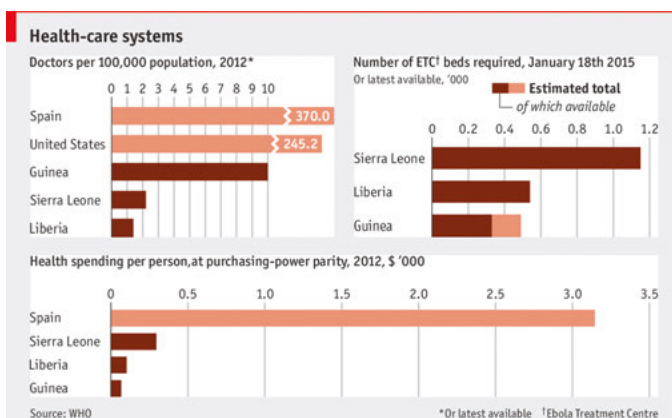


Figure 1

Epidemic curve for all affected countries as of 12 November 2014

However, even where healthcare and humanitarian aid exist, these have frequently been met with suspicion and avoided or even attacked. In this paper, I will argue that cultural clashes

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Reproductive cycles must also be separated, and not confused with any transition to death. Thus, a breast-feeding mother should not have sex, nor should a pregnant woman care for a dying relative. Other faults relating to the natural order of things concern actions relating to economic order e.g. stealing, ignoring debts, and not reciprocating gifts.¹¹

The second type of fault relates to specific ancestors. Ancestors are villagers who have been correctly respected and buried in death, permitting their access to the village of the dead where they are reunited with the previous deceased and watch over the living.¹¹ Failure to respect cultural practices relating to death is a social fault of crucial importance to the Ebola epidemic and is discussed in more detail later.

As disease arises from a fault and, particularly if simple remedies have been tried without success, a diviner must be sought. The sick person is then implored to confess their fault, or threatened that their condition will worsen. The fault can then be addressed by a specialist competent in repairing the forces of nature.¹¹ In contrast, hospital care is expensive and biomedicine is poorly understood and so this alternative mode of treatment often specifically avoided.

Curses are also thought to cause disease by disrupting the natural order of things. However, these result from intentional manipulation by a sorcerer using talismen thought to contain deadly, interfering materials. Ancestors or relatives who fail to reach the ancestral village after death might also be held responsible for cursing an individual or village, especially if traditions relating to their death and burial were neglected.¹¹

Death and Dying

Throughout Guinea, Ebola Treatment Units (ETUs) have been introduced to isolate suspected Ebola patients.¹² However many patients and communities avoid ETUs, hiding sick relatives, escaping, or even violently attacking the centres and their staff.¹³ More recently, Community Transit Centres (CTComs) have been built to hold patients before transfer to ETUs. One of the first Guinean CTComs was burnt down in January 2015, officially documented as “an act of arson...due to the continuing resistance of the local community to EDV (Ebola virus disease) response efforts.”¹⁴ Over half of Ebola infections have occurred in households and communities but resistance is not abating.¹⁵

Numerous studies have been conducted to evaluate the efficacy of ETUs in containing Ebola. One study conducted in Liberia estimates that for every 1% increase in the number of Ebola patients going to ETUs, 112 new Ebola cases are averted.¹⁶ Whilst it is useful to collect evidence that backs the efficacy of

Ebola containment measures, these studies have not necessarily translated into greater attendance at ETUs. Considering the perceived consequences of committing a social fault, this is understandable.

As previously mentioned, certain traditions regarding a dying villager must be respected to avoid the potentially dire consequences of committing a fault. Important traditions include respecting the last wishes of the dying and ensuring they receive all the food and drink they solicit. Patients isolated in ETUs often can't communicate their dying wishes to family members and there have been reports of patients being deprived of food and drink, fuelling families' reticence to sending their relatives there. It is also important that the correct family or community members look after the dying, and again, this tradition is not respected in ETUs where relatives are kept out for their own safety.¹¹

Funeral Practices

Funerals are orchestrated to enable the dead to attain the elevated rank of an ancestor and enter the village of the dead. Regardless of an individual's sins or achievements, becoming an ancestor is entirely dependent on the practising of funeral rites. In addition, people intend to join their deceased loved ones in the village of the dead but, of course, this cannot be possible if the deceased do not reach the village themselves.¹¹ Failing to correctly bury the deceased condemns them to wander eternally in limbo, and a terrible fault would have been committed. In this case, the disgruntled dead are thought to torment their descendants and village.



Figure 2

This statue was considered the abode of the spirit of a Kissi ancestor

Traditional funeral practices pose an infection risk. Practices vary according to the age and importance of the deceased, however, all deceased must be washed and most will be wrapped and carried in a cloth or mat to be buried. If a family is poor, a fine cloth may be used to transport the dead to their burial site in the village, with a cheaper one used for the actual burial. Important deceased villagers may be touched by a soothsayer who calls on their spirit to question their cause of death and any previous faults. If a pregnant woman dies, it is essential that the foetus is removed and buried separately in order to prevent disruption to the natural order of things. Additionally, suspected witches must be identified and buried differently to prevent them continuing to curse the villagers. One method of witch identification includes cutting open the body and removing the spleen, placing it in water and, if it sinks, then the deceased is deemed a witch.¹¹ As a result of touching the body, contaminated cloths, and removing body parts, almost a tenth of new Ebola infections were attributed to funeral practices in August 2014.¹⁵



Figure 3

“The herbalist’s mourners fanned out across the rolling hills of the Kissi tribal chiefdoms, starting a chain reaction of infections, deaths, funerals and more infections”

International responses to the Ebola crisis have frequently been conducted without sufficient consideration of the importance of events surrounding death in ensuring the security of relatives or their village. Thus many ETUs and biomedical attempts to contain the virus are met with suspicion and are avoided, demonstrating how cultural clashes have perpetuated the spread of Ebola.

Reasons for Mistrust of the State, Westerners and Biomedical Humanitarian Aid *Colonial History*

Forest Guinea was a French colony until the 1920s and experienced violent domination, exploitation of unpaid labourers, and tapping of resources (extrac-

tivism) purely to benefit France.¹⁷ Resistance to colonialism led to everyday corruption and bribery, e.g. to avoid excessive taxation. Appointed ‘official’ leaders were considered compromised by colonial authority, and as a result a dual power structure developed with secret societies holding significant power on a more local and relevant level.¹⁴ The occupation also created an association between Western healthcare and aggressive capitalism. This includes a history of treating local populations to be fit for labour, and violent policing of vaccination throughout colonial Africa. More sinisterly, Africa has been described as a ‘living laboratory’ owing to ethically dubious medical trials which have been conducted there over many years.¹⁸ The association with capitalism is particularly relevant as capitalist aims such as accumulating wealth are considered classic signs of sorcery and evil.

After independence, extractivism has continued in Guinea and been described as only marginally less violent.¹¹ The new government came from existing ruling families or their wealthy rivals, who are often still seen as foreign elements linked to the national elite who live largely abroad. Thus, the government is still not trusted and resistance developed from tradition and secret societies has continued.

‘Sanitary’ Checkpoint Scam

As previously alluded to, the state is not trusted for its benevolence or stated aims, sometimes with good reason. For example, road checkpoints were introduced to control Ebola spread. However, these ‘sanitary’ stops lacked even basic medical equipment such as thermometers, and on arrival, papers were checked and 5000GNF charged if anything was missing. When the fine was paid, travellers could continue on their way usually regardless of their health. Hence, these ‘sanitary’ control check points represented a meaningless state performance to extract money under the guise of Ebola containment.¹¹

The Governmental Facilitation of Suspicion

In the 1990s, the Guinean government repeatedly provoked distrust of so-called ‘foreign elements’ amongst the population. This resulted from international humanitarian and refugee programmes entering Guinea to address problems from neighbouring countries’ civil wars. The government sensed incursion into domestic politics and restricted organisations’ statutes stating that NGO/UN actions were not safeguarding Guineas own communities and well-being.¹⁹

Unsurprisingly, the biomedical infrastructure has been attacked, and ‘foreign elements’ denied access in parts of Guinea. For example, at the heart of the Ebola

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outbreak in the Forest Region, Médecins Sans Frontières staff were forced to temporarily halt ETU activity following protests by the local Macenta population.²⁰

Western Sorcerers and Government Conspiracy

As well as historical factors and antagonism to traditional values, further reasons for Guineans to distrust Westerners exist. Firstly, Western theories attribute spread of Ebola to bushmeat and fruit bats.⁸ However, Guineans have always eaten bushmeat, whilst people and fruit bats have long cohabited.²¹ Understandably, these theories are regarded with suspicion. Indeed, the arrival of Ebola coincided with an increase in Western influence, international press and humanitarian aid. It is therefore appealing to blame the new and unknown and consequently, Ebola has also been attributed to the new Western practices of erecting barriers, disinfecting houses, and sending relatives to ETUs, never to return.²¹

Another concern is that those who cannot recover from a disease are usually considered subjects of sorcery, and Ebola has a high mortality rate. In the past, traditional healers cured all sorts of illnesses, sustaining communities for years with well understood methods that addressed the natural order of things.²² However, Western medical powers are unknown and the subject of speculation. Additionally, Ebola is a disease of social individuals, affecting those caring for the sick and attending funerals. These are considered good qualities which should promote good health. Conversely, those who avoid Ebola are those living in seclusion, eating alone, avoiding visiting others or funerals, and often accumulating more than they participate. As already mentioned, these are classical indicators of sorcery and associated with Western capitalism. Official Western discourse on Ebola encourages individuals to avoid all that is socially and morally 'good' so naturally many Guineans are wary of Westerners.¹¹

Finally, Westerners have laid claim to Ebola by defining it in terms unrelated to locally recognised 'big' and 'small' fevers.¹¹ In addition, they have dictated how local communities should address Ebola, which has been experienced as a mode of power. Also, assuming that the international community did recognise Ebola, little action was taken until months after the onset of the epidemic, after hundreds of Africans had already died.

With regards to the Guinean government, the Ministry of Health conducted research into Ebola which was focused solely on the challenges of curbing transmission in the Forest Region. This region is more isolated from the modernisation experienced in urbanised parts of Guinea, such as the capital, Conakry, where the remote elite reside. Residents of the Forest region have already been marked as a

significant 'other' in modernised Guinea, and this research has been criticised as only serving to further exoticise and stigmatise the Forest people. Thus, there are suspicions of a conspiracy to keep communities out of the Forest.²¹ Similar conspiracy theories stem from distrust of the state and awareness of prolific corruption, e.g. the road check points. Among these is the belief that the government is diverting financial aid and Ebola is being used as a money-making scam.

Mistrust of Biomedical Aid

Humanitarians are often keen to distinguish 'traditional' from 'biomedical' healthcare systems, dismissing the former. Although useful for health professionals, it is not useful for shaping health-seeking experience and behaviour, particularly when the traditional practices are so openly admonished. Furthermore, biomedical aid often comes with church, state or those associated with sorcery/mysterious forces. It is not perceived as simple 'secular' bureaucracy with power lying only in dispensing medicines. Additionally, there is suspicion regarding ETUs/CTComs as it is widely known that Ebola is incurable. Thus, people question the benefit of sending relatives there. One belief is that bodies are taken away from ETUs, specifically to drain blood and steal body parts.

Z-mapp Controversy

A case justifying Guineans' mistrust of Westerners and humanitarian biomedical aid is the Z-mapp controversy. Z-mapp is an experimental therapy for the treatment of Ebola, developed in the West and first given to two Americans and a European, but not the local population in any of the hardest hit West African countries.^{23,24} In fact, the drug was flown as far as Liberia to be given to a Westerner, but none was offered to the many suffering Liberians.²⁵ Such incidents validate scepticism from Guineans as to whether these biomedical aid foreigners really have Guineans best interests at heart. Conversely, for the first time, the World Health Organisation has more recently agreed to support clinical trials of new Ebola drugs on the affected population but reports from affected developing countries say that 'potential participants have been too suspicious to participate.'²⁶

Media Misrepresentation

One final point to make regarding distrust of foreigners relates to the media. International news reports such as the 2014 'CBS 60 minutes' report on Ebola have excluded local voices despite the fact that Ebola is not new to West Africa and has been contained by local doctors numerous times before. Reference has been made to the racist undertones of such programmes, and the prevalence of denouncing the weak Guinean health infrastructure and the poorly understood resistance to biomedical

practices.²¹ International press could therefore be seen as perpetuating a “white-saviour” complex narrative and whilst this connects the international audience, it is perhaps reflected in the attitudes of foreigners including humanitarian aid workers.

Conclusion

In conclusion, in mid-2015 Guinea is still experiencing a serious epidemic and whilst overall trends show numbers of new cases declining with the epidemic well past its peak, the geographical area of transmission in Guinea has expanded in recent weeks and the death toll continues to rise.²⁷ Spread of Ebola is facilitated by certain traditional practices, including funeral rites, but the international community has underestimated the significance of these practices and has failed to adapt their response accordingly. In addition, the government has lacked the funds and public trust required to adequately contain Ebola. There is a clash between biomedical and traditional health systems and a long history of colonialism has exacerbated distrust of Westerners, biomedical systems and the government. Cumulatively, these cultural clashes have enabled spread of the Ebola epidemic.

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Lyme Borreliosis

S Pearson

Abstract

Lyme disease, or Lyme Borreliosis, is an infectious disease caused by the spirochaete *Borrelia burgdorferi* and transmitted to humans by the bite of an infected tick. In the absence of the distinctive pathognomic rash, diagnosis can depend on serology which has its limitations. Early treatment with antibiotics is usually successful but untreated disease can lead to a wide range of multi-system debilitating symptoms and be more difficult to treat. Awareness of ticks and proper removal techniques is the key to disease prevention.

Introduction

Lyme disease, or Lyme Borreliosis (LB), is caused by related spirochaetes within the *Borrelia burgdorferi* sensu lato complex. It is transmitted by infected ticks. It occurs throughout temperate zones in the northern hemisphere where it is the most common vector-borne disease. The incidence is increasing and raised awareness of both ticks and LB is important because early treatment maximises the chance of complete recovery.

The Pathogens

In Europe there are at least five genospecies of the *Borrelia burgdorferi* sensu lato complex that cause human infection¹:

- *Borrelia garinii*: associated with neurological disease.
- *Borrelia afzelii*: associated with skin infection and an atypical neurological presentation²
- *Borrelia burgdorferi* sensu stricto: associated with arthritis and the main cause of Lyme disease in the USA.
- *Borrelia spielmanii*.
- *Borrelia bavariensis*.

LB is a zoonotic infection and the principal reservoirs for the bacteria in nature are small mammals and birds which also provide blood meals for ticks. *Borrelia* is an obligate parasite which has necessarily evolved various means of immune evasion and disruption and is adapted to survive in the warm-blooded vertebrate host. Ticks feed and mate on larger mammals such as deer and sheep but these and other ruminants seem to be incompetent hosts and eliminate most LB bacteria in the feeding tick³. Although they tend not to carry the bacteria itself, these larger mammals may facilitate the spread of ticks. Migratory birds not only carry ticks but may themselves carry *Borrelia* and other tick-borne diseases over considerable distances to new areas.

The Vector

Ticks

Ticks belong to the family of arthropods, resemble small spiders and thrive where there is enough humidity from vegetation to prevent desiccation. Deciduous woodland, rough pasture and moorland are typical habitats, though similar conditions occur in parkland and urban gardens. Factors such as

changes in climate, land management and biodiversity may explain the expanding range of the tick vector to new areas, higher altitudes and more northern latitudes, correlating with the emergence of LB in new geographical areas. Increasing outdoor pursuits which allow closer contact with nature may contribute to some of the observed increase in cases. Several species of hard-bodied tick act as vectors for the bacteria: *Ixodes ricinus* (sheep tick) and *I. hexagonus* (hedgehog tick) are the main vectors in Europe, *I. scapularis* (deer tick) and *I. pacificus* (western black-legged tick) account for most American cases and *I. persulcatus* is the main vector in Asia.

There is continuing debate about how long a tick needs to stay attached to transmit *Borrelia*. The risk of developing LB increases with the length of time a tick remains attached and infection is known to have occurred within 12 hours⁴.

Tick Bite Prevention

It is important to be aware of the risk of tick bites. Wearing long trousers tucked into socks can reduce the chance of being bitten. Brushing down clothing afterwards and checking for ticks is essential. Insect repellents containing DEET and picaridine are effective against ticks. DEET is thought to be safe for most people, but has been associated with adverse reactions. Picaridine is better tolerated and does not damage synthetic fabrics but may be less effective⁵. Products containing permethrin are primarily intended for treating clothing and mosquito nets.

Tick Removal

It is important to remove ticks promptly. The recommended technique is to grasp the tick as close to the skin as possible with fine tipped tweezers and without squeezing the tick's body, to pull the tick straight out. If using a proprietary tick removal tool, it is important to follow the instructions provided as these are often designed to be twisted during removal. In an emergency, a cotton thread may be looped around the tick's mouthparts, as close to the skin as possible and the tick pulled out steadily without twisting.

Lyme Borreliosis

Epidemiology

LB is the most common vector-borne disease in the northern hemisphere. It is endemic throughout the UK and the number of recorded laboratory confirmed cases increased to approximately 1000 per year in 2011, which is thought to be a significant underestimate. Within the UK the highest incidence is in the Highlands of Scotland and the southern counties of England.

It is important to emphasise that whilst LB has come to be associated with remote or rural areas such as the New Forest, Dartmoor and Thetford Forest, 'hotspots' can occur wherever the local ecosystem

Lyme Borreliosis: *continued*

supports the enzootic life-cycle of the tick vector. In any year, up to 20% of the recorded cases of LB in the UK are thought to have been contracted abroad⁶. There is a much higher incidence in mainland Europe with the highest number of cases recorded in Austria and eastern European countries such as Slovenia and Poland. LB is not notifiable in most European countries and so reliable data either does not exist or is hard to find. The overlap in the territories of European ticks and *Ixodes persulcatus*, which is the main cause of Lyme borreliosis in Asia, may explain this phenomenon. In the USA the highest rates occur in North-eastern states such as Connecticut, New York and Rhode Island, the mid-west and on the west coast.

Clinical Manifestations

The classical sign of early LB is a spreading rash called erythema migrans or EM rash which is described as having a 'bull's eye' appearance. In the UK, where LB is less well known than mainland Europe, studies show that only 65% of people notice this⁷ but if the disease is recognised at this early stage and diagnosed clinically without waiting for the results of blood tests, the response to treatment is generally good.

- Erythema migrans typically occurs 3-30 days after the tick bite.
- EM is usually not itchy or painful, though may be mildly so.
- EM is usually not hot, like cellulitis, nor scaly with a raised edge, like ringworm (Tinea.)
- Rashes may be multiple and not necessarily at the bite site.
- They may appear uniformly red and be irregular in outline.

Systemic symptoms may accompany or follow the rash and include flu-like symptoms accompanied by unusual fatigue. Such a presentation weeks or months after a suspected tick bite between late spring and early autumn should flag up LB as a possible diagnosis. Patients may not seek medical advice at this stage if symptoms are not severe. If LB is not diagnosed and treated promptly the bacteria may spread to other tissues and persist as a chronic infection and multi-system disorder. *Borrelia* has a predilection for collagen-rich tissues as found in the nervous system, skin, joints, eyes and cardiac tissue, some of which are immune privileged sites. In the UK around 15-25% people who are untreated or inadequately treated develop Lyme neuroborreliosis^{6,7}. This may produce a range of neurological symptoms, affecting the peripheral, central and autonomic nervous system.

Diagnosis

LB should be a clinical diagnosis, supported by the results of appropriate tests. Currently there is no biomarker for disease activity, no way to confidently exclude this diagnosis and no test of cure. Symptoms of Lyme neuroborreliosis may overlap

with other conditions like multiple sclerosis, Bell's palsy, Guillain-Barré syndrome, Parkinson's disease, stroke and dementia⁽⁸⁾. The relapsing remitting pain and fatigue may resemble chronic fatigue syndrome, ME or fibromyalgia. Other differential diagnoses include SLE, sarcoidosis, malignancy and autoimmune conditions.

Testing

Serology testing aims to detect antibodies to *Borrelia* which is an indirect assay of the body's immune response to infection.

In the UK this involves 2-tier testing

- Stage 1 – An EIA or ELISA screening test. If this result is equivocal or positive the sample is sent to the specialist reference laboratory for further testing.
- Stage 2 – An immunoblot is carried out with the aim of confirming LB and identifying false positive EIA results.

Serological diagnosis of LB has limitations⁹. If antibodies have not developed sufficiently, it is possible for tests to be negative despite active infection. This may occur following an early course of insufficient antibiotics (eg malarial prophylaxis) or immunosuppressants. Antibodies can persist for years in treated, asymptomatic patients, so positive serology does not always indicate active disease. Diseases such as rheumatoid arthritis, Epstein Barr virus and syphilis may give false positive results due to cross reacting antibodies.

Prophylaxis

Statistically, the risk of developing LB following a single tick bite is low¹⁰. However, it may only take one bite from an infected tick to transmit the bacteria. In the UK, single dose doxycycline for prophylaxis following a tick bite is not recommended. Prophylaxis using a full course of antibiotics may be used if a patient is pregnant, immunocompromised or has visited a highly endemic area. There is currently no vaccine available for LB.

Treatment

Treatment is with antibiotics but the optimum drug, dose, route of delivery and duration, especially for disseminated or late presenting LB remains uncertain and further research is needed⁸. Erythema migrans should be treated immediately without waiting for the results of serology tests which are likely to be negative, since the antibody response takes weeks to develop¹¹.

The currently recommended treatment regimens can be found on the NICE Clinical Knowledge Summaries web pages for LB.

Patients sometimes develop a Jarisch-Herxheimer reaction a day or so after starting treatment manifesting as a transient worsening of symptoms. Unless this is severe, patients can be advised to continue the antibiotic¹².

Prognosis

Treatment of LB at an early stage is associated with a

Lyme Borreliosis: *continued*

better outcome⁹. Research shows that over 50% of people who develop Lyme neuroborreliosis are left with significant residual symptoms of headache, pain and fatigue¹³. The underlying cause is uncertain and may be persistent infection, immune dysfunction or tissue damage¹⁴.

Other Tick-borne Diseases

Ticks may carry and transmit a range of other diseases to humans¹⁵. In the UK Public Health England has now recorded a number of confirmed cases of Anaplasmosis which is a rickettsial pathogen infecting white blood cells (personal communication). Q Fever is rarely acquired through tick bites. Babesia infects red blood cells and although detected in various animal species in the UK is thought to rarely infect humans which contrasts with the situation in the USA where increasing cases have led to concerns about the risk of transfusion transmitted Babesiosis cases.

Currently the only tick-borne virus endemic to the UK is the flavivirus Louping ill which is a disease primarily of sheep but which may cause disease characterised by lymphadenopathy etc. in humans. Tick-borne encephalitis is endemic on mainland Europe and Crimean-Congo Haemorrhagic Fever virus in much of Eastern Europe, Africa, the Middle East and Asia.

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Further resources

- Lyme Disease Action <http://www.lymediseaseaction.org.uk/>
- Public Health England: Lyme disease: guidance, data and analysis <https://www.gov.uk/government/collections/lyme-disease-guidance-data-and-analysis>
- National Institute for Health and Care Excellence (2010) Clinical Knowledge Summaries: Lyme disease <http://cks.nice.org.uk/lyme-disease#!topicsummary>
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The Importance of Seasonal Influenza Vaccination as a Travel Vaccine

G Kassianos

Seasonal influenza is a major global public health burden, with an estimated 3-5 million cases of severe illness each year and approximately 250,000-500,000 deaths¹. It is a virus that circulates globally and causes epidemics during winter in temperate zones – approximately October-April in the northern hemisphere and May-September in the southern hemisphere; in less temperate zones the virus circulates all year. While anybody can be infected by seasonal influenza viruses, particular groups are at higher risk of developing serious complications: these include the elderly (≥ 65 years of age), young children, anyone with a chronic underlying health condition, and pregnant women. Additionally, healthcare workers are recognised as a group at particular risk of either becoming infected or facilitating the spread of the virus to vulnerable patients with whom they may be in regular contact^{2,3}. While anti-viral medications are available⁴ vaccination is recognised the best primary intervention, particularly in these at-risk groups¹. Recently influenza was ranked as one of the most common vaccine-preventable diseases (VPDs) in travellers⁵ and the WHO recommends routine vaccination for international travellers who are in a group at risk of serious complications¹. Due to higher vaccine coverage, with a target of 75% being generally recognised in industrialised countries³, the public health burden is lower in industrialised than in developing countries where influenza-related child morbidity and mortality are high each year. This further highlights the importance of vaccination if travelling to less industrialised countries.

As well as being susceptible to infection when travelling to areas in which the influenza virus is circulating, the converse is also a situation of which travellers should be aware, i.e. an unvaccinated person travelling from an epidemic area to an area in which the virus is not circulating could import the infection and pass on to others. This can be particularly important for 'enclosed' holidays such as cruises, which may result in unvaccinated individuals—often the elderly (a population at risk of serious morbidity)—coming into close contact with others from different global regions who may either be infected and exhibiting symptoms or infected but asymptomatic⁶. This principle holds true for any enclosed environment in which travellers may mix and in which the transfer of virus between people from different global regions may therefore be more likely, e.g. in aeroplanes during long-haul flights, in theatres, or at other mass gatherings.

Influenza viruses are classified into three types – A, B and C. Globally, type C is much less prevalent than

types A and B, and so classically only types A and B are included in the trivalent seasonal vaccine. Recently quadrivalent vaccines have been introduced, including an extra type B virus, and are expected to increase protection. Ongoing surveillance by the World Health Organisation Global Influenza Surveillance and Response System (WHO GISRS)⁷ means that the seasonal influenza vaccine can be adapted each year, if necessary, to maximise protection against the circulating influenza virus strains, which can evolve continually and rapidly. The WHO GISRS meets twice each year to define the strains to be included in the northern and southern hemisphere vaccines, based on a prediction of the strains that are likely to be circulating during their respective influenza seasons.

Due to the time needed for vaccine formulation, production, and distribution, the definition of vaccine content occurs approximately 8 months in advance of the influenza season – the choice for the 2015-2016 hemisphere vaccine was made at the end of February 2015, and is shown below⁸.

- An A/California/7/2009 (H1N1)pdm09-like virus.
- An A/Switzerland/9715293/2013 (H3N2)-like virus.
- A B/Phuket/3073/2013-like virus.

Note: it is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Brisbane/60/2008-like virus.

With the composition defined in February 2015 there is the potential for a mismatch between the vaccine and the circulating strains if antigenic drift in the meantime results in a new circulating strain against which the vaccine provides little protection. This was blamed for the low effectiveness of the northern hemisphere vaccine for the 2014-2015 season compared to previous seasons, and the northern hemisphere vaccine for the 2015-2016 season has been modified accordingly⁸. However, even when effectiveness is reduced in this way, vaccination remains the most important single intervention against infection, with some direct protection being provided as well as the possibility of cross-protection between strains contained in the vaccine and those that are circulating. So, even though the northern hemisphere vaccine is not licensed in the southern hemisphere, and vice versa, vaccination before travelling will still afford some protection against the viruses circulating in the destination area. If staying for a prolonged period, vaccination with the local vaccine may also be appropriate⁹.

Anyone over 6 months of age and without a severe

The Importance of Seasonal Influenza Vaccination as a Travel Vaccine *continued*

allergy to a component of the vaccine is eligible for seasonal influenza vaccination, and an increasingly wide-range of vaccine presentations are now available worldwide. These include the classical intramuscular injection, an intradermal presentation and a nasal spray. Additionally, in the US a high-dose formulation is available for the elderly, who may not mount a strong immune response following vaccination with the regular formulation (it is uncertain whether this presentation will be made available in the EU).

To conclude, given that influenza is a common VPD in travellers, that it can lead to severe morbidity and mortality especially in certain groups, and that effective seasonal influenza vaccines with a range of presentations are available, it is clear that vaccination should be recommended to anyone travelling to a global region in which influenza viruses are likely to be circulating, and in particular those who are at high risk of serious complications. Additionally, those travelling from an epidemic region should be vaccinated to minimise the possibility of importing the virus to their destination. Travellers should be aware that influenza seasons vary by geographical location, and also that the influenza vaccine should be administered at least 2 weeks prior to travelling to allow sufficient time for the development of antibodies^{6,9,10}.

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Post Infectious Diarrhoea

N Read

Between 8 and 25% of people can develop persistent abdominal discomfort and bowel upset that can last for years after a bout of gastroenteritis. The infection may have gone, but the gut remembers what happened – the memory lingers on. Gastroenteritis is the most common ‘identifiable’ risk factor for IBS. A meta-analysis showed that people who become ill with gastroenteritis are 7.3 times more likely to develop IBS after an attack of acute gastroenteritis¹. Another study² showed that troops turning from the Middle East had five times the risk of developing IBS if they had had an episode of travellers’ diarrhoea.

It had been known since 1950 that an attack of gastroenteritis can give rise to chronic bowel upset. Stewart reported as much in conflict veterans returning from Malaysia³. But it was not until 1993 that Dr Michael McKendrick and I observed that people hospitalised with gastroenteritis had much more chance of developing symptoms of irritable bowel syndrome than the people who had not had gastroenteritis⁴.

This provoked the question, why didn’t everybody develop IBS and what was special about the patients who did? In 1995, we conducted a prospective study on 104 consecutive subjects admitted to the infectious diseases ward of Sheffield’s Hallamshire Hospital to answer that question. We collected clinical and demographic data during admission, performed anorectal function tests and also subjected patients to psychological questionnaires. We then followed patients up for six months and found that 22% of them had persistent symptoms of diarrhoea and pain⁵. Analysis of the results showed that persistence of symptoms was significantly more common in women compared with men, in people with more severe symptoms of gastroenteritis and most significantly in those who were anxious or depressed at the time of their original infection and/or had something going on in their lives.

Subsequent studies showed that patients whose symptoms persisted also had a mild inflammation in the gut and raised levels of pro-inflammatory cytokines⁶. Studies conducted by Professor Robin Spiller’s group in Nottingham have confirmed that what came to be known as post infectious IBS is associated with activation of the gut immune system⁷, which comprises persistent low-grade inflammation, an increase in gut permeability, mucosal infiltration of mast cells, enterochromaffin cells and lymphocytes, increased production of pro-inflammatory cytokines, and alterations in colonic microflora⁸. There are also physiological changes which include enhanced visceral sensitivity and increased release of enteric neurotransmitters, specifically 5-hydroxytryptamine (5HT), which plays a central role in mediating

sensory, motor and secretory responses in the gut.

In May 2000, in the small town of Walkerton in Ontario, Canada, the highly dangerous O157:H7 strain of *E. coli* seeped from an adjacent farm into the reservoir supplying water to the community. The deadly bacteria slipped through the maze of pipes into peoples’ homes, where unsuspecting residents drank the polluted water and bathed in tubs, ridden with bacteria. Over the next few weeks, 1,286 people suffered severe gastroenteritis with bloody diarrhoea. 28% of these continued with persistent gut upset for several years and 16% still had symptoms, 8 years later⁹. As in the Sheffield study, these were more likely to be women with more severe infection. Biopsies taken from the colons of people with post infectious IBS have revealed evidence of a persistent mild inflammation.

What predicted post infectious IBS?

These studies characterised post infectious IBS as a mild inflammatory disease of the bowel associated with in some people activation of the immune system and changes in the colonic microflora, but only a minority of patients develop persistent immune activation and IBS after gastroenteritis, indicating the intervention of another factor. Possibilities might include the severity of the acute illness, the particular pathogen, antigenic mimicry, epigenetic priming, genetic factors, and microbial depletion, and last but not least, psychological factors.

In our original study, the people who developed persistent symptoms of bowel dysfunction, had more anxiety, depression and indices of somatisation at the time of their gastroenteritis and had more changes and stresses going on their lives⁵. In other words, it seemed that a connection had been developed between gut and the brain so that the symptoms of gastroenteritis might have been recruited to express ongoing emotional difficulties. Similarly in the frightening Walkerton outbreak, female gender, younger age group, anxiety and depression, fever and weight loss. symptoms of anxiety and depression during the outbreak all predicted the development of persistent symptoms⁹. It was as if the memory of what happened created a link between the gut and the brain that kept the illness going.

There could be no doubt that what happened in Walkerton constituted a major trauma in that quiet rural community. Seven people actually died. Not only were the residents fearful of their lives and the lives of their families but they were angry at the water engineers who allowed it to happen. This was a major trauma for the residents of Walkerton, so much so that anything that reminded them of what happened, rekindled the symptoms and signs of the original infection.

Post Infectious Diarrhoea: *continued*

Stress is the second most common risk factor causing IBS and if stress and infection occurred together, it stands to reason that the risk of IBS would increased. Psychological stress is known to modulate visceral sensitivity and the reactivity of the gut immune system, leading to enhanced susceptibility to luminal content¹⁰.

The gut is not an autonomous organ; it is connected to and regulated by the brain, so much so that IBS is best considered a brain gut disorder¹¹. Although most of what happens in the gut occurs below the level of consciousness, a constant flow of impulses travel up the sympathetic and parasympathetic nerves and are integrated with information from the rest of the body and the wider context to modulate brain-gut function. Recent research has demonstrated changes in autonomic nervous system function, the hypothalamo-pituitary axis, descending spinal inhibition and the neuroimmune axis, relevant to IBS¹¹. Brief stimulation of the gut by injury or inflammation or stress is often damped down very quickly, but in chronic abdominal pain, peripheral stimulation may cause up-regulation of stress arousal circuits by increases in neuro-immune sensitivity while fear or recall of past experience may do the same via central mechanisms¹⁰. These insights have revealed a complex, bidirectional communication system that not only ensures influences gastrointestinal function but is likely to have multiple effects on affect, motivation and higher cognitive functions, including intuition, conferring some validity to Friedrich Nietzsche's speculation that 'all prejudices come from the intestines'.

IBS is not a disease with a specific cause; several factors are involved. It is likely that an infection of the gut that occurs in the context of emotional disturbance could influence a number of mechanisms to reset gut sensitivity and reactivity. For example, an infection causing diarrhoea could deplete the microbiota, compromising the gut epithelium and leading to activation the gut immune system. This would release transmitters that could alter the reactivity and sensitivity of the gut and act via autonomic afferent nerves to influence the emotional responses of the brain. At the same time stress could amplify all these physiological responses and establish a link between the brain and the gut that keeps the illness going and could be rekindled by anything that reminds a person of the original stressful situation¹². Recent data has shown that people whose IBS is instigated predominantly by stress have microbiota that more closely resemble healthy controls than those whose IBS is primarily caused by gut disturbances¹². Thus, could it be that there two types of IBS, one predominantly caused by changes in the gut, the other predominantly caused by stress?

IBS is often associated with intolerance to various

foods and if the gastroenteritis is brought on by a particular meal or increases the sensitivity of the gut to a variety of foods, then it is likely that food intolerance becomes part of the illness memory and is evoked by stress. This raises the possibility that IBS/food intolerance might have been triggered by trauma occurring in the context of food in childhood, and the gut has never forgotten it. Trauma can remain in the body unless you can connect the response with the memory and resolve it¹³.

'There is nothing good or bad as thinking makes it so'. Food has so many connotations. Meat may be contaminated or make us fat. Shellfish could be contaminated, chocolate could make us sick. More and more people are intolerant to food these days, wheat intolerance, dairy, fibre and now FODMAPs. If we fear a certain food is likely to upset us, it probably will, but it may not be the food itself but our fear of what might happen. By that time, the damage is done; the illness has been consolidated.

Holidays are by definition, situations associated with change and stress. Holidays, like Christmas, often bring to a head any emotional tensions that exist in the family. This might render the gut immune system less resilient to infection, increasing the possibility and severity of gut reaction and also the bodily memory of the event. On holiday people get ill, litigation is fraught with difficulties and has a tendency to maintain the illness.

The usual precautions apply when going on holiday to tropical or sub-tropical destinations. Eat food hot, beware of salads, sauces and meals left out on a buffet to cool, wash fruit, use sterilised water, keep your mouth closed in the swimming pool, take prebiotics or probiotics, but also keep calm, avoid crowds and risky situations and temper excitement with relaxation.

Susie was perfectly well until she got married to Tom. She had her man. They had had a wonderful day. Everything was perfect; church, carriage, fabulous wedding dress, bridesmaids pages and reception in the country house. It was all she could have possibly have wished for. It was her day and would only happen once in her life. And then they jetted off to St Lucia in the Caribbean for her dream honeymoon; sun, sand and lots of sex. The dream turned out to be a nightmare.

First, there was a hurricane alert and the flight was held up in Miami, where they spent twenty four hours in the departure lounge. The weather in St Lucia was still bad when they arrived. It rained for the first four days and the beaches were littered with debris from the storm. Their picturesque honeymoon chalet on the beach was no longer available. They were given a back room in the hotel facing the main road. Then Susie got food poisoning. For the last four days of their holiday, she lay in bed with vomiting and diarrhoea. She was hardly the fairy tale princess she had

wanted to be for Tom. But he managed. During the day, he spent his time by the pool and then in the evening toured the local bars and discos with his new found friends and didn't come back until late. It was a complete disaster. Their relationship never recovered.

The trip back took ages and she still wasn't well. Everyone wondered why Tom wasn't living with her. She couldn't say. Her guts didn't clear up. Everything she ate upset her. Over the next few weeks, she lost weight, had terrible stomach cramps, was bloated and seemed to spend most of her time on the loo.

Her doctor sent her for blood tests, scans and endoscopies. They were all negative. He diagnosed Irritable Bowel Syndrome, but nothing he prescribed seemed to make any difference. That was two years ago and the symptoms are still going on. As long as she stays at home and is very careful what she eats, she can just about manage her illness.

Dr Nick Read, MA, MD, FRCP, Chair of The IBS Network

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Tips to aid Last-minute Travellers

A Willcox

Why do people travel at the last minute?

Experts advise attending a travel clinic six to eight weeks before travel. Last-minute travel is now a fact of modern day life. It happens for many different reasons: lots of people have family abroad and need to visit at short notice because of a birth, death, illness or other family events. Others travel for urgent work or humanitarian reasons and many just see a bargain holiday on the internet and realise they can suddenly manage a holiday.¹ Services need to recognise and respond to the changing health needs in society and travel clinics should be a good example of where proactive care is available – not a place to berate a stressed traveller who has not had weeks to prepare for travel!

Are last-minute antimalarials useful?

Yes. Malaria is a serious risk to health and over 1500 cases were imported into the UK in 2013.² VFR (visiting friends and relatives) travellers to West Africa are particularly at risk. It is better to start anti-malarials later than would ideally be recommended rather than not to give them at all. Discuss with the traveller the fact that they won't have optimum protection for the first 24 hours in the malarial destination. Bite avoidance measures are essential then and throughout the trip. Provide written information as having to remember lots of advice may not be achievable. Make sure they understand the importance of completing antimalarials course after leaving the malarial area. Doxycycline or atovaquone + proguanil are suitable last-minute options because of their short lead time.

Is it worth starting a last-minute course of a vaccine?

Yes, if a risk of disease has been identified for that individual. There are two reasons why starting a course of a vaccine can be helpful to the traveller. Partial protection from one or more doses is better than no protection. Even if an incomplete course of a vaccine does not prevent the traveller getting an infection, for instance typhoid or hepatitis B, it may mean that they are not as severely ill as they would have been without any vaccination. Vaccinating against a disease such as hepatitis A which has a long incubation period (and is the most common vaccine-preventable disease associated with travel), is particularly effective. Secondly, many travellers repeatedly travel at short notice. If vaccines were continually denied them, they remain at risk and that risk is accumulative as more time is spent in at-risk regions.³

However, you need to help the traveller to understand that vaccines don't work immediately – most take between seven and 14 days. If a course is started,

the first vaccine 'primes' the immune system to be ready to provide protection. The following doses build protection by stimulating antibody production and for some vaccines, helping the immune system to 'remember' how to make antibodies long after the schedule is completed.⁴

Should I complete a schedule or give a booster at the last minute?

Yes, for the same reasons given above. This traveller will be at an advantage because their immune system has been primed by their earlier vaccine – completing the schedule or giving a booster will enable their immune system to make protective antibodies. It is good practice always to complete a schedule that has been started, for the health of the individual and in terms of public health.

The traveller is only going away for a weekend – is vaccination of any use?

Perhaps, particularly if they frequently travel abroad at the last minute. Even if their trips are short ones, there will be an accumulative risk over time. Again, it is important that you ensure the traveller knows they do not have instant protection after vaccination.

The traveller is going away for a long trip – tonight!

Vaccination and antimalarials should be recommended if risks have been identified, even if travel is imminent. However a course may need completing while they are abroad. Provide them with a record of which vaccines and brands have been given and when the next dose is due. For many vaccines the brands can be used interchangeably and their record will help a clinician abroad to complete the schedule. Advise the traveller that care is needed to locate a reputable clinic at their destination – counterfeit medicines are an international problem. Signpost them to the International Society of Travel Medicine website where a Global Travel Clinic Directory is available to the public: see <http://www.istm.org/> Alternatively they could contact the British Embassy, High Commission or Consulate at their destination for local advice.

What if the traveller needs to have several vaccines?

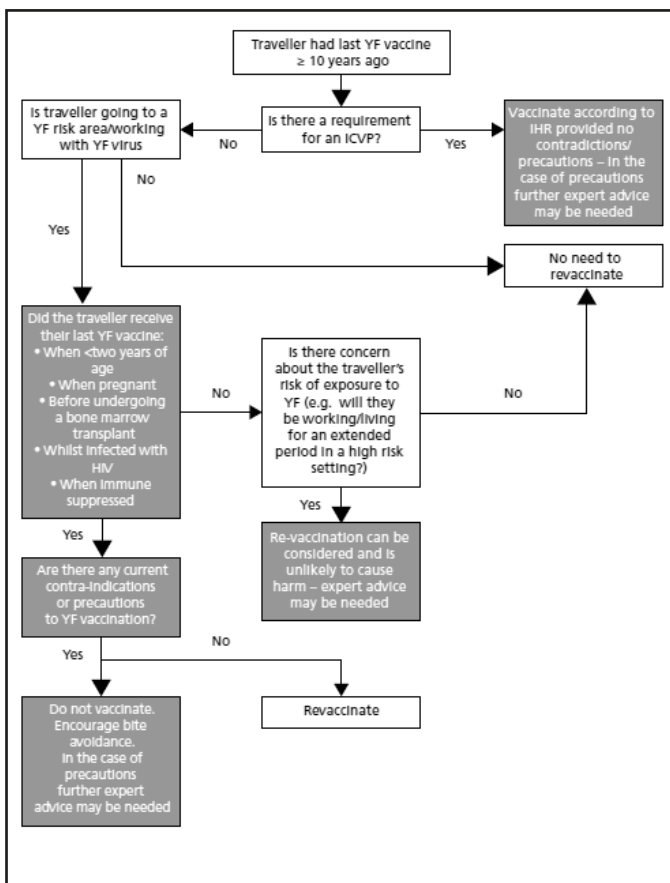
Consider using combined hepatitis A and typhoid so that only one injection instead of two is required against those diseases. Nimenrix (meningococcal ACWY) has black triangle status and ideally should be the only injection in one deltoid – Menveo is a non-black triangle product. Otherwise, remember that you can give injections 2.5 cm apart in one deltoid but make sure you record which one went into upper or lower deltoid.

Won't there be a risk of an adverse reaction during their flight?

Travellers should be advised of the possible side-effects of vaccination. An adverse reaction of anaphylaxis is estimated at one case per million doses of vaccine. As the prevalence of egg allergy is 1 per 1000 adults⁵ and it is estimated that 1 in 3500 people experience anaphylaxis in the community,⁶ a traveller is more likely to experience an adverse reaction to everyday products in the airport than they are to vaccination. There are no regulations restricting the use of vaccines prior to flying.⁷

What should I do if the last-minute traveller is going to a country that needs an ICVP (International Certificate of Vaccination or Prophylaxis) for yellow fever?

As with any travel consultation where yellow fever is raised, you need to consider whether there is a clinical risk of disease, or a requirement for an ICVP, or both. If there is a clinical risk and the traveller has not been vaccinated before, then vaccination is recommended on those grounds. If a certificate is required by the transit or destination country, advise the traveller that they may not be admitted because the certificate is not valid until 10 days after vaccination. Record your advice. You may find this flowchart from the 'Green Book'⁸ helpful for those travellers who have previously received yellow fever vaccination:



Are there any vaccines or antimalarials that should NOT be given to last-minute travellers?

There are no absolute contraindications but there are some principles of good practice to follow:

- Injectable typhoid vaccine would be a better option than oral Vivotif because it would start to work more quickly (the Vivotif capsules take 5 days to complete), and because of the need to store Vivotif, which is a live vaccine, in accordance with cold chain requirements.
- The concomitant use of some vaccines, e.g. yellow fever and MMR needs to be considered. If Yellow Fever vaccine is required, recommended practice is to give it at least 28 days after receiving an MMR vaccine. If both vaccines have to be given without a 28 day gap, inform the traveller that an additional dose of MMR is needed at least 4 weeks after this dose.
- Another example of concomitant vaccination concerns MMR used for travellers. If a tuberculin skin test (Mantoux) has already been performed, then MMR should be delayed until the skin test has been read unless protection against measles is required urgently. If a traveller has had a recent MMR, and requires a tuberculin test, then a four week interval should be observed.⁹
- Twinrix (combined hepatitis A and hepatitis B) is not a suitable option for last-minute travellers because 3 doses are needed prior to travel to ensure a sufficient dose of hepatitis A. Use monovalent vaccines instead.¹⁰
- Mefloquine is not a good option for a last-minute antimalarial.¹¹ This is because a 3 week lead time is recommended to ensure the traveller tolerates it – adverse psychiatric reactions would be very problematic abroad.
- Chloroquine needs a week's lead time in order to build up sufficient protection against malaria.
- Doxycycline should not be used if Vivotif has only just been completed. Oral typhoid vaccine must be completed 3 days before commencing doxycycline.

Tips to aid Last-minute Travellers *continued*

How else can I help this last-minute traveller?

Last-minute vaccines will not provide instant protection and no vaccine is 100% effective, so make sure you provide additional information on preventative measures to the traveller. Stress its importance: the information on food and water hygiene will help prevent infections such as hepatitis A, typhoid cholera and polio; avoiding exchanges of blood and body fluids will protect against hepatitis B and insect bite avoidance measures may avert Japanese encephalitis, tick-borne encephalitis and yellow fever while the vaccines are taking effect. And finally, the help you provide on reducing non-infectious risks to health, such as personal safety, need to be part of every travel consultation.

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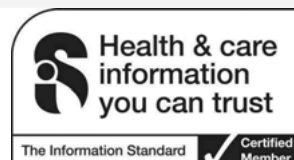


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World Travel and Toilet Problems

I B McIntosh

Toilet and continence are topics rarely discussed by travel health professionals in pre-travel health consultations, but they are a concern for many travellers, particularly those of advancing years. The question of toilet access en route and on holiday is a prominent travel related anxiety.¹ UK and foreign travel brings inevitable restrictions on toilet access and a variable quality of toilet facilities.

Overseas these are often coupled with limited availability, 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. Going to the toilet can range from challenging to risky and even death-defying in foreign lands and on adventure holidays.

Some degree of occasional or regular incontinence is common in people, especially the elderly, with up to 71% of the community-living affected. There are 1 million British sufferers, the majority aged over 65 years, most being women. Many of these holiday overseas.² Many are too embarrassed to discuss their functional disturbance and surveys show only 1 in 5 is prepared to discuss this problem with a health professional.¹ The affliction causes some to avoid travel far from home. Sometimes, pressurised into travel by spouse or offspring, their fears may surface at pre-travel interview.

In absence of a surgical disturbance, the cause is usually due to bladder instability resulting from an uninhibited neurogenic bladder, giving rise to urge incontinence, or sphincter weakness giving stress incontinence. Management procedures instituted in months prior to travel can relieve symptoms, bring control, or make the condition sufficiently manageable for the individual to travel without undue concern.³

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 back rigidity can create problems in unconventional 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.

In continental Europe and the UK, where sanitary units may be more acceptable, toilet seats and physical supports may be absent. The ability to hover over a toilet bowl, or perch upon porcelain, in the absence of toilet rails and wall supports, makes demands on the agile and is a skill often beyond the

ability of the old, with arthritic joints and poor spinal function. In the unhygienic, filthy, evil-smelling toilets met in many parts of the developing world, performing the voiding function without soiling self and clothing requires an acrobatic ability beyond most



users. Left hand cleansing required of some can require contortions of balance in the less agile. Contamination of the person is all but guaranteed in an establishment devoid of toilet paper or running/stored water, or ablutions.

Even if 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, forcing further toileting in a short time thereafter.^{4,5} This, associated with poor renal clearance in older people 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, 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 with excrement, making toilet relief a dreaded experience. Aircraft cabin staff can assist passengers to the toilet, but their food-handler role 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

World Travel and Toilet Problems *continued*

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 frequent 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. Emergency evacuation of bowel or bladder in a public area can have unforeseen legal consequences.

Disabled and blind travellers have serious problems in accessing appropriate toilet areas overseas.^{6,7} Special facilities are rare in the developing world and even in the best European toilets, wheelchairs, strollers and walking aids can become contaminated

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.



Incontinence is often 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.⁸ 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 found 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 air and land transit delays and lack of toilet access can precipitate inability to urinate. Urinary retention 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, distance emergency health facilities, limited resources and unhygienic health procedures may have more serious consequences.

Case histories

A fit, retired 67 year old school teacher on a coach tour to Cornwall from his Hebridean home, suffered an acute retention when his coach, devoid of a toilet, was delayed 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 where he arranged a few days walking in the Himalayan foothills. Several days into the trek and 2 days and a high mountain pass away from emergency health care, 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, and was carried out of the high valleys on the back of a Sherpa porter. Even in hospital his convalescence and repatriation was protracted before his ultimate return to NHS care and subsequent operation.

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 or aircraft take off, can be given a musculo-trophic drug such as oxybutynin as it has 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.^{8,9}

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 specific countries, stressing the inadequacy of those in the third world.

An information hand-out reinforces instructions and improves recollection and behavioural response. Acquisition of passenger leaflets from British Airport Authority airports, detailing toilet access, should be advised.

Case history.

One American senior, an intrepid traveller to far-away places and very familiar with the uncrowned toilet bowls met in the UK and foreign parts, dissatisfied with paper toilet seat covers for her protection, decided to carry her own light-weight, plastic toilet-seat cover with her on her travels! She vehemently believed that this precaution protected her from the novovirus infection which sporadically occurred on the cruise ships she sailed on.

Ensconced within the tight confines of an aircraft or coach toilet, the old are likely to come to little physical 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. History can be obtained the using questionnaires on bladder control. The doctor should make a physical examination of pelvis, rectum and vagina to identify any specific causative factor and refer if necessary to the appropriate specialist consultant.¹⁰

In females, urinary tract infections, atrophic vaginitis, cystocoele and rectal overloading have to be considered and treated if found. Prostatism requires a rectal check and possibly 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.

Pre-travel health consultation

History taking by nurse or doctor should include:

Questions on:-

destination and transportation
worries about toilet access on the journey and at the venue
do you, "have to get up at night ?
sometimes not make it to the toilet?
leak urine when you exercise, sneeze, run, cough,?
have problems actually emptying the bladder?"

Investigations

Mid-stream specimen of urine
(organisms, sugar albumen)
Prostatic specific antibody test

Examination by doctor (if incontinence admitted)

Vaginal and rectal examination to
exclude infection, atrophy

Advice:

Possibility of - limited facilities - no wash-hand basins, toilet paper, toilet seats, toilet bowls, wall supports, grab handles, privacy

Non-availability of toilets on airside of customs and immigration, during protracted holding manoeuvres before aircraft landing/take off, and in developing countries

Problems with alcohol consumption en route.

Preparation:

Encourage hand luggage carriage of toilet paper, toilet seat covers, antiseptic wipes, incontinence aids, appropriate continence-inducing drugs for rectal over-loading and prostatism

Instruction

Instruction in pelvic floor exercises for the person with stress incontinence. The individual to practise interrupted micturition every time she goes to the

World Travel and Toilet Problems *continued*

toilet and perform the exercises 8 times per day. Bladder drill and retraining for people with urge incontinence - secondary to bladder instability. Patients should be encouraged to only toilet at certain times with the duration between progressively lengthened every two days.

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. Single use catheter for emergency use for travellers to remote destinations. Finasteride 5mg daily may be indicated for those with benign prostatic hypertrophic, Prostatic size can be reduced by half in 6 months usage. Be aware that PSA measures will also be reduced to half normal reading with this medication.

Review

Medications eg diuretics

Traveller's advice

Anticipate and prepare for toilet problems.
Make a special study of availability and access, if disabled or visually impaired.
Seek pre-travel health consultation and discuss potential difficulties
Carry toilet, rolls, cleaning tissues, antiseptic wipes, incontinence pads & paper toilet-seat covers.
Use sanitising solutions before meals and after toilet on cruise ships
Consider use of extensible walking pole to aid toilet manoeuvres
If likely to be travelling far from emergency aid, consider acquisition of a catheter.
Take diuretic's as advised after review by gp.
Ensure an adequate water in put- avoiding water drinking may diminish the need to void the bladder but may lead to dehydration and renal problems.
Consider taking a disposable urine container on long trips

Summary

Toileting and continence are a concern for many travellers, particularly those of advancing years. UK. and foreign travel brings inevitable restrictions on toilet access and a variable quality of toilet facilities. Pre-travel health consultation provides the opportunity for doctor and nurse to discuss potential problems, identify medical disorders and suggest solutions and precautions. Several incontinence and prostatic difficulties respond to treatment or training. With good advice and sensible preparation many toilet hazards met in foreign travel can be mitigated. Toilet worries should not prevent the determined world traveller from venturing afar.

Iain B McIntosh

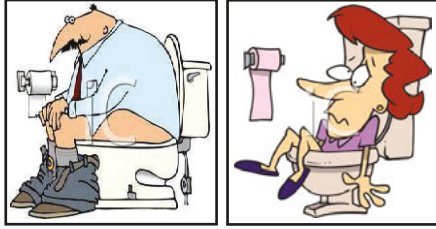
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Caught Short and Caught-out Abroad

T Blackwood



Availability, accessibility and quality of loos are considerations in world travel. Voiding the bladder and evacuation of bowels can be a minor or major problem on ventures abroad. A quiet place for relief in extremis is often hard to find. A convenient wall, out of public view, may satisfy the male traveller with a bursting bladder if acting discretely and women can squat, with intimate parts cunningly protected from view by a capacious skirt, or hunker down behind an umbrella or sun-shade. Paucity of facilities is often compounded by public place congestion in Asia and Africa. The solitude seeker searching for privacy has often to combat the curiosity and inquisitiveness of locals, especially children. Inadvertently creating a public nuisance and exposing of the privates in some countries can bring the unwanted attention of guardians of the law. In lands where locals routinely piddle into the gutter and defaecate by the field-side, a stranger taking the same liberty can provoke outrage.

Case History

An urgent need to relieve the bladder can bring unforeseen consequences for the tourist. Determined to avoid dehydration in the heat of St Kitt's island summer, I drank plenty of water before a prolonged trip round the island and was aware of an over-full bladder while exploring an island castle, which seemed deserted. I searched for a public toilet to no avail and in desperation slipped behind a cupola on the battlements, to direct the spray down a rampart to fall dramatically to the sea far below. Comfortable again, I wandered back across the balustrade at peace with the world. As I descended, a very large Caribbean uniformed police constable and an even more redoubtable and vast lady companion ponderously approached and confronted me.



"It is against the law to urinate here", he announced.

I misread their intent and jokingly replied, "When in need."

"You have broken the law and must pay the consequences," the policeman said sombrely. "You saw the sign," said the lady.

"What sign? and she pointed behind me. To my surprise, a very large sign was fixed to the wall of the cupola on the opposite side to my misdemeanour, advising that indiscriminate bladder relief was prohibited and would attract a large fine and jail if unpaid.

"I was not being indiscriminate," I asserted rashly. They were not amused,

"If you do not pay, "we will arrest you," he said, and I wondered if I could race away. His girth suggested he was no athlete. As if guessing my intent he added.

"My inspector is waiting at the gate."

I had only a few local coins with me and the situation was taking on unattractive undertones.

"You would not soil castles in your homeland," the lady averred. Not necessarily a truism, as I thought of the many evil-smelling dungeons and arbours taken advantage of by Britons in need and too lazy to seek a proper toilet.

"I will not pay for a natural function," I stated baldly, and now the inspector joined us. Slightly less intimidating in his speech, he confirmed,

"It is a serious offence."

I was reduced to flattery, extolling the scenic virtues of the island and the friendliness of the people and this thoughtless unfortunate mishap, which I hoped would not blight my visit. He mellowed. It transpired that part of the castle was a local prison and officers had been sitting in an observation point watching my indiscretion. He had visited the UK and proved to be an avid Arsenal football devotee and we talked football, until he dismissed his underlings and escorted me off the premise's, with a warning not to perform publicly again in his jurisdiction.

This episode had me ruminate on the perils which can arise from performing necessary bodily functions in foreign places. The very private acts of defaecation and urination can be a challenge and hazard for tourist and adventurer. I remembered walks of potential death when performing acts of nature on the high mountains, venturing to what are euphemistically called long drop loos. My first introduction came on the top refuge hut, 4,000 m. up Mont Blanc. The toilet was a tiny rickety structure sticking out over a void, poised on swaying spidery trestles overhanging a thousand foot drop to the glacier. Bearing a bottom in the icy tempest that blew through the structure required as much courage as that to embark on the precarious journey to the toilet. The Horombo hut loo on Mount Kilimanjaro was little better. There acute mountain sickness had made me light-headed and off-balance. Vertigo overcame me as I perched

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precariously over a huge chasm and I nearly joined the evacuation as it plummeted to cliffs far below.

High mountain ventures can make every toilet need a desperate experience. Storm-bound, within a tent in imminent danger of being blasted off the mountain, any thought of leaving the sanctuary cannot be contemplated. Passing urine into a container in the tight confines of a two-man tent usually occupied by three burly colleagues is a tedious, acrobatic, public exercise. Constipation mercifully is a welcome if uncomfortable companion on remote mountains. High climbing is however often associated with gastro-intestinal upset and the demands of an upset gut decree nocturnal visits out in to the hostile external environment.

Removal of umpteen layers of thermal and protective clothing defies description in a howling ice-cold gale. Exposure of private parts for more than a few moments is agony and invites frost-bite to intimate parts. In the high Andes, nights are protracted and extremely cold and a call of nature inevitable in the long hours of tent incarceration. Departure from the warm confines of the sleeping bag is an intimidating prospect, but recourse to a wide-necked container involves only a few contortions before a return to repose. The warm bottle is useful for heating the feet but by morning, the contents are invariably frozen solid as are feet.

Gut infection and frequent nocturnal toilet visits can however have compensations. Dossing down in the Thorung Monastery which is situated below the glacier plunging from Mount Everest, my gut upset ensured frequent moonlit visits to the distant loo. The whole mountain was bathed in light from a full moon and the view was stunning. A snow plume drifted from the highest summit in the world and guardian mountains gleamed in splendour against a blue-black sky - an unforgettable ethereal sight.

That same trip brought my worst personal experience of a toilet. A 'good loo' guide has been published, but there is a greater need for a bad loo guide and this one would have had prime place. Isolated and at 5000m up on the Tibetan plateau, the only hotel was a filthy hovel with the lone "toilet", a hole in the extended flat roof. Every occupant of the abode had profuse watery diarrhoea and a visit involved climbing several floors and skating across a floor awash with frozen excrement. Nearer the voiding aperture, frozen urine joined half-melted piles of ordure, some a foot high. When the sun shone, the melting contents of the orifice would run down the side of the building into the pavement gutters. Each morning, when the sun was up, locals performed ablutions and teeth cleaning in the infected watery sludge by the kerbside.

Sod's Law determines that when a toilet is found in emergency, it is locked and access denied, or the

guardian with the key is nowhere in sight; there is a fee for entry and you have no money, the wrong currency, no small change for the machine or a fat bribe is demanded, the figure increasing as you argue and need becomes greater. The cost for a single sheet of toilet paper, once demanded in a ramshackle loo-shack in rural China would have left profit after its complete rebuild.

Delighted to meet with success in finding a place to retire in privacy, pleasure may be diluted on reading warnings of local health hazards. Crocodiles had recently snatched an unwary toilet resident occupying the 'John' in one Australian out-back location. Snakes and insects also enjoy these places as do venomous red-backed spiders, mosquitos and midges. Having gained sole access to the coveted refuge, there are plumbing challenges to come, or there may be an absence of fixtures and supports. This hallowed spot may also shelter other occupants. Given the luxury of a toilet bowl with cover, it is wise to rattle the toilet lid if one is present, to allow permanent residents to escape. It is wise to inspect what lies within the bowl or deeper in the plumbing, or in depths below the squat. In Jane Wilson Howarth's humorous book "Shitting pretty", several anecdotes are recounted of encounters with denizens of the lavatory, or latrine. A gecko popped



its head out as one bare bottom was presented to the pan, another lady was astounded to see green frogs splashing about in water in the bowl.

Peering into the depths below latrines has led to many lost belongings but can be a revelation. There may be a writhing mass of maggots and it is common in Asia for sewage disposal to be performed by frequent visits of local pigs to the dung heap and scavenger dogs fight over discarded human excreta. In "Shitting pretty", there is an account of a hotel in Hunan where latrines were on the second floor. Crouching over a drafty hole on a visit therein, the writer describes hearing voices coming from beneath her feet. In the room below was a 30 foot wide pool full of excrement, with men preparing its use to fertilise nearby vegetable patches- a reminder that human waste often fertilises rural fields in developing

countries.¹

The toilet abode comes in all shapes and sizes ranging from state of the art splendid automated tabernacle in Japan to crude holes in the dirt in Borneo. They can be cunningly hidden from public gaze or prominently perched in a public park. Long awaited they can bring surprises. Expensive automatic units seem to delight in spraying water at the unfortunate occupant in is self-cleaning endeavour and mechanical failure leaves one locked in a sterile steel capsule. Desperate for bowel relief and following a prolonged search, the sign WC was welcome. It was discomfiting to find a large sign over the squat commanding "No shit here" with no offered alternative location.

Case Histories

Eight coaches of senior coach passengers en route on the four hour journey from Viet Nam to Angkor Wat were disturbed to discover that there was only one stop en route. Appeals to stop the bus before the destination were denied, as there were land-mines by the road side. Finally reaching a solitary café halt, all queued patiently for entry to a toilet on a hill comprising two lavatories without water facilities.

Outside the convenience stood three children, two with basins of water and one with a towel. One by one the passengers used the loo, then conscientiously washed their hands in one basin, rinsed them in the next and dried on the towel. Water and towels were only changed after the long procession had passed!

On another coach trip in Ecuador the long run was broken by a loo-stop when all disappeared into a "convenience" in a jungle clearing. The toilet accommodation was primeval and the stalls dank, dark, uninviting and home to an army of mosquitos. Need must however, and they were used by the coach-load. With the nether parts exposed to mosquitos and possible malarial infection, many of the women returned with bites to the posterior. Returning passengers to the fleet of coaches were greeted by a lone company representative with one aerosol of anti-malarial spray- belated recognition of the health hazard to which they had been exposed.

On a prolonged trip through rural China, the coach stopped in a rural township and the occupants rushed for the toilets. The men were accommodated by a wall with a plastic roof gutter for a urinal. The women's queue advanced at an unaccustomed speed, as women rushed into the loo and returned at greater pace. Bare-bottomed, squatting Chinese ladies sitting on a ladder placed over a pit were willing to publicly share the ladder with their unexpected European sisters, but the visitors hurriedly decided that the need to "spend a penny" could be deferred.

The anxious search for relief can be plagued by linguistic difficulties when sexual segregation can easily lead to deviation. Despite the use of symbols and sometimes because of them, the hallowed place is not always easy to identify and appropriate entry ambiguous. The ubiquitous symbol of a skirt over a door can mislead a kilted Scotsman

or Mongolian wearing a del and some countries have difficulty verbally separating man from woman in a word. Signore and signori, senior and senore can be mystifying traps for the unwary. Violent retribution can befall the unwary man who makes a mistaken entry, although men are rarely concerned by cleaning ladies who frequent the gents.

Land-based toilets have their hazards. Sometimes slipping behind a bush is much preferable to using an unhygienic man-made edifice. This practice brings other potential risks however. There are scorpions, leeches, snakes ready to bite exposed parts and stinging nettles and poisonous plants can inadvertently leave their mark on vulnerable skin.

Case history

A patient presented in surgery one evening complaining of an itch and lump at his anus. Anticipating a prolapsed pile or pruritus ani, I was surprised to find that several ticks were firmly attached to anal skin. He had just returned from a back-packing holiday when he had answered the call by squatting in savannah grass, when the ticks had invaded his person.

Air, land and sea transportation brings its own voiding problems with desperate people facing locked loos on trains and aeroplanes, or substantial queues that leave those in line crossing legs and estimating whether an over-distended bladder will hold out before rupture, or incontinence ensues. Prolonged delay can lead to urinary retention and emergency hospital admission.² Lack of space to perform is a feature of airline toilets and on cruise ships there is concern that over-vigorous plumbing suction may suck intestine down the drain. On trains one can contemplate the speeding rails below and on a dhow, stoically squatting with posterior over the stern, admire attendant fishes. Wherever, whenever one answers the call in global travel, performing a natural function can often prove a memorable experience.

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Initiation Rites and HIV Transmission in Malawi

J Bristow

Introduction

The adult HIV rate in Malawi is 10.8%, the 9th highest prevalence of any country¹, with young people accounting for 46% of new infections². Anthropologists exploring potential reasons behind these statistics suggest the role of cultural violence, including the practice of childhood initiation ceremonies. These are considered a 'rite of passage' in most of Malawi, with 80% of girls³ and 38% of boys⁴ taking part. The ceremonies intend to teach adolescents about their communities' beliefs towards adulthood and sexuality³. However, many studies suggest that initiations lead to increased risk of Human Immunodeficiency Virus (HIV) infection^{3,4,5}. This ethnography explores both the harmful and protective potential of these traditional rites of passage.

What is an initiation rite?

Initial rites are meaningful traditional ceremonies held in Malawi to signify an individual's progression from childhood to adulthood³. Ceremonies usually occur around puberty, with average ages of 15 for females and 14 for males⁴. However, reports suggest children as young as 6 are initiated³. The rites aim to prepare children for adult life with teachings about respect and responsibilities. Most discuss sexual activity, including guidance on how and when to have sex⁴. Participation depends on geographical location and ethnicity, with the highest prevalence in Yao and Lomwe ethnicities in the Southern Region of Malawi^[4]. Practices differ, including length of rite, what is taught and who teaches, and vary for girls and boys^{3,4}.

In discussion groups, reasons for participation range from excitement to take part, to feeling it is obligatory⁴. Afterwards, initiates feel 'elevated' from non-initiates and avoid associating with them, so refusal to participate can lead to social isolation⁴. One interviewee explained:

"Whenever a person, be it a girl or a boy, has not gone through initiation he or she is not regarded as a member in society³"

Most ceremonies are organised by village elders³. Local churches also organise advisory sessions which incorporate religious values⁴.

Girls' initiation rites

Female initiations, often called Chinamwala, usually take place after first menstruation⁴. A female community elder, known as a nankungwi, will counsel girls about their future adult lives⁴. Girls are isolated from the community, particularly males, from a week to two months, while they are counselled³. During this time, they are educated on good manners,

respect for elders and carrying out household chores³. They also learn hygiene beliefs, including care during menstruation. It is believed that men fall ill after contact with menstrual blood, and cooking with salt during menstruation causes sickness in those eating the food⁴. Girls are usually taught how to please a man during sex³. This can be taught through dancing, diagrams or re-enacting sex with older women⁵. These teachings are omitted in Christian initiations⁴.

Advice on sex before marriage depends on local custom. In Northern districts, abstinence is usually advised, due to cultural beliefs and fears about HIV, pregnancy and its complications³. However, in Southern and Central areas, girls are encouraged to have sex to avoid kutuwa – 'getting pale'³. In some districts, this is arranged at the end of the girl's initiation, at a ceremony known as Msondo³. The girls gather at the Chief's house where they dance naked, simulating sex, to show their new skills. Anybody is welcome to watch, and the best dancers are complimented with ululation. Local people may give the girls gifts in return for being able to touch their breasts³. Afterwards, girls are advised to choose a boy to have sex with to 'remove their childhood dust' – known as kusasa fumbi³.

Boys' initiation rites

Boys' initiations tend to be less structured and shorter due to the saying "*mwamuna saudizwa*" which means 'a man needs not be told what to do'³. Ceremonies are also less elaborate in Northern districts³. A boy is initiated after onset of an illness called sila, which involves fever, weakness and wet dreams³. Similar to the girls' chinamwala, boys are taught about what is expected of them as adults, including respect for elders, local traditions such as funeral rites and avoiding violence towards women³.

17% of male initiations involve circumcision using fingernails or unhygienic tools, to prevent painful sex³. This is known as Jando. In some areas, initiation is completed at the chief's house. Boys are presented with a meal prepared by a local married couple, who must have sex and wash their genitals using water - this water is then used to prepare the meal³. After the ceremony, boys are often encouraged to have sex to 'spill the oil' (kutaya mufatu)³. Some initiates are warned that abstinence causes pain, death or penis shrinkage, making sex is impossible³. Regular sex is promoted to prevent energy building up and causing backaches³. However, some communities now use traditional medicines to prevent these complaints³.

In a Malawi Human Rights Commission (MHRC) survey, respondents claimed that boys attending religious initiations, where sex is not taught, suffer from poor sexual performance and future divorce³.

Some religious initiations have compromised by teaching the logistics of sex, but encouraging abstinence until marriage³.

17% of boys are initiated through a male-only cult Gule Wamkula, which translates as Big Dance³. This initiation is common amongst Chewa people, the largest ethnic group in Malawi⁴. Cult members, called Nyau, wear masks and dance to communicate with their ancestors at different ceremonies, from funerals to initiations⁴. The Nyau are responsible for initiating boys in their community and harass or assault non-members until they agree to join⁴. Some boys are reluctant as the church opposes the cult, ex-communicating discovered members⁴. Initiations can last two months while boys are taught cult dances, and appropriate responses to secret questions to prevent future harassment from Nyau⁴. Boys are warned not to inform non-initiates about happenings in the cult, or their parents will die⁴, so it is difficult for anthropologists to establish exactly what occurs during initiation. Gule Wamkula urge members to have sex to prove their adulthood⁴. Condom advice is mixed and cult dependant⁴.

Practices after initiation

After initiation, some Chewa and Yao community parents hire an older man called a fisi – hyena – to ‘cleanse’ their daughter’s ‘childhood dust’^{3,6}. This is often forced and without condoms^{3,6}. Another practice of forced sex after initiations is Gwamula, which takes place in 38% of the country and traditionally involves groups of men – most aged 10-20 – breaking into girls’ dormitories known as a kulas³. The men have sex with the girls, sometimes using violence, so both sexes can practice their initiation teachings³. Gwamula is now performed by individuals, more than groups, as kulas are less common³. The practice is decreasing due to fears of getting caught and punished, and HIV concerns³.

The effect of initiation ceremonies on HIV transmission

There are several reasons why initiation ceremonies may contribute to Malawi’s high HIV rate. One likely factor is explicit encouragement of initiates to have sex^{3,4,5}, with the risk furthered as condoms are rarely advised³. Currently, HIV education is uncommon during initiations⁵. This means that initiates may not understand how HIV is contracted, particularly as sex is generally a taboo subject outside of initiations⁷. Without fully comprehending the risk, young people may be more likely to have sex.

Fisis and Gwamulas may further facilitate HIV spread. The fisi is hired throughout the community by other parents or as part of other rites, such as sexual cleansing of widows⁸. In fisi arrangements and Gwamula, condoms are rarely used³. Another concerning aspect is that the sex may be forced and

violent, as rape increases HIV risk⁹. For boys, the unhygienic circumcisions may also increase the adolescents’ exposure to HIV.

After their ceremony, initiates perceive themselves as adults with the right to engage in sexual activities. In one discussion group, a village member remarked: *“Let us be honest, these rites are to blame because we most of the times tell our children there that they are now grown up persons”*⁵

One study found that circumcised boys aged 12-14 were over twice as likely to be sexually active than uncircumcised (uninitiated) boys of their age⁴. Perceiving initiates as adults may also be detrimental to parent-child relationships, as parents no longer feel obliged to supervise their children⁵.

Some anthropologists suggest that initiation rites spur curiosity in sex, even when abstinence is promoted⁵. Interviewed community members explain that although initiates are advised against sex, they “go as if they have been told to do so”⁵. Discouragement from sex may be ineffective in preventing HIV spread, as lessons are often cryptic⁴, leaving initiates uneducated about sex. For instance, a girl may not understand the connotations behind ‘not playing with boys’.

Initiates may also receive conflicting messages about sex from different sources. For example, churches and schools discourage sex but perceived social norms, peer pressure and radio exposure are thought to encourage sexual activity⁵. As sex is generally a taboo subject⁷, adolescents may be left with questions or false beliefs about sex or HIV spread.

Protective factors of the ceremonies

Although initiations are suggested to increased HIV risk^{3,4,5}, some aspects of the ceremonies may be protective against HIV. If initiations are modified, it is essential to be aware of, and further develop these positive elements.

Firstly, if initiations that currently explain the health risks of sex are providing open and honest discussions, adolescents may become better informed about HIV. Initiation rites provide an opportunity to educate children about sex, in a society where these conversations would not otherwise occur⁷. Although some believe that this encourages curiosity in sex⁵, studies worldwide have found that sex education allow individuals to make informed, safer decisions¹⁰. Additionally, hygienic male circumcision has been shown to reduce HIV risk.¹¹

Recent changes in the initiation rites

Over recent years, urban ceremonies have made changes due to HIV risk. For example, groups known as Nchanda ni Nchanda have been set up to find and

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punish anyone forcing girls into sex, such as by Gwamula⁵.

'World Vision' started educating ceremony leaders about HIV risk, hoping this knowledge will be incorporated into initiations¹². They are also working to get circumcisions performed in health clinics¹². These projects have shown promising results within the targeted villages¹². Another new modification is using traditional medicine to prevent the believed health risks of abstinence³.

Potential modifications to help reduce HIV transmission

Despite promising changes, the potential platform of initiations in communicating with young people is not fully utilised. Initiation ceremonies provide a unique opportunity for HIV education in an established and culturally valued environment¹³. However, as ceremonies are an important life milestone, it is essential to be culturally sensitive when approaching community leaders with potential modifications¹³. Changing practices may be challenging. As church initiations have found, it is difficult to address fears of pain or future divorce as a result of abolishing sexual teaching³. However, traditional medicine has been well received in some areas³ and may be worth trying nationwide. Christian initiations may also be against providing condom advice.

MHRC propose abolishing fisi use³, although this may be controversial. Living in poverty, fisi work may be a much-needed source of income for some community members. To tackle this problem, projects providing alternative careers within communities could be beneficial. MHRC also suggest engaging with teachers to provide an education that 'must not centre on how to perform sex but on good behaviour'³. A new curriculum could improve male education on benefits of abstinence⁴. Currently girls are usually encouraged to abstain, however generally boys instigate sex⁴. HIV risk may be better addressed if the mixed messages adolescents received are actively discussed⁵.

Another modification that may help is encouraging parents to persevere with advising their children, after initiation. To initiate, having sex represents entry to adulthood⁵ and it is critical that any modifications incorporate this meaning.

Conclusion

Initiation ceremonies are significant milestones in Malawi. However, they cause controversy due to the potential consequence of HIV contraction. Initiated young people are at high risk of HIV from subsequent sex, unhygienic circumcision and discouragement from using condoms.

However, these ceremonies also have several positive aspects. They are culturally important and

provide sex education in a society where this would otherwise be taboo⁷. With some alterations, the custom provides an accessible platform to increase HIV awareness among young people. It is essential to introduce change sensitively and with collaboration of community members. Successfully modified ceremonies may be reduce, rather than encourage, future HIV transmission.

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Occupational Health in Adventurous Locations

A M Grieve

This article provides an overview of the Workshop on this topic which was part of the BGTHA/FTM Conference 2015. An “adventurous location” is assumed to be a remote environment, usually outside the home country, in which the enterprise or expedition has to be completely self-sufficient. This may well be a developing country with no formal infrastructure on which the group may depend, or to whom they might turn for assistance if in difficulties. Such situations are typical of military operations, mineral extractive industries, oil and gas exploration and production, expeditions of various sorts, and more recently the establishment of green field sites to support healthcare in West Africa.

The Occupational Health Role

Occupational Health (OH) is the study of the effects of work upon health and health upon work. It is acknowledged that most health problems are not caused by work, but health problems can impact on work, or the ability to work.

In remote situations, other members of the group are generally pre-occupied with the reason for their being there. It can therefore fall to the Occupational Health Practitioner (OHP) to identify the full spectrum of health issues and to ensure that they are addressed. The OHP is the “go to” health person. The spectrum of issues to be addressed might include:

- Healthcare arrangements
- Prevalent health issues locally
- Occupational Health Issues
- Public Health Issues
 - accommodation
 - catering
 - water
 - sanitation

The role of the OHP is therefore more diverse than one might think and should include:

- prevention of health problems, promotion of healthy living and working conditions
- health promotion, education and training
- understanding the effects of work on health and health on work
- health care and health screening
- workforce and workplace monitoring
- counselling and support
- risk assessment and risk management.

In tackling this challenge, the OHP does however enjoy a privileged position. This is a unique role between the workforce and management. It safeguards health in the workplace and improves health, wellbeing and the quality of working lives. It can

involve intervention and giving advice which has not been sought (and can be unwelcome!). The OHP is not competing for the leadership role however, so this remit should not be seen to challenge the leaders and should therefore be uncontentious. It involves influencing decision makers but without the authority to instruct them!

Preparation

A good starting point when considering preparation is to reflect on “Duty of Care”. In OH this is not just a duty or an imposition upon us – it is also an opportunity. The UK Arbitration, Conciliation and Advisory Service (ACAS)¹ has defined succinctly the dimensions of this duty and concluded that: we each have a duty to ourselves and to each other, that employers should take all steps reasonably possible to ensure the health safety and wellbeing of employees, and that this is not merely a legal duty because there is a clear business and humanitarian case for so doing. Everybody wins.

Elements of the overall duty of care will be provided by: the individuals for themselves and their colleagues, the employer for the employees, the local operation for accommodation and local security, and the host country for overall arrangements and national security.

Preparation should include provisions for the selection, training and briefing of the members of the group. Selection criteria include physical and mental health. Medical preparation will strongly resemble the standard travel medicine agenda (medical history, vaccination history, travel history, itinerary, vaccinations required and the use of personal protective measures).

Briefing of employees (and their partners/dependents where appropriate) should include information on host country: geography, climate, politics, prevalent health issues and security. This is best done when reinforced by written information or sources to which they can refer as there is a risk of information overload, or the probability that items not thought relevant by them at the time might later prove to be important.

The OHP supporting the venture will also need to understand the health arrangements available locally. Generally, in this situation, these fall into one of three categories. Good healthcare may be available locally. If not, it might need to be included as part of the expedition (as in exploration and extractive industries, or the armed services). If neither of these is available or feasible, arrangements need to be in place to evacuate serious medical cases to a place of safety for definitive care. This will usually be done under the arrangements of the emergency services provider, using their established procedures and

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approved safe havens. Thought should also be given to the use of telemedicine, as virtual support may be provided either to manage health problems locally or to support the local arrangements where evacuation is frustrated by logistics or weather.

In the field

Once deployed, the OHP should address the full range of health related issues for the enterprise. This will include public health issues such as the hygiene implications of: accommodation, catering, water supply and purity, and sanitation. There may (or may not) be other health personnel providing clinical medical services. If not, the OHP may need to assume that role. If clinical health specialists are present they are generally engaged in clinical activities and tend not to involve themselves in the wider public health issues. The general overview of the OHP, and their relationship with the leadership on these matters, therefore remains important.

The range of concerns will include issues normally in the remit of public health, local clinical medicine, occupational health, the industrial process and the environment.

Accommodation matters will include monitoring the suitability of accommodation. The adequacy of weather tight and hygienic accommodation is quite variable. Accommodation camps or barges will be shared by a wide variety of people and clear responsibilities for cleanliness and maintenance need to be set down. At peak work periods there may be shift systems and “hot bedding” where more than one person will use a bed within each 24 hours, opening issues such as cleanliness and the possibility of insect or vector transmission (e.g. scabies, pediculosis, and tinea). There is also the risk of personnel cooking and eating in the living accommodation, attracting vermin and creating garbage issues.

Catering may be under the supervision of a catering person, or there might be informal self-catering. In any event, a view needs to be taken on the quality of food sources, food storage and preparation, dining arrangements and the safe cleaning of facilities and disposal of garbage. Where the other members of the group are pre-occupied with the principal aim of the mission, these matters can easily be neglected. It is not for no reason that “Travellers’ Diarrhoea” (TD) has remained the prevalent travel medicine issue throughout time, and typhoid, cholera and dysentery have claimed so many lives in wars and refugee situations. TD is no respecter of rank, reputation or status!

Water supplies should be both from a reliable source of water, and have a robust treatment process. In a rural situation, water from rivers and streams should be taken from upstream of the accommodation. Reconnaissance should ensure that



“A Suitable Water Source?”

your clean upstream water is not someone else’s effluent, or that other exploration or extraction processes upstream are not emitting industrial pollution or toxic metals – neither of which would reliably be removed by usual purification methods such as filtration and chlorination.

Sanitary arrangements should be downstream of the accommodation, but care should be taken in their siting. Discipline and a clear accountability are needed to ensure that they are maintained and cleaned. There also needs to be an agreed means of disposing of sanitary waste which does not contaminate the environment – which can be tricky from an accommodation barge in a mangrove swamp!

Occupational Health

Finally, the reason the OHP came along. The full range of conventional OH issues needs to be considered in every situation (Table 1).

Occupational Health Issues	
<u>Type of Industry</u>	<u>Type of threat</u>
• Oil & gas • Mineral extraction • Manufacturing • Defence • Health	• General threat – workload • Industry specific – physical – chemical – Mineral • Environmental threat – Toxic substances • Civil unrest

Table 1

Workload and scheduling deserve attention as participants in expeditions, upstream business activities and military operations are frequently thinly resourced and progress and success may depend on long working hours and a “macho” environment. This may not apply universally throughout the group and the OHP should remain vigilant to the possibility of overwork and be prepared to advise the leadership accordingly. Excessive working hours lead to performance degradation and are not sustainable. Similarly, issues such as bullying and harassment can occur as easily here as elsewhere and should be identified and addressed.

Physical hazards in the work place can occur because of makeshift arrangements, poor risk assessment, under manning or long working hours.



“Trauma, Explosion, Fire?”

The ergonomics of the workplace should be considered as part of routine surveillance. If correct, the risk of accident and injury will be minimised.

Industry specific risks should be well known to the participants, and the focus should be on risk assessment, training, correct procedures, protective equipment, supervision and management. Arrangements should be in place to cope with the types of problem which can be expected to occur in that situation. This may include physical injuries, fire, chemical injuries and possible poisoning by toxic substances. Such arrangements must take into account the management of the incident, casualty stabilisation, management and evacuation to definitive care.

Summary

Occupational Health in Adventurous Locations is a diverse subject and calls upon a whole spectrum of medical skills, including clinical medicine, occupational medicine, travel medicine, public and environmental health and a good understanding of the business or industry for which support is being provided.

It requires practitioners who can address such a wide spectrum of issues, whilst enjoying the confidence of their colleagues by giving pragmatic and effective advice.

Most enjoyable, but not for the faint hearted!

Alex M Grieve, FFTM RCPS (Glasgow)
Occupational Physician

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UPDATE**Actinic Keratosis (AK)**

People who travel to very a sunny environment are at risk of developing actinic keratoses which can be precursors to skin cancer. These are avoidable, often regress spontaneously and can be easily treated if recognised early.

Actinic keratosis (AK) is a chronic skin hyperkeratotic skin lesion that has potential to become malignant. Scaly actinic keratoses occur on sun-exposed areas such as the head, neck, back of forearms and hands. Rough, white surface scale is usually present in patches less than 1 cm in diameter and often feels gritty even before becoming visible. The European Dermatology Forum guideline recommends that all lesions should be treated, as progression to squamous cell carcinomas (SCCs) is unpredictable.¹ However, the British Association of Dermatologists guideline advocates no treatment if there is little clinical concern and the patient is not troubled.^{2,3} 15–25% of AKs spontaneously regress within a year, with only 1 in 1000 pa. progressing into SCC.²

A grading system can help with management:-

- Grade 1—slightly palpable, easier felt than seen
- Grade 2—moderately thick, easily felt and seen
- Grade 3—very thick, hyperkeratotic, and obvious.

When to refer

Refer if transformation from AK into SCC is suspected. The risk increases over time and with large numbers of lesions.

Suggestive features of SCC are:-

- recent growth
- induration (i.e. swelling or thickness of the skin lesion)
- pain and tenderness
- inflammation
- a nodular lesion
- bleeding/ulceration/non-healing
- lesions on the lip
- where there is diagnostic uncertainty
- where the patient:
 - has more widespread/severe actinic damage
 - is immunosuppressed, e.g. following organ transplantation

Management

Perform a full skin examination in patients with multiple AKs on head and neck. Patients with multiple AKs in this region are at increased risk of basal cell carcinomas. Common areas to check are the periorbital areas, cheeks, ears, and the neglected back on men and lower legs of females. Consider treating both individual AKs as well as sun-damaged skin (referred to as field damage). This will

manifest as erythema, chronic photo damage, and several actinic keratoses in close proximity. Field damage is more prone to developing into SCC and therefore treatment can reduce the risk of malignant transformation. The risk of transformation to SCC increases with greater numbers of AKs.

Treatment options can be divided into:

- topical—useful for widespread thinner lesions, such as grade 1 or 2 AKs, or where there is field damage
- ablative—physical treatments that destroy the actinic keratoses. They include grade 2 or 3 AKs, especially where patients do not wish to apply creams

Topical treatment

Topical 3% diclofenac in 2.5% hyaluronic acid gel

- used twice daily for 60 days, for areas of field damage, grade 1 AKs, and possibly grade 2 AKs
- moderate efficacy, well tolerated—usually there is less irritation and inflammation compared with other topical agents, i.e. 5-fluorouracil

5-fluorouracil

- used twice daily for 3–4 weeks
- causes a vigorous skin reaction leading to pain, itching, ulceration and even scarring. It is mandatory that patients are counselled in advance. Can be used to treat grade 1 or 2 AKs, or field damage sequentially to avoid a vigorous reaction in a large area.

5-fluorouracil 0.5% and salicylic acid 10%

- once daily for 8–12 weeks
- forms a whitish membrane overlying the AK which should be peeled off the following day after application
- used to treat an area of field damage (up to 5 × 5 cm) or 10 grade 1 or 2 AKs.

Imiquimod 3.75% and 5%

- imiquimod 3.75%
 - to treat larger areas of field damage as well as grade 1 or 2 AKs
 - used once daily for 2 weeks, then 2 weeks off, followed by another 2 weeks the whole face and scalp can be treated simultaneously
- imiquimod 5%
 - used to treat grade 1 or 2 AKs as well as small areas of field damage up to 5 × 5 cm. Used 3 times a week for 4 weeks, followed by a 1-month break then another 4-week course of treatment if needed. Can cause flu-like symptoms because of increased levels of interferon released.

Ablative treatment

Cryotherapy using liquid nitrogen is a simple, effective technique for treating a solitary uncomplicated AK. A 5-second freeze in a single or double dose will usually suffice. It is quick, convenient, and easy to administer. Patients should be counselled about pain during the procedure. Side effects including blistering, ulceration, and scarring.

Other alternative ablative treatments include surgical excision, especially if SCC is suspected. Curettage and cautery as well as shave excision are effective treatments for larger AKs.

Patient Education

Most patients only need a diagnosis, an explanation

of cause and prevention, and advice regarding:-

- reducing sun exposure
- use of sunscreens
- emollient use for symptomatic relief
- potential changes in lesions and what to look for

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Dengue Fever and Chikungunya

Two different viruses, dengue and chikungunya, are mosquito borne

Dengue fever is spread by mosquitoes that bite in the day and night. Symptoms are a sudden onset of fever and headache, and severe joint and muscle pain. Later, joint swelling, backaches and a rash may appear. Symptoms may improve after two to three days, then return after a day or so and persist for seven to ten days, sometimes much longer. Serious complications do occur, though they are not very common. It is lethal in 0.03 per cent of cases. The World Health Organisation currently estimates there may be 50-100million dengue infections worldwide every year. However, vaccines against dengue could be introduced soon.

Chikungunya is caused by a different virus, the illness has many similarities to dengue fever, but is rarely lethal or as severe. Symptoms appear between four and seven days after the infective bite, and include: high fever, joint pain (lower back, ankle, knee, wrists or fingers), joint swelling, rash, headache, muscle pain, nausea and fatigue. In some people, the joint pain may cause persisting trouble. Recovery brings immunity to further infection. Chikungunya is also spreading fast – half a million cases have occurred since 2013, in the Caribbean and Latin America. No vaccine is available at present.

Traveller advice.

1. Whenever there are biting insects around cover up.
2. Outdoors, use an insect repellent containing DEET on exposed skin and on clothing.
3. Avoid using scents – they may attract mosquitoes.
4. Use a mosquito net treated with permethrin and mosquito coils or an electric mosquito killer.
5. Spray hotel room each evening.
6. Use permethrin on clothing if spending much time outdoors.

IBM



Questions and Answers on Vaccinations

GP Dr Mandy Fry poses questions to RCGP immunisation lead Dr George Kassianos on rotavirus vaccination, tetanus injections and the nasal flu vaccination.

I understand that the evidence suggests the shingles vaccine is probably effective for three years. Why is it then offered as a once-only vaccine? Should we be offering it to other at-risk individuals or just the age groups recommended?

The three years' protection comes from the original trials of the Zostavax vaccine, as 3.09 years was the average follow-up time. The latest data we have show the vaccine to be effective at five years after vaccination, and the follow-up is continuing.¹ Other data show that statistically significant vaccine efficacy for shingles burden of illness (financial cost/morbidity/mortality) persisted into year 10 post-vaccination, whereas statistically significant vaccine efficacy for incidence of shingles persisted only through year eight.² We currently offer this vaccine once because it is a live vaccine, and so it is likely to give long immunity. At this stage, we don't know how long the vaccine-induced immunity will last. The current UK recommendation is that we offer it to all 70-, 78-, and 79-year olds (and also 71-year olds, but strangely no fee is claimable for this age 3) that do not have a contraindication to this vaccine.

Zostavax is licensed from age 50 years and over. Taking into consideration the unknown length of vaccine effectiveness, as well as the fact that the burden of disease is greater in the elderly aged 70 to 79 (less severe in those aged 50 to 69), we offer the vaccine to this age group for now. Another consideration is the fact that this vaccine is very popular in many other countries and there is only one manufacturer. Not every country can get enough vaccine.

What is the current thinking about whether to offer the HPV vaccine to boys as well as girls?

Currently, we vaccinate girls only at the age of 12-13 years. Ideally, girls and boys should receive the HPV vaccine at this age. The rationale about giving it to just girls, apart from budgetary considerations, is the hope that girls, by being protected, will reduce circulation of HPV infection among boys they come in contact with to a certain degree. But we all know life is not exactly like that. For this reason, there are now moves and discussions to offer the vaccine also to men who have sex with men. In my opinion, this vaccine should be offered to all boys and girls at 12-14 years of age.

Now that we recognise that having five tetanus injections in a lifetime is probably adequate, are there any circumstances in which additional tetanus vaccinations should be offered?

A fully immunised person is one that has received

three doses of tetanus-containing vaccine at monthly intervals, a first booster three years later, and a second booster 10 years after the first booster (five doses in total). This schedule will give the vaccinee satisfactory long-term protection.

Additional boosters should be considered routinely in individuals at high risk of tetanus infection. Intravenous drugs users are a priority group and booster doses should be given if there is any doubt about their tetanus immunisation status. Any laboratory worker who may be exposed to tetanus in the course of their work is also a high-risk patient.

A group of patients that could benefit from tetanus boosters is those who are immunocompromised – liaise with the oncologist. These patients show reduced responsiveness to tetanus toxoid vaccination or shorter duration of protection. In the UK, pregnant women receive a booster at each pregnancy between 28 and 32 weeks' gestation when they receive the pertussis vaccine.

GPs often receive enquiries from patients looking to travel abroad. We should ensure they have received five doses of tetanus toxoid in the past. Depending on the nature of travel abroad and risks at the destination (for example, where medical attention may be difficult to access), such travellers may require additional doses at 10 or more years.

I understand that in some areas all children are being offered the new nasal flu vaccine, whereas in others the vaccine is for certain age groups. Could you clarify this?

The nasal flu vaccine is offered to the following children that do not have a valid contraindication for this live vaccine:⁴

- All children aged two, three and four via GP surgeries.
- Children aged two to 17 in clinical groups at risk.⁵

These two groups of children were the national target for 2014/15. Next season, the age of children receiving the nasal flu vaccine routinely will move upwards. Here, the vaccine is given to:

- Children aged five to 10 in the same primary school pilots as 2014/15.
- Children aged 11-13 (school years seven and eight) in pilot areas around the country.
- Children aged five to seven (school years one and two). This group will not form part of the national programme and will be vaccinated through locally commissioned arrangements.

Children that have a valid contraindication to the nasal influenza vaccine should receive an appropriate

inactivated (injectable) influenza vaccine. The injectable influenza vaccine can also be offered to children eligible to receive the influenza vaccine that refuse to have the nasal vaccine.

Given that we vaccinate pregnant women against whooping cough, does that mean that all adults are potentially susceptible to this condition? Or are we simply vaccinating to give additional protection to the unborn foetus? How does this work?

In order to protect the newborn, 'cocooning' has been suggested, whereby family and household members, as well as mothers postpartum, are vaccinated against pertussis. But this does not work.⁶ What does work is transplacental transferral of antibody to the foetus. This takes two weeks to happen, so it is important to vaccinate early rather than around the delivery time, although you should never miss the chance to vaccinate a pregnant woman. The vaccine should ideally be given between 28 and 32 weeks' gestation, but any time between 28 and 38 weeks is fine. In this case, the newborn has mother's antibodies to protect at least until the five-in-one vaccine (DTaP/IPV-Hib) at two months of age.

Between January and October 2012, when the pertussis vaccine was introduced for pregnant women, 14 babies under three months died of pertussis. In 2013 and 2014, three and five babies respectively also lost their lives to pertussis. Of these eight babies, seven were of unvaccinated mothers and one of a mother vaccinated but less than two weeks before delivery.

Even previously immunised children are susceptible to pertussis infection. The acellular pertussis vaccine gives a good degree of immunity for about six years. Vaccinated children aged seven to 14 years become susceptible to pertussis infection, as shown in the 2010-11 pertussis outbreak in California. The RCGP, for a number of years now, has been calling for a booster at 13 years. Instead of dT/IPV, children could be receiving dTaP/IPV.

How and where to give vaccines to children with known egg allergy remains a perennial issue. Which vaccines can we safely give to these children in primary care? Are there any vaccines that are completely contraindicated?

Egg protein is a constituent of a number of vaccines that are manufactured using embryonated chicken eggs. If a child under 18 years of age has a history of an allergic reaction to egg (for example, hives), an influenza vaccine with a low ovalbumin content (less than 0.12µg/ml-0.06µg/ml for 0.5ml dose) can be administered.

If the allergy to egg is severe – confirmed anaphylaxis

to egg or with egg allergy and severe uncontrolled asthma – refer the child to a paediatrician specialising in allergies. Individuals aged 18 years and over could receive the ovalbumin-free influenza vaccine. For the ovalbumin content of individual flu vaccines, see table 19.6 of the Green Book, chapter 19.

All children with egg allergy are recommended to receive the MMR vaccine.⁷ Published data suggest that anaphylactic reactions to MMR vaccine are not associated with hypersensitivity to egg antigens but to other components of the vaccine, particularly gelatin.⁸ Any person with a confirmed anaphylactic reaction to egg should not receive the yellow fever vaccine.

I understand that the WHO now feels that a single vaccination is sufficient for lifetime protection against yellow fever. What does this mean for travellers who need to provide a certificate proving their immunisation history in order to enter certain countries after visiting endemic areas?

In May 2013, the WHO Strategic Advisory Group of Experts suggested that a booster dose of yellow fever vaccine 10 years after a primary dose is not necessary. This is because the live yellow fever vaccine induces long-term immunity, more than 35 years, and probably for life.

The current validity of the yellow fever vaccination certificate is 10 years. From June 2016, the validity will change from 10 years to lifelong.

In April 2014, the Department of Health and Public Health England published new recommendations and the appropriate chapter in the Green Book was updated to reflect these. Until June 2016, a booster dose 10 years after the primary dose is recommended for those who need a valid international yellow fever certificate, and those who received the initial dose of yellow fever vaccination when aged less than two, during pregnancy, while infected with HIV, when immunosuppressed, before undergoing a bone marrow transplant, or where there is concern about high risk of exposure to yellow fever infection.

Sometimes it is more cost effective to offer travellers combined vaccinations rather than single components, even if they are up to date with some of the constituent vaccines. Are there any downsides to this approach?

The rationale behind combining travel vaccines is that they may allow fewer visits to the travel clinic, the number of injections are reduced, less time is required at the clinic, and compliance might be increased. Of course, these vaccines give dual protection against two infectious diseases. But administering combined vaccines can be more costly than monocomponent vaccines.

Update: *continued*

The downside is that the clinician needs to know very well the antigen content in each of the vaccines they use. If an adult patient, for example, had one of three doses of Twinrix, they cannot receive a dose of the monocomponent hepatitis A vaccine in order to complete the hepatitis A immunisation schedule. This is because Twinrix contains half the hepatitis A antigen the monocomponent vaccine has. Such a traveller should complete the Twinrix course of three vaccine doses.

In the case of the first dose of the combined hepatitis A and typhoid vaccine, the traveller needs the monocomponent hepatitis A vaccine to complete the hepatitis A immunisation six to 12 months later, and the monocomponent typhoid vaccine as a booster after three years.

Of course, if three or more years have elapsed since the first dose of the combined hepatitis A and typhoid vaccine, another dose of this vaccine will complete the hepatitis A immunisation schedule and be a booster for typhoid. The clinician needs to know their vaccines well.

What is the risk of intussusception with the new rotavirus vaccination?

Intussusception is a rare form of bowel obstruction in which a proximal segment of the bowel prolapses into a more distal portion in the same manner as a telescope. In children under three years of age, intussusception is the most common cause of bowel obstruction.

Most cases are seen in male infants below one year of age. Look for the classic triad of abdominal pain, bloody diarrhoea and a palpable tender mass. Up to one in five cases are idiopathic, while inflammatory bowel disease, Meckel's diverticulum, benign and malignant bowel lesions, jejunostomy, intestinal tubes and GI surgery can be underlying causes.

In 1999, the RotaShield vaccine was withdrawn in the USA because it was associated with approximately one case of intussusception in 10,000 vaccine recipients.⁹ The risk was greatest three to seven days after the first dose. This is the peak period of replication of the vaccine virus in the intestines.

For this reason, the two newer vaccines, RotaTaq and Rotarix, set up clinical trials that involved in excess of 60,000 infants. No elevated risk was found during the 42-day and 30-day periods after vaccination, and the WHO recommended both vaccines.^{10,11}

The vaccine we use in the UK was tried in Mexico (285 case patients) and Brazil (330) with 2,050 controls.¹² A

combined annual excess of 96 cases of intussusception in Mexico (approximately one per 51,000 infants) and in Brazil (approximately one per 68,000 infants) was attributable to the vaccine – and of five deaths due to intussusception.

But the vaccination prevented approximately 80,000 hospitalisations and 1,300 deaths from rotavirus diarrhoea each year in these two countries.

Dr George Kassianos is a GP in Berkshire and RCGP immunisation lead. He is also the president of the British Global and Travel Health Association

Dr Mandy Fry is a GP in Cirencester, Gloucestershire

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Intestinal Helminths

The large **roundworm** *Ascaris lumbricoides* is sometimes passed spontaneously by mouth or anus but is more often diagnosed by finding eggs in faecal specimens. Since even a single worm may rarely enter and obstruct the bile duct, patients with roundworm should always receive treatment. Piperazine is a well tried treatment at a single dose of 4g of piperazine hydrate equivalent for an adult given as tablets, granules, or an elixir.

Hookworm infections due to *Necator americanus* or *Ancylostoma duodenale* are often encountered in immigrants or travellers, but rarely cause problems. Infections are usually far too light to cause iron deficiency anaemia. If an anaemic patient with many hookworm ova in the stool presents to the clinic, the anaemia should be treated with oral iron for about 3 months after anaemia has been corrected. Hookworm infection can be eradicated using mebendazole.

The whipworm *Trichuris trichuria* which lives in the large bowel is usually harmless, but can cause anaemia, dysentery and stunting of growth in young children with very heavy infections. Most patients who are aware that they have whipworm infection wish to be treated and fortunately mebendazole is fairly effective in the standard 3-day dosage regimen.

Strongyloides stercoralis is an unusual worm in that it can multiply in the body. The female worms produce living larvae which reinfect the patient by penetrating the perianal skin or, in the presence of an immune defect, the bowel wall. Patients once infected often remain infected for life because of auto-infection. Diagnosis of strongyloidiasis depends upon finding larvae in fresh stool specimens by microscopy and culture although excretion of larvae is often intermittent, or on serological tests for antibodies by ELISA tests. The best treatment for strongyloidiasis is thiabendazole which is given by mouth at a dose of 25mg/kg twice a day for 3 days. This gives a cure rate of about 80% in those with a normal immune system.

Threadworms

While the threadworm, *Enterobius vermicularis*, remains the only prevalent helminthic parasite in the UK, contemporary travel assures periodic contact with worm problems from tropical and semi-tropical climes. The threadworm lays its eggs around the anal orifice so that nocturnal anal scratching is common. In females, the genitalia can be invaded by the enterobius remain very common in the British population, especially among pre-school children. They cause a disproportionate amount of worry since they may be difficult to eradicate permanently. Adult worms only remain in the gut for a maximum of about 6 weeks. The females undertake a suicide mission to lay their eggs on the perianal skin after which they die. It is sensitivity to the products of the female worms which produces the characteristic perianal itching. The large number of eggs laid may reinfect the person either directly by contaminating fingers

which are then introduced into the mouth, or by inhalation in dust in which the eggs commonly remain visible for several days. Infection should always be considered as a family affair since other members of the family are usually infected even when they have no symptoms and a failure to treat them all leads to recurrence. The diagnosis is confirmed by sight of worms on the perianal skin or in a stool specimen or, by taking tape swabs from the perianal area in the morning. As egg laying is often intermittent, at least 3 morning specimens should be examined when necessary.

Tapeworms In *T. solium* infections with the adult worm, symptoms are similar to those with beef tapeworm but there is the added danger of auto-infection with eggs by mouth which give rise to larval infection – cysticercosis. Cerebral cysticercosis from larval *T. solium* may present with convulsions, a syndrome mimicking a cerebral tumour or, in massive infections, progressive dementia.

Trematode (Fluke) infections Schistosomiasis or bilharzia due to infection with *Schistosoma haematobium* causing urinary schistosomiasis or *S. mansoni* causing intestinal schistosomiasis is quite often found in the UK travellers who have been swimming in African lakes or rivers. Most infections are light and asymptomatic but the first infection with intestinal schistosomes sometimes results in an acute febrile illness known as Katayama syndrome. The diagnosis is confirmed by finding eggs in the stool, urine or in squash preparations of rectal mucosa. Serological tests are helpful but in my opinion they are not sufficiently specific to be used as a basis for treatment.

The common liver fluke (*Fasciola hepatica*) occurs in people who have eaten contaminated watercress. Pain in the liver area, episodes of cholangitis, anaemia and eosinophilia suggest the diagnosis which is confirmed by finding eggs in stool or duodenal aspirate.

Fasciolopsis buskii is an intestinal fluke common in Bangladesh and some other parts of Asia. Filarial infections Onchocerciasis caused by *Onchocerca volvulus* produces skin itching and eye lesions related to death of microfilariae in these structures. The adult worms live in the subcutaneous tissues and sometimes are walled off in fibrous subcutaneous nodules. The diagnosis is confirmed by finding microfilariae in skin snips or by slit lamp examination of the anterior chamber of the eye. Loiasis is another filarial infection transmitted only in west and central Africa. Symptoms are usually those of recurrent slightly itchy subcutaneous swellings of the hands, arms or of other parts of the body known as Calabar swellings. Sometimes the adult worm crosses the conjunctiva of the eye where it can readily be seen. The diagnosis is suggested by a massive eosinophilia and can often be confirmed by finding typical microfilariae in day-time blood specimens.

CISTM 2015 - Quebec

Brief Report on selected Plenary Sessions

D Evans, L Goodyer

Rabies- Estimating risks and Optimising Vaccines

It is acknowledged that the risk to humans being exposed to rabies is increasing especially in the areas of India and SE Asia. The first speaker argued that the vaccination of dogs was better both, clinically and financially, as a control method rather than vaccinating humans. A second speaker proposed that the presence of bats in a bedroom does not automatically provide a high risk for rabies and that actual risk is statistically very small with the risk to travellers being exaggerated. The final speaker proposed that there was evidence to support a post exposure schedule of 4 sub dermal vaccinations given in 2 visits. This is current not accepted by WHO, however the antibody response is similar to the traditional treatment and provides improved patient compliance if they fail to return for the traditional full post exposure course.

Providing Care from a distance- The role of New Technologies

Presenters focussed on the topics of connectivity, mobility and collaboration. The definition of task shifting was defined using media to involve another HCP through the authorisation by a doctor, using an electronic medical record. Telementoring was defined as the diagnosis at a distance and may involve the use of other technology such as cameras. A Swiss telemedicine centre highlighted the service that can be offered from teleconsultation through to emergency care, working with a collective of doctors to provide a government supported service across 24/7, in many disciplines and across several languages. This telemedicine centre worked across other healthcare professionals to provide a treatment plan, a mobile app for patient access and was supported by mobile mentors. To support the decisions made the electronic records that were maintained included the taped recordings of all telephone calls, photographs and pictures only sent over a secure network and emails being restricted until the recipient had received a telephone call from the sender prior to being sent.

Social Media in the practice of travel medicine

The presenter had designed an app that was supported on most electronic platforms program titled - Vaccine Record for Travellers that allows the traveller to copy details of all vaccinations into an electronic form and also store photos of important documents such as YF certificates. The growth in Internet usage has been recorded as +3000% in Africa and +6000% in India since 2013. The best channels for conversation with the travellers was identify as using

Twitter (fastest) and Blogging for less urgent information. The use of Facebook was discouraged as the owners of the platform we're currently changing the model and this would become a chargeable cost.

In and Outs of Traveller's Diarrhoea

The new term of human microbiota was defined as all the microbes in the gut habitat that provide the composition to the of the gut flora. The term of microbiome was defined as different as this includes the genomes of all the microbes in the microbial gut pool. Evidence was produce to indicate that microbiota development did not convert to the same levels in a child until the teenage years, and therefore the risk factors would be different between children and parents. The second speaker discussed the evidence available for probiotics and concluded with a study of 3000 patients that there was no benefit of the probiotics. The final speaker focused on the use of oral antibiotics for the control of TD. They discussed a recent study finding that those travellers in a cohort of 430 were more likely to test positive for harbouring extended spectrum beta lactamase producing (ESBL) enterobacteriaceae on return from Asia. The presenter suggested that there was an argument for not using antibiotics for TD self treatment, but this must be balanced against the benefits.

Optimising migrant health- the role of travel medicine

The first speaker reviewed the intersection of migrant health and travel medicine, defining migration and the pathway reasons of why it occurs, using evidence from the World Migration Report. This moved on to recognise the increasing impact of global migration on human health and the need to protect both themselves and the community of the host country. This led into a discussion on the role of the practitioner as a health educator, covering all generations and training peers. The second speaker focussed on VFRs and produced statistics that indicated on average the VFR traveller was away for 36 days compared to 16 days for routine travellers. The impact of VFR on national statistics was highlighted by results that in Australia 91% of all imported cases of Hep A were from a VFR; in India 46% of VFR in the age range 15-24 years, had no HepA immunity and Geosentinel data showed that there was an 8 times greater risk of a VFR acquiring malaria than an ordinary traveller. Some of the reasons for these variances were VFR had to use food and water sources provided by the family, a misconception that they were already immune and not understanding the risks that HepA and HepB were different.

Yellow Fever and Japanese Encephalitis

Presentation given by members of the Australian public health team. YF immunogenicity has been investigated and of the 2 strains of the virus around 99% is achieved after 28 days and 80% after 10 days, explaining the 10 day rule. A recent review has indicate that the best response is seen in males and Caucasians; and a CDC count of 500 was probably safe although the immunogenicity is lost quicker.

Australia has received its first case of JE this year with a traveller who had a 7 day trip to Bali. Due to the mosquito/virus life cycle the risk is defined as related to the amount of animal contact, although the rarity of the disease also needs to be considered. Statistics produced indicated that 60% of reported cases were tourists, 65% of these had been in the infected area for greater than 1 month and 27% for 2-4 weeks. The Australians now recommend the following vaccination guidance, vaccinate all those who will be in Asia for >1 year, >1 month in rural endemic areas in the wet season and those camping or in budget accommodation and >1 month in Papua NG and Torres Straight Islands. WHO still recommend vaccinate all travellers < 1 month in rural endemic areas but planning outdoor activities during the rainy season. A new single dose vaccination has been made available in Australia (Imojev) which has a seroconversion of 99% (Ixio 98%) and boosted after 5 years. It can be given safely with YF.

Evolving and Emerging Respiratory Infections

The session began with an overview of outbreaks. We were reminded of SARS controlled by good barrier practise in hospitals. Avian flu continues to be reported and a particular epicentre is now China where poultry farming has grown enormously in recent years. We were also reminded that in the equator flu can be present all year round and to consider vaccination in those individuals. There was a presentation from Saudi Arabia where the Middle Eastern Respiratory Syndrome (MERS) was first identified and outbreaks continue to appear. The animal vectors for this serious coronavirus infections are bats and camels, though the latter are probably the source of most primary cases. The first recognised case in a human was in 2013 where a camel owner died 10 days after presentation. The infection if caught directly from animals has a high mortality, but if contracted via human transfer appears to be less serious likely due to a lower viral load in that circumstance. There have been a number of outbreaks in hospitals amongst health care workers treating MERS patients, probably because of late diagnosis before adequate quarantine arrangements could be instituted. Cases have been noted in 24 countries.

Can malaria standby treatment replace chemoprophylaxis in low risk areas?

A long standing debate concerns the use of standby treatment for malaria instead of chemoprophylaxis. There is agreement that if visiting higher risk areas for falciparum malaria, such as in Sub Saharan Africa, chemoprophylaxis is always recommended. However some countries, such as Switzerland, recommend no chemoprophylaxis is given to travellers visiting low risk areas, and carrying a malaria standby treatment such as Malarone or Riamet. They would recommend such an approach to many parts of India, yet for those same areas the UK the recommendation is bite avoidance alone and the US would advise chemoprophylaxis. Three experts presented a case either for or against standby treatment in these circumstance and the audience were asked to vote, the result: 65% in favour of standby.

Can Travel Medicine Recommendations be Evidence Based?

The Canadians have been putting a great deal of resource into making evidence based recommendations using the 'GRADE' system which was developed by Prof Guyatt, a Canadian physician and expert in Evidenced based medicine. He described the system and how it allowed for collecting and systematically analysing evidence and then identifying the strengths and limitations of that evidence in order to come to a strong or weaker recommendation for practice. The example of typhoid was used, where the outcome was a strong case for use in India but but weaker elsewhere. A particularly useful aspect though was that the recommendation in the areas outside India was 'conditional', in that there was insufficient data to assess potential higher risk groups e.g. VFRs, thus still allowing for decisions based on individual risk assessment. In addition they advocated the concept of personal preference, in that if the traveller was aware of the evidence yet was very risk adverse and requested vaccination these wishes should also be considered.

Posters

Two very popular posters at the conference reported on some initial work indicating ways in which rabies vaccines could be used to give protection much closer to the point of travel if there was not time to give the usual schedules. One seemed to indicate that using both the Japanese encephalitis vaccine and rabies vaccine at the same time allowed for an accelerated 1 week pre-exposure course for rabies. The other demonstrated that multiple intradermal doses of rabies vaccine injections in one visit could give adequate protection for travel. Further evidence to support these findings would be very useful in clinical practice.

CASE STUDIES

First Imported Case of Chikungunya fever in Córdoba, Argentina

P Sánchez, M Garzón, A Zarate, J Caeiro

Abstract

Chikungunya is a mosquito-borne viral disease. In late 2013, Chikungunya virus was found for the first time in the Americas on islands in the Caribbean. We report the first case of imported Chikungunya in Córdoba, Argentina.

Introduction

Chikungunya virus is an arthropod borne virus disease transmitted by the mosquitoes *Aedes aegypti* and *A. albopictus*. It is characterized by fever associated with intense headache, polyarthralgia, myalgia and a maculopapular rash. Laboratory studies show leucopenia.

The name Chikungunya originates from a Tanzanian tongue which translates into "that which bend up" as it was first described in Tanzania, Africa in 1952¹. There have been outbreaks in Africa, Europe, Asia, and the Pacific and Indian Ocean². Towards the end of 2013 there were autochthonous cases in the Western Hemisphere, including the Caribbean, mainly Dominican Republic, Haiti and El Salvador and the Americas³. Similar to dengue infection Chikungunya is an antroponosis³.

Although there are *Aedes* mosquitoes present in Córdoba, Argentina there have been no cases reported.

Located in the central region, Córdoba is one of the 23 provinces that make up the Republic Argentina, bordered to the north by the province of Catamarca and Santiago del Estero, east to Santa Fe, southeast with Buenos Aires, the south with La Pampa, and west to San Luis and La Rioja. Its capital is the homonymous city.

With 165 321 km², it is the fifth largest province in the country, occupying 5.94% of its total area. According to the 2010 national census with a population of 3,308,876 inhabitants, which is the second most populous province of Argentina. Nearly 40.18% of the population is crowded into the provincial capital, with 1,329,604 inhabitants, making it the second largest city in the country after Buenos Aires. (Fig.2)

Case report

We present the first case of imported Chikungunya fever in Córdoba, Argentina. A 36 year-old pregnant woman was evaluated for fever after arriving from a trip to Dominican Republic. Symptoms began with fever, polyarthralgia, headache, retro-orbital pain and rash on the day of departure July 15th 2014. The laboratory results showed leucopenia. She received treatment with paracetamol for pain. After 48 hours, she had persistent joint pain and with leucopenia. Serology test results were negative for CMV, EBV, HIV, hepatitis B, C, parvovirus B19, dengue and rubella. She tested positive for pregnancy and a new rash developed 14 days after arriving back in Argentina associated with arthralgia in the wrists and knees bilaterally.

A Serology test for Chikungunya virus was positive with IgM by enzyme-linked immunosorbent assay (ELISA), with confirmation of a second positive sample (Neutralizing antibody test). She recovered uneventfully.

This is the first case report of imported Chikungunya fever in our province. It is important to diagnose the viral infection in travelers to endemic countries. Argentina has only imported Chikungunya fever case according to a recent report from PAHO/WHO on February 2015.

There were 123 cases of Chikungunya fever notified to the public health authorities in Argentina in 2014. 28 cases were probable (IgM antibody positive), 19 were confirmed, and 23 were ruled out. There are 53 cases been studied. All probable and confirmed cases were imported after a recent travel to an endemic area⁵.

Being able to identify cases is important since Córdoba has *Aedes aegypti* mosquitoes and would



Figure 1:

Expansion of chikungunya fever from the Caribbean, from December 2013 until June 2014.

allow people to avoid mosquitoes bites. Our patient was pregnant, so close follow up was carried out as recommended ⁶.

Clinicians need to be alert for new cases in patients with high fever, arthralgias and rash coming from endemic areas such as The Dominican Republic⁷. Public Health officials should be notified of any suspected cases in order to prevent transmission and control vector populations.

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Nodular Skin Lesions After a Backpacking Trip in Brazil

N Shah, A Greenbaum, L Eisenstein, R McKenzie

Often, a detailed travel history can help shed light on the underlying diagnosis in patients who present with unusual skin lesions. A previously healthy 25-year-old college student presented with nodular skin lesions on both arms, which had gradually increased in size over the preceding 2 ½ months. Several weeks before the lesions developed, he had hiked in the rural Chapada Diamantina region of Bahia in northeast Brazil. During this trip, he slept outdoors in a sleeping bag without a tent. The lesions were non-painful and non-pruritic and he recalled one week of low-grade fevers and myalgias 2-3 weeks after the lesions appeared, but reported no other symptoms at that time.

On physical examination he was afebrile. The two lesions on his right upper arm and five lesions on his left arm and wrist were 1.0-1.8 cm in diameter with shallow ulceration and a small amount of eschar in the center, along with minimal surrounding scale (Figure 1). There were bilateral 1 to 2-cm, non-tender axillary lymph nodes. A complete blood count and chemistry panel were normal. A skin biopsy was performed. Giemsa stain revealed a dense interstitial infiltrate of histiocytes and plasma cells with perivascular lymphocytes. Some histiocytes contained small circular-shaped organisms with an eccentric basophilic nucleus.

The patient's travel history and skin lesions raised concerns for an infectious etiology, namely cutaneous leishmaniasis. A biopsy specimen sent to the Center for Disease Control and Prevention (CDC) was positive by PCR and culture for *Leishmania braziliensis*. No neoplastic cells were noted and no other abnormalities were detected on skin biopsy. The patient recalled being bitten by insects,

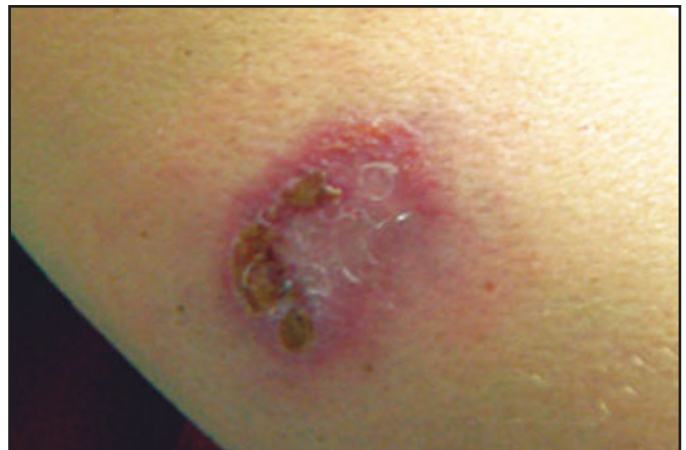


Figure 1:

presumably sandflies, while camping in rural Brazil.

Leishmaniasis, an intracellular protozoal infection, is caused by a variety of species that vary based on geography¹. Treatment of leishmaniasis is dependent on several factors, including extent of disease, geographic region of infection, and species causing infection^{1,2,3}. Species identification is especially important for treatment of cutaneous infection acquired in the New World. *L. braziliensis* is one of the most common species causing infection in South America, especially in Bolivia, Peru and Brazil⁴. Cutaneous disease caused by *L. braziliensis* and other members of the subgenus *Viannia* may progress to more serious, sometimes destructive, mucosal leishmaniasis, also called espundia^{2,3}. Infection with

Nodular Skin Lesions After a Backpacking Trip in Brazil: *continued*

species from the *Viannia* group is an indication for systemic treatment of cutaneous leishmaniasis. Other indications are large lesions (>4-5cm); multiple lesions; regional adenopathy; cosmetically or functionally important locations such as face, fingers, or joints; and immunocompromise^{2,3}. Parenteral medications available in the US include the pentavalent antimonial sodium stibogluconate, which is available via an Investigational New Drug application from the CDC; pentamidine; and amphotericin B. Experience is increasing with liposomal amphotericin as a less toxic alternative. This medication targets macrophages, the cells parasitized by *Leishmania*. Approved for treatment of visceral Leishmaniasis, liposomal amphotericin was effective in several case series for treatment of mucosal disease⁵ and cutaneous disease^{6,7} including that caused by *L. braziliensis*^{6,8,10}. In March 2014, the Food and Drug Administration approved the oral agent miltefosine for treatment of cutaneous leishmaniasis caused by three particular species, all three of which are New World species in the *Viannia* subgenus—namely, *L. (V.) braziliensis*, *L. (V.) panamensis*, and *L. (V.) guyanensis*¹⁰.

Given his diagnosis of cutaneous leishmaniasis with a species that can progress to mucosal leishmaniasis months to years after infection, he was treated with a 7-day course of intravenous liposomal Amphotericin B. Three months later, his lesions were flat and smaller, and he remained afebrile and symptom-free otherwise.

Our case highlights the importance of considering the diagnosis of leishmaniasis for chronic nodules or ulcers appearing after travel to endemic areas in Central America, South America, the Mediterranean region, and parts of Africa and Asia. Risk is increased in backpackers and military personnel. Speciation is important to direct therapy. The species can be determined by PCR or culture or, in the absence of these techniques, estimated based on geographic location of travel. For many South American species, systemic treatment is recommended to reduce the risk of progression to mucosal leishmaniasis, which may occur months or years later.

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In the News

Sea Travel

Parts of Norway's remote Svalbard archipelago will be off limits to most cruise passengers from January, after a ban on heavy fuel oil (HFO) is fully implemented. The number of Europeans and North Americans taking a cruise has levelled off in recent years. Britons opting for a holiday at sea fell by 4.8 per cent last year compared with 2013. Some of this related to the loss of the *Concordia*.

Boarding mishap

A passenger on Cunard's *Queen Elizabeth* died following an accident while boarding from a tender (the small boats that carry passengers from ship to shore or port when the cruise ships anchor at sea). Crew members jumped in to rescue her, but she died. Gangway ramps can, on occasion, break free of either the ship or the tender, causing passengers or crew to fall into the sea. Tender boats rise and fell several feet on the swell to align with the ships gangway.

According to the website cruiseshipdeaths.com, 14 people have died on cruise ships this year, the majority from natural causes or as a result of falling overboard.

Chinese cruise ships

Almost three quarters of all cruise passengers in the future could be Chinese. A river cruise ship has recently capsized in a storm on the Yangtze river with the deaths of several hundred passengers.

Hong Kong Tourism Board (HKTB), estimated that China had the potential to deliver 83 million cruise passengers a year. With 23 million people around the world expected to take a cruise in 2015, China would completely dominate the industry.

Acute mountain sickness risk

Many mountain climbers risk AMS when they climb above 4,000 metres altitude. Mt Blanc is 5,000 metres high and Mt. Kilimanjaro a popular African climb well over that height.

Mt Kilimanjaro is estimated to have 35,000 climbers attempting the summit annually. AMS is a problem.

Mt Blanc challenged by 25,000 climbers per year and 100 summiteers on Mt Everest. on good days.

UK Health Resources

Research comparing Britain with 30 Organisation for Economic Co-operation and Development countries places it 28th on the league table when it comes to healthcare resources.

There were just 2.8 doctors per 10,000 population in the UK in 2012, compared with an average of 3.2 doctors in other well-off OECD countries, analysis by the Economist Intelligence Unit shows.

The UK has 8.2 nurses per 10,000 population, compared with an average of 8.9 nurses among the 30 countries examined.

The statistics also show the UK has fewer hospital beds per head, with just 2.8 hospital beds per 1,000 population against an OECD average of 4.8.

For population health – in a ranking considering life expectancy and the impact of disability and disease on wellbeing – Britain came 19th.

French doctors strike over NHS-Style change

French doctors have been striking over NHS-Style change to the country's health service. They protest at reforms modelled on the NHS, which they claim will create too much red tape. The changes would adopt the NHS principle of "free at the point of delivery". They are part of wider savings to the £133.5 billion health budget, which will be £7 billion in the red this year.

At present, patients pay £23 for each GP visit and reclaim roughly two thirds of that sum from the state and the remainder from their work or private insurance scheme.

In future, such visits would be free and doctors would have to claim the money back – a move they fear will lead to delays in payment and more red tape.

Infection

Ebola Orphans

A report by the Street Child charity, has for the first time documented the shocking extent of the Ebola orphan crisis. More than 12,023 children have been orphaned by Ebola in Sierra Leone. An estimated 25,000 have been orphaned across West Africa as a whole. Around 17 per cent of them live in a household with five or more other orphans. Orphans have an average age of nine. Nearly 60 per cent live in isolated rural settings, making it hard for aid workers to reach them.

Many of the orphans have not only experienced immediate problems such as hunger, but have also been stigmatised by their wider community. Such is the fear of infection in Sierra Leone's small towns and villages that neighbours are shunning the children of the dead, ignoring the long established African tradition of taking orphans into your home.

Faecal Foulting

Before the earthquake struck the base camp area in Nepal, human faeces was blighting the base camp and slopes of Everest. The world's highest peak could become an open cesspit as commercialisation is destroying the environment of the mountains. The sheer number of people who are now making ascents of the mountain is causing the problem. There are no real toilet facilities at the base camps.

2014 saw the introduction of a new law requiring

In the News *continued*

climbers to bring down some of their waste, but enforcing such rules on the mountain is a problem. There needs to be some agreement with those companies providing the guiding, to ensure that they will take greater responsibility for managing their clients in the mountain environment.

Insurance

Insurers are cynically looking for excuses to avoid paying out on legitimate travel health insurance claims, according to statistics from the Financial Ombudsman Service, independent arbitration service. Insurers' travel insurance policies are written in such a way as to allow for more disputes, and insurers are often actively hunting for reasons to decline claims. 50% of complaints are found in customers' favour, compared with around a third for other types of general insurance.

The Aircraft Environment

EasyJet cabins are about to get even more cramped. Changes mean more passengers share the same cabin space, with a higher seat count. The space between seat and the same point on the chair in front may be affected. There is a general trend among manufacturers and airlines to cram extra passengers on board their aircraft. Boeing and Airbus are working on new models that will reconfigure the traditional cabin, mainly by offering more seats. They will squeeze as many passengers as possible into available space. There will be often, smaller lavatories, with one wall of the cubicle deliberately curved to accommodate the backs of the seats on one side.

A survey by Business Traveller in 2012 listed Ryanair's seats as the tightest offered by 32 major airlines – at 16in. The same figures showed that British Airways economy seats could be as wide as 18in, with those on Virgin Atlantic stretching to 19in. Cramped seating conditions risk DCT. A 2012 report by CNN revealed that while the average width of the American posterior in the Sixties was 14in, in the second decade of the 21st century it has crept up to a more generous 15in.

Civil Aviation Accidents

Several high profile incidents occurred in 2014. Disasters involving two Malaysian Airlines resulted in the deaths of 537 people, and with the loss of an AirAsia flight another 162 passengers died. According to the website, planecrashinfo.com 1,021 aviation deaths have been registered for 2014. According to Flightglobal, in 2013 there was one fatal accident per 1.9 million flights.

The past decade has however been the safest in aviation history, with 7,490 deaths, while 2013 was the safest year on record with only 265 deaths. This is encouraging as there are more aeroplanes in the sky

than ever before.

In Britain, 25,551,200 passengers flew in in 1980, compared with 118,304,674 in 2013.

Aerotoxic Syndrome

A coroner has said. "Aerotoxic syndrome" ie. toxic fumes in the cabin air, pose a health risk to frequent flyers and aircrew." It is the first time a British coroner has come to the conclusion that damage is being done by cabin air, something the industry has been denying for years.

A solicitor is acting for approximately 50 aircrew allegedly affected by the syndrome, working for airlines including Emirates, Cathay Pacific, Etihad, Thomas Cook and EasyJet. He is also representing passengers.

Commercial passenger planes have a system which compresses air from the engines and uses it to pressurise the cabin. It can malfunction, with excess oil particles entering the air supply. In a confined space, with the air recirculated, the cumulative effect on frequent flyers, especially aircrew, can be harmful, according to the coroner.

In the report, sent to chief executive of BA and the chief operating officer of the Civil Aviation Authority, the coroner raises five "matters of concern", including that "organophosphate compounds are present in cabin air"; that "the occupants of aircraft cabins are exposed to organophosphate compounds with consequential damage to their health" and that "impairment to the health of those controlling aircraft may lead to the death of occupants". He also says there is no real-time monitoring to detect failures in cabin air quality and that no account is taken by airlines of "genetic variation in the human species that would render individuals intolerant of the exposure".

What is it?

It is an illness caused by exposure to contaminated air in aircraft – known as "fume event".

Commercial passenger jets have a system that compresses air from its engines and uses it to pressurise the cabin. However this can malfunction, causing excess oil particles to enter the supply. Aircrew who spend considerable periods on board aircraft, are the most vulnerable, according to experts.

A slight leakage of oil into the cabin can sometimes be detected by an odour that has been described as similar to sweaty socks, wet dog or vomit, according to the Aerotoxic Association, a campaign group. If a "fume event" occurs, bluish haze or smoke in the cabin may be visible. There are no chemical sensors in modern jet aircraft.

The International Transport Federation's (ITF) air quality working group is met to discuss the problem of contaminated air on commercial aircraft and at

airports. Official records from the Civil Aviation Authority show that oxygen masks are being used by pilots and crew at a rate of at least five times a week to combat suspected "fume events". The official safety watchdog, the Air Accident Investigation Branch, has called for aircraft to be fitted with equipment to detect any contamination of cabin air. The Government's position is that "concerns about significant risk to the health of airline passengers and crew are not substantiated".

UV radiation in pilots' cabins

Another aircraft hazard for pilots has been investigated. A study Published in JAMA Dermatology has found that spending 56 minutes behind the controls at 30,000ft is the equivalent of 20 minutes on an average-strength sunbed. Researchers

at the University of California fear pilots may be at risk from skin cancer by chronic exposure to UV rays. The authors of the study also suggest the levels could be higher when pilots are flying over thick clouds and snow fields, which can reflect UV radiation. Airplane windshields do not completely block UV-A radiation and therefore are not enough to protect pilots.

For every additional 2,952ft above sea level, there is a 15 per cent rise in intensity of UV radiation. At 30,000ft, where most commercial aircraft fly, the UV levels are more than twice that of the ground. Authors recommend the use of sunscreens and periodical skin checks for pilots and cabin crew. UV-A radiation can cause DNA damage in cells and its role in melanoma is well known.

IBM

Anecdote - Herbal Medicine

S E Howarth

I travel extensively in Asia for my work on irrigation in fragile states. I developed psoriasis some years ago and local colleagues often offer medical advice on good effective treatments. Colleagues in China recently took me to see a traditional practitioner who prescribed substantial quantities of dried vegetable material.

I was instructed to boil this up for 20 minutes. It bubbled and bubbled and stank out the kitchen so I retreated to the barbeque and cooked it up in the garden. The tar-colour fluid that came off the mixture tasted foul. It seem to have a good effect and started to reduce my scaly rash.

I had only bought a two week supply – which filled my suitcase – I was a bit sceptical and wasn't sure what UK customs would make of it, but I could see the signs of good progress by the end of that trial period. I did discover where I could buy more in

London but didn't continue the treatment then as I was offered a course of UVB phototherapy at the hospital. This cleared my skin but three months on it has gone back to its original itchy state. I may buy the Chinese medicine again. Inevitably my British dermatologist was dismissive of the herbal brew but he didn't see the improvement in my skin achieved by drinking the Chinese concoction.

Chinese colleagues continue to look after me and on a different trip I had a cold and was given ampoules of 'medicine' that I decided not to swallow, preferring to sleep it off on a 48-hour train journey. It is hard to know the contents of these preparations.



Journal Watch

Edited by M Townend & J Moore

Rabies

The prevention and management of rabies.

Crowcroft NS, Thampi N. BMJ 2015;350:g7827 doi:10.1136/bmj.g7827

This paper appears as a Clinical Review in the Education section of the BMJ of 17 January 2015, pages 27 to 30. It gives an overview of rabies, its transmission and its global distribution. It goes on to outline prevention by pre-exposure vaccination and the routes of administration of rabies vaccine, and post-exposure measures including wound cleaning and the various recommended schedules for post-exposure vaccination.

Comment

This paper provides an extremely useful review of rabies and provides also includes additional sources of information for both health care professionals and the public.

HIV

Cambodia finds 212 with HIV where unlicensed medic operated.

Thui PC, vi Thomson Reuters, 10 January 2015

This is not a published paper but a news report from Thomson Reuters, but nevertheless it merits inclusion here. The report states that Cambodian health authorities found 212 villagers infected with HIV in a district where an unlicensed "medic" had been practising. He was subsequently charged with murder, as it was suspected that he had been responsible for spreading HIV by using contaminated equipment. Injections and intravenous infusions appear to have been the means of transmission of infection.

Comment

This report has implications for both local people and or travellers. For local people it highlights the necessity for close control of practitioners of all kinds, but also the health inequalities present in many countries that are likely to lead to financially disadvantaged patients seeking treatment from the only sources that they are able to afford and which may well be of dubious quality. For travellers it highlights the need for extreme care in using medical facilities in resource-poor countries and the need for carrying sterile kits in such circumstances.

Seizures, cysticercosis and rural-to urban migration.

Gonzales I, Miranda JJ, Rodriguez S, Vargas V et al. Trop Med & Int Health doi: 10.1111/tmi.12456

The authors investigated the prevalence of seizures, epilepsy and positive cysticercosis serology in three groups in Peru: rural dwellers in a cysticercosis-endemic setting, rural-to-urban migrants and urban

shanty town dwellers. Prevalence of epilepsy in these three groups was 15.3/1000 in urban dwellers, 25/1000 in rural dwellers and 35.6/1000 in migrants. Positive cysticercosis serology was found in 2% of urban dwellers, 18% of rural dwellers and 13.5% of migrants. In rural dwellers there was a strong correlation ($p=0.011$) between positive serology and seizures, but this was not found in migrants or urban dwellers. In the study population as a whole there was a strong correlation ($p=0.001$) between strong seropositivity and epilepsy. The authors conclude that not only international migration but also internal migration within a country can affect patterns of endemicity. They also conclude that neurological complications of cysticercosis can outlast the antibody response for many years after rural-to-urban migration.

Comment

Cysticercosis is a parasitic infection caused by larval cysts of the pork tapeworm *Taenia solium* in brain, muscle, or other tissue, and is a major cause of adult-onset seizures in resource-poor countries. Cysticercosis is acquired by faecal-oral transmission from a person with an intestinal tapeworm and not by eating undercooked pork, which can result in intestinal tapeworm if the pork contains larval cysts. Pigs become infected by eating tapeworm eggs from the faeces of a human infected with a tapeworm.

This paper addresses patterns of endemicity within a single country, but it should also alert those dealing with migrant populations, for example in the UK, to the possibility of cysticercosis in migrants from resource-poor countries, especially if they show evidence of neurological problems such as epileptiform seizures. This study also demonstrates that those with such symptoms may no longer have positive serology for cysticercosis.

The prevention and management of rabies

Crowcroft NS, Thampi N. BMJ2015;350:g7827. doi:10.1136/bmj.g7827

This Clinical Review of rabies was published in the BMJ of 17 January 2015. It covers the global burden of disease, those at risk, rabies transmission, symptoms, prevention, post-exposure treatment and travel advice. It provides a very useful overview of rabies and should be read by all who give advice to travellers.

The impact of providing rapid diagnostic malaria tests on fever management in the private retail sector in Ghana: a cluster randomised trial.

Ansah EK, Narh-Bana S. Affran-Bonful et al. BMJ2015;350:h1019. doi : 10.1136/bmj.h1019

The authors of this paper in a recent edition of the BMJ set out to investigate whether or not making rapid diagnostic tests for malaria available in private retail drug shops improved management of fever. The short answer is yes, it did. The proportion of those who were found to be slide-negative for malaria but received antimalarial drugs was 88% in the control group but only 32% in the intervention group ($p < 0.0001$). The proportion of those receiving appropriate treatment for fever was 74% in the intervention group compared with only 27% in the control group ($p < 0.0001$).

Comment

In a malaria endemic country there is a tendency to assume that any fever is caused by malaria. This may well be in many ways a safe assumption to make, as malaria is a potentially serious illness, but if this assumption is carried to its conclusion in the absence of any form of testing for malaria, it will lead to many patients unnecessarily receiving antimalarial medication and/or to not receiving appropriate treatment for other causes of fever. Rapid testing kits are still not an adequate substitute for a slide test in producing a definitive diagnosis of malaria, and the use of such kits did not eliminate the unnecessary use of antimalarial drugs completely. This study has, however, shown clearly that ready availability of rapid diagnostic tests for malaria can reduce unnecessary antimalarial treatment and improve the management of fever of whatever cause in a malaria endemic setting.

Long-term efficacy of a hepatitis E vaccine

Zhang J, Zhang X, Wu T et al. NEJM 372 (10), 914-922. Over 56,000 healthy adults aged between 16 and 65 years were randomly allocated to each to two groups in a double blind trial. One group was given 3 doses of a hepatitis E vaccine at 0, 1 and 6 months and the other received hepatitis B vaccine at similar intervals as a control group. They were followed up initially for 19 months with a further follow-up period of up to 4.5 years. Over the 4.5 years there were 7 cases of hepatitis E in the study group (0.3 per 100,000 patient years) and 53 cases in the control group (2.1 cases per 100,000 patient years), representing a vaccine efficacy of 86.8% (95 CI 71-94). The incidence of adverse events was similar in both groups.

Comment

Hepatitis E is found in many countries throughout the world, with the highest prevalence in East and South Asia. It is transmitted, like hepatitis A, by the faecal-oral route. Hepatitis E has been reported in travellers, especially to the Indian subcontinent, and until now there has been no available vaccine. The first vaccine against hepatitis E has now been produced in China, and this paper reports on its safety and efficacy. The vaccine is not yet available globally, and it will

continue to be necessary to warn travellers who are vaccinated against hepatitis A that they may still be at risk from hepatitis E.

Emergency post-exposure vaccination with vesicular stomatitis-vectored Ebola vaccine after needlestick.

Lai L, Davey R, Beck A et al. JAMA. 2015; doi: 10.1001/jama.2015.1995.

This is a case report about a physician who experienced a needlestick injury while working in an Ebola treatment unit in Sierra Leone. He was evacuated rapidly to the USA and was given an experimental Ebola vaccine VSV-G-ZEBOV. It is not known if this vaccine is safe or effective for post-exposure use following high risk occupational exposure such as occurred in this case, but clinical and laboratory evidence were consistent with a vaccination response and no evidence of Ebola virus infection was detected.

Comment

Conclusions cannot be drawn from one case report, but this report gives some hope that effective post-exposure treatment may become available for those working in Ebola treatment units.

Malaria

Adherence to malaria prophylaxis among Peace Corp Volunteers in the Africa region.

Landman KZ, Tan KR, Arguin PM. *Trav Med & Inf Dis* 13, 61-68

Surveys were sent to 3248 US Peace Corps Volunteers, of whom 781 responded. 541 volunteers (73%) reported adherence to prophylaxis. The commonest reasons for non-adherence were forgetting (90%), fear of long term adverse effects (54%) and adverse events attributed to the medication (51%). 200 volunteers reported not being worried about malaria. After controlling for factors such as sex and experiencing adverse effects, the factor most strongly associated with non-adherence was being prescribed mefloquine.

Comment

All the volunteers who responded to this survey had worked in countries in which they were at risk from malaria. While it is encouraging to note that 73% of volunteers had adhered to their chemoprophylaxis (or reported that they had done so), it is worrying that just over a quarter of them did not. It is difficult for the travel health adviser to prevent lapses of memory, but this survey highlights the importance of explaining why it is necessary to adhere to chemoprophylaxis and suggesting ways in which the traveller could be reminded to take the medication regularly. Fear of adverse effects, the next commonest reason for non-adherence, can also be dealt with prior to travel by reassurance and putting the incidence of adverse effects into perspective in terms of their likelihood

Journal Watch *continued*

and comparison with the risk from malaria itself. For those who reported adverse events that they attributed to the medication, it is important for the travel health adviser to stress that many of the symptoms experienced may be attributable to some cause other than the medication. It would be helpful if they had some lines of communication to seek advice should symptoms be experienced, which should be possible in these days of global communications.

Mefloquine at the crossroads? Implications for malaria chemoprophylaxis in Europe.

Schlagenhauf P, Hatz C, Behrens R et al. Trav med & Inf Dis (2015) 13, 192-196

This paper was published under the heading “Controversial commentary”. It examines the implications for the prescribing of mefloquine in Europe in the light of an announcement in July 2013 by the US Food and Drug Administration of a “boxed warning” about strengthened and updated restrictions on mefloquine and the risk of neuropsychiatric and other adverse events. This led to the European medicine Agency also recommending strengthened warnings. The intention was to ensure that prescribers communicate these risks to their patients and to ensure that only travellers who have no contraindications receive the drug.

Mefloquine remains contraindicated in those known to be hypersensitive to mefloquine or chemically related products, who have a history of depression, anxiety, psychosis, self-harming behaviour or fits or

who have severe impairment of liver function. New contraindications are a history of blackwater fever (intravascular haemolysis caused by malaria) and, in some countries, concomitant use of halofantrine or ketoconazole. New precautions state that the prescriber is expected to provide detailed information on possible adverse events, to instruct the user to read the information leaflet provided with the product, to issue an alert card and to warn that long lasting adverse events may occur and may persist for up to several months. The authors also suggest that a warning about visual adverse events may be appropriate in view of a paper reporting the occurrence of such events. The warning also states that mefloquine should be discontinued in patients developing symptoms of neuropathy. Screening prior to the prescription of mefloquine is now mandatory and should follow a checklist format.

Comment

The new restrictions should ensure that only those with no contraindications are given mefloquine, but they are likely to make a pre-travel consultation at which mefloquine is being considered more prolonged. They are also likely to result in a reduction in the use of a drug which is still, for many, an important chemoprophylactic agent, particularly pregnant women and small children. In particularly high risk areas such as sub-Saharan Africa and parts of Oceania, the level of risk from mefloquine is still likely to outweigh the risk of adverse events

Anecdote - An Odd Sample

J Wilson-Howarth

A small team from Britain (Howarth et al 1988; Wilson 2013) spent some months in Madagascar and one aim of their research was to examine the factors influencing schistosomiasis acquisition and its effect on the nutritional status of school children. Pupils at two schools were asked



to provide urine and stool samples so that we could screen for microscopic haematuria and parasites. On examining one liquid sample, I noticed a mosquito larva wriggling around in the fluid.

It transpired that one little girl had been unable to provide a urine sample so took herself down to a drainage channel and scooped up some water in the hope of passing this off as her sample. She managed to pass some urine about an hour later, proved to have urinary schistosomiasis and was given treatment.

Dr Jane Wilson-Howarth

References:

- Howarth SE, Wilson JM et al. Wells worms and water in western Madagascar. *Journal of Tropical Medicine & Hygiene* 1988 91 255-264
- Wilson, Jane 2013 *Lemurs of the Lost World* 214pp

CASE HISTORIES

Malaria Risk in Uganda

J Wilson-Howarth

A male patient in his late 20s consulted me in my GP surgery. He had returned from Uganda two weeks before and was worried that he might have contracted malaria. He was asymptomatic.

He had stayed with an expatriate friend who had – on arrival in Kampala – provided antimalarial tablets for them both. This friend had now developed malaria. My patient was concerned that he too was at risk.

I asked why he had chosen to go against the normal advice of starting antimalarials before arriving in a malaria risk destination. He told me that he had discussed this strategy with the immunising nurse at the local private Travel Clinic who reportedly had said it was all right to source antimalarial medicines from his friend in Uganda. We discussed that this was not good practice as he could not have started his prophylaxis soon enough. I also informed him that there was a big problem of counterfeit medicines in East Africa.

I checked with the immunising nurse at the Travel Clinic and was reassured that she hadn't sanctioned my patient's approach to antimalarials. When she challenged him he claimed he would request a prescription from his GP surgery. He did not do this.

The patient had been economical with the truth about the advice given to him by the Travel Clinic and he had rewritten history in what he told the Travel Clinic about his intentions to access antimalarial cover. I found this salutary, as it is easy to judge other clinicians as

incompetent when patients transmogrify facts.

My patient wanted reassurance that he would not develop malaria. I explained that there was no screening test and that he would have to be aware of the risk and report symptoms very promptly. He was initially unsure which antimalarial he'd taken, but we worked out this was almost certainly doxycycline, which he'd only taken for two weeks after leaving the malaria risk zone. I prescribed a further two weeks for him. I emphasised that despite this, he was still at risk of developing malaria and that he had been ill-advised by his friend.

Clearly this young man was anxious to save money and was not receptive to expert advice. Both my notes and notes at the Travel Clinic recorded this. It is particularly important to make careful note of advice given to avoid complaints as in the eye of the law if advice is not recorded in the notes it is assumed that it hasn't been given, so failure to adequately record consultations exposes a practitioner to litigation.

Fortunately, as far as I am aware, my patient did not become ill as a consequence of poor malaria protection.

Dr Jane Wilson-Howarth

Case history – adolescence and prophylaxis

J Wilson-Howarth

A well-travelled family flew from the UK to southern Africa for a three week holiday. They all took mefloquine as their malaria prophylactic. All four family members (namely the parents and sons aged seven and twelve) tolerated the Lariam with no side-effects whatsoever.

Years later, when the younger son was 19, he headed back to Africa on his gap year. The nurse advising him on travel precautions wisely suggested a pre-travel trial of Lariam. One dose made this young man's mood labile to a distressing degree. He had uncharacteristically angry outbursts and also became mildly irrational and tearful. This reaction settled in about a day and he set off for Africa with doxycycline for his prophylactic.

Clearly, in this case, tolerating mefloquine in childhood did not imply that it would be tolerable in adulthood. Even so this prophylactic remains a useful and affordable choice for many travellers.



Book Reviews

Travelling Well, A Travel Health Guide

Dr Deborah Mills. Mills,

D.J. Travelling Well (19th Edition) October 2014

ISBN 978-0-9873550-2-9

"Travelling Well" is published in Australia but is relevant to all travel advisers and travellers. There is a wealth of travel health information contained within its 188 pages, delivered in an easy to read format. The front cover picture of this light weight and very portable book shows the author in Bhutan. The back cover includes 13 small colourful travel photographs, as well as a picture of Dr Deb, the Clinic Logo and the title picture of The Travelling Well video.

Now In its 19th Edition, Travelling Well is divided into 5 main Sections- '*Before You Go*, '*While You Are Away*', '*If You Get Sick*,' '*A Few Details*' and '*When You Get Home*'.

A double page spread on Vaccines lists preventable diseases in large bold print and in table form, as well as the protecting vaccines. There is a brief explanation of the possible schedule(s), the length of preferred time before vaccination, and the duration of protection. The information on Rabies Vaccination, pre travel and post exposure is particularly clear. A Personal Vaccination Schedule and a description of possible Side Effects of Vaccination follows. A section on Malaria includes practical Insect bite avoidance measures, the choice of malaria tablets, how to take them and again, possible side-effects. Malaria Awareness is stressed. The contents of the "Travellers Medical Kit" and general tips on Medications are comprehensively dealt with and adequate advice on pre-travel medical and dental care is given. Good travel insurance is stressed. A section on travellers with special needs is suitably informative.

The "*While You Are Away*" section begins with advice on DVT avoidance and Jet lag. This is followed by preventative measures for gastro problems, cold and flu and general insect diseases, as well as avoidance of worms and parasites. Care around animals, especially for children, is emphasised. Information on such topics as Motion Sickness, Accident Prevention, Personal Safety and Security, Mind Altering Drugs, and Sex and Disease, is both clear and practical and typical of the easy to read, yet factually important information given throughout "Travelling Well". Special categories of travellers and travel are equally well covered. These include, "The Female Traveller", "Travelling with Children", "Travelling at Altitude", "Scuba Divers", "Travel at Hot and Cold Climates" and "Trekking, and Travellers at High Altitude". A table showing the altitudes of some of the popular high tourist areas is useful as is the comprehensive section on Altitude Sickness. The three stages of adaptation to a "new culture", and coping mechanisms, is an especially excellent section.

The "*If You Get Sick*" section starts with a practical Overview of Travellers' First Aid, and includes how to access medical help while abroad. Descriptions of several diseases, and how to deal with them, are given under the heading "fevers". These include Malaria, Dengue, Typhoid and a variety of Respiratory, and Upper Respiratory conditions. In keeping with the frequency of Travellers Diarrhoea, the section on this topic is very well covered, and advice and dosage for children is especially useful. (A copy of "Travelling Well" is available to all Travel Medicine Alliance Clinics in Australia, and this section is the most frequently referred to, both before and during travel). General medical conditions are covered -including skin conditions and a variety of insect bites. Remedies for "Hangovers" are also included! There are 8 pages giving information on the medications that are frequently used in travel.

In the "*A Few Details*" Section a brief outline of diseases commonly associated with travel is adequately presented- especially on the malaria life cycle and on the diseases itself. Several myths associated with travel conditions and their treatment, are discussed!

The "*When you get Home*" gives straightforward advice on how

to deal with post travel illness, or concerns, including the possible recommendation of treatment of worms.

Two appendices give advice on vaccine transport, and also an encouragement for travellers to have a responsible approach to the local community and its culture, as well as to the environment generally. A comprehensive Index follows.

"Travelling Well" is primarily intended for travellers themselves, but is in itself a very useful educational tool for the travel health adviser-especially one undertaking a Foundation Course in Travel medicine, or indeed preparing for the ISTM Certificate Examination.

"Travelling Well" available at www.thetraveldoctor.com.au

Dr Reggie Cooke

Oxford Handbook of Expedition and Wilderness Medicine

Publication May 2015.

Increasing numbers of people now travel to remote destinations, the UK travel industry sold over 250,000 'adventure' holidays in 2013. The new edition of this book is therefore welcome. It is nearly 100 pages longer than first edition and a third of the book has been wholly re-written with additional authors. It contains more colour plates and more algorithms to ease assimilation of data. The layout of chapters has been re-organised with more space for each of the expedition environments. Greater emphasis has been placed on risk management, and diversity of ages and abilities that nowadays participate in adventure travel to wilderness areas. The health professional adviser, trekker, climber, extreme sport enthusiast and climber will benefit for acquaintance with its contents.

IBM

How to Shit Around the World

J Wilson-Howarth

Perseus Books London

This book combines education with humour and produces copy which makes learning easy. A revision of Jane's original book "Sitting Pretty" it is worth reading for the funny anecdotes of toilet humour recounted by many travellers who have found themselves caught short or in severe straits of bowel distress. The toilet process can be a challenge in international where conventional toilets are at a premium and facilities very variable in quality.

The book has many tips, facts and lessons on eating and drinking safely, avoiding gastro-intestinal disease and coping with inadequate toilet facilities. It is an essential, guide for all those who adventure across the world.

IBM

Your Child Abroad

A Travel Health Guide - Third Edition

Jane Wilson-Howarth, Matthew Ellis

Bradt Travel Guides Ltd, UK

Co-authored by Jane a GP member of BGTHA sub.committees and Mathew Ellis, a paediatrician, this is likely to become a popular and definitive book on child care while travelling abroad. Jane has extensive experience of travelling with small people and a disabled son. She has authored several other books and writes effectively and humorously in a manner that aids assimilation. The contents are conventionally laid out, are easy to read and cover pretravel preparations, first aid, vaccinations and all the many considerations that arise when travelling with small children and staying with them while abroad. The book will find a place in every travel health clinic on its undoubted merit.

IBM

2015-30th Anniversary of Birth of TRAVAX

F Genasi, C Suckling, E Walker

In 1985 TRAVAX, a travel health resource for Health Care Professionals on travel health/medicine issues was created in response to the demand for travel health information from GPs and Practice Nurses in Scotland. Since no similar service was available at the time in other parts of the UK, TRAVAX has become used by widely by healthcare professionals both throughout the UK and overseas.

An anniversary year is underway culminating in a one-day celebratory symposium for invited guests and speakers in September.

The nine strong Travel and International Health Team of Health Protection Scotland (previously Communicable Diseases Scotland, then the Scottish Centre for Infection and Environmental Health based in Ruchill Hospital Glasgow)) is responsible for continually working to maintain and update TRAVAX and ensure that it constantly provides comprehensive information to support travel health practitioners across a wide variety of settings.

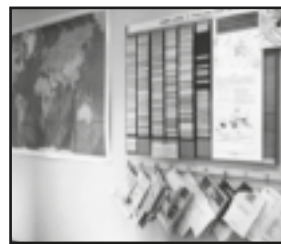
The practice of 'Travel Medicine' emerged as a special discipline during the 1970s with the advent of 'jumbo' wide-bodied aircraft and the resulting huge increase in international travel. At that time the number of travellers leaving the UK was around 5 million a year – it is now around 60 million. This expanding cohort of new travellers sought travel health advice; however no comprehensive, continually updated, sources of evidence-based information, easily accessible, were available in the UK or even worldwide. The World Health Organisation and the Foreign Office focused primarily on legal requirements such as the need for yellow fever and cholera vaccination certificates. The Foreign Office advice given at that time now seems rather strange – for example, typhoid vaccine was advised for holiday makers to Spain and malaria tablets for transit passengers through Saudi Arabia.

Nearly all education for doctors and nurses was led by the vaccine and drug companies organising half-day lectures with an inevitable focus on the need to prescribe. Wall charts usually produced or sponsored by the companies were popular and were often included in the free GP newspapers. The need for comprehensive, evidence based travel health advice was very clear.

The Evolution of TRAVAX

1985 – Country specific travel health information is captured in wall hanging poly pockets. Most advice is still given over the phone to health care professionals who phone into Ruchill hospital switchboard to speak to the travel medicine person "on call". However volume of calls is becoming unmanageable, compounded by practices giving out the hospital

phone number to their travelling patients to call directly! This was before the days of the Internet but Ceefax was available (an elaborate way of sending telegram (letter by letter) messages). So the information from the wall pockets was transferred into TRAVAX Ceefax format. The progression from poly-pockets, to Ceefax and then to the Internet is illustrated below)



TRAVAX Timeline

1990

- The first Internet version of TRAVAX is launched. A counterpart public information site, fitfortravel, begins development.
- Health Protection Scotland (HPS) study days and short courses in Travel Medicine are established for primary care, particularly practice nurses and GP's.

1995

- Then came a focus on education since it was clear providing information alone was not sufficient – health care professionals needed to know how to use it and travel medicine was not, and in many places is still not, included in medical and nursing school courses.
- Glasgow University launches Diploma and MSc courses in travel medicine in collaboration with HPS. This is a world first.
- There are now several thousand TRAVAX users and the fitfortravel website gets over a million hits.

2000

- After ten years, the Travel Medicine short courses move out of NHS Scotland, to cover all of the UK and are rebranded as TREC (www.trectravelhealth.co.uk).

2015-30th Anniversary of Birth of TRAVAX: *continued*

- The Diploma and MSc courses move from the University, which is now concentrating mainly on degrees rather than Diplomas, and is offered in collaboration between HPS and the Royal College of Physicians and Surgeons, Glasgow. This move prompts nurses and pharmacists to be admitted to the College for first time

2006

- HPS become responsible for designating Yellow Fever Vaccination centres in Scotland on behalf of the Scottish Government.
 - The fitfortravel website is given a major redesign and re-launch. In Edinburgh, HPS co-hosts a major international Travel Medicine conference (the first Northern European Conference in Travel Medicine NECTM1) which attracts more than 1000 delegates.
- 2007
- A Faculty in Travel Medicine is created within the Royal College of Physicians and Surgeons, Glasgow – a world first. The Diploma course is now fully incorporated within the College.
 - TRAVAX spreads its reach from the UK home base and is increasingly seen as an international resource.
 - For the first time, the International Society of Travel Medicine appoints a nurse as President of the Society, who now heads up the Travel and International Health team at HPS.
 - The Royal College of Nursing publishes the first career and competency framework for nurses working in travel health.
- 2012
- Following extensive customer consultation, a redesigned TRAVAX is launched. The site has many new features including a forum, an outbreak news feature, automatic email updates and a patient suitcase.
 - It is clear that TRAVAX has become embedded in the way that healthcare staff work and is being routinely and extensively used across both the UK and wider world setting with global health issues and new and emerging disease increasingly on the agenda.

2014

- The public facing site, fitfortravel, is given a major upgrade and a whole new look to bring it up-to-date with content sharing and mobile device compatibility. This site is now getting over ten million hits per year.
- HPS links up with the European Centre for Disease Prevention and Control to expand global health surveillance activity for the Glasgow Commonwealth Games.
- With 60 million visits abroad by UK travellers each year, the TRAVAX team now numbers nine, including scientists and customer support staff. There are more than 17,000 registered TRAVAX users across 24 countries.

2015

- Happy 30th Birthday TRAVAX!!

TRAVAX – the future?

The world of electronic communication is continually advancing and TRAVAX, and the team behind the website, are perpetually striving to improve both quality and delivery of information. Planned developments to the site include: tools to assist with post travel consultation, risk assessment and vaccine planning; improving the capability of using TRAVAX to send information directly to the traveller, and for the adviser to be able to keep a record of this exchange.

The team at HPS will always remember that it is the practitioner, sitting with the traveller in front of them, who is using and relying on the website the most. Central to this, we will strive to keep a strong clinical focus and continue to sift and translate evidence into information for action, for our many thousands of TRAVAX users.

Fiona Genasi, Clare Suckling

Health Protection Scotland, Travel and International Health Team

Eric Walker

University of Glasgow

Disaster Preparedness in Nepal

S Ritchie

In 2006 I worked on disaster preparedness for six months in Nepal with the World Health Organisation. I am a British GP, with an MSc in public health. I was the only doctor in my team. Our remit was: to reduce mortality and morbidity in the health sector from man-made and natural disasters across the whole country. I wondered if there would be an earthquake while I was there. This did not happen, but recent sad events in Nepal reminded me of my work there.

Nepal is a beautiful but poor country. It contains the wondrous Himalayas, and it's mainly Buddhist



Local Nepali Ambulance

people are extremely humble and hospitable. It lies along a large fault-line in the Earth's crust. I learnt that Nepal has minor earthquakes every few years, and a major earthquake repeatedly every century.

I was there at the time of the Maoist revolution. I was given a jeep and driver, and a Nepali public health nurse to help me. I spent the first 10 weeks designing needs assessment questionnaires, and obtaining baseline health service capacity data in 8 districts spread across the country. In each district we visited the 4 different levels of health facility, from district hospital right down to the smallest health clinic.

I found severe shortages at all levels. This ranged from empty female community health volunteer first aid boxes, and lack of tetanus toxoid, splints, oxygen, and electricity in the smallest health facilities, to lack of a single cardiac monitor in the main district referral hospital which would have to cover casualties from the entire Western area of Nepal.

Three months into the job, I that death certification was not mandatory in Nepal, and that a person's death certificate did not have to be completed before cremation or internment. The vast majority of deaths

in Nepal are consequently not recorded with a death certificate - which meant there was no reliable baseline mortality data.

The cause of death could only be chosen from a limited number of, around ten, predetermined tick boxes, and cause of death could be chosen by a family member, without a medical professional. I tried to introduce a template death certificate based on the UK standard death certificate via the WHO country office, but don't know if there has been much advancement on this since then.

I also discovered that the national Nepal Red Cross are the best organization to quantify casualties in a disaster. They have extensive networks of volunteers in place across the length and breadth of Nepal. Their otherwise brilliant forms did not distinguish between major and minor casualties. I secured the agreement of their head office in Kathmandu to split the 'injuries' column on their form into two, to separate it into 'walking wounded' and 'those too injured to walk'. However I was not in Nepal long enough to ensure this change occurred in their forms country-wide, and if this was ever implemented.

It is hard to fathom quite how difficult and time-consuming transport and communication are in Nepal, even normally, let alone in a disaster. There are probably more mountains and valleys in Nepal than any other country on Earth. When roads are disrupted in an earthquake local people will surely fare better the more basic training and equipment they have at hand themselves. Training is vital, and in my second three months I wrote and started delivering triage training to rural health workers. But training is little use without basic drugs and equipment.



A Health Clinic

Morphine was not readily available in the district hospitals in Nepal due to widespread, deep-rooted, and exaggerated fears about addiction. But there was also a profound lack of anaesthetists in Nepal outside

Disaster Preparedness in Nepal: *continued*

the cities. In a disaster there is a deep shortage of both analgesic and anaesthetic capability. Until the day comes when Nepal has trained anaesthetists in all its



bed for women to deliver on

district hospitals, the only general anaesthetic which

can be given safely in rural areas, without the need for airway protection, is Ketamine, invaluable in a disaster, from suturing in children, to fracture stabilization or other trauma injuries in adults too painful to manage without opiate analgesia. I wrote a proposal to increase the availability of ketamine general anaesthesia in rural areas of Nepal. Not only could Ketamine help in a disaster, but it might also have the potential to help the 80% of women in Nepal who probably still give birth without access to Caesarian section.

We may never know the true toll of deaths and major injuries in Nepal's latest major earthquakes. Nepal will have more earthquakes in future, and simple in-situ preparedness must surely be better and cheaper than an international rescue effort. If anyone helping with re-development in the aftermath thinks any of my reports might be useful, contact me.

Dr Sara Ritchie

GP Partner, Appraiser, & Editor of InnovAiT

A Working Honeymoon in a District Hospital in Nepal S Kong, KKY Kong

In 2011 we travelled to Nepal for three months shortly after our wedding. We spent the majority of our time in the small town of Tamghas, working at the rural district hospital, whilst living with a host family. We made some effort to contribute to the hospital, but in return we have learnt so much more from the Nepalese people and developed a great deal of respect for them. This is an account of our time there.

Our first day at Gulmi District Hospital started at 8am. We waited in the tired and dirty nursing office for the ward round to start. The two charity doctors employed by the Nick Simons Institute arrived. We set off on the ward round with two young nurses in white uniforms to one of the two wards at the hospital, the supposed 'male' ward. In here, lined up close to each other, were old decrepit iron bed frames with thin mattresses, where underprivileged looking patients lay. Of the seven beds, six were filled with various patients; mostly men but also a young girl with her mother, and a baby with his mother. We went round each patient in turn. One of the charity doctors was kind enough to translate the details of each case to us in English. Many of the patients did not look particularly sick and several of them could be discharged home. One or two had an intravenous canula attached but no other medical interventions or monitoring were visible.

In the 'female' ward there were more children and mothers could be seen, knees crossed on the bed,

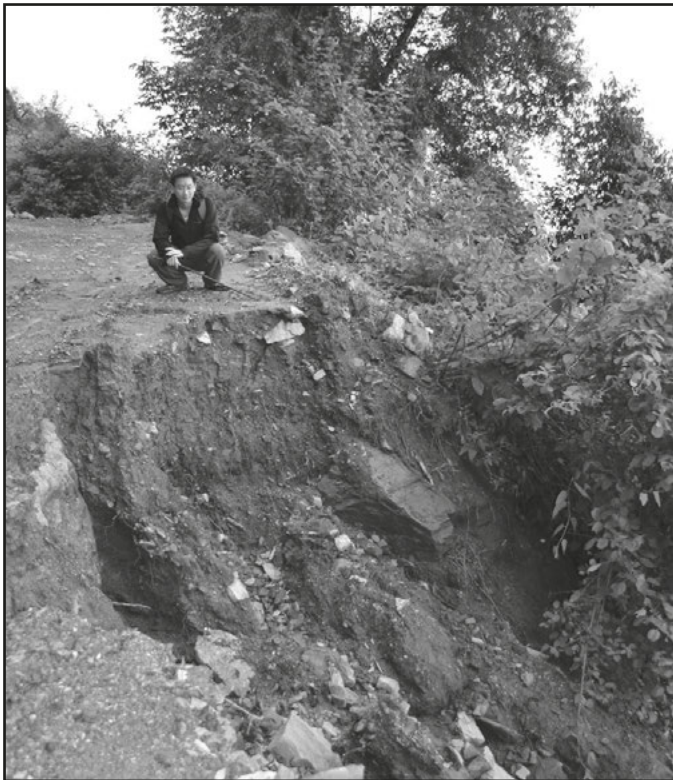
nursing sick infants. A couple of babies had pneumonia or fevers of other causes, then there were two ladies both with broken arms, and patients with a few other problems. Most patients with fever were treated with antibiotics to cover typhoid. Because there was no microbiology laboratory in the hospital, they were all treated empirically. The incidence rate of typhoid in the area was unknown, and it was not possible to look at sensitivities. According to www.uptodate.com, typhoid in Asia was sensitive to ceftriaxone. Using this piece of information, the doctors here had been using cephalosporins for the past few years. In fact, they were worried about resistance and were keen for us to develop new guidelines on antibiotics for them.

We started observing infection control and antibiotic prescribing practice in the following weeks. Although there was running water available in the hospital, with one sink in each of the two wards, we found that doctors and nurses rarely washed their hands. Additionally, patients were often being nursed on mattresses placed on the floor when the hospital became busy as there were not enough beds. One day we saw a senior physician examine the penis of a boy who presented with urinary symptoms, and then went straight onto the next bed to examine another man who presented with diarrhoea, without washing his hands. This illustrated a powerful image and from then on we decided to concentrate on trying to improve infection control practice instead. Our efforts

were subsequently published in a different article.¹

In addition to the main hospital building, there was also a maternity block. Impressively, the two charity doctors employed by the Nick Simons Institute were both capable of delivering babies and performing caesarean sections. They both obtained a MD in general practice in Nepal, and that seemed to translate to being a 'jack-of-all-trade' remote doctor. For example, they would perform an ultrasound on a pregnant patient, identify that the patient needed a caesarean, and wheel the patient to the theatre. Then one of the doctors could switch into an anaesthetist and perform spinal anaesthesia, while the other became an obstetrician and would carry out a caesarean section. Subsequently they would also function as a paediatrician if required, resuscitating any babies in need. In addition to all that, we also witnessed them performing abdominal ultrasound and echocardiography, reducing fractures and dealing with trauma patients, as well as dealing with gynaecological emergencies!

The setup of the hospital was quite different from a UK hospital. There were seven doctors in the hospital, who oversaw the running of the hospital as



Frequent landslides in the rural area contributes to difficulties in transport and accessing healthcare

well as leading the twice a day ward rounds and afternoon clinics. The two charity doctors were also responsible for the maternity unit. There were usually one or two nurses present in the ward rounds, during which they would receive instructions and carry out any jobs for the patients as required. All nurses were also fully trained as midwives, and they essentially adopted the role of a midwife when they worked in

the maternity unit. Patients' relatives were very much involved in caring for the daily needs of the patients, while the nurses were more involved in the medical tasks such as taking and documenting observations, dressing changes, and administering intravenous fluids and medications. In the hospital health care assistants comprised the main bulk of the medical work force and made up more than the doctors and nurses combined. They ran clinics, attended patients out-of-hours, and were also in charge of the very basic casualty department. They received a much shorter training compared to the doctors and the nurses - 18 months, but were able to prescribe antibiotics and functioned independently most of the time. Their skills seemed to vary, with a tendency to prescribe antibiotics for most problems. On one hand, we came across a patient clerked by a health care assistant with a presumed diagnosis of hepatitis, with minimal history-taking apart from one line stating that he had abdominal pain. The conclusion was the prescribing of metronidazole, which was not a treatment for hepatitis. On the other hand, one remarkable individual had undergone additional anaesthetics training, during which he performed more than 1,500 spinal anaesthetics in the space of six months. His practical skills, paralleled those of an anaesthetic consultant in the UK.

Every Friday the hospital had a teaching session for all their medical staff. We were keen to speak about Oxygen Guidelines and the Modified Early Warning System (MEWS) in our first presentation. We observed that although there was a pulse oximeter, it was very rarely, if ever, used, and patients were given oxygen only when they complained of breathlessness. On one occasion, a lady was receiving one of the four oxygen cylinders available in the hospital, but was subsequently found to have a saturation of 100% when she was taken off the oxygen. On the other hand, another patient with confirmed tuberculosis was found to have a saturation of 72% and had no supplementary oxygen. No routine observations were done on patients out-of-hours, and observations were only usually documented once a day in the mornings. We were therefore keen to introduce a framework for the nurses to identify sick patients and treat them accordingly, and to guide them as to when to notify the doctors, especially during the out-of-hours period. MEWS is a scoring system that tracks the observations of a patient and triggers a response when a patient is identified as deteriorating. It gives a numerical score based on a combination of the patient's blood pressure, pulse, respiratory rate, oxygen saturations, temperature and neurological status. MEWS has been adopted in many hospitals in the UK, while other hospitals have been using similar warning systems. More recently, the Royal College of Physicians has developed the National Early Warning Score (NEWS), in an attempt to standardise this 'track and trigger' system within the UK.²

The charity doctors were clearly very interested in

A Working Honeymoon in a District Hospital in Nepal: *continued*

the MEWS system. Nurses, however, were divided in their responses. The senior sister felt that it would be obvious to her if a patient was sick, and the scoring system would be unnecessary. In truth, we were keen to have the sister on board with our infection control project, and felt that it would discourage her from engaging with us if we introduced too many ideas. The MEWS system was therefore not adopted in the hospital during our time there. Subsequently we were involved in the weekly educational program and presented on multiple occasions to the healthcare professionals in Tamghas.

One of the charity doctors came to find us and said a lady had presented at the hospital in labour but the baby was in transverse position so it was impossible for her to have a vaginal delivery. A caesarian section was urgently needed. We arrived in the maternity department to find the lady having contractions on the maternity table. From her vagina, the baby's arm was hanging with a section of the umbilical cord. Since the cord was not pulsating, the charity doctor informed us the baby was sadly dead. She had been in this predicament since the early hours of that morning. She lived a long way from Tamghas, and had presumably expected a home birth, very common in these parts due to the lack of healthcare facilities in the rural areas of Nepal. It was only when the birth did not progress as expected and the baby did not present as normal, that she made her way to the hospital. A caesarian was now vital to save the mother. The procedure was done and the dead baby girl was removed. The mother's cervix was torn and the uterus was at risk of rupture at the time of the caesarian. She would not have survived much longer without the quick medical help the staff at the hospital were able to provide. 'This is Nepal. Rural Nepal.' one of the charity doctors said to us after the life-saving surgery. This incident reminded us of the 'three delays model', when delays can be caused by:

1. a delay in decision to seek care
2. a delay in reaching care
3. a delay in receiving adequate health care³

Both the hospital and the charity doctors there worked

very hard to improve this but unfortunately this type of occurrence was not unusual here.



Sending off ceremony at Tamghas Hospital

During our trip we saw that life for people in the hills in Nepal can be hard. Although we enhanced our skills as medical practitioners during our experience there, one of the main feelings that remains with us is the admiration for the kindness and resilience of the rural Nepalese people; in financial terms they may be poor, but they are certainly rich in their warm and generous nature.

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RESEARCH SECTION

Travel health training and educational needs in the United Kingdom: a survey of BGTHA members

M Townend & L Goodyer

Introduction

One of the aims of the British Global and Travel Health Association (BGTHA) is to further education in travel health. In order to investigate the level of training amongst travel health practitioners and their perceived educational needs the BGTHA conducted a survey of its members.

Method

A questionnaire was circulated to all BGTHA members with a link to a Survey Monkey poll. Information was requested on the profession and age group of members, the number of years qualified, whether or not members were engaged in giving health advice and/or vaccinations to travellers and whether or not they held a recognised qualification in travel medicine such as a Diploma, MSc or the International Society of Travel medicine (ISTM) Certificate. They were then asked if they had attended or taken part in any educational sessions in travel medicine within the previous two years, if so, what type of sessions they had been, if they would like to take part in any future educational activities produced by the BGTHA and what would be their preferred type of sessions. The results were collated and analysed using an Excel spreadsheet.

Results

65 members completed the survey, a response rate of approximately 15%.

The professional status of the respondents is shown in Table 1.

Table 1 Professional status of respondents

Professional status	n	%
Nurse	33	50.8
Doctor	25	38.5
Pharmacist	5	7.7
Other	6	9.2

Those who gave their occupation as "other" included a medical student, two regulation of care officers, one retired, one medical anthropologist and one unspecified.

Of the 62 members who responded to the question about their professional activity, 54 respondents (87.1%) stated that they were engaged in giving advice and/or vaccinations to travellers, 8 (12.9%) stated that they were not.

Length of time since professional qualification is shown in Table 2.

Table 2 Length of time since qualification

Years since qualification	N	%
0-5	2	3.1
6-10	1	1.5
11-15	5	7.7
16-20	7	10.8
>20	50	76.9

Qualifications and educational activities 62 members responded to the questions about training received. Of these, 35 (65.5%) stated that they held a recognised qualification in travel medicine and 27 stated that they did not. Some members held more than one qualification. The qualifications held are summarised in Table 3.

Table 3 Qualifications held

Qualification	n
Diploma in Travel Medicine	13
MSc in Travel Medicine	9
Member of the Faculty of Travel Medicine	2
Fellow of the Faculty of Travel Medicine	2
ISTM Certificate	3
Diploma in Tropical Medicine & Hygiene	2
PhD in Travel medicine	1
Diploma in Tropical Nursing	1
Foundation course in Travel Medicine	1

62 members responded to the question about educational activities that they had undertaken within the last two years. Their responses are summarised in Table 4.

Table 4 Educational activities undertaken within the last two years

Type of activity	n	%
Study day	42	67.7
Evening or half day event	23	37.1
Single lecture	19	30.6
Short course of up to 1 week	13	21.0
Course longer than 1 week	9	14.5
None	3	4.8

Travel health training and educational needs in the United Kingdom: a survey of BGTHA members: *continued*

13 respondents had attended other types of educational activities including online activities and international conferences. As the figures indicate, some respondents attended more than one type of activity.

Future educational activities

61 members responded to the question about future educational activities. Of these, 57 (93.4%) stated that they would like to take part in future BGTHA educational activities, with only 4 (6.6%) stating that they would not. 56 members responded to the options with which they were presented for the format of their preferred activities, rating them from 1 to 5 in order of preference, with 1 being the highest order, and an average rating was calculated. The results are summarised in Table 5.

Table 5 Preferences for future educational activities

Type of educational activity	Score*
Lectures	2.43
On-line structured learning programme	2.68
Interactive workshops	2.79
Webinars on selected topics	3.18
Printed material	3.68

*1=high, 5=low

Members were also given the opportunity to state what other types of educational activities they would wish to see provided. 12 responses were received, some of which were similar to the options already presented, but others included study days, sharing information sessions, "hot topics", "Master Class" podcasts, local focus groups, an online Diploma course and protected learning time in the practice.

Discussion

Estimates of email survey response rates range from 10-20%¹ to 25-30%² or higher, and according to the UK Data Service³ web-based surveys tend to have relatively low response rates. Seen in this light a response rate of 15% is not too discouraging though towards the lower end of what might be expected. It is possible that only the more enthusiastic or committed BGTHA members responded to the survey, and the results may well have been very different had the views of the majority of non-responders been able to be analysed. It is also evident that a large majority of responders had been qualified in their professions for a considerable length of time and were aged more than 36 years, being more likely to have longer experience in travel medicine. Given this inevitable bias, it is still, however, possible to draw some conclusions about the levels of qualification and educational needs of our members.

In spite of their age and length of time qualified, almost half (43.5%) did not have any formal qualification in travel medicine. This does not necessarily imply that they were providing a service of lower quality than their more qualified peers, but it does indicate that a substantial number had never had their knowledge of travel medicine formally assessed. There is a strong argument that all those who practice travel medicine should have formal training and assessment of their knowledge in the specialty, and those who have not undergone such a course should be strongly encouraged to do so.

It is encouraging to note that only 3 respondents (4.8%) had not attended any educational sessions in the previous 2 years. All who practice the specialty should be encouraged to refresh their knowledge regularly, though it is questionable whether attending a single lecture is adequate for this purpose. Issues of travel related health change rapidly, with emerging and re-emerging diseases, changes in climate and distribution of diseases, disasters and migration and the emergence of drug-resistance amongst the issues that require continual updating.

It is also encouraging to note that 93.4% of respondents expressed a wish to participate in future educational activities organised by BGTHA. It is perhaps surprising that in the 21st century the most popular educational activity is the face to face lecture, though this could be a function of the age characteristics of the respondents, many of whom are more likely to be accustomed to traditional methods. Although lectures have been criticised for being outdated, with an audience attention span of 15-20 minutes at the most, if they are compact and well structured and engage the audience well they can be an effective way of teaching and learning⁴. BGTHA has recently produced a series of regional educational meetings with face to face lectures and subject to obtaining suitable funding there will be more of these in the future. Students are, however, turning more and more towards electronic methods of learning as the use of computers has become virtually universal, and this is reflected in the fact that the next most preferred learning method identified was an online structured learning course. Such courses offer a means of learning in which students can learn at their own pace and in their own time and, if suitably constructed, allow their learning to be assessed and give them feedback on their performance. Links can be included to external sources of information and a variety of audiovisual techniques can be included to enhance the learning experience. BGTHA is, at the time of writing, constructing such an online course which it is hoped will provide a useful grounding in the basics of travel health for newcomers to the specialty and an equally useful refresher course for more experienced

members.

Interactive workshops were the third most preferred option. This type of activity involves the learner to a much greater extent than does a didactic lecture and has been shown to have a much greater effect in changing professional behaviour⁵. For several years BGTHA has included workshops in its conference programme, and it is intended that this should continue in future conferences as a valuable learning tool. Webinars did not feature highly in members' preferences, possibly because this is a relatively new education tool of which many members have little experience. They are essentially online presentations transmitted live with the possibility of interaction between presenters and participants. They are an effective method of teaching and learning⁶ and are likely to become increasingly popular. BGTHA is currently preparing a series of webinars on selected topics in travel medicine, and it is hoped that they will become as popular with members as they are in many other online communities.

Printed educational material was the least preferred option. It is costly to produce and distribute, but the use of e-books greatly reduces the cost. Some students still prefer to use printed material, as evidenced by the demand for "handouts" at lectures, and although electronic learning methods, lectures and workshops may prove more effective and more popular there is still likely to be some demand for printed material.

Conclusions

There are still many travel health practitioners who have not undergone a formal and assessed course of training, which should be a pre-requisite for all who

wish to practice in the specialty. Practitioners need to undergo regular updating of their knowledge, and whilst many attend educational activities, not all of them attend sufficiently often or at a sufficient level of intensity. There is a high level of demand for educational activities amongst travel health practitioners, and whilst many still prefer to attend traditional face to face didactic lectures, many others would prefer to have electronic methods of learning such as online courses and webinars, or more interactive workshops. The demand for printed educational material is relatively low.

BGTHA is working towards fulfilling these educational needs. We have organised regional educational meetings in the past and intend to do so again in the future. We will continue to offer interactive workshops at our conferences and are developing webinars and a structured online course to fulfil members' needs in the field/electronic learning methods.

Mike Townend , Larry Goodyer

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RESEARCH

Hydration Levels for Travellers and Advice given by Travel Health Providers

D Evans

Keeping the traveller hydrated and healthy - an examination of the published information of the required hydration levels for travellers and advice given by travel health providers; including a comparison of water filter systems for individual use.

Background

Much has been written about the need to rehydrate and how to achieve non-infected water supplies when travelling. Very little is published on the correct levels to be advised to travellers. A web-based search was completed on current rehydration guidelines and then compared to the answers received in a telephone scenario amongst local healthcare professionals (HCP) who advertise travel health services. Finally a comparative review of personal water purification systems was completed as an indicator to obtaining non-infected water.

Review of current advice on hydration and rehydration levels using the following search words: water, rehydration, hydration, fluid intake.

NaTHNaC¹- no advice on hydration levels, section discusses water-borne diseases, risks and purification. The online health professional site refers to rehydration in cases of cholera.

CDC²- discusses water infections and disinfection for travellers only, no advice on fluid intake for travellers.

Keystone³- discusses dehydration and fluid consumption from the points of hypo-hydration, over-hydration and hyponatraemia. Chapter 41 discusses the need to replace fluid lost through sweating and produces a table guide of the fluid replacements under various conditions of work intensity and heat load.

Goodyer⁴- highlights that in cases of heat exhaustion up to 10 litres per day maybe required, and that early signs of insufficient fluid intake is a reduced urine output that is dark in colour.

In summary, the commonly accessed and used sources for travel information by both health professionals and travellers contain no clear references to the volumes that are required to be drunk in hot climates. However these are referred to in specialist reference material to which few have direct access.

A web based search for rehydration guidelines:

References that provided numerical advice on rehydration levels and the impact of dehydration in studies:

- US Military Fluid Guidelines (5)- an in depth study involving the US military which indicates that at the lowest range of effort, tasks in a temperature range of 78-82 degrees Fahrenheit, will require a soldier to consume a half a quart (500ml) every hour up to a maximum of 12 litres per day.
- WHO water nutrients (7)- this study takes into account the US Military Fluid Guidelines and then applies this to adults who are either physically active and/or increased temperature providing guidance that for males and females the range of fluid intake should be 8-16 litres per day.
- Water, Hydration and Health (6)- the authors of this study indicate the impact of dehydration on the body and show that a small loss of 2-3% in body water can produce marked symptoms, such as darkening of the colour of the urine and a 10-13% reduction in energy output. Another study in children in a high school highlighted the reduction in cognitive effects with low levels of dehydration that led to a loss in visual perception and short-term memory but could be reversed by taking adequate water.

To the traveller the impact of reduced water intake could be huge. Dehydration leads to a reduction in physical activity producing tiredness, lethargy, fatigue and confusion. Cognitive impairment and the reduction in short term memory could lead to a lack of concentration when in busy traffic or missing important appointments such as departure times.

Results of a survey of pharmacies and private clinics, advertising travel health services, and water hydration advice.

As part of a larger unpublished survey a selection of private travel clinics, GP surgeries, multiple pharmacies, and independent pharmacies, all advertising travel health services were contacted to determine the advice given to a scenario involving water rehydration in a traveller to a warmer climate than the UK.

Can he drink the tap water out there?			
Yes	No	Ask Dr/Nurse for advice	Not sure/Don't know
0	9	5	6
0	45%	25%	30%

Suggestions to provide water source:			
Bottled water	Tablets	Drops	Filtration system
16	4	0	0

Suggestions to provide water source:			
	Don't know	Seek advice	
	3	1	

So how much water does he need each day					
7	4	2	2	4	1
35%	20%	10%	10%	20%	5%

Is that the same (water intake) in the				
3	4	5	6	2
15%	20%	25%	30%	10%

Comments

- 45% confirmed that tap water was unsafe to drink, but only 20% of those when asked advised to use any water purification system.
- Rehydration- 10% advised within the WHO guidelines; 10% advised according to UK standards; 20% vaguely advised "increased levels" and 60% advised to seek information from another source such as Dr, Google and a camping shop,
- Only 20% recognised that increased water intake was required for the jungle conditions
- Useful additional comments made included referral to recognised advice site (NaTHNaC and FitForTravel); observe the colour of urine for signs of dehydration.

From this brief study it can be shown that travel health professionals are providing inconsistent advice to the volume of water required for rehydration with regard to the increased temperatures. Additionally there was a reliance on alternative information sources for correct information including those that may not have a medically evidenced based source of information. No reference was made to any other water purification system other than chlorine tablets/drops.

Survey of water purification systems comparison.

Use of water purification systems has increased over the recent years from in house systems to a

portable unit that has a combined drinking bottle and a filter with nano-sized holes that will extract most bacteria, viruses, protozoa, and helminth infections. As the intake of water is needing to be increased in the average traveller, then the quality of water standards need to be indicated to ensure adequate hydration and continued health.

This section compares some of the most commonly advertised systems to indicate the strengths and weaknesses to the travel health professional when advising on safe, uninfected water intake. An online web based survey was undertaken for the most popular brands stocked in outdoor stores and retailers.

System	Aquapure	Lifestraw Go	Lifestraw Personnel	Sawyer mini	Sawyer All in One	Katadyn Vario	Water to Go
Manufacturer	Pure Hydration	Vestergaard	Vestergaard	Sawyer	Sawyer	Katadyn	Watertogo
Price (£) 2015	39	35	35 (online)	30	76 (online)	115	30
Weight (grams)	181	225	56	65	N/A	425	152
Filtered vol (litres) per cartridge or change*	350	1000	1000	100000 (Manuf claim- not evidenced)	1000000 (Manuf claim- not evidenced)	2000	200
Removes bacteria	Y	Y	Y	Y	Y	Y	Y
Removes virus	Y	N	N	Y	Y	N	Y
Removes Protozoa	Y	Y	Y	no information	no information	Y	Y
Removes inorganic material**	Y	N	N	no information	no information	Y	Y
Filter size (microns)	0.2	0.2	0.2	0.1	0.1	0.2	0.1
Meets EPA drinking water standards ***	Y	N	N	N	N	N	N
	cap protection only available on new models	does not remove viruses	does not remove viruses	breakable screw threads	breakable screw threads	requires 3 filters	replacement cartridge screws into cap lid and is sealed by O ring.
		does not remove chemicals	does not remove chemicals	requires O rings to remain a sealed unit	requires O rings to remain a sealed unit	needs to be hand pumped	Thread can break and O ring can be lost, allowing untreated water to come into contact with hands of user
		unable to remove debris	unable to remove debris	cannot carry water, requires separate pouch		only fits wide mouthed bottles (Nalgene type)	Does not kill viruses
			cannot carry water			heavy item to be carried	Does not meet full EPA guidelines
			need to open 2 caps, top and bottom to used			Can only be used in vertical position	

* Manufacturers supporting their product with evidenced information are entered in the table. Where indicated are products identify manufacturers whose advertising claim cannot be supported with evidence.

** Inorganic material includes the removal of heavy metals.

*** The Environmental Protection Agency (EPA) is the US bench mark for the water purification industry. It applies chemical, microbiological and radio-nuclear tests to all water samples at accredited test laboratories. The only water filtration system that passed all the required tests (log 6,4 and 3) for removal of bacteria, viruses and Protozoa was the Aquapure system made by Pure Hydration and this can be classified as a water purification system, whereas all others are only water filters.

Hydration Levels for Travellers and Advice given by Travel Health Providers: *continued*

Conclusions

The importance of correct levels of hydration for travellers is generally realised but currently considered a low priority and rarely advised alongside other risk factors such as water borne diseases.

In the absence of any internationally published standards on rehydration then the U.S. Military or WHO guidance could be advised.

The ability to obtain supplies of personal non-infected water for correct hydration should include reference to water purification systems.

The Aquapure water filtration system has the highest standard of all the filters and is the only one exceeding the EPA standard for water purification levels.

To improve the consistency and accuracy of information regarding water hydration standards and methods then more education is required for health care professionals.

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Photo Competition

Winners of the photo competition for most humorous and educational entries are: S E Howarth, P A McIntosh and T Blackwood each receiving a £25 cash Prize. The editor thanks all contributors, some of the entries below.



Sign
outside
toilet!

