TAISTEAL

Volume 18

Issue 3

Winter 2018

NEWSLETTER

ed. A. Weidenhammer

The Travel Medicine Society of Ireland

wish all our members a very Happy Christmas
and a Prosperous New Year
We look forward to seeing you in 2019

A NEW LOOK FOR THE TMSI WEBSITE

The Society's website has been updated – take a look (www.tmsi.ie) and in particular, please publicise our undergraduate prize (http://tmsi.ie/index.php/undergrads) to any medical students you know or who are in training in any of your practices. A gold medal is awarded to the winning entry and the closing date is in February.

Details of two postgraduate bursaries are also on the site (http://tmsi.ie/index.php/postgrads) and discussed elsewhere in this edition of Taisteal. The bursaries provide the successful applicants with assistance to attend a relevant educational event in Ireland or overseas (e.g. courses, conferences, seminars) by providing partial financial support to defray the costs of attending the event.

Simon Collins.

SCHISTOSOMIASIS ('BILHARZIA')

(The story of an exotic parasite that is not as rare as you think and is often worth screening for in the returned traveller).

Photo: Lake Malawi, one of the most popular African freshwater lakes visited by tourists, particularly 'overland truck' trips travelling between Kenya and South Africa. Medical students on holiday during summer elective placements in Zambia/Malawi are frequent swimmers in the lake also.

One Friday afternoon, the mother of a 16 year-old schoolboy phones you to say he's not well. He was on a school trip to Malawi (20 students travelled) and returned about six weeks ago. For the past two days he's had a low-grade fever, some diarrhoea and a cough. He's admitted to her that he missed a couple of days of malaria prevention medication while on the trip. She's worried that he might have malaria. You see him later the same day. A thin and thick malaria slide done at the local hospital is reported as negative. You treat him as a precaution for bacterial food poisoning with a broad-spectrum antibiotic. A few days later he recovers.

A week later, three classmates from his school who were on the same trip turn up with similar symptoms, one of them having right upper abdominal discomfort and another having a rash. A Full Blood Count is done on one of the patients and shows a significantly elevated eosinophil count. It turns out the diagnosis is acute schistosomiasis ('Bilharzia'). All 20 boys are screened at the local hospital by the Infectious Diseases team – ten turn out to be infected. 15 of the boys had been swimming in a fresh-water lake; in effect, two-thirds became infected with schistosomiasis. Those who are infected are all cured with the use of oral treatment on an outpatient basis.

The above story is not as uncommon as you might think. Most tropical diseases are rare in day-to-day general practice, but Schistosomiasis is not and has the potential to be missed initially, persist in the patient for some years, cause diagnostic confusion and in unlucky cases, complications at a later stage. It's a fresh-water microscopic trematode fluke, widely distributed in African lakes and rivers and also present in parts of South America and Asia, e.g. Myanmar, Laos and the Philippines (see map).

Map: Schistosomiasis distribution (Gryseels B et al, Human Schistosomiasis Lancet 2006; 368 (9541), 1106 - 18).

The clinical manifestations and diagnosis of the parasite are different when comparing visitors with local populations. For the purpose of this article, I am discussing how the parasite relates to the visitor/tourist to an infected region and not to those who have lived there all their lives.

Locals who are infected with the parasite transmit it into fresh water either through urine or stool passage. A freshwater snail as intermediate host needs to be present in the water for the parasite to complete its life cycle. The parasite emerges from the snail as a stage in its life cycle known as 'cercariae' (see step 5 in life cycle diagram, below), ready to infect its next human host; the parasite does this by direct penetration of the skin – so that even walking through water that is infected (e.g. at a lake shore) is sufficient for a person to become infected.

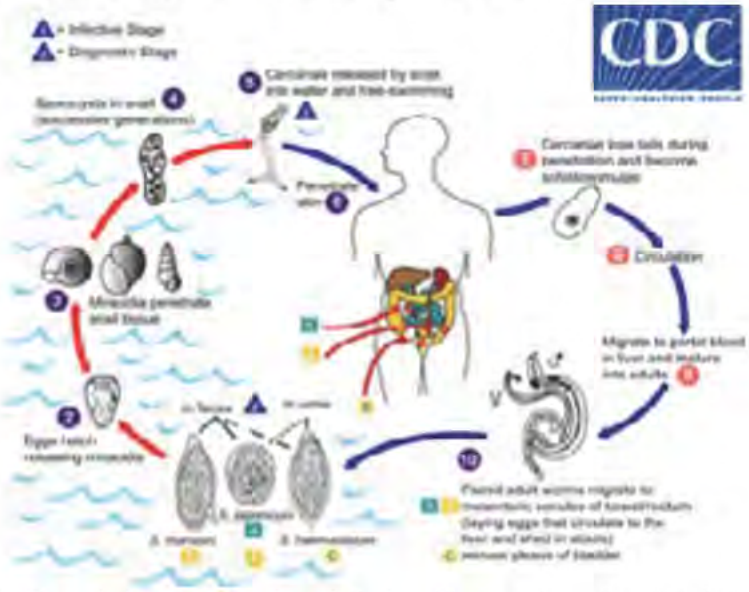


Photo: Schistosomiasis parasite life cycle (CDC). Step 6 shows infection of both tourists and locals in infected regions (mostly Africa). Step 10 shows how the parasite is passed from infected patients (usually locals) in either urine or faeces into the environment.

Cercariae remain viable in fresh water for up to 72 hours (this means that infection can even occur from taking a shower, if the shower water has been taken from a contaminated source (e.g. on safari – see below).

Photo: a gravity shower, commonly used in camping and safari holidays in Africa. If the water in the shower has been obtained from a contaminated river or lake, the infective cercariae can remain viable for up to 72 hours.

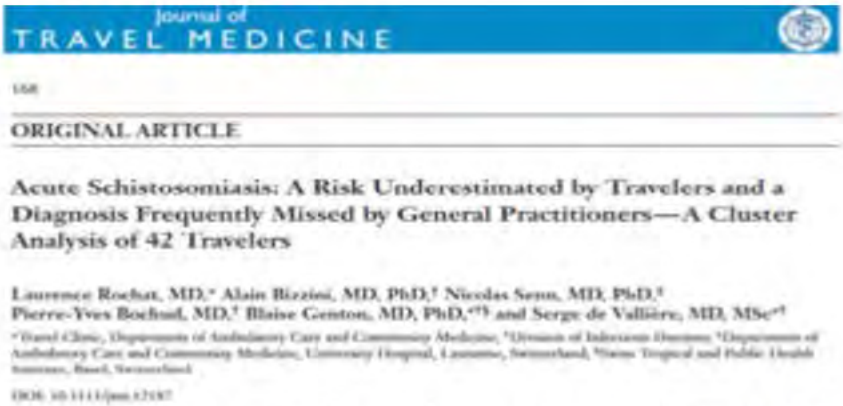
The fact that the cercariae can remain viable for so long might explain why some patients who test positive for the infection will deny having walked or swam in fresh water.

Photo: the shoreline of Lake Victoria, Uganda (Entebbe Boating Club). Ankle-deep immersion in water is sufficient to lead to schistosomiasis infection. The microscopic parasite penetrates the skin of the lower limbs.

Infection leads to three possible scenarios: 'Swimmers' Itch', acute schistosomiasis and chronic schistosomiasis:

- Swimmers' Itch is a skin allergy-type rash which appears within 48 hours at the site of penetration of the parasite. It occurs in no more than a third of cases. The parasite then migrates to the lungs and the liver, finally ending up in the blood vessels around the bladder or large bowel. It is passed by the patient's urine or in faeces.
- Acute schistosomiasis occurs four to eight weeks after infection. It is an immune reaction by the body to the migrating parasite and is made up of a constellation of symptoms. These can include any or all of the following: cough, low-grade fever, diarrhoea, right upper quadrant abdominal pain and rash. A transient accompanying eosinophilia occurs in about 70% of cases and this is a key diagnostic clue. If the diagnosis is missed, the patient's immune system will often settle and the symptoms will disappear after a few weeks, but the patient remains infected.
- Chronic schistosomiasis is the persistence of the parasite in some patients. On average, the parasite will survive 3 – 5 years but in some cases can last much longer.

Acute schistosomiasis is important because you may unwittingly encounter it in a patient some weeks after their trip. The non-specificity of the symptoms mean that neither the patient nor their doctor may make the connection with the trip.



Journal of
TRAVEL MEDICINE

ORIGINAL ARTICLE

Acute Schistosomiasis: A Risk Underestimated by Travelers and a Diagnosis Frequently Missed by General Practitioners—A Cluster Analysis of 42 Travelers

Laurence Rochat, MD,* Alain Bizzini, MD, PhD,† Nicolas Senn, MD, PhD,‡ Pierre-Yves Bochud, MD,§ Blaise Genton, MD, PhD,*¶ and Serge de Vallière, MD, MSc*‖

Photo: an example of a journal article describing missed cases. A large travel group visited a waterfall in Madagascar. Unknown to them, many became infected. The diagnosis of one case in Europe led to all group members being screened. 16 who tested positive had already been to their family doctor with a variety of symptoms (acute schistosomiasis) – in none of those cases had the correct diagnosis been considered.

Chronic schistosomiasis is important because a returned traveller (particularly from stays in Africa where they have swum in lakes or rivers) who is seeking an 'all-clear' medical check-up will need to be specifically tested – a sizable minority of infected cases are asymptomatic.

Diagnosis:
In expatriates/visitors (as opposed to local residents), blood testing by serology is the most accurate method of diagnosis. This should be performed earliest 3 months after exposure as tests before that time point might come back false negative. Testing urine or stool samples in expatriates will often leads to false negative results due to the relatively light parasite load in visitors.

Treatment:
The medication 'Praziquantel' given three months or more post-infection has a high cure rate. One day of treatment is usually sufficient. Treatment given immediately after infection will not treat the immature form of the parasite. Waiting until at least three months after the last date of possible infection is important.

In case of acute schistosomiasis, oral steroids are the mainstay of treatment.

Common pitfalls:
Clinicians failing to test or
Patients saying:

- "I don't need to be tested" (I wasn't in fresh water)
- "The lake I swam in was not infected, according to the locals"
- "I only had a shower in fresh water"
- "I have treated myself already" - the pitfalls of this approach include:

➢ premature treatment (not waiting until 3 months post-exposure)
➢ inadequate dosing
➢ fake, expired or sub-potent medication (due to poor storage at high temperatures)

Key messages:

- Any patient who has been exposed to fresh water, particularly in Africa, is at risk of having contracted Schistosomiasis
- Many patients are asymptomatic
- Acute Schistosomiasis, occurring 4 – 8 weeks post-exposure, is often mistaken for other illnesses. Think of acute schistosomiasis if a patient presents 4 – 8 weeks post-travel with cough and/or diarrhoea and/or low-grade fever and/or right upper quadrant abdominal pain and/or rash. An FBC will reveal significant eosinophilia in about 70% of cases
- The most accurate diagnostic test in expatriates (i.e. tourists, not native populations) is blood serology (not stool or urine testing). Tests done before the patient has been 3 months home from a risk area runs the risk of false negative result. Tests done 3 or more months post-travel are relatively reliable.
- Treatment usually involves the use of oral Praziquantel tablets for one day. Treatment does not cure the juvenile forms of the parasite and so treatment should not be given until the patient has is three months or more home from an infected region.

References:
Bailey SL, Fluke infertility: the last cost of a quick swim J Travel Med 2011; 18 (1): 61-2.
Ross AG et al, Neuroschistosomiasis J Neurol 2012; 259 (1): 22-32.
Rochat L et al, Acute schistosomiasis a risk often underestimated by travellers and a diagnosis frequently missed by General Practitioners – a cluster analysis of 42 travellers J Travel Med 2015; 22 (3): 168 – 73.

Simon Collins FFTM RCPS (Glasg)

This article is based on an OSKE delivered by the author at the TMSI meeting in Dublin on 10th November 2018.

TEST YOUR KNOWLEDGE – MULTIPLE CHOICES QUESTIONS IN TRAVEL MEDICINE: *By* Dr. Joseph Sim.

1. Ebola:

(A) Ebola haemorrhagic fever / Ebola virus disease is a severe but easily treatable disease in humans if detected early.

(B) The 2014-2016 outbreak in West Africa was the largest and most complex Ebola outbreak since the virus was discovered in 1976.

(C) Ebola is introduced into the human population through contact with infected birds.

(D) The 2018 Ebola outbreak in the Democratic Republic of Congo is under control as of Nov 2018 and the risk of the outbreak spreading to neighbouring countries is now extremely low.

2. Avian Influenza:

(A) Although some avian H7 viruses such as H7N7 have occasionally been found to infect humans, Avian Influenza A (H7N9) were only reported in humans from China in 2013.

(B) WHO recommends routine post-exposure anti-viral chemoprophylaxis for all H7N9 cases.

(C) Most known cases of human infections result from direct or indirect contact with infected poultry or contaminated environments although a minority of cases may have resulted from person-person transmission.

(D) Influenza viruses are inactivated by normal temperatures used for cooking therefore properly handled / cooked meat products and eggs can be consumed safely.

3. Notifiable Diseases:

(A) Healthcare professionals including laboratories are required to notify the Medical Officer of Health / Director of Public Health of certain diseases using the notification of infectious disease form.

(B) Lyme disease, Viral Meningitis, Hepatitis B infection and Rotavirus infection are examples of notifiable diseases.

(C) The information collected is used for early identification of outbreaks, monitoring the changing patterns of diseases and influencing interventions such as immunisation.

(D) A standardised case definition is not essential for effective health surveillance – case definition depends on the local laboratory criteria / standards for identifying the diseases.

4. Measles:

(A) Measles is a highly contagious acute viral disease & unvaccinated young children / pregnant women are at highest risk of the infection and its complications.

(B) The virus remains active / contagious in the air or on infected surfaces for up to 24hr.

(C) Can be transmitted by an infected person from 4 days prior to the onset of the rash to 4 days after the rash erupts.

(D) The National Immunisation Advisory Committee (NIAC) has recently updated the measles vaccination guidance for people travelling to countries or regions where measles outbreaks are occurring.

5. Plague:

(A) Is transmitted by the plague virus Yersinia pestis that often infects small rodents.

(B) People get plague through the bites of infected fleas, direct contact with infected animals and inhaling droplets from the cough of infected persons / animals.

(C) Plague occurs naturally in western USA and epidemics have occurred worldwide although most human cases since 1990s have occurred in Africa, predominantly in small towns and rural areas.

(D) The most common clinical forms are bubonic plague, septicaemic plague and pneumonic plague.

6. What Country is this - Hints:

(a) It's paradise for wildlife lovers – look out for the Baobab trees, the elusive long-tailed ground roller bird and the aye-aye lemur.

(b) Located off the coast of Africa, this 4th largest island in the world was only discovered around 500AD.

(c) Plague is common here and WHO stated that around 600 cases are reported annually.

Answers on page10

WHAT'S IN THE JOURNALS?

The most recent (September-October 2018) issue of Travel Medicine and Infectious Disease (https://www.journals.elsevier.com/travel-medicine-and-infectious-disease) has much to interest the reader. An original study from Colombia on the diagnosis and outcomes of Zika virus in pregnancy is accompanied by an editorial on the subject. A prospective cohort study of enteropathogens acquired by pilgrims during the 2016 Hajj pilgrimage to Mecca is of interest to travel medicine clinicians who advise Muslim pilgrims. An interesting study of Finnish travellers provides insights into the acquisition in specific countries of notifiable infections transmitted by contaminated food and water or through sexual contact. A paper from Sweden details the incidence by age group of chlamydia infection in travellers over a 13-year period. A second Swedish group report on the sexual risk-taking behaviour of Swedish men who have sex with men during travel abroad while a letter to the editor challenges the association between HIV infection and the LGBT community and the consequent discrimination this may engender. A Dutch study examines travel-related health issues in immunocompromised travellers. A systematic review, led by journal editor-in-chief, Patricia Schlagenhauf, examines the profile of infectious diseases seen in migrants from Syria and Eritrea who reach Europe. Some clinicians will not be familiar with Nipah virus infection which can be transmitted through food or from direct human-to-human contact. A correspondence article calls for outbreak preparedness in Pakistan after recent fatal cases in neighbouring India.

Journal of Travel Medicine (https://academic.oup.com/jtm) has a new Editor-in-Chief, Annelies Wilder-Smith, who succeeded Eric Caumes in July 2018. Eric gave many years of loyal service to the journal and I always admired him for his impartiality, fairness and attention to detail. Annelies is well known as the immediate past president of the ISTM and is a recognised global expert on dengue infection. There have been some early editorial policy changes which saw the elimination of the Brief Communications article category, the introduction of a new Clinical Pearls category (we published one recently on a Brazilian expatriate with delusional infestation) and the promotion of more systematic review submissions. There have been some very high profile contributions in recent months, prominent among them:

- an updated logarithmic scale of vaccine preventable diseases during travel by the great Robert Steffen;
- a Swiss paper on safety of live vaccines in travellers on immunosuppressive therapy;
- a GeoSentinel analysis of ill business travellers;
- our own analysis of international travel fatalities at the Cliffs of Moher;
- latent TB infection prevalence among migrants who have crossed the Mediterranean Sea; lake tourism deaths in the USA;
- a systematic review of Zika in travellers;
- an expert review by Kevin Baird of tafenoquine for prophylaxis of malaria and radical cure of Plasmodium vivax;
- the new ISTM Older Traveller special interest group;
- Internationally adopted children;
- Measles in Europe;
- Medical elective student health problems;
- cosmetic surgery tourism;
- air pollution and travel;
- and the prospects for a Shigella vaccine for travellers.

If you have an idea for an original research project in travel medicine which you would like some guidance and support to develop, please contact anntmsi35@gmail.com and I will get in contact with you. You may have had an interesting case or an observation which you would like to share and this can sometimes be communicated as a Letter to the Editor, a Diagnostic Challenge or a Clinical Pearl in 500 words or less.

Prof. Gerard Flaherty

Foundation and Diploma Courses in **Travel Medicine**

ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF GLASGOW
TRAVEL MEDICINE

Foundation Course in Travel Medicine

The Foundation Course in Travel Medicine is a **six month e-learning course** suitable for those working in the field of Travel Medicine.
The course includes:

- Introductory educational training session in Glasgow (*two days, attendance required)*
- Four e-learning units with assignments

Topics covered include:

Pre-travel risk assessment
Infections and epidemiology of infection
Immunisation theory, practice and available vaccines
Malaria

Diploma in Travel Medicine (DipTravMed)

The Diploma Course is suitable for healthcare practitioners working in the field of Travel Medicine. It is delivered through a blended e-learning approach over one full calendar year.

The course includes:

- An introductory residential week in Glasgow
- Module 1: ten e-learning units with assignments
- A mid-session residential week in Glasgow including an objective structured clinical examination (OSCE)
- Module 2: ten e-learning units of self study with practical exercises
- Module 3: a project chosen by the student
- A final written examination in Glasgow.
  Overseas students can opt to sit this examination in their own country by arrangement.

Student support (applicable to both courses):
All students are allocated a personal advisor and access to the course website, TRAVAX and e-Library. Online staff/student communication is also provided.

The UK's only multidisciplinary Royal College

For more information and applications, please contact:
Applications and administration: Lesley Haldane
+44 (0)141 241 6217 | lesley.haldane@rcpsg.ac.uk

Course content and curriculum: Ann McDonald or Clare Henderson
ann.mcdonald@rcpsg.ac.uk | clare.henderson@rcpsg.ac.uk
+44 (0)141 227 3239

Travel Medicine Courses, Faculty of Travel Medicine
Royal College of Physicians and Surgeons of Glasgow
232-242 St Vincent Street, Glasgow, G2 5RJ, UK
www.rcpsg.ac.uk/travel-medicine

"Back to basics" programme - November 2018

On our last TMSI meeting, which was held on Saturday, 10th November in Clayton Hotel in Liffey Valley, the two Nurse members of the TMSI committee Patricia Brady and Siobhan Grehan jointly presented a programme entitled Fundamentals of Travel Medicine for Practice Nurses ("back to basics"). The Masterclass in Travel Medicine was held parallel to that.

The "Back to basics" programme entailed four sessions, two were held in the morning and a further two in the afternoon.
The day was broken in the middle when we joined up with the Masterclass in Travel Medicine, to listen to our invited plenary speaker doctor George Kassianos, President of the British Global Travel Health Association. He delivered an extremely interesting presentation on Influenza and the traveller, certainly making us all reconsider the place of flu vaccination as an advised vaccine to all International travellers.

The 'Back to basics' for Nurses was extremely popular. We had to limit the numbers to 35, so that participants would get opportunities to ask questions and interact.

Thank you to all those who participated pictured above and for their very supportive and encouraging feedback.
It is one of the main aims of the Travel Medicine Society of Ireland to provide relevant and up-to-date education in all aspects of Travel Medicine.

Membership of the society entitles you to free attendance to their regular meetings, a reduced fee when attending the Masterclass and for those who like to avail of it there is a significantly reduced fee for the use of Travax.

Anyone interested in becoming a new member can contact our secretary Anne Redmond at anntmsi@gmail.com

Siobhan Grehan

TEST YOUR KNOWLEDGE – ANSWERS FROM PAGE 7

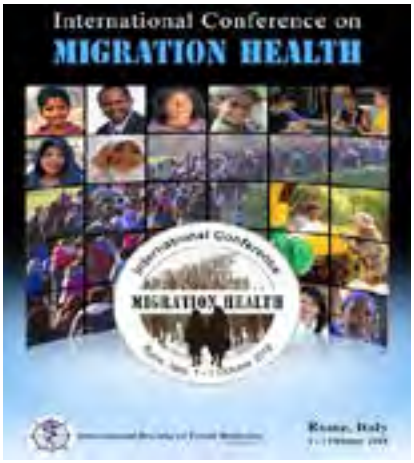
Question	A	B	C	D
1. Ebola	False	True	False	False
2. Avian Influenza	True	False	True	True
3. Notifiable Diseases	True	True	True	False
4. Measles	True	False	True	True
5. Plague	False	True	True	True
6. Country:	Madagascar			

MIGRATION HEALTH CONFERENCE REPORT

The first International Conference on Migration Health was held October 1-3 in Rome, Italy. Organised in conjunction with the International Society of Travel Medicine, it was organised by Prof. Francesco Castelli from Italy and Dr. Christina Greenaway from Canada. I was invited to chair a conference session on chronic and non-communicable diseases in migrants and I participated in a round table discussion on migration health. An ISTM executive committee meeting was held on the Wednesday afternoon and all day on the Thursday.

Day 1 featured a plenary session from Francesco Castelli on promoting and protecting the health of migrants and a morning symposium on the experiences of receiving countries in North America, including a presentation from Paul Douglas of the International Organization for Migration. A panel discussion considered challenges and opportunities in regional migration from the perspectives of North Africa, the Middle East and South Asia. The oral research session focused on immigrant women and children and workshops were devoted to engagement of migrants in healthcare and the screening of migrants.

One of the afternoon symposia considered the plight of paediatric migrants, including infectious disease challenges, traumatic stress and the promotion of resilience. The final symposium from day 1 addressed tuberculosis, HIV and viral hepatitis in migrants. South-to-South migration was the subject of a second oral research session. The packed day ended with an open forum which provided compelling first-person accounts of the migration pathways, both from newly arrived migrants, and from migrants who have integrated fully into their adopted nations.



The second day of the conference featured a plenary which examined the history of the refugee process and the role of various international organisations as well as the economic and cultural benefits of migration for host countries. The morning workshop focused on continuing medical education of health care providers in relation to refugee and migrant health. A parallel symposium reflected on the experiences of receiving countries caught up in the recent European refugee crisis. Speakers included doctors from Greece who were at the frontline of local efforts to assess and settle migrants crossing the Mediterranean Sea from North Africa.

The afternoon witnessed a debate on the controversial issue of screening for latent tuberculosis among migrants and workshops addressing transcultural competences and vaccination issues along the migration pathway. Pregnancy, female sexual mutilation and violence against migrant women were the subjects for discussion in the first of three afternoon symposia. The others dealt with mental health among migrants and public health surveillance for refugees and migrants. The day ended with an oral research session dedicated to infectious diseases among migrants.

Challenging cases in migration medicine opened proceedings on the final day of the conference before the final plenary asked “Where do we go from here?”. A symposium dealt with parasitic infestations in migrants, with a focus on malaria, Chagas disease, schistosomiasis and strongyloidiasis. A panel discussion chaired by Dr. Kamran Abassi from the UK discussed how the public and policy discourse on migration health is being shaped by the press and policy makers. Overall, this was a very stimulating conference which offered much useful information to participants. Italy provided a very appropriate venue for the discussions.

Prof. Gerard Flaherty

CANCER PATIENTS ON COMBINATION CHECK-POINT INHIBITORS SHOULD NOT RECEIVE INFLUENZA VACCINE

Influenza vaccination is strongly recommended for most patients with cancer, ideally 2 weeks before commencing Chemotherapy. A second dose in the same season would be recommended for patients, who received the vaccine while on chemotherapy (except where the vaccine is contraindicated). This second dose should be given a 'minimum of 4 weeks following a course of chemotherapy, if lymphocyte count is $\geq 1.0 \times 10^9$/L and regardless of whether they have received influenza vaccines in previous seasons'.

However due to increased risk of immune related adverse reactions, it is now advised that people on combination check-point inhibitors (e.g. Ipilimumab and Nivolumab) should not receive the seasonal influenza vaccination.

Check-point inhibitors are a type of immunotherapy used to treat cancer including lung cancer. Patients with lung cancer are at risk of complications from Influenza particularly the people who are not vaccinated against the seasonal Flu. The Influenza vaccine provides good protection against seasonal Flu but the vaccine may cause exaggerated immune response in patients on the specific type of cancer immunotherapy: combination check-point inhibitors. Immune-related adverse events include skin rashes, arthritis, colitis, encephalitis, pneumonitis and neuropathy.

NIAC has revised Chapter 3 of the Irish immunisation Guidelines (Immunisation of Immunocompromised Persons) to include "those on combination check-point inhibitors should not receive any vaccines". This recommendation is now also reflected in the HSE 2018-2019 Influenza Vaccination information leaflet.

Dr Joseph Sim

DOM COLBERT UNDERGRADUATE PRIZE IN TRAVEL MEDICINE

The winning essay by Bryan Chang Wei Lim, a fourth year medical student at NUI Galway, in this year's Dom Colbert prize competition has been expanded as a manuscript. It has been published by the International Journal of Travel Medicine and Global Health which is a free open access journal. Readers may access the article in full without cost at the following website: http://www.ijtmgh.com/article_69631.html. Congratulations to Bryan!

The title of this year's essay competition is "Unwanted Souvenirs: antimicrobial resistance and international travel". The closing date for entries by email to Anne Redmond is 14th February 2019. This competition is open to all registered undergraduate medical students in the Republic of Ireland. The winner will be announced at the AGM seminar of the TMSI on 6th April 2019.

Reference

Lim BCW, Flaherty GT. Leaving light footprints – the importance of promoting responsible international travel. Int J Travel Med Glob Health 2018; 6(3):88-91.

FREQUENTLY ASKED QUESTIONS ABOUT REPATRIATION OF DECEASED INTERNATIONAL TRAVELLERS

What are the most common causes of death in international travellers?
Coronary heart disease is the leading cause of death during travel and the risk increases with age. Younger travellers are more likely to die from accidental and trauma-related deaths, especially road traffic collisions and drowning.

How expensive is expatriation of human remains?
Expenses vary across the world and depend on transportation distance and cargo weight. Costs range in Australia from Au$8,000 to Au$16,000 and in the USA from US$6,000 to US$12,000.

Can a travelling companion identify the remains of the deceased?
Rules vary depending on the jurisdiction but in many cases identification may be carried out by a travelling companion or business partner of the deceased. In some cases, it will be necessary for a family member to travel to the country of death to identify the deceased, however.

What are the most important initial steps to take?
Travelling companions or family members should contact the nearest national embassy, travel insurance provider and tour operator, if applicable.

What services can the embassy provide?
Embassies can appoint liaison case workers to contact family members, provide interpreters, mobilise relevant authorities including an international funeral director, and arrange for money to be transferred from family for the purposes of repatriation. They will not fund the repatriation of remains, however.

Is there any alternative to repatriation?
Yes. It may be necessary or desirable to bury or cremate the remains in their current location, especially if the deceased did not have repatriation insurance and the family cannot afford the repatriation costs.

Are there any special requirements for the coffin used to transport the remains?
Yes. Coffins crossing international boundaries must be lined with zinc or lead. This makes them unsuitable for cremation in the home country and an alternative wooden coffin will have to be used for that purpose.

What documents will be requested by the Coroner in the country receiving the remains?
The Coroner will require the following documents: medical certificate of cause of death; certification as to whether a post-mortem examination has been performed; the post-mortem report; authorisation to remove the body or ashes from the country; embalming or cremation certificate; and a certificate that confirms that the body is not being conveyed from an area of infectious disease.

Are post-mortem examinations standardised across the European Union?
An effort is currently underway to harmonise medicolegal post-mortem procedures following a Council of Europe recommendation. Where the Coroner is not satisfied with the quality of the post-mortem report, a further autopsy may be required in the deceased traveller's home country.

What happens if a passenger dies aboard a cruise ship in international waters?
Approximately 200 of the 21 million passengers that travel on cruise ships annually die on board the ship. The majority of deaths on cruise ships are the result of cardiovascular disease. Cruise ships contain a morgue which can hold bodies for up to one week. Some ports will allow the body to remain on the cruise ship until it arrives at its destination which could reduce costs of repatriation if conducted within this one week containment interval.

What is the protocol if an individual dies on a commercial flight?
Flights are generally not diverted and must continue to their intended destination. The captain is notified and the deceased passenger is restrained in a passenger seat or corpse cupboard and draped in a dignified manner. Repatriation procedures are handled at the destination.

What if the deceased had a communicable disease?
Category A infectious substances include Ebola and Lassa viruses, for example, and category B includes less transmissible agents such as HIV. Sometimes cremation at the site of death may be preferred in the case of category A scenarios. A special permit must be issued from the aviation authority and from the countries of transit and final destination. There is a global shortage of flight operators with the appropriate aircraft and isolation equipment for this scenario.

What if death was the result of a criminal act?
Death as a result of crime will delay the repatriation process. Investigations are conducted by local police and judiciary and the Irish Department of Foreign Affairs cannot interfere with any investigations. The Coroner in the country of origin or the deceased traveller's family may request that a second autopsy be conducted when the body has been repatriated. In the event of death due to a terrorist attack in the EU, financial compensation may be available to the deceased's family. Identification of remains in this setting can be difficult and families may be asked to provide photographs, fingerprint samples and medical records from the deceased's doctors to aid in identifying remains.

If migrants die during passage to the EU are their remains repatriated?
Generally, migrants' remains are not repatriated in this scenario owing to high costs, safety fears and lack of political will. No standardised procedure exists to deal with the remains of a migrant's body at present. Unfortunately they are often buried locally without formal identification.

How important is travel insurance?
Travel insurance with repatriation cover is the most important safety net for the victim's family. Independent trusts (e.g. the Kevin Bell Repatriation Trust in Ireland - https://kevinbellrepatriationtrust.com/) may be able to provide monetary assistance where an individual was not insured.

Can a traveller who dies in a remote or hostile environment be repatriated?
This may not be possible in order to safeguard remaining expedition members. A decision may have to be made to leave the remains in situ. Witness the recently reported killing of an American missionary by the isolated Sentinelese indigenous tribe on the remote Andaman North Sentinel island off the coast of India. See https://www.bbc.com/news/world-asia-india-46354940 for a discussion of the dangers involved in attempting to retrieve the victim's body.

Are there any special precautions if a deceased traveller had an implanted medical device?
Cremation is contraindicated because of the risk of explosion. Prosthetic implants or artificial limbs must also be removed prior to cremation. This may complicate efforts to repatriate the cremated remains of a traveller whose death was caused by a highly infectious disease.

Reference
Connolly R, Prendiville R, Cusack D, Flaherty G. Repatriation of human remains following death in international travellers. J Travel Med 2017, 1-6. doi: 10.1093/jtm/taw082.

Prof. Gerard Flaherty

NOTICE BOARD

Travel Medicine Society of Ireland Educational Bursary Scheme

The TMSI is launching an Educational Bursary Scheme. Applications for this bursary are open to current members in good standing of the Travel Medicine Society of Ireland who have been members of the Society for at least 2 consecutive years. Applicants must be registered healthcare professionals resident and practising travel medicine in the Republic of Ireland. Bursaries will assist travel health clinicians who wish to attend a relevant educational event in Ireland or overseas (e.g. courses, conferences, seminars) by providing partial financial support to defray the costs of attending the event.

TMSI will reimburse successful applicants upon presentation of vouched receipts to a maximum amount of €500. Two such bursaries will be available for 2019.

Successful applicants are expected to disseminate information acquired to other members of TMSI by writing an article for the newsletter Taisteal and by presenting an OSKE on an agreed topic at two regional educational seminars. TMSI will publicise the outcome of the bursary scheme in its newsletter and on its website.

Members of the Executive Committee are not eligible to apply under this particular scheme.

For further details and application form please contact Anne Redmond at anne.redmond@tmsi.ie
Closing date for receipt of 2019 applications: 28th February 2019

Items for the newsletter can be forwarded to:

taisteal@tmsi.ie

or

anne.redmond@tmsi.ie

BOOK REVIEW

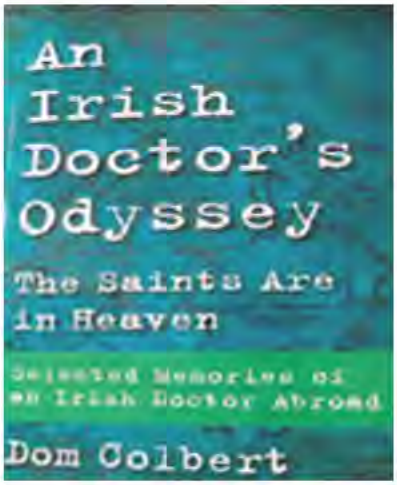
An Irish Doctor's Odyssey:

The Saints Are in Heaven.

Dom Colbert.

Paperback. Orpen Press.

1 March 2018. ISBN: 9781786050571.



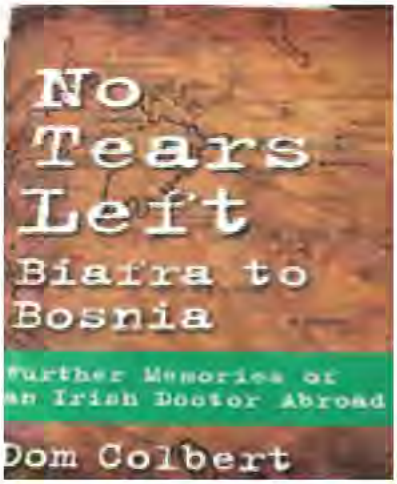
No Tears Left: Biafra to Bosnia -

Further Memories of an Irish Doctor Abroad.

Dom Colbert.

Paperback. Orpen Press.

1 March 2018. ISBN-10: 1786050560. ISBN-13: 978-1786050564.



The practice of medicine is changing, and not entirely for the better. Modern doctors face pressures and challenges which would have been alien to their predecessors. It is easy to become disillusioned in the face of unrealistic patient expectations, medicolegal risks, mounting bureaucracy, and an uncontrolled expansion of medical knowledge. This two-volume set of memoirs, written by a recipient of the Irish People of the Year Awards in 1995, Dr. Dom Colbert, will go some way to restoring doctors' belief in the goodness of humanity and the inherent value of their work.

Dom Colbert was my physiology lecturer in medical school. I loved attending his lectures though he was a man of high standards and a tough examiner. Students can always tell when their teacher 'knows his stuff' and with Dom, one always had that absolute confidence. Knowledge flowed effortlessly from him and there was no dependence on overheads or fancy PowerPoint slides. Dom had a special ability to impart information and inspire a love for the subject in his learners. He spoke from clinical experience and this gave him enormous credibility. His textbook 'Fundamentals of Clinical Physiology' was a gem and reading it was like listening to him give you a private tutorial. Dom appreciated the poverty of students and, memorably, he once told us not to buy the book but to borrow it instead from the library!

We grew to be close friends many years later through working together on the executive committee of the Travel Medicine Society of Ireland (TMSI), which Dom had set up to raise the standards of travel medicine education and practice in Ireland. Again, Dom brought his travel experiences to bear on his teaching and his books of examination questions in travel and tropical medicine are the reference texts for candidates preparing for the international Certificate in Travel Health and Diploma in Travel Medicine examinations. Dom's outstanding leadership in travel medicine continues to be recognised each year with the award by the TMSI of the Dom Colbert Medal in Travel Medicine to one undergraduate medical student in Ireland. We deliberately sit the essay prize winner beside Dom at lunch after the award ceremony and each student, bar none, has remarked to me about how privileged they felt to learn about Dom's remarkable life.

This collection of memoirs is filled with wisdom and quite extraordinary insights into life, death, disease and humanity. The first volume *An Irish Doctor's Odyssey* shares stories from Dom's formative years,

growing up in a conservative time in Irish history, and graduating as a medical doctor from UCD in 1957. It was more than a passing rumour, although he will not admit to it, that Dom Colbert was one of the most brilliant medical minds ever to graduate from UCD. Instead of pursuing a high-flying clinical or academic career in a prestigious institution, Dom chose instead to devote much of his working life to providing medical care to 'the forgotten poor' in Africa and beyond. The loving support of his late wife, Doreen, and his university colleagues at University College Galway (now NUI Galway) were instrumental in enabling Dom to travel as a missionary doctor to war-torn and disease-ravaged parts of Africa for long periods at a time, often at short notice.

Dom's surgical training was put to good use in Africa, where he also learned about how to diagnose and manage patients with tropical infectious diseases. His memoirs contain vivid accounts of patients with a wide variety of tropical infections, including cerebral malaria, schistosomiasis, filariasis, dysentery, loa loa ('eye worm') and cholera. You will read about his encounters with trachoma and typhus in Ethiopia, with guinea worm and gas gangrene in South Sudan and, unusually, with Chagas' disease achalasia in Uganda of all places. One of the problems with modern medical practice is the lack of generalist training in hospitals. Dom and his contemporaries were true all-rounders. You will read about the horror of having to perform a post-mortem Caesarean Section in Africa or an amputation without anaesthesia in Sudan. You will witness the reality of practising improvised medicine under the most deprived conditions, where mosquito nets were used as mesh for hernia repairs and clothes hangers were fashioned into internal fixation devices for the treatment of long bone fractures.

The two books should be read as a unit and are divided into short, readable chapters, which flow easily in Dom's inimitable but most engaging teaching style. The descriptions are beautifully vivid and the author has the memorable turn of phrase of a storyteller, one of the qualities perhaps of a great teacher. The grave and surreal are juxtaposed with the comical and light-hearted. Dom's appreciation for human nature permeates each chapter. His observant accounts of the personalities of colleagues in the missionary hospitals in Africa are wonderfully rendered. His kindness, respect for local customs and for his hard-working missionary sister colleagues – the 'unnoticed Cinderellas' – will impress the reader. Dom's spirituality and religious devotion are echoed throughout both books but there is no attempt to proselytise. The books serve as a reminder of the outstanding service to humankind provided by missionary priests and nuns in developing countries down through the years. Dom is not afraid to be critical of NGOs, however, and we gain fascinating insights into the challenges they faced together.

For the medical or nursing student, the pages are peppered with many gems of instruction, such as 'examine the patient not the notes'. How true that is in investigation-obsessed modern medical practice! For the travel writing enthusiast, you will be transported to the sights and sounds of tropical Africa, and you will learn of the dangers of providing medical relief in dangerous settings, be that among the land mines of Sudan, during the Rwandan genocide, or surviving passage through 'sniper alley' in Sarajevo. It is just as well that Dom was a "young and brash" tropical doctor! These memoirs are a unique and compelling account of a doctor's life well lived, and a salutary reminder of the sense of duty and vocation which society deserves from its medical professionals, and of the importance of spirituality to patients and their carers. I recommend these books to all medical and nursing students, healthcare professionals, healthcare managers and members of the lay public, especially members of NGOs and those with an interest in humanitarian and disaster relief. You cannot but be moved by the honest, self-effacing recollections of Dom Colbert and I hope you will appreciate this unsung hero as much as I do. As Dom says himself in *From Biafra to Bosnia*, "…worldly honours mean little for truly fine people". Dom is healthy and active in his retirement and continues to be an example to us all. We thank him for his contribution to medicine and to the dissemination of medical knowledge. He will always be my most cherished teacher.

Prof. Gerard Flaherty

WATER PURIFICATION

One of the most common infections travellers encounter when travelling to low income countries is traveller's diarrhoea, with 20-60% of people being affected.
The risk of contracting a waterborne disease depends on several factors: the infective dose, virulence of the organism and host factors.
While for V.cholerae a large dose of bacteria would need to be ingested, for Shigella, Hepatitis A, Giardia, enteric Viruses and some E.coli species a small dose is sufficient to be infectious. Pregnant women, children, immunosuppressed and other more vulnerable patients will be more seriously affected.
Some of the most common infectious contaminants in water are listed in the table below.

Bacteria	Viruses	Protozoa	Other Parasites*
E.Coli species Shigella Campylobacter Vibrio Cholerae Salmonella spp (Typhii) Yersinia Aeromonas	Hep A Hep E Norovirus Polio Virus Misc enteric viruses (>100 other types)	Giardia intestinalis Entamoeba histolytica Cryptosporidium parvum Isospora Belli Balantidium coli Acanthamoeba Cyclospora	Ascaris lumbricoides Ancylostoma duodenale Dracunculus medinensis Strongyloides stercoralis Others

*Helminths are not usually transmitted through water with the exception of Dranuncula mediensis.

While the main concern is infectious agents in water, other potentially hazardous contaminants include industrial chemical pollutants, organic or inorganic material from land and vegetation and biological organisms from animals.

The advice usually given to patients is to avoid drinking/ingesting tap water and only consume bottled water, emphasizing that bottles should be bought in a reliable shop, checking that the seal is not broken.
This would certainly be the most convenient method for most short-term travellers, also the most common practice for longer term travellers. The main concern is the waste and therefore environmental impact these plastic bottles create, especially in countries with no effective recycling systems in place. With growing awareness of plastic pollution and the desire to minimize plastic waste, it would be preferable to be able to educate our travellers about safe, effective and more environmentally friendly alternatives of potable water.

So what alternative methods are there and how effective are they?

Boiling

Boiling water is one of the most reliable one-step methods. One minute of boiling is sufficient to kill the majority of harmful organisms including viruses, bacteria, parasites and oocysts. It may be a practical method for VFRs but might be less suitable for a backpacker who does not always have access to cooking facilities or might not want to carry a heating coil or kettle with them.

Advantages	Disadvantages
Susceptibility: Protozoa>Bacteria>Viruses	
• No impact on taste or colour • Can Pasteurize water without boiling • Single step, which inactivates all enteric pathogens • Efficacy not compromised by contaminants	• No improvement of taste, smell or appearance • Fuel source required

Filtering

Filtering water is a physical and chemical process which is influenced by the characteristics of the filter media, water and flow rate. The effectiveness of this method depends primarily on the pore size of the filter. Microorganisms like protozoa and bacteria are eliminated by most commercially available filters, which usually have a pore size of 0.1µm (Microfiltration). To also remove viruses, either nanofiltration (0.001-0.01 µm) or treatment with halogens is required.
Apart from different pore sizes being available, filters also have different membranes to improve effectiveness, taste and appearance.

Examples of different Filter Technologies include:

- Ceramic filters +/- an activated carbon core
- Filters which incorporate chemical disinfection to increase their effectiveness
- Hollow fibre technology (nanofiltration)
- Filter with Mechanically Advanced Disinfection (MAD) technology based on electrohesion (pores in the filter are positively charged attract and hold the pathogens, which are negatively charged)

There are a wide range of filters available on the market with prices ranging from €20 -€300. Investing in a filter is certainly a good option for any longer term or adventurous travellers who might travel into remote areas where they rely on water from natural sources.

Advantages	Disadvantages
Susceptibility: Protozoa>Bacteria>Viruses	
• Simple to operate • Mechanical filters don't require holding time • Often improves taste and appearance of water • Rationally combined with halogens for removal or destruction of all microorganisms	• Bulky and add weight to luggage • Most filters are not reliable for removing viruses • Expensive relative to halogens • Channelling or high pressure can force microorganisms through filter • Filters can clog from organic material, may require maintenance or repair

Halogens

The two widely used Halogens for water disinfection are Iodine and Chlorine. Since 2009 Iodine is no longer sold for water disinfection within the EU due to concerns regarding it's toxicity to the thyroid gland.
Chlorine (usually as Sodium or Calcium Hypochlorite) remains the most commonly used disinfectant in municipal water supplies worldwide and there are no concerns regarding toxicity. It inactivates enteric bacteria and viruses through oxidation of essential cellular structures and enzymes, but its limitation is that Cryptosporidium and Cyclospora cysts are resistant to the standard doses used. Chlorine works best in water in which particulate matter has already been removed as organic matter impairs the effectiveness of Halogens. Chlorine's effectiveness is also dependent on the pH of the water being treated. For any traveller, Chlorine is an easy to use and cheap method with 30 tablets (sufficient to treat 30L) costing around €3 but its effectiveness is limited against Protozoa.

Advantages	Disadvantages
Susceptibility: Bacteria>Viruses>Protozoa	
• Chlorine widely available • Taste can be removed (use Vit C) • Flexible dosing (easily applied to large or small quantities	• Corrosive, stains clothing • NOT effective for Crypto • Can impart unpleasant taste and odour to water

Chlorine Dioxide

Chlorine Dioxide is more effective than Chlorine as it kills not only viruses and bacteria but also most protozoa including Cryptosporidium (but not Cyclospora).
It is available in tablet or droplet form and by being a relatively cheap (30 tablets (equivalent to 30L treated water) = €10, drops for 60L = €14) and effective method it can be a good alternative to bottled water for short term travellers.

Advantages	Disadvantages
Susceptibility: Bacteria>Viruses>Protozoa	
• Effective against all Microorganisms including Cryptosporidium • Low doses have no taste or colour • More potent than equivalent doses of chlorine • Less affected by nitrogenous wastes	• Volatile • No persistent residual (does not prevent recontamination) • Sensitive to sunlight, so keep bottle shaded

Ultraviolet light

Depending on the wave length UV light is a very effective method to kill infective agents, with 240nm (UV C) being the most effective wavelength. The energy in UV waves destroys bacteria, viruses and Cryptosporidium cysts on contact. The effectiveness of this method is limited in cloudy water or with high levels of solids; as a result, the water being treated should be clear of visible particulate matter.
There is a handheld, battery-operated device available on the market (Steripen®), which is an effective means of disinfecting small amounts of clear water. The pen is held for a defined time in a container of water while stirring. An independent study carried out by Timmermann et al. tested its effectiveness with positive results.

Cost for a Steripen is around €60. It would be an effective alternative for any traveller who has access to clear (but potentially contaminated) water.

Advantages	Disadvantages
Susceptibility: Protozoa>Bacteria (gram neg>gram-pos) >Viruses	
• Effective against all Microorganisms • Imparts no taste • Simple and quick to use • Portable device available, lighter than ceramic filters	• Requires clear water • Dose not improve water aesthetics • Does not remove toxins or heavy metals • No residual effect • Requires power source, expensive • Fragile light bulb

Other methods of water purification and disinfection which are available (Silver Ion, Photocatalytic Disinfection, Coagulation/Flocculation, reverse osmosis and forward osmosis) are either not as user-friendly or have limited efficacy.

References:

- Keystone et al. Travel Medicine (3rd ed.) chapter 6, pages 37-48
- https://travelhealthpro.org.uk/factsheet/44/food-and-water-hygiene
- https://www.travax.nhs.uk/health-advice/general-health-advice/food-and-water-precautions/
- Timmermann L et al. Drinking water treatment with Ultraviolet light for travellers – Evaluation of a mobile lightweight system; TMAID (2015) 13, 466-474
- https://wwwnc.cdc.gov/travel/yellowbook/2018/the-pre-travel-consultation/water-disinfection-for-travelers

Dr. Astrid Weidenhammer

This article is based on an OSKE held by the author at the TMSI meeting on 10th November 2018