New to Travel Course – Day 1

Monday 17th September 2018
Written and taught by
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Queen's Nurse

About you

Where from?

Your job?

Your travel health experience?

What do you hope to achieve from this course?

What are my goals

1. **Today** - I want you to understand the basic principles of a risk assessment, the diseases and vaccines and the resources to help put safe service together
2. **By the end of the two days** I'd like you to go away feeling more 'in control' for travel health, hopefully enthused about the subject and to potentially enjoy it in the future!

Competence comes with time and experience!

www.janechiodini.co.uk/education/new-to-travel/Autumn18/

Agenda

- Introduction to travel medicine
- Travel risk assessment
- Travel vaccines and related issues
- Travel medicine operational issues
- Recap on resources

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Activity prior to starting the course

http://www.janechiodini.co.uk/education/online-learning/

An introduction to travel medicine – the key issues

- The travelling public needs to be well informed not only about their destinations and all of the cultural richness, but also **aware of the potential risks during their journey**
- Equally there needs to be a nucleus of GPs, practice nurses and other trained health professionals who are **knowledgeable about the risks on a country by country basis and who are confident about advising their patients** about each of the measures necessary to keep them healthy while travelling

Field VF, Ford L, Hill DR, eds. Health Information for Overseas Travel, National Travel Health Network and Centre, London, UK, 2010.

Who provides travel health advice?

- In other countries its traditionally the doctor who sees the traveller and performs the risk assessment, passing them on to the nurse to administer the vaccines and give some advice
- More recently pharmacists have become involved in travel medicine, especially in Canada and the UK
- In the UK, nurses have been undertaking all aspects of travel health since the early 1990s, from risk assessment to administration of vaccines and providing risk management advice. In some cases, nurses who have obtained a non medical prescribing qualification are not only prescribing but in some circumstances setting up and owning their own travel clinics

Why is the practice of travel medicine different in the UK?

- National Health Service provides some travel vaccines free of charge – service provided in the majority of primary care settings as GPs are financially rewarded for the service
- Pressure on GPs with their workload so historically, they passed travel health on to the nurses, but now pharmacists are getting very involved as well, with private clinics are growing dramatically
- Some surgeries are ceasing the provision of a travel service – however, they are NOT allowed to do this unless they surrender the provision of the global sum which they receive for immunisation services

www.janechiodini.co.uk/news/faqs/faq-2/

Charging for travel vaccines in an NHS setting – covered in day 2

- **Vaccines that must always be given as part of NHS provision** (hepatitis A all doses, combination A+B all doses, typhoid, combination typhoid and hep A, polio and cholera)
- **Vaccines that cannot be given as an NHS service** (yellow fever, Japanese encephalitis, tick borne encephalitis and rabies for travel and more recently ACWY for travel – but see FAQ page)
- **Vaccines that can be given as NHS or private service** (hepatitis B)

Note: Cholera and oral typhoid vaccines are now only NHS vaccines in an NHS setting

see http://www.janechiodini.co.uk/news/faqs/faq-no-2/

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General Practice in the UK

UK GP Statistics 2014 [1]
9,800 practices
- 7,962 in England
- 988 in Scotland
- 470 in Wales
- 363 in Northern Ireland

43,000+ GPs

General Practice Nursing in 2013 [2]
14,943 full-time equivalent GP practice nurses

1. BMA Press Briefing – General Practice in the UK July 2014 (accessed January 2016) http://www.bma.org.uk/search?query=press%20briefing%20general%20practice%20in%20the%20UK
2. http://www.pulsetoday.co.uk/hot-topics/practice-news/gp-practice-nurse-numbers-grow-by-17/20006656.fullarticle

Governance for health care professionals – working within 'our codes'

http://www.gmc-uk.org/Good_medical_practice___English_1215.pdf_51527435.pdf
https://www.pharmacyregulation.org/spp
http://www.nmc-uk.org/Documents/Standards/The-code-A4-20100406.pdf

A key document for those undertaking travel medicine

Includes …….
- History of travel medicine
- Details about the provision of a travel service
- Risk assessment
- Competencies
- Forms
- Resources

Royal College of Nursing (2018) Competencies: Travel health nursing - career and competence development, London: RCN.

New inclusions - Page 9

A statement is included for those who run Yellow Fever Vaccination Centres in the UK acknowledging that whilst YF training is not mandatory for all individuals administering the vaccine, both NaTHNaC and Health Protection Scotland (HPS) recommend:

all those responsible for administering YF vaccine complete the training for their own accountability and good practice

Royal College of Nursing (2018) Competencies: Travel health nursing - career and competence development, London: RCN.

New inclusions

- There is now greater awareness of the potential identification of a traveller within a consultation going abroad for the purpose of FGM or of forced marriage. These topics are included within the sections for young travellers, female travellers, plus FGM is included in the risk assessment form (p. 12, 15, 29).
- Similarly, LGBT and transgender travellers are highlighted (page 13).

Royal College of Nursing (2018) Competencies: Travel health nursing - career and competence development, London: RCN.

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Further resources in help

Three levels of nurses

Competent nurse	Experienced / proficient nurse	Senior practitioner / expert nurse
See slides to follow outlining expectations	Fulfils points of competent nurse as well	Fulfils points of competent and experienced nurse as well

While there is a strong focus on the work of a registered nurse, the field of travel medicine is truly multidisciplinary and much of the information provided in this publication is equally applicable to other registered health care professionals

including **doctors** and **pharmacists** who provide travel health

Royal College of Nursing (2018) Competencies: Travel health nursing - career and competence development, London: RCN.

For doctors, pharmacists and nurses specialising in travel medicine

Go to
http://www.janechiodini.co.uk/about/publications/

http://download.journals.elsevierhealth.com/pdfs/journals/1477-8939/PIIS1477893912000671.pdf

Core competence for the *Competent Nurse* (or practitioner) in a travel health consultation (pages 21/23)

- Demonstrates good geographical knowledge
- Able to perform risk assessment effectively and understands how to interpret potential risk within a trip
- Knows where to 'go' for recommendations for travel advice, immunisations, malaria chemoprophylaxis
- Recognises limit of knowledge and knows when to refer appropriately
- Has good knowledge of common travel related illnesses e.g. TD, hepatitis, typhoid, malaria

Royal College of Nursing (2018) Competencies: Travel health nursing - career and competence development, London: RCN.

Search on 'travel health' at www.nmc.org.uk/

i) Documented in the patient record that the patient was going to 'Lybia' (sic.) (a reference to Libya, a low risk travel destination for contracting malaria) when in fact the patient was travelling to Liberia (a high risk travel destination for contracting malaria).

https://goo.gl/SqtoQF

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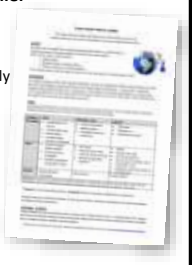
Core competence continued

Able to provide individual advice to the traveller

- ✓ Accident prevention
- ✓ Safe food, water and personal hygiene
- ✓ Prevention of blood-borne infections and sexually transmitted diseases
- ✓ General insect bite prevention
- ✓ Prevention of animal bites, particularly rabies including wound management
- ✓ Prevention of sun and heat complications
- ✓ Personal safely and security
- ✓ Malaria awareness, ABCD advice



Royal College of Nursing (2018) Competencies: Travel health nursing - career and competence development, London: RCN.

Core competence continued

- Communicates information effectively
- Prioritises in a situation when traveller is on a limited budget
- Assesses anxieties and acts appropriately
- Demonstrates an excellent vaccine administration technique
- Completes patient and administrative records after vaccination

Royal College of Nursing (2018) Competencies: Travel health nursing - career and competence development, London: RCN.

Education and Training – page 23

- Demonstrates evidence of learning to apply skills and knowledge in the field of travel medicine. For example, minimum of 15 hours of relevant learning plus mentorship in clinical skills before undertaking a travel consultation alone
- Ensures travel health knowledge is always up to date
- Attends an annual travel health update study session/conference at a local, national or international event

Royal College of Nursing (2018) Competencies: Travel health nursing - career and competence development, London: RCN.

Agenda

- ✓ Introduction to travel medicine
- Travel risk assessment
- Travel vaccines and related issues
- Travel medicine operational issues
- Recap on resources

Risk Assessment & Management in Travel Health

Aims and Objectives of this session

- To understand what risk assessment is
- To appreciate the elements of the risk assessment process
- To have a good understanding of the required knowledge and resources needed to perform a risk assessment
- To be able to apply these skills at the end of the course

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Risk assessment

No travel health consultation should take place without conducting a travel risk assessment and documenting the information.

The assessment forms the basis of all subsequent decisions, advice given, vaccines administered and the malaria prophylaxis advice that is offered.

This takes time to perform correctly, and for best practice practitioners should leave sufficient time.

Royal College of Nursing (2018) Competencies: Travel health nursing - career and competence development, London: RCN.

Time is the major constraint

From the RCN Guidance – page 18

The main consideration is to allocate sufficient time to perform the risk assessment. It would be

unsafe to only allow 10 - 15 minutes

for a new travel appointment.

A **20-minute consultation appointment per person should be allowed** to exercise best practice. Travellers with more complex needs such as backpackers or individuals requiring malaria prevention advice relevant to their destination - **may need even longer** consultation time.

The Nursing and Midwifery Council 'Code' is about being professional, about being accountable and about being able to justify your decisions; employers need to respect the complexity of a travel consultation and appreciate that sufficient time must be allowed for nurses to abide by the Code.

Royal College of Nursing (2018) Competencies: Travel health nursing - career and competence development, London: RCN.

What is risk?

Would you enjoy this?

The best way to manage/conduct a risk assessment – one option

Travel risk assessment form completed prior to appointment by traveller

Travel risk assessment form reviewed by travel health adviser

Management of the travel risks discussed with the traveller by the travel health adviser and conclusions reached

Example of risk assessment form for information recording

Available to download from my 'Tools' page – item no. 1 http://www.janechiodini.co.uk/tools/

Chiodini J, Boyne L, Stillwell A, Grieve S. Travel health nursing: career and competence development, RCN guidance. RCN:London 2012. Page 2

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Information to be gathered

Traveller information

- Age and sex
- Medical history, past and present
- Current health status
- Medication
- Allergies to drugs and food
- Previous experience travelling
- Current interest and knowledge of health risks
- Previous vaccine history
- Any special needs

Traveller's itinerary

- Destinations (s)
- Date of departure
- Duration of stay
- Mode of transport
- Purpose of trip and planned activities
- Quality of accommodation
- Financial budget
- Healthcare standards at destination
- Relevant comprehensive insurance provision

Risk assessment exercise

- Beckham is 10 years old and is travelling to Angola in the summer holidays to stay with his grandparents for 8 weeks
- What are the issues and risks when assessing this traveller?

VFR traveller

Child – limited awareness of danger, more susceptible of infection

May be staying in a village in a rural location and ACT like the locals

Fairly recent outbreak of yellow fever

High risk destination for malaria

High risk country for diseases such as hepatitis A, typhoid, ?cholera, hepatitis B, yellow fever, rabies, TD

What if Beckham had been a girl, is there anything else you might consider?

Risk management

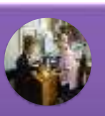
Having performed a risk assessment the risks identified are managed by individualised advice

- Medical preparation
- Journey risks
- Safety risks
- Environmental risks
- Food and water borne risks
- Vector borne risks
- Air borne risks
- Sexual health and blood borne viral risks
- Skin health
- Psychological health

Field VF, Ford L, Hill DR, eds. Health Information for Overseas Travel, National Travel Health Network and Centre, London, UK, 2010.

What does performing a risk assessment achieve?

It enables you to give:



Appropriate travel health risk advice

Appropriate travel vaccines for travel plans

Appropriate malaria prevention advice

To perform and provide evidence of best practice

But what is risk assessment all about?

A very individual process also influenced by the traveller's personal perception of risk

Booking process and patient expectations

How is the trip booked?

- Travel agent
- Online travel site
- Self organised trips

Patient issues

- Visiting the travel clinic for advice in good time!
- Often annoyance at the risk assessment process
- Focus on the injections with limited understanding of other risks

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Vaccine preventable health risks to travellers abroad ?

In reality, the diseases below are uncommon in travellers, usually occurring less than

1 case per 1,000 overseas visits

Hepatitis A
Japanese B
Rabies
Meningococcal disease
Yellow fever
Tick borne encephalitis
Tetanus, diphtheria, polio
Typhoid
Hepatitis B

Field VF, Ford L, Hill DR, eds. Health Information for Overseas Travel, National Travel Health Network and Centre, London, UK, 2010.

The role of vaccination

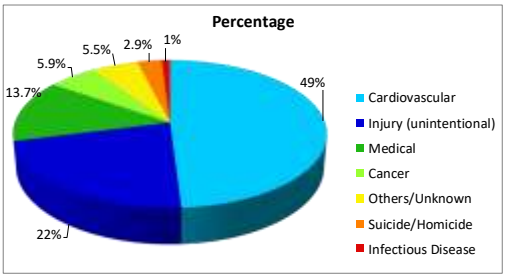
Nevertheless, vaccination is one of the most important public health interventions for global infectious disease control and offers protection for travellers at risk of exposure

Field VF, Ford L, Hill DR, eds. Health Information for Overseas Travel, National Travel Health Network and Centre, London, UK, 2010.

Vaccine-Preventable Travel Health Risks: What Is the Evidence—What Are the Gaps?

Journal of Travel Medicine
Volume 22, Issue 1, pages 1-12, 6 NOV 2014 DOI: 10.1111/jtm.12171
http://onlinelibrary.wiley.com/doi/10.1111/jtm.12171/full#jtm12171-fig-0001

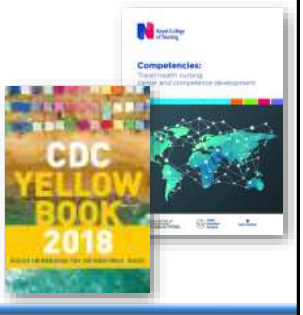
Cause of mortality in travellers



Hargarten SW et al. Ann Emergency Med 20:622-626, 1991
This slide was adapted from the ISTM slide set – Introduction to travel medicine 2nd Ed. www.istm.org

Implications of the questions we ask

Many sources to increase your knowledge and understanding of pre-travel risk assessment in more detail – including on national databases and international resources



The following slides provide some examples ……
but please refer to the resources on previous slide for more information.

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Age and Sex

Babies and small children

- Increased risk of other hazards e.g. accidents, encounters with animals – need for rabies post exposure
- Small, mobile, inquisitive toddlers, limited hygiene awareness
- Risk of illness more severe – e.g travellers' diarrhoea, malaria – requiring medical treatment abroad
- Restrictions on some choices of vaccines and malaria chemoprophylaxis

Older travellers

- Immune systems reduced – infection risk increased
- Senses reduced
- PMH more common
- Immunisation status
- Specific problems e.g. yellow fever vaccine

Female travellers

- Security risk
- Travelling during pregnancy / breast feeding
- Managing contraception
- Coping with menstruation

www.mooncup.co.uk

www.mooncup.co.uk

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www.whizproducts.co/uk

Male travellers

20 – 29 year old age group at greater risk of accidents

Ref:McInnes R, Williamson L, Morrison A. (2002) Unintentional injury during foreign travel: a review. *Journal of Travel Medicine*, 9:297-307.

Medical History

Medical History

1. Past and present medical history and current health status
2. Medication
3. Allergies to drugs or food/reaction to vaccination

Why consider the medical history ?

For example:

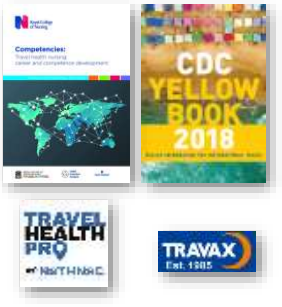
- Specialist advice may be needed e.g. those with severe renal or liver disease & malaria chemoprophylaxis
- Recent surgery or long term medical problems such as respiratory disease may impact of travel and fitness to fly
- Immunosuppression – some live vaccines contra-indicated, other vaccines may be less effective
- Impact on travel insurance with many medical problems
- Elderly people on regular medication need to be aware of continuing regular administration
- Establishing true anaphylaxis

Royal College of Nursing (2018) Competencies: Travel health nursing - career and competence development, London: RCN.

Implications of the questions we ask

Many sources to increase your knowledge and understanding of pre-travel risk assessment in more detail

The Yellow Book has a lot of information about medical history as do the National databases



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Fitness to fly

The International Air Transport Association

- Is a trade association of the world's airlines. IATA supports airline activity and helps formulate policy and standards
- Its key priority is one of safety

http://www.iata.org/publications/Documents/medical-manual.pdf

Examples of specific medical guidelines

http://www.iata.org/publications/Documents/medical-manual.pdf

Travellers visiting friends and relatives (VFRs)

- Less likely to observe malaria chemoprophylaxis compliance
- Values and beliefs need to be explored

Chiodini PL, Patel D, Whitty CJM and Lalloo DG . Guidelines for malaria prevention in travellers from the United Kingdom. London: Public Health England; October 2017

Previous vaccine history

- In the absence of documentation, don't assume
- Ensure primary immunisations are up to date
- Give traveller a record of vaccines given

Destination

location, altitude, climate

Destination - political and economic situation

https://www.gov.uk/foreign-travel-advice

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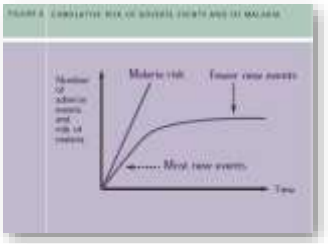
Departure date – season and timing

- Wet season – increases malaria risk
- Dry season – increases meningitis risk
- Last minute, still consider some vaccines e.g. hepatitis A

Length of stay

Complacency can creep in during a longer visit

A 3 month visit carries a malaria risk around 6 times greater than a 2 week visit*



* Chiodini PL, Patel D, Whitty CJM and Lalloo DG . Guidelines for malaria prevention in travellers from the United Kingdom. London: Public Health England; October 2017

Mode of transport

Risk of accidents

Purpose of trip and planned activities

People often seek adventure and take risks abroad they wouldn't consider when 'back home'. People vary in their perception of risk

Quality of accommodation

Top quality accommodation is not absolute assurance that there is no risk

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Financial budget

Those travelling on a tight budget may be at higher risk

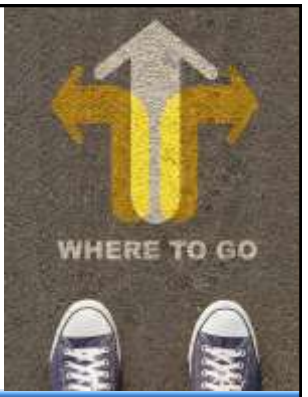
General advice is not to eat at roadside stalls, however sometimes seeing the cooking process, quality of food and heat used, this may be a preferable option to a back street café!

Health standards at the destination

- What are the healthcare standards like?
- The reuse of needles and syringes can be a common practice in some resource poor countries
- Carry a sterile medical kit
- Has adequate insurance been purchased?

Collected the risk assessment information – then what?

Do you know which resources we would use to make decisions?



Be aware of key UK resources for guidance

UK National databases - www.travax.nhs.uk and for the public - www.fitfortravel.nhs.uk

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https://travelhealthpro.org.uk/

From NaTHNaC for healthcare professionals and the general public

Access via your page and the 'New to Travel' page on my website

Please note, if using TRAVAX, you will still need a user name and password

http://www.janechiodini.co.uk/tools/new-to-travel/

- Taking into consideration any patient specific factors (e.g. medical history, how high risk the destination is etc.) review the vaccines advised and decide what is needed – based also on previous vaccine history
- If a malarious area, also decide risk and identify appropriate chemoprophylaxis
- Consider advice required to manage the risks identified

Review the country specific information on a national database e.g. TravelHealthPro or TRAVAX

Communicating the risk and providing advice

- Providing information about vaccines sufficient to provide adequate information to obtain informed consent
- Discussion of what is necessary and desirable – taking time and cost into the equation
- Advising on malaria prevention advice and deciding with patient the most suitable chemoprophylaxis
- Delivering other appropriate travel health advice – some will need to be in written format

Advice leaflet that can be adapted for your use –

See item no. 4 at http://www.janechiodini.co.uk/tools/ - written in Word format for you to adapt

Food, water and personal hygiene advice

- Always wash hands before eating or preparing food
- Boiled water, bottled water - this includes ice cubes in drinks and water for cleaning your teeth
- Only eat well cooked fresh food
- Avoid leftovers and reheated food
- Ensure meat is thoroughly cooked
- Eat cooked vegetables, avoid salads
- Only eat fruit you can peel
- Never drink unpasteurised milk and avoid ice cream
- Shellfish is a high risk food

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- Studies have shown that the "Cook it, peel it, boil it or forget it" directive is not followed by many travellers and that conflicting results have been shown in the value of such strict advice
- New thinking in travel medicine is that food and drink can be placed into three categories
  - Safe
  - Probably safe
  - Unsafe
- There is no vaccine available for travellers' diarrhoea

Ericsson CD. Prevention of Travelers Diarrhea in: Keystone J, Freedman D, Kozarsky P, Connor B and Nothdurft H. Eds. *Travel Medicine* 3rd Edition. Saunders, an imprint of Elsevier Inc; 2013. p. 191 -196

Food and beverage recommendations for travellers (this poster is on your page)

Category	SAFE	PROBABLY SAFE	UNSAFE
Beverages	• Carbonated soft drinks • Carbonated water • Boiled water • Purified water (iodine or chlorine)	• Fresh citrus juices • Bottled water • Packaged (machine-made) ice	• Tap water • Chipped ice • Unpasteurized milk
Food	• Hot, thoroughly grilled, boiled • Processed and packaged • Cooked vegetables and peeled fruits	• Dry items • Hyperosmolar items (such as jam and syrup) • Washed vegetables and fruits	• Salads • Sauces and 'salsa' • Uncooked seafood • Raw or poorly cooked meats • Unpeeled fruits • Unpasteurized dairy products • Cold desserts
Setting	Recommended restaurants	Local homes	Street vendors

Ericsson CD. Prevention of Travelers Diarrhea in: Keystone J, Freedman D, Kozarsky P, Connor B and Nothdurft H. Eds. *Travel Medicine* 3rd Edition. Saunders, an imprint of Elsevier Inc; 2013. p. 191 -196

Food water and personal hygiene advice...
(this poster is on your page)

Travellers' diarrhoea advice

- **High risk areas** include North Africa, sub-Saharan Africa, the Indian Subcontinent, S.E. Asia, South America, Mexico and the Middle East
- **Medium risk areas** include the northern Mediterranean, Canary Islands and the Caribbean Islands
- **Low risk areas** include North America, Western Europe and Australia

Management
- Rehydration
- Anti diarrhoeal tablets
- Standby emergency treatment could be an option for some

Contact medical help if the affected person has:-
- A temperature
- Blood in the diarrhoea
- Diarrhoea for more than 48 hours (or 24 hours in children)
- Becomes confused

Prevention advice for hepatitis B, C and HIV infection

- Only accept a blood transfusion when essential
- If travelling to a resource poor country, take a sterile medical kit
- Avoid high risk procedures e.g. ear and body piercing, tattooing & acupuncture
- Avoid casual sex, especially without using condoms

Malaria prevention advice - the ABCD rules !

More information on malaria on day 2 of this course

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Rabies advice

1. Do not touch any animal, even dogs and cats
2. If you are licked on broken skin, scratched or bitten in a country which has rabies, wash the wound thoroughly with soap and running water for 15 minutes then apply antiseptic.
3. Seek medical advice IMMEDIATELY, even if you have been previously immunised.

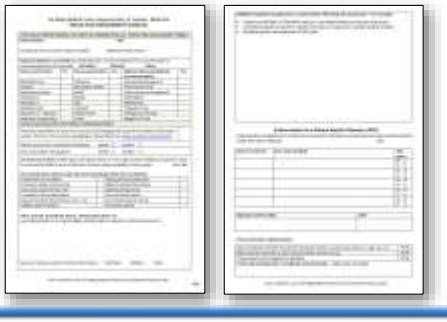
More information on rabies on day 2 of this course

Prevention of accidents advice

- Avoid alcohol and food before swimming
- Never dive into water where the depth is uncertain
- Only swim in safe water, check currents, sharks, jellyfish etc.
- Avoid alcohol when driving, especially at night
- Avoid hiring motorcycles and mopeds
- If hiring a car, rent a large one if possible, ensure the tyres, brakes and seat belts are in good condition
- Use reliable taxi firms, know where emergency facilities are

Risk management and the importance of documentation

Risk management form helps to 'record' best practice within the travel consultation



Form can be found in 'Tools' – item no. 2 http://www.janechiodini.co.uk/tools/

FOR HEALTH PROFESSIONAL USE ONLY IN CONJUNCTION with TRAVEL RISK ASSESSMENT FORM A

Patient Name: dob:

Childhood immunisation history checked: Additional information:

National database consulted for travel vaccines recommended for this trip and malaria chemoprophylaxis (if required): NaTHNaC: TRAVAX: Other:

Disease protection	Yes	Disease protection	Yes	Malaria Chemoprophylaxis Recommendation	Yes
BCG/Mantoux		Influenza		Atovaquone/proguanil	
Cholera		Meningitis ACWY		Chloroquine only	
Dip/tetanus/polio		MMR		Chloroquine and proguanil	
Hepatitis A		Rabies		Doxycycline	
Hepatitis B		TBE		Mefloquine	
Hepatitis A+B		Typhoid		Proguanil only	
Hepatitis A + Typhoid		Yellow fever		Emergency standby	
Japanese Encephalitis		Other		Weight of child:	

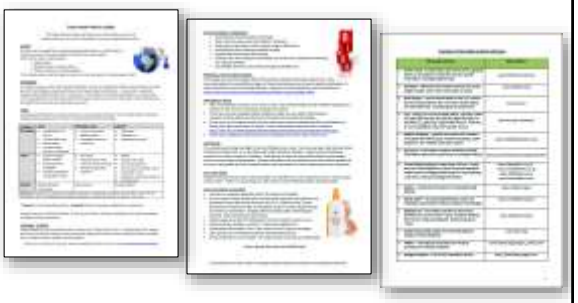
Vaccine and General Travel Advice required/provided

Potential side effects of vaccines discussed (including giving copy of the Patient Information Leaflet (PIL) from the vaccine packaging or obtainable from www.medicines.org.uk/emc/

Patient consent for vaccination obtained: verbal ☐ written ☐

Post vaccination advice given: verbal ☐ written ☐

Advice leaflet with additional resources – sample leaflet available on my website



See item no. 4 at http://www.janechiodini.co.uk/tools/ - written in Word format for you to adapt

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General travel advice leaflet given (all topics below in the surgery advice leaflet) and patient asked to read entire leaflet due to insufficient time to advise verbally on every topic: Yes / No

Items ticked below indicate topics discussed specifically within the consultation:

Prevention of accidents		Mosquito bite prevention	
Personal safety and security		Malaria prevention advice	
Food and water borne risks		Medical preparation	
Travellers' diarrhoea advice		Sun and heat advice	
Sexual health & blood borne virus risk		Journey/transport advice	
Rabies specific advice		Insurance advice	

Other specific specialised advice / information given on:
e.g. smoking advice for a long haul flight; altitude advice; prevention of schistosomiasis etc.

Source of advice used for further information: NaTHNaC TRAVAX Other

Additional patient management or advice taken following risk assessment – for example

- Vaccine(s) patient declined following recommendation, and reason why
- Telephoned NaTHNaC or TRAVAX for advice or used Malaria Reference laboratory fax service
- Contacted hospital consultant for specific information in respect of a complex medical condition
- Identified specific nature/purpose of VFR travel

Authorisation for a Patient Specific Direction (PSD)

Following the completion of a travel risk assessment, the below named vaccines may be administered under this PSD to:

Name: **dob:**

Name, form & strength of medicine (generic/brand name as appropriate)	Dose, schedule and route of administration	Start and finish dates

Signature of Prescriber	Date

- The template of this form could be adapted to use within a computer system, e.g. EMIS or Systm One
- If using paper copy of the form, then scan in after completion

Post Vaccination administration

Vaccine details recorded on patient computer record (vaccine name, batch no., stage, site, etc.)	Y / N
SMS vaccines reminder or post card reminder service set up	Y / N
Travel record card supplied or updated:	Y / N

Travel risk management consultation performed by: (sign name and date)

Form devised and created by Jane Chiodini © Updated May 2013

Performing vaccination

Preparation of equipment and vaccines

Preparation of the patient

Documenting the vaccinations

- Record of vaccines used must include the name of the drug, batch number, expiry date, site of administration and names of the administrator
- Ideally provide a written record of vaccinations given to the traveller

Variety of options now available, e.g. online, app format

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Conclusion

- No travel health consultation should take place without conducting a travel risk assessment and documenting all the information
- The assessment forms the basis of all subsequent decisions, advice given, vaccines administered and malaria prophylaxis advice that is offered
- Risk assessment and management takes time to perform correctly, and for best practice practitioners should leave sufficient time
- Good documentation is essential

Access via '**your page**' to practice the case studies

Agenda

- ✓ Introduction to travel medicine
- ✓ Travel risk assessment
- Travel vaccines and related issues
- Travel medicine operational issues
- Recap on resources

Vaccine preventable diseases and related issues

Agenda

- ✓ Travel vaccines and related issues
  - Key resources
  - Principles of vaccination and the rules
  - Range of vaccine preventable diseases and the specifics of these vaccines

Be aware of key UK resources for guidance

Yellow Book not online – may be in your workplace and some information is being placed on the NaTHNaC website

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Key UK resources for guidance

JCVI (Joint committee on vaccination and immunisation)

Recommendations made by the JCVI to Government

Policy implemented and changes notified from Public Health England via direct communication

Information appears in VACCINE UPDATE along with other information re leaflets etc.

UK National databases - www.travax.nhs.uk and for the public - www.fitfortravel.nhs.uk

UK National databases - www.nathnac.org

Working within National Guidelines and knowing one's limitations

E mail service – see malaria page, to be discussed next time

Telephone helplines

NaTHNaC
0845 602 6712
Monday – Friday 9am to 11.00 am and 1pm to 2pm x 2
Closed Monday and Friday at 2pm and other days at 3.30pm

TRAVAX
0141 300 1130
Mon. &Wed. 2 to 4pm
Firday 9.30 to 11.30am

MRL Fax line
Download risk assessment form from www.malaria-reference.co.uk, complete and return to 020 7636 0248

Available from 'TOOLS' item no. 8

Vaccines currently available to protect our travellers

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Diseases for consideration in this section?

PART 1
NHS vaccines (mostly) and provided in an NHS setting (hepatitis B and meningitis can be private)

- Tetanus, diphtheria and polio
- Hepatitis A
- Typhoid
- Cholera
- Hepatitis B
- Meningitis

PART 2
Always private, more specialist vaccines given by those more experienced

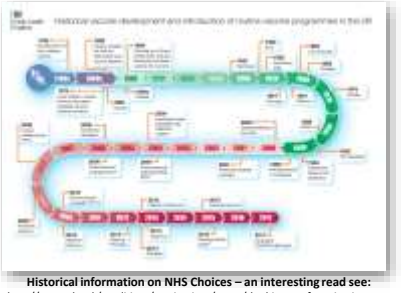
Covered on day 2

- Just touching on Yellow fever but separate training is required by NaTHNaC
- Rabies, Japanese B, tick-borne encephalitis

For more details regarding the charging of vaccines see FAQ no. 2 on my website
http://www.janechiodini.co.uk/news/faqs/faq-no-2/

Immunisation timeline

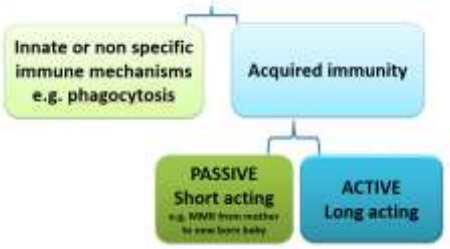
Historical vaccine developments and introduction of vaccines in the UK



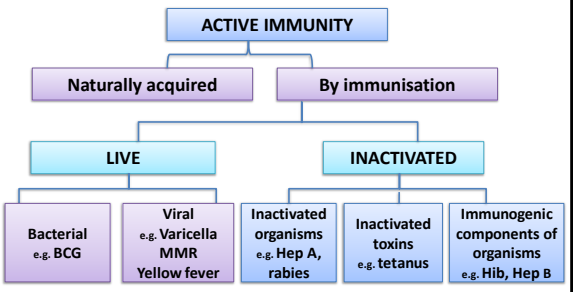
Historical information on NHS Choices – an interesting read see:
http://www.nhs.uk/conditions/vaccinations/pages/the-history-of-vaccination.aspx

Remember – this is item above accessed no. 10 to download from the 'Help' page at http://www.janechiodini.co.uk/news/help/

Important to understand the principles of immunology



Active Immunity



Helpful videos for immunology and FAQs
http://immunologyanimation.hpa.org.uk
and chapter 1 of the 'Green Book'
access via the 'your dedicated page' on my website

New video published in May 2018

https://www.ovg.ox.ac.uk/news/how-do-vaccines-work

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Do you know what factors might effect the immune response to a vaccine?

Age **Medical history**

- Very young children (especially under 2 years) have difficulty developing an immune response to polysaccharide only vaccines, and conjugated vaccines are used where possible
- Immunocompromised individuals usually cannot receive live attenuated vaccines. Inactivated vaccines are usually safe, but their immune response may be inadequate

When might there be a contraindication to vaccinate?

- In general, a vaccine is absolutely contraindicated if a person has a confirmed anaphylactic reaction to a previous dose of the vaccine or product contained in the vaccine
- Pregnant women present a special risk group where, if the disease exposure is considered high during travel, most vaccine can be offered, although caution should be used with live vaccines
- All centres administering vaccines must be adequately prepared to deal with anaphylaxis

Knowledge of the route we give vaccines and how soon they start to work is needed

- Most vaccines given by IM or SC route except BCG and oral vaccines (cholera and live typhoid)
- An active immune response to vaccines begins within a few days of administration and peaks in approximately 10-14 days
- Primary vaccine courses need 2 or 3 doses to complete the series

Time for Vaccines to become effective

Table adapted from TRAVAX

Vaccine	Time until effective
BCG	6 weeks
Diphtheria	1-2 weeks after 3rd dose
Hepatitis A (active)	2 weeks for optimum protection (the average incubation period for the disease is 28 days so it is often still useful to give the vaccine even at short notice prior to travel)
Hepatitis A immunoglobulin (passive)	Immediate
Hepatitis B	I month after the 3rd dose
Japanese encephalitis	7 days after the 2nd dose, IXIARO® (Novartis) 1-2 weeks after the 2nd dose, Green Cross vaccine (MASTA)
Measles/Mumps/Rubella (MMR)	2 weeks
Meningococcal vaccines (including ACW135Y)	2 weeks
Poliomyelitis (inactivated)	1-2 weeks after 3 doses
Rabies	1-2 weeks (after the 3rd dose)
Tetanus	1-2 weeks after the 3rd dose
Tick-borne encephalitis	2 weeks after the 2nd dose
Typhoid injectable	1-2 weeks
Yellow fever	10 days

http://www.travax.nhs.uk/vaccination-practice/arranging-schedules/time-for-vaccines-to-become-effective/

The rules of vaccination

on 'your dedicated' page

Peter thinks he has had 2 doses of hepatitis A vaccine in the past, but nothing is documented. He's going to travel to do some research work in a hospital in India – what would you do?

In the absence of documentation you cannot

ASSUME

the patient has been vaccinated, therefore further vaccines for protection should be given

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The evidence

For a variety of reasons, some individuals may not have been immunised or their immunisation history may be unknown.

If children and adults coming to the UK are not known to have been completely immunised, they should be assumed to be unimmunised and a full course of required immunisations should be planned.

Where a child born in the UK presents with an inadequate immunisation history, every effort should be made to clarify what immunisations they may have had. A child who has not completed the routine childhood programme should have the outstanding doses as described in the relevant chapters of the Green Book.

Pages 83 / 84

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/554298/Green_Book_Chapter_11.pdf

Michelle had a first Havrix Junior Monodose at the age of one but never returned to complete the course, how would you proceed?

The evidence

If any course of immunisation is interrupted, it should be resumed and completed as soon as possible. There is generally no need to start any course of immunisation again, as immunological memory from the priming dose(s) is likely to be maintained

Pages 81

The rules of vaccines

If a course goes off schedule and there is quite a long time interval, there is no need to re start the course, just pick up where it was left off and continue the course

January — 6-12 months (time interval) → **Between July and the following January**

First dose

Booster dose (or completing dose in the course)

January — Forgets! → **January 6 years later**

Just boost when they turn up

ALWAYS USE AN AGE APPROPRIATE VACCINE

Department of Health. Immunisation against infectious disease (3rd Edition) London: TSO, 2006 Ch.17, p154
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/147954/Green-Book-Chapter-17.pdf

Jon is backpacking around SE Asia for 6 months and is having a course of rabies vaccine. He had his day 0 dose today but won't be around for the day 7 dose and asks if he can attend in 5 days instead for his second dose.
What would you advise ?

The evidence

In general, it is acceptable to lengthen the intervals between doses and repeating previous vaccine doses is not necessary unless this is explicitly stated in the package insert. On the other hand, significant shortening of the intervals is not recommended

Site of injection and number that can be given at one time?

- If two or more injections need to be administered at the same time, they should be given in separate sites, preferably in a different limb. If more than one injection is to be given in the same limb, they should be administered at least 2.5cm apart
- Immunisations should not be given into the buttock, due to the risk of sciatic nerve damage and the possibility of injecting the vaccine into fat rather than muscle[2]

1. Department of Health. Immunisation against infectious disease (3rd Edition) London: TSO, 2006 Ch.4, p29
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/147915/Green-Book-Chapter-4.pdf
2. Department of Health. Immunisation against infectious disease (3rd Edition) London: TSO, 2006 Ch.4, p29
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/147915/Green-Book-Chapter-4.pdf

Where do you obtain relevant vaccine information?

- Green Book – for diseases and vaccines, online
- The National Databases (NaTHNaC and TRAVAX)
- Patient Group Directions - in your workplace
- Electronic Medicines Compendium - online
- British National Formulary – book or online
- Pharmaceutical companies - online

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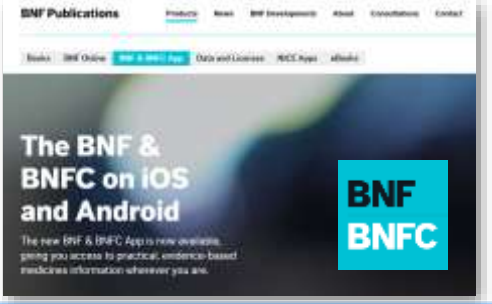
Electronic Medicines Compendium

www.medicines.org.uk

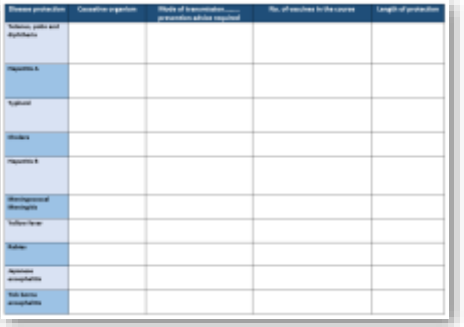
www.bnf.org

BNF and BNFC apps now great!



https://www.bnf.org/products/bnfbnfcapp/

Document your learnings



Tetanus, polio and diphtheria

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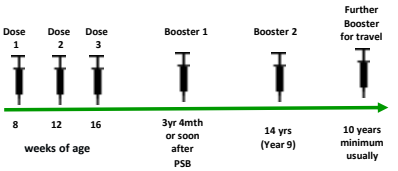
Which disease is which?

Learning more from Green Book chapters, but also www.nhs.uk

Disease	Organism	Mode of transmission
Tetanus	toxoid	Spores in the environment
Diphtheria	bacterium	Droplet infection
Polio	virus	Faecal oral and saliva

but also www.nhs.uk

Tetanus, diphtheria and inactivated polio vaccine in the immunisation schedule



Schedule above of 5 doses make the primary course in the UK.

Booster given if any of the three diseases are a risk at the destination, then an additional dose is provided on the NHS in an NHS setting.

Tetanus, polio and diphtheria disease protection is not available in monovalent vaccines, only as one combined vaccine but in different products within the routine immunisation schedule

Infanrix hexa	DTaP/IPV/Hib/Hep B
Infanrix IPV	(DTaP/IPV)
Repevax	(DTaP/IPV)
Revaxis	(Td/IPV)

Acronyms for vaccines and values of diphtheria content – D and d

Available vaccines[6]

Diphtheria vaccines are available in two strengths according to dose of toxoid:

- High-dose - vaccines contain ≥30 IU of diphtheria toxoid and are used to achieve satisfactory primary immunisation of children - as in diphtheria/tetanus/acellular pertussis (DTaP) vaccine (capital D = high dose).
- Low-dose - vaccines contain approximately 2 IU of toxoid and are used for primary immunisation of those aged over 10 years and for subsequent boosters (lower case d signifies low dose as in dTaP).

https://www.cdc.gov/vaccines/acip/committee/guidance/vac-abbrev.html
https://patient.info/about-us
https://patient.info/doctor/diphtheria-and-diphtheria-vaccination

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Would this traveller need Td/IPV?

- Lucy is 19 years old and is going on a two week holiday in the Galapagos Islands
- She is up to date on all her scheduled national programme immunisations
- She hasn't travelled abroad before
- No PMH, she is on the OCP only

Galapagos Islands off coast of Ecuador

Would this traveller need Td/IPV?

- James is 26 years old
- he's taking a one year career break back packing around the world
- He last had a tetanus vaccine as a school booster 9½ years ago at the age of 16

Keeping an eye on other groups

dTaP/IPV vaccine given between gestational weeks 20* and 32 rather than from week 28

*Can be given from 16 weeks but usually offered after the anomaly scan

Examples are ?

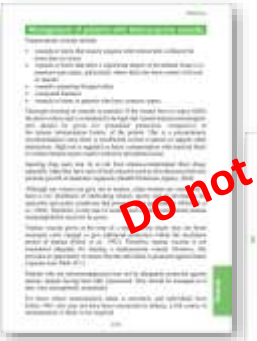
Boostrix-IPV or Repevax

To find out more about whole cell pertussis and acellular pertussis see http://www.who.int/biologicals/vaccines/pertussis/en/

FAQ on tetanus

Managing a tetanus prone wound

Pages 379 – 382 of the Green Book



Do not use now

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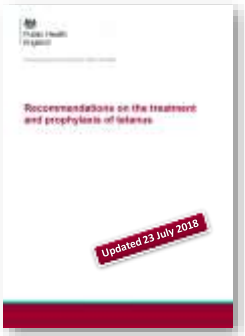
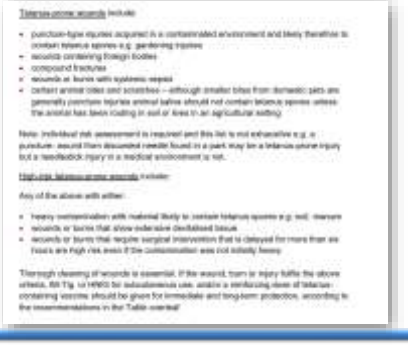


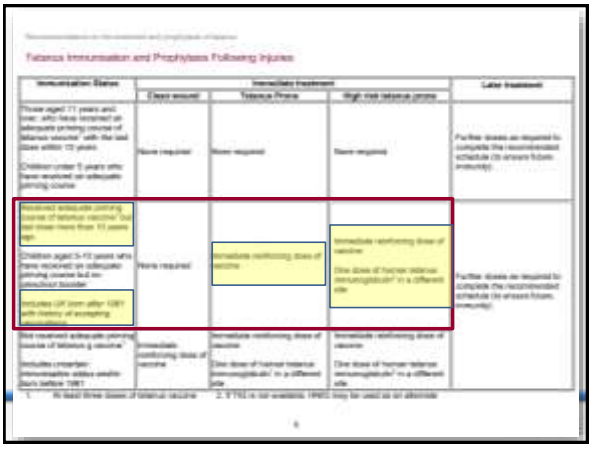
Tetanus

- Tetanus immunoglobulin supply limited for some years
- Severe shortages just now of TIG and also HNIG
- PHE have urgently reviewed the existing evidence and data to prioritise the use of TIG and HNIG
- This temporary guidance supersedes the Green Book guidance
- Revised guidelines will be published later in the year

https://www.gov.uk/government/publications/tetanus-immunoglobulin-recommendations-on-treatment-and-prophylaxis

Read the guidance to see definitions





Recent and ongoing Polio Problems more about this on day 2

Hepatitis A

Hepatitis A

http://gamapserver.who.int/mapLibrary/Files/Maps/Global_HepA_ITHRiskMap.png?ua=1

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Hepatitis A disease

- Viral infection
- Transmitted via contaminated food and water
- Those at higher risk – VFRs, long term travellers, those exposed to conditions of poor sanitation
- Incubation averages 28 - 30 days (range 15 to 50 days)
- Often asymptomatic in young children
- Abrupt onset of malaise, anorexia, nausea, fever followed by jaundice
- Fulminant hepatitis is more likely in those with pre-existing liver disease and in older individuals
- The overall case fatality ratio is low but is greater in older patients and those with pre-existing liver disease

http://phil.cdc.gov/phil/home.asp

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/147954/Green-Book-Chapter-17.pdf

Hepatitis A schedule – what the Green Book says

- The duration of protection from a completed course of vaccine can be expected to be at least 25 years and probably indefinite.
- However, PHE recommend that until further evidence is available on persistence of protective immunity, a booster dose at 25 years is indicated for those at ongoing risk of hepatitis A.

Hepatitis A vaccines can be used interchangeably: Chapter 4, page 145 of the Green Book

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/147954/Green-Book-Chapter-17.pdf

Five hepatitis A monovalent vaccines

VACCINE NAME	AGE GROUPS	WHEN TO BOOST- general principles and comments
HEPATITIS A vaccine (and schedules)		
• Hep A vaccine SPCs have different timings but note Ch. 4, 1st paragraph in GB		
VAQTA® Paediatric	2 dose schedule of hepatitis A vaccine should be given at day 0 and then 6 to 12 months after the initial dose as recommended in Green Book for hep A vaccines. Regimes may vary in SPCs, see above • & key	1 - 17 years	Ideally, follow the summary of product characteristics but in late-presenting travellers, a course does not need to be restarted (DH 2013). Protection is expected for 25 years from the second dose – also see NaTHNaC info on Hepatitis A ** and detail below within the 'key' section regarding GSK 'Havrix' vaccines***.
VAQTA® Adult		18 years and over
Avaxim®		16 years and over
Havrix Junior Monodose®		1 – 15 years
Havrix Monodose®		16 years and over

KEY
* Within the Summary of Product Characteristics (SPC)
** The Green Book (2013) refers to all hep A products, so the 25 year protection also applies to the combined products and paediatric hepatitis A vaccines. Until further evidence is available on persistence of protective immunity, a further booster at 25 years is indicated for those at ongoing risk. See the Green Book chapter (page 156) and NaTHNaC document at www.nathnac.org/pro/factsheets/hep_a.htm
***SPC for Havrix Monodose & Havrix Junior Monodose April 2012 states 'Current recommendations do not support the need for further booster vaccination among immunocompetent subjects after 2 dose course'.

See item no. 3 at http://www.janechiodini.co.uk/tools/

Over to you!

1. What is the ideal schedule for a course of hepatitis A vaccine?
2. What do you do if the patient doesn't return for their booster on time?
3. How long does a completed course of hepatitis A vaccine last?
4. Is the time of the protection taken from the first dose or booster dose of hepatitis A vaccine?
5. Are hepatitis A vaccines interchangeable?
6. If you gave a child a first hepatitis A vaccine and they return as an adult and a booster is required – which vaccine is best?
7. If a patient has a past medical history of confirmed hepatitis A infection, would you need to vaccinate them?
8. Could you give hepatitis A vaccine on the day of departure of a trip?
9. If a patient had HNIG recorded in their notes would how would you proceed on hep A protection?

Over to you!

1. 0 and 6-12 months
2. Just boost when they turn up
3. 25 years
4. 25 years from the booster dose
5. Yes
6. Boosting with an adult dose
7. No
8. Yes
9. Start a course of hep A vaccine

https://www.gov.uk/government/publications/hepatitis-a-the-green-book-chapter-17

Some historical hepatitis A protection/vaccine information

Immunoglobulin given in 1980s and early 1990s but discontinued due risk of CJD from UK sourced blood products

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Some historical hepatitis A protection and vaccine information

- Immunoglobulin given in 1980s and early 1990s but discontinued due risk of CJD from UK sourced blood products
- Hepatitis A vaccine introduced in 1992 – Havrix – had to give two doses prior to travel as it had 720 ELISA units of hepatitis A (three doses in total course)
- Havrix Monodose available from 1994 which had 1440 ELISA units of hepatitis A and only one dose required prior to travel (two doses in total course)
- Vaqta Adult – problem in 1990s when some batches thought not to give protection – instructed at that time to disregard doses given previously and re-vaccinate. Vaqta Adult now available again
- See **Nuggets of Knowledge – hepatitis A**

Would this traveller need hep A vaccine?

- Lucy is 19 years old and is going on a two week holiday in the Galapagos Islands
- She is up to date on all her scheduled national programme immunisations
- She hasn't travelled abroad before
- No PMH, she is on the OCP only
- Which vaccine schedule would you give?

Would this traveller need hep A vaccine ?

- James is 26 years old
- he's taking a one year career break back packing around the world
- He last had a tetanus vaccine as a school booster 9½ years ago at the age of 16
- He tells you he had one dose of hep A vaccine when he was 12 years old but there is no record of it in the notes
- How would you proceed?

Tip

Hepatitis A vaccine provides some of the most frequently asked questions therefore NaTHNaC and TRAVAX both have very helpful documents to help – it's a good idea to be aware of them

http://travelhealthpro.org.uk/hepatitis-a/

http://www.travax.nhs.uk/diseases/vaccine-preventable/hepatitis-a/hepatitis-a-faqs.aspx

FAQ on Hep A from TRAVAX

Recommend you do this to consolidate knowledge – see on your page

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15 minute video explaining why vaccine shortages happen, where to find details of vaccine supply and how to use the dose sparing guidance. Also links provided to all the resources required.

https://www.janechiodini.co.uk/education/online-learning/

Hepatitis B

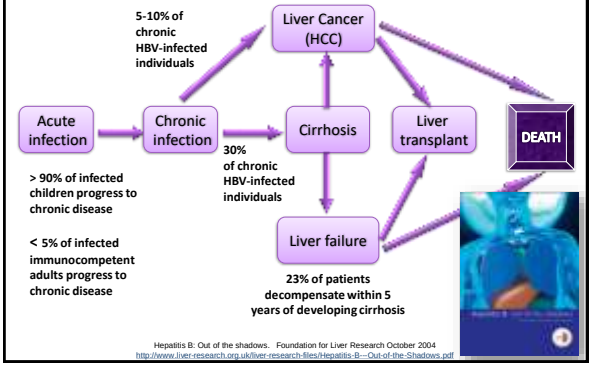
WHO Factsheet – Hepatitis B

updated July 2017

- Hepatitis B is a viral infection that attacks the liver and can cause both acute and chronic disease.
- The virus is transmitted through contact with the blood or other body fluids of an infected person.
- An estimated 257 million people are living with hepatitis B virus infection (defined as hepatitis B surface antigen positive).
- In 2015, hepatitis B resulted in 887 000 deaths, mostly from complications (including cirrhosis and hepatocellular carcinoma).
- Hepatitis B is an important occupational hazard for health workers.
- However, it can be prevented by currently available safe and effective vaccine.

http://www.who.int/en/news-room/fact-sheets/detail/hepatitis-b

Natural history of hep B infection



Hepatitis B: Out of the shadows. Foundation for Liver Research October 2004
http://www.liver-research.org.uk/liver-research-files/Hepatitis-B---Out-of-the-Shadows.pdf

This Khmer woman died of hepatoma, four months after arriving in a refugee camp in Thailand

http://www.vaccineinformation.org/hepb/photos.asp or
http://www.immunize.org/photos/hepatitis-b-photos.asp

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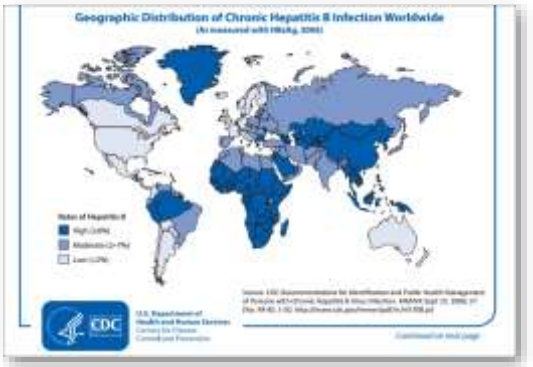
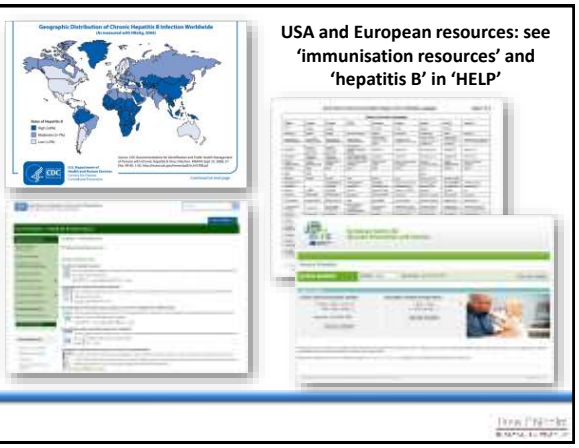
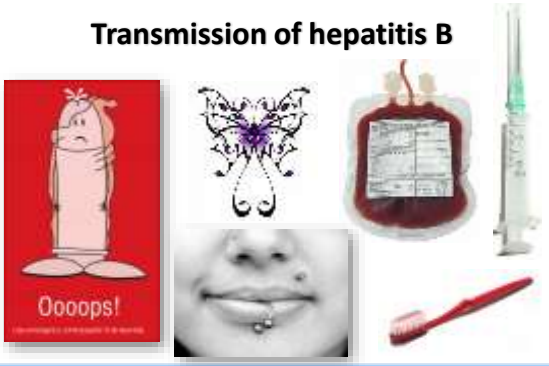
Geographic Distribution of Chronic HBV



USA and European resources: see 'immunisation resources' and 'hepatitis B' in 'HELP'



Transmission of hepatitis B



More recent craze – corset piercing

http://unusual-things.blogspot.com/2011/05/surgeon-blasts-latest-craze-in-body.html

The commonest transmission route of hepatitis B?

http://unicef-org.blogspot.co.uk/2010/10/unicef-executive-director-launches_31.html

Not travel related but important to understand

See page 14, chapter 18 of the Green Book

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/215622/dh_132637.pdf
https://www.gov.uk/government/publications/hepatitis-b-antenatal-screening-and-newborn-immunisation-programme-best-practice-guidance

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Green Book recommendations for hepatitis B vaccine

- Injecting drug users
- Individuals who change sexual partners frequently, particularly MSM and commercial sex workers
- Close family contacts of a case or carrier
- Families adopting children from countries with a high or intermediate prevalence of hepatitis B
- Foster carers
- Individuals receiving regular blood or blood products and their carers
- Patients with chronic renal failure
- Patients with chronic liver disease
- Inmates of custodial institutions
- Individuals in residential accomodation for those with learning dificulties

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/148308/Green-Book-Chapter-18.pdf

The Green Book information regarding travellers

People travelling to or going to reside in areas of high or intermediate prevalence

Travellers to areas of high or intermediate prevalence who place themselves at risk when abroad should be offered immunisation. The behaviours that place them at risk will include sexual activity, injecting drug use, undertaking relief aid work and/or participating in contact sports. Travellers are also at risk of acquiring infection as a result of medical or dental procedures carried out in countries where unsafe therapeutic injections (e.g. the re-use of contaminated needles and syringes without sterilisation) are a risk factor for hepatitis B (Kane et al., 1999; Simonsen et al., 1999). Individuals at high risk of requiring medical or dental procedures in such countries should therefore be immunised, including:

- those who plan to remain in areas of high or intermediate prevalence for lengthy periods
- children and others who may require medical care while travelling to visit families or relatives in high or moderate-endemicity countries
- people with chronic medical conditions who may require hospitalisation while overseas, e.g. dialysis
- those travelling for medical care

NB. The Green Book is nothing to do with whether the traveller should pay for vaccine or not

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/148308/Green-Book-Chapter-18.pdf

Recent history of hep B vaccine shortage for use in travellers

Hepatitis B vaccine is back!

Directions on use from NaTHNaC

- Combined hepatitis A/B vaccine continues to be available and is the preferred first line choice for travellers.
- For those who have previously received hepatitis A vaccine, and require a primary course of hepatitis B for travel to countries where there is a NaTHNaC hepatitis B vaccine recommendation, single antigen hepatitis B vaccine, can be offered
- NaTHNaC vaccine recommendations have been made for countries where 2% or more of the population were known to be persistently infected with the hepatitis B virus (intermediate/high prevalence)

https://travelhealthpro.org.uk/news/333/plan-for-phased-re-introduction-of-hepatitis-b-vaccine-for-travellers
https://travelhealthpro.org.uk/factsheet/11/country-specific-information--rationale

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Schedules for hepatitis B vaccine

HEPATITIS B vaccine (and schedules) Important – Hep B now in the childhood programme not included here		
Engerix B® - 0, 1 and 6 months	Over 16 years	Note: 0, 1, 2 month schedule Green Book doesn't advise 4th dose at 12 months unless they remain at continued high risk, see Ch.18 Page 16. Note SmPCs do advise a 4th dose but GBook should be followed. Update to policy in the Green Book in June 2017 for hepatitis B for all (which would include travellers) states those who have received a primary course do not require a reinforcing dose of hep B containing vaccine except health care workers (boost once at 5 years), patients with renal failure and at time of significant exposure. Please read Ch. 18 page 13 of Green Book for detail. Testing for evidence of immunity post immunisation is not routinely recommended. See GB. Ch.18. Page 18
Engerix B® - 0, 1, 2 months	Over 16 years	
Engerix B® - 0, 7, 21 days & 12 months	Over 16 years in SmPC – But also 16 -18 years in Green Book	
Engerix B® Paediatric 0, 1, 6 months	0 to 15 years	
Engerix B® Paediatric 0, 1, 2 months	0 to 15 years	
Engerix B® Option of two doses of 1 ml (10mcg) for low-compliance adolescents given 6 months apart when the risk of hepatitis B is low and completion of course can be assured before risk is high	11 – 15 years	
HBvaxPRO® 0, 1, and 6 months	16 years and over	
HBvaxPRO® 0, 1, 2 months	16 years and over	
HBvaxPRO® Paediatric 0, 1 & 6 months	0 – 15 years	
HBvaxPRO® Paediatric 0, 1, 2 months	0 – 15 years	

Two products, four presentations

Which schedule?

Hepatitis B Green Book chapter page 12

Pre-exposure immunisation schedule for high risk individuals

- For pre-exposure prophylaxis in most adult and childhood risk groups, an accelerated schedule should be used, with vaccine given at zero, one and two months.
- Higher completion rates are achieved with the accelerated schedule (at zero, one and two months) in groups where compliance is difficult (e.g. in people who inject drugs [PWID] and genitourinary medicine clinic attenders) (Asboe et al., 1996).
- This improved compliance is likely to offset the slightly reduced immunogenicity when compared with the zero-, one- and six-month schedule, and similar response rates can be achieved by the opportunistic use of a fourth dose after 12 months.
- An alternative schedule at zero, one and six months should only be used where rapid protection is not required and there is a high likelihood of compliance.
- If the primary course is interrupted it should be resumed but not repeated.)

What about hepatitis B boosters?

Hepatitis B Green Book chapter page 13

Reinforcing doses for those who have received pre-exposure immunisation

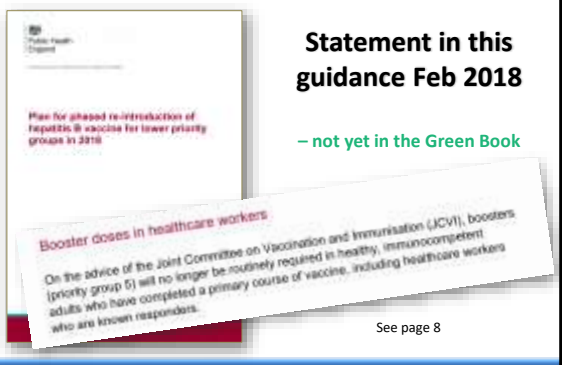
The current UK recommendation is that those who have received a primary course of immunisation, including children vaccinated according to the routine childhood schedule and individuals at high risk of exposure, **do not require a reinforcing dose of Hep B-containing vaccine**, except in the following categories:

- healthcare workers (including students and trainees), who should be offered a single booster dose of vaccine, once only, around five years after primary immunisation
- patients with renal failure
- at the time of a significant exposure (see the chapter for more detail)

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/628602/Greenbook_chapter_18.pdf

Statement in this guidance Feb 2018

– not yet in the Green Book

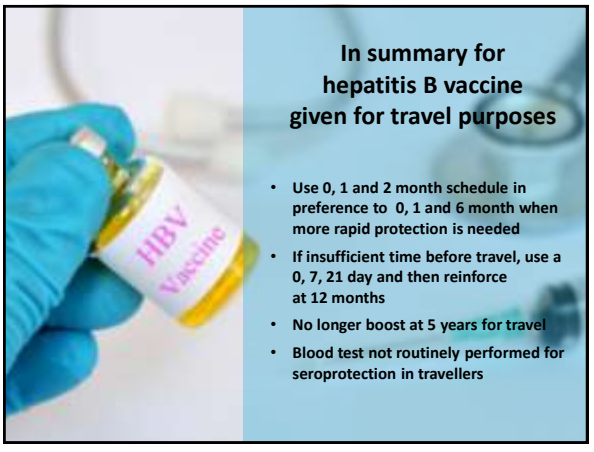

Plan for phased re-introduction of hepatitis B vaccine for lower priority groups in 2018

Booster doses in healthcare workers

On the advice of the Joint Committee on Vaccination and Immunisation (JCVI), boosters (priority group 5) will no longer be routinely required in healthy, immunocompetent adults who have completed a primary course of vaccine, including healthcare workers who are known responders.

See page 8

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/683830/Plan_for_phased_re-introduction_of_hepatitis_B_vaccine_for_lower_priority_groups_2018_.pdf



In summary for hepatitis B vaccine given for travel purposes

- **Use 0, 1 and 2 month schedule in preference to 0, 1 and 6 month when more rapid protection is needed**
- **If insufficient time before travel, use a 0, 7, 21 day and then reinforce at 12 months**
- **No longer boost at 5 years for travel**
- **Blood test not routinely performed for seroprotection in travellers**

Where would you find information about the levels of protection?

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Understanding Twinrix

Hepatitis A content

- **Havrix Mono**dose – content of **1440** elisa units of hepatitis A
- **Havrix Junior Monodose** – content of **720** Elisa units of hepatitis A
- **Twinrix Adult** – content of **720** Elisa units of hep A plus an adult dose of hep B
- **Twinrix paediatric** – content of **360** elisa units of hepatitis A plus paediatric dose of hep B

Red = full dose Green = half dose Blue = quarter of a dose

Hepatitis A vaccine antigen content within vaccines

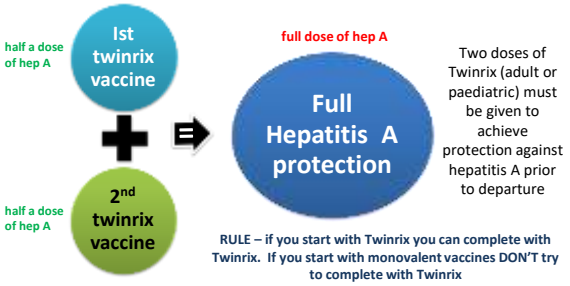
Adapted from table 1 of the Public Health England Hepatitis A vaccination in adults temporary recommendations *

Hep A vaccine formulation	Trade name	Hep A vaccine antigen content	Adult dose Hep A antigen equivalent	Made by
Adult monovalent hep A	AVAXIM	160 U	Full dose	SP
	HAVRIX MONODOSE	1440 EU	Full dose	GSK
	VAQTA ADULT	50 U	Full dose	MSD
Paediatric monovalent hep A	HAVRIX JUNIOR MONODOSE	720 EU	Half dose	GSK
	VAQTA PAEDIATRIC	25 U	Half dose	MSD
Adult combination hepatitis A/B	TWINRIX ADULT	720 EU	Half dose	GSK
Paediatric combination hepatitis A/B	TWINRIX PAEDIATRIC	360 EU	Quarter dose	GSK
	AMBIRIX	720 EU	Half dose	GSK
Combination hepatitis A/typhoid	VIATIM	160 EU	Full dose	SP

Made into a poster and now on your webpage

SP – Sanofi Pasteur; GSK – GlaxoSmithKline; MSD – Merck Sharpe Dohme Ltd

Explaining composition of Twinrix



Two doses of Twinrix (adult or paediatric) must be given to achieve protection against hepatitis A prior to departure

RULE – if you start with Twinrix you can complete with Twinrix. If you start with monovalent vaccines DON'T try to complete with Twinrix

Combination A and B vaccines schedules

Twinrix adult	• 0, 1 & 6 months from 16 years • 0, 7, 21 days & 12 mths (18yrs)
Twinrix paediatric	• 0, 1 & 6 months • Use in 1 – 15 year age group
Ambirix	• 0 and 6 - 12 months • Use in 1 to 15 years

Understanding content of Twinrix and Ambirix

- **Havrix Mono**dose – content of **1440** elisa units of hepatitis A
- **Havrix Junior Monodose** – content of **720** Elisa units of hepatitis A
- **Twinrix Adult** – content of **720** Elisa units of hep A plus an adult dose of hep B
- **Twinrix paediatric** – content of **360** elisa units of hepatitis A plus paediatric dose of hep B

Ambirix – content of **720** elisa units of hepatitis A plus a full dose of hep B

Combination hepatitis B vaccines used in the UK

Table 18.2 Dosage of combined hepatitis A and hepatitis B vaccines by age (from the Green Book)

Vaccine product	Ages	Dose HAV	Dose HBV	Volume
Twinrix Adult® Hepatitis A (inactivated) and hepatitis B (rDNA) (HAB) vaccine (adsorbed)	16 years or over	720 ELISA units	20µg	1.0ml
Twinrix Paediatric® Hepatitis A (inactivated) and hepatitis B (rDNA) (HAB) vaccine (adsorbed).	1 – 15 years	360 ELISA units	10µg	0.5ml
Ambirix® Hepatitis A (inactivated) and hepatitis B (rDNA) (HAB) vaccine (adsorbed).	1 – 15 years	720 ELISA units	20µg	1.0ml

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/148308/Green-Book-Chapter-18.pdf

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Tip

In practice we give hepatitis B for lifestyle risks and travel, but not usually occupational risk. Hepatitis B is a large topic – it would be useful to read the Green Book chapter on this topic at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/148308/Green-Book-Chapter-18.pdf

And the BMA guidance document at http://bma.org.uk/practical-support-at-work/doctors-as-managers/managing-your-practice/focus-hepatitis-b-immunisations

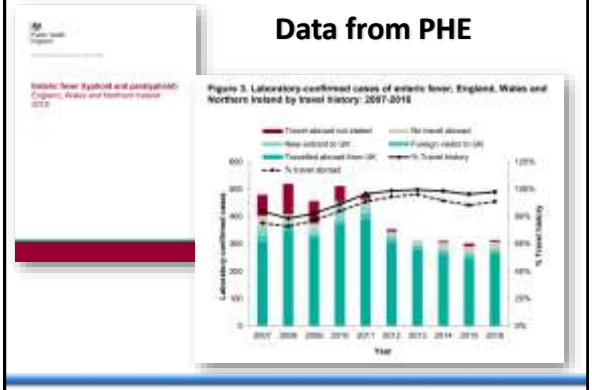
See the hepatitis B document on **your dedicated** page !

Typhoid

Enteric fevers – typhoid & paratyphoid

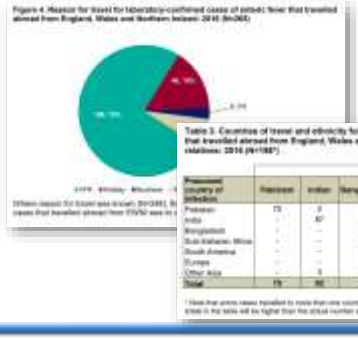
- Gram-negative bacterial infection
- Transmission by faecal-oral route, water borne and human to human
- Those at higher risk include VFRs, young children, long term travellers and those exposed to conditions of poor sanitation – mainly in Asia
- Incubation 7 to 14 days
- Fever, chills, headache, malaise, weakness, anorexia, abdominal pain, diarrhoea
- Complications in 10% -15%: intestinal perforation, bacteraemia, meningitis
- Chronic carrier status in <3% infected persons

Data from PHE



https://www.gov.uk/government/publications/typhoid-and-paratyphoid-laboratory-confirmed-cases-in-england-wales-and-northern-ireland

Reason for travel and destination



India, Pakistan and Bangladesh were the highest risk country for travellers returning with enteric fever

https://www.gov.uk/government/publications/typhoid-and-paratyphoid-laboratory-confirmed-cases-in-england-wales-and-northern-ireland

Details from the Green Book

Vaccine product	Ages	Dose	Volume
Typhim Vi	Two years and older	25µg	0.5ml
Typherix	Two years and older	25µg	0.5ml
Dosage of oral monovalent typhoid vaccine			
Vaccine product	Ages	Dose	
Vivotif	Six years and older	Three capsules on days 0, 2 and 4	
Dosage of combined typhoid and hepatitis A vaccines*			
Vaccine product	Ages	Dose typhoid	Dose HAV†	Volume
Hepatyrix	15 years and older	25µg	1440 ELISA units	1ml
VIATIM	16 years and older	25µg	160 antigen units	1ml

* For booster dose of either typhoid or HAV, single antigen vaccines can be used
† HAV – hepatitis A vaccine

Note
Typherix and Hepatyrix have now been discontinued – Green Book not yet updated

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/148512/Green-Book-Chapter-33-dh_125348.pdf

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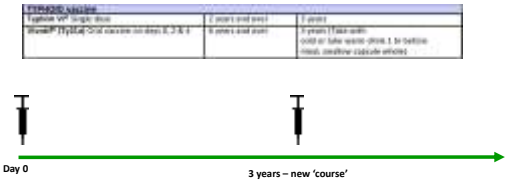
Two vaccines for typhoid protection
No vaccine is available against paratyphoid



Day 0

3 years – new 'course'

Injectable typhoid protection is a polysaccharide vaccine and so just one dose makes up 'the course'. After this time period if further typhoid protection is needed a new dose is given.

Oral typhoid - Vivotif

www.medicines.org.uk ®

Oral typhoid vaccine - Vivotif

- LIVE vaccine*
- Use from 6 years of age
- Three doses on days 0, 2 & 4 (Green Book)

Administration

- The capsule should be taken approximately one hour before a meal with a cold or lukewarm drink (temperature not to exceed body temperature, e.g. 37°C)
- The vaccine capsule should not be chewed and should be swallowed as soon as possible after placing in the mouth

* can be administered at any time before or after other live vaccines.

Interactions with other medication from the SmPC

- Antibiotics – Vivotif may not work if it is taken while you are also taking antibiotics. Take Vivotif no earlier than 3 days after the last dose of an antibiotic
- Medicines to prevent malaria – do not start these until 3 days after the last dose of Vivotif
- Yellow fever vaccine can be given while taking Vivotif

Vivotif® Patient Information Leaflet http://www.medicines.org.uk/EMC/medicine/24328/PIL/Vivotif/

Charging and administration

Oral typhoid vaccine is an NHS provision in an NHS setting

1. You could buy this vaccine in and bring the patient in for all three doses
2. You could administer the vaccine to the patient for the first dose and given them the other two doses to take home to self administer but the vaccine must be stored at 2 – 8°C
3. You could supply the vaccine on an FP10 and allow the patient to self administer

You need to ensure that your traveller understands the importance of, and can assure the cold chain in points 2 and 3 above.

Who would need typhoid vaccine if there is a shortage?

- Family of four going to an all inclusive break for a 10 days Cancun
- 40 year old couple travelling to stay in 4 star hotel in Bangkok for two weeks
- 26 year old man going to stay in Bangkok in a guest house/hostel type accommodation and he has type 1 diabetes
- Parents and their children of 7, 5 and 2 years travelling to Pakistan for 3 weeks to see family

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Tip

NaTHNaC and TRAVAX have both written information documents on typhoid as well

http://travelhealthpro.org.uk/typhoid-and-paratyphoid/

http://www.travax.nhs.uk/diseases/vaccine-preventable/typhoid/typhoid-faqs.aspx

Hepatitis A + Typhoid available as a combined vaccine

Why give combination vaccines?

COMBINED vaccines (and schedules)		
VIATIM® (Hepatitis A and typhoid) Single dose	16 years and over	6-12 months for hepatitis A component (then hepatitis A booster given as a monovalent vaccine) and 3 years for the typhoid component

The combination hepatitis A and typhoid vaccine can be given with the hep A protection provided as either the first dose or reinforcing or booster dose of hep A vaccine as long as there is the three year interval to fulfill the typhoid requirement of the vaccine.

Does this traveller need typhoid vaccine ?

Anu is travelling to Mumbai to see relatives for a 4 week stay – she is 22 years old. She had a 1st dose hepatitis A vaccine at the age of 14 years. Would she need a typhoid vaccine and which one would you give if so?

Anu needs a booster dose of hepatitis A vaccine and she needs a typhoid vaccine so it would be very appropriate in this situation to give her a combined hepatitis A and typhoid vaccine.

Food and water hygiene advice remain paramount

https://travelhealthpro.org.uk/news/349/extensively-drug-resistant-typhoid-fever-in-pakistan

Cholera

Cholera

Disease	Organism	Mode of transmission
Cholera	Bacterial infection	Mainly water-borne through ingestion of faecally contaminated water or shellfish and other foods. Person-to-person spread may occur through the faecal–oral route

http://gamapserver.who.int/mapLibrary/

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Cholera is referred to in 'pandemics' – currently in the 7th Pandemic

http://gamapserver.who.int/mapLibrary/

http://globalhealth.unc.edu/blog/2011/06/haiti-diary-back-to-the-basics/

16 November 2010

http://www.dailymail.co.uk/news/article-1330282/Anti-UN-riots-Haiti-leave-people-dead-locals-blame-cholera-outbreak-UN-peacekeepers.html

Cholera

- Acute intestinal infection
- Causal bacterium - *Vibrio cholerae*
- Transmitted faecal orally
- 90% cases are mild to moderate
- 10% cases very severe – leading to profuse diarrhoea, vomiting, circulatory collapse and shock
- Mortality rate can be over 50% in untreated cases, unless rapid rehydration therapy is given promptly
- Chronic carriage is rare
- Organism survives for up to 2 weeks in fresh water and 8 weeks in salt water
- Transmission normally though infected drinking water

Management of cholera

- Fluid replacement
- Prompt action improves outcome
- IV fluids in severe cases or when vomiting
- Rapid rehydration until signs improve
- NG tube used if IV not possible
- Antibiotic therapy in severe cases

Cholera recommendations for administration

Advice from the Green Book

- Immunisation against cholera can be considered, following a full risk assessment, for the following categories of traveller:
  - relief or disaster aid workers
  - persons with remote itineraries in areas where cholera epidemics are occurring and there is limited access to medical care
  - **travellers to potential cholera risk areas, for whom vaccination is considered potentially beneficial**.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263838/Green-Book-Chapter-14v2_0.pdf

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Cholera vaccine fact finding

- What is the youngest age at which give cholera vaccine can be prescribed?
- How many doses would you give a child?
- How many doses would you give an adult?
- What is the minimum and maximum time interval between doses?
- How long does cholera vaccine last?

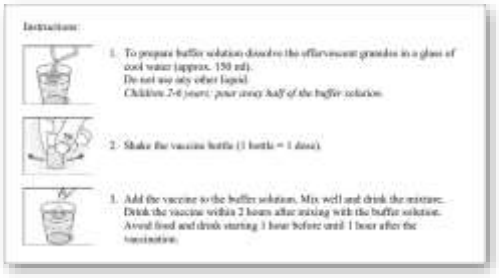
Cholera Vaccine

CHOLERA vaccine		
Dukoral® Oral vaccine, 2 doses, minimum 1 wk apart and maximum 6 weeks apart, from 6yrs of age. 3 doses, in 2 – 6 year olds	2 years and over	2 yrs or age 6 to adult 6 months in 2 – 6 year olds NBM 1 hr before & after vaccine

Food and drink should be avoided 1 hour before and 1 hour after vaccination. Oral administration of other medicinal products should be avoided within 1 hour before and 1 hour after administration of Dukoral.

https://www.medicines.org.uk/emc/medicine/31272

From the PiL



Charging and administration

Cholera vaccine is an NHS provision in an NHS setting

1. You could buy this vaccine in and bring the patient in for subsequent doses
2. You could administer the vaccine to the patient for the first dose and given them the 2nd dose to take home to self administer but the vaccine must be stored at 2 – 8°C
3. You could supply the vaccine on an FP10 and allow the patient to self administer

You need to ensure that your traveller understands the importance of, and can assure the cold chain in points 2 and 3 above.

For further information to learn more about these diseases, look at the Green Book (online) NaTHNaC and TRAVAX

TRAVAX Est. 1985

TRAVEL HEALTH PRO

NaTHNaC

Tip

Meningococcal meningitis

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Meningococcal Meningitis

- Meningococcal disease is a rare, but potentially devastating infection
- Caused by the bacteria *Neisseria meningitidis* of which there are 6 disease-causing strains called serogroups (A, B, C, W, Y and X)
- Approximately 10 percent of the general population of the UK are thought to carry *N. meningitidis* in the lining of the nose and throat
- Spread between individuals occurs through coughing, sneezing, kissing or during close contact with a carrier
- Carriers do not have symptoms, but can develop disease when bacteria invade the bloodstream from the nasopharynx
- Invasive disease is a rare but serious outcome usually presenting as septicaemia or meningitis

http://travelhealthpro.org.uk/diseases/meningococcalmeningitis/

Meningococcal Meningitis

- Less commonly, individuals may present with pneumonia, myocarditis, endocarditis, pericarditis, arthritis, conjunctivitis, urethritis, pharyngitis and cervicitis

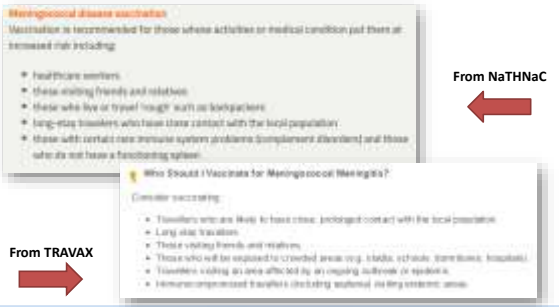
- The incubation period is from two to seven day

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/223749/Green_Book_Chapter_22_v2_3.pdf

Meningococcal meningitis vaccine given to travellers going to meningitis belt in Africa

http://gamapserver.who.int/mapLibrary/Files/Maps/Global_MeningitisRisk_ITHRiskMap.png
http://wwwnc.cdc.gov/travel/yellowbook/2016/infectious-diseases-related-to-travel/meningococcal-disease

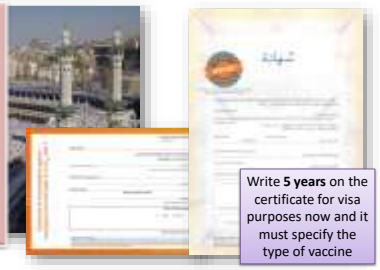
Vaccine recommendation for travellers to the meningitis belt



and travellers going on a pilgrimage to Umrah and Hajj

The KSA Ministry of Health (MoH) currently recommends that, as a precautionary measure, pregnant women and young children, should postpone the performance of the Hajj and Umrah.

Those with severe medical conditions such as terminal cancers, advanced cardiac, respiratory, liver, kidney diseases or senility are exempt from these religious duties



Write **5 years** on the certificate for visa purposes now and it must specify the type of vaccine

Note – information given that vaccine must be given minimum of 10 days prior to entry into the country

Certificates available at:
https://hcp.gsk.co.uk/content/dam/global/hcpportal/en_GB/therapyareas/vaccines/pdfs/meningococcal-acwy-certificate.pdf
and https://pfizervaccines.medisa.com/medisa/?wicket:interface=:3:::

The ACWY vaccines

Menveo

- Conjugate vaccine
- Use from two years of age
- Available from GSK
- GSK data gives 5 years protection from administration

Nimenrix

- Conjugate vaccine
- Use from 6 weeks now*
- Just had black triangle removed
- Available from Pfizer
- Pfizer studies up to 60 months – refer to pharmacodynamics properties in the SPC

* If needing to give, please check the Green Book, the SPC and TravelHealthPro

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/302904/Green_Book_Chapter_22_v2_5.pdf

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When would you boost - it's been very confusing!

- The Joint Committee on Vaccination and Immunisation (JCVI) Committee reviewed information on length of protection following ACWY conjugate vaccination. Antibody against serogroup A disease was the first to wane, and this meant boosting was important for travel, but less important for the routine Men ACWY programme in the UK.
- For travellers at continued risk, the Committee agreed that boosting **every five years** would be a sensible approach until data became available.

http://www.who.int/wer/2016/wer9126-27.pdf?ua=1

For further information to learn more about these diseases, look at the Green Book (online) NaTHNaC and TRAVAX

TRAVAX Est. 1985

TRAVEL HEALTH PRO

NaTHNaC

Tip

Agenda

- Introduction to travel medicine
- Travel risk assessment
- Travel vaccines and related issues
- Travel medicine operational issues
- Recap on resources

Immunisation Training

Some of the resources on the 'Help' page with more being added

For example, Immunisation Resources

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New immunisation training guidance

Revised and updated version of the original standards published by the former HPA in 2005. Previously published as two separate documents, this revised document incorporates the Minimum Standards and the Core Curriculum in one document.

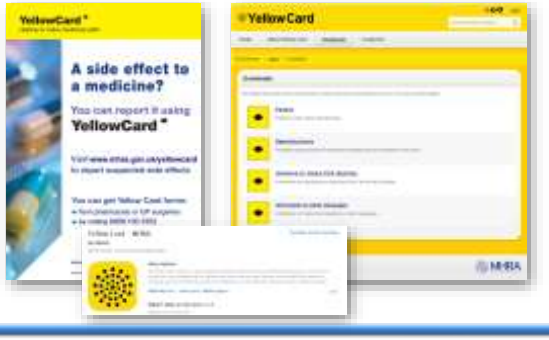
The joint RCN/PHE documents 'Supporting the delivery of immunisation education', and the 'Immunisation knowledge and skills competence assessment tool' previously published by the RCN have both now been incorporated into this version.

Practitioners may also require additional training depending on the vaccine(s) they give.
For example, those who give travel immunisations will require specific training on travel health – a generic immunisation course alone would not be sufficient.

Intended to be free of charge for all

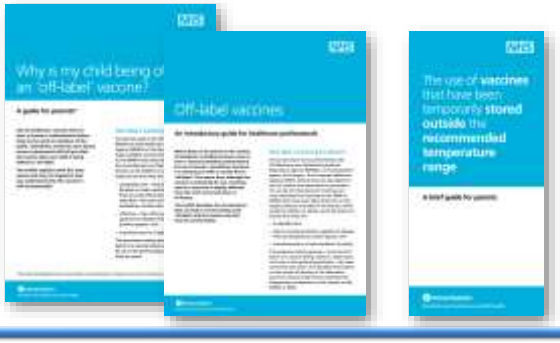
https://www.e-lfh.org.uk/programmes/immunisation/

Yellow card



https://yellowcard.mhra.gov.uk/downloadable-information/

Licensed, Unlicensed and Off-label



https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/390117/PHE_9173_VU_223_Dec_2014_11.pdf

Immunisation training includes…

- CPR and anaphylaxis
- Consent
- Prescribing
- Administration
- Documentation
- Vaccine storage – protocol
- Finance

} Not part of the National Standards, but topics covered briefly on day 2

www.resus.org.uk

Annual training for CPR and anaphylaxis should be undertaken

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Vaccine ordering, storage and handling

The perfect fridge!

Prescribing for travel medicine

Legal requirement – covered on day 2

https://www.nice.org.uk/guidance/mpg2

FAQs (under News) for information on prescribing

http://www.janechiodini.co.uk/news/faqs/faq-no-1/

Consent

Chapter 2 in the 'Green Book'

Administration

- Cleansing the skin
- Size of needles
- Preparing the vaccine
- Post vaccination waiting time ?

Equipment

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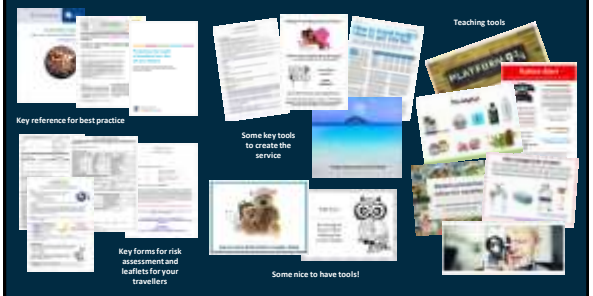
Importance of Documentation – working within your code

http://www.nmc-uk.org/

Resources for a travel service



To be found at http://www.janechiodini.co.uk/tools/travel-service/

Agenda

- √ Introduction to travel medicine
- √ Travel risk assessment
- √ Travel vaccines and related issues
- √ Travel medicine operational issues
- Recap on resources

Resources in Travel Health

Resources from my website www.janechiodini.co.uk

UK National databases - www.travax.nhs.uk and for the public - www.fitfortravel.nhs.uk

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https://travelhealthpro.org.uk/

From NaTHNaC for healthcare professionals and the general public

Key UK guidance resources

Both available from the publications page on my website
http://www.janechiodini.co.uk/about/publications/

Access via the 'New to Travel' page on my website

Please note, if using TRAVAX, you will still need a user name and password

http://www.janechiodini.co.uk/tools/new-to-travel/

Key UK resources

- Department of Health 'Green Book' published in 2006 but new cover and new publication date of 2013
- DO NOT USE PAPER COPY
- Use online version
  - Whole book
  - Individual chapters
  - Update patches

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Key UK resources

- UK Malaria Guidelines found at www.malaria-reference.co.uk
- Also available from the malaria page on my website http://www.janechiodini.co.uk/news/help/malaria/

DH, PHE and MHRA all under one roof

https://www.gov.uk/government/organisations/department-of-health
https://www.gov.uk/government/organisations/public-health-england

Working within National Guidelines and knowing one's limitations

Telephone helplines

NaTHNaC
0845 602 6712
Monday – Friday 9am to 11.00 am and 1pm to 2pm x 2
Closed Monday and Friday at 2pm and other days at 3.30pm

TRAVAX
0141 300 1130
Mon. &Wed. 2 to 4pm
Firday 9.30 to 11.30am

MRL e mail service
Download risk assessment form from www.malaria-reference.co.uk, complete and return by e mail

Electronic Medicines Compendium www.medicines.org.uk – provides SmPCs and PILs

Don't forget the protected login area to store your own choices

Immunisation training

https://www.janechiodini.co.uk/help/immunisation-resources/

Finding additional destinations

Google search www.google.co.uk
and/or google maps
http://maps.google.co.uk/

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Worldwide resources

TRAVAX from Shoreland is not the same as UK TRAVAX

Other useful maps also at www.who.int/ith

http://gamapserver.who.int/mapLibrary/Files/Maps/Global_ChoeraCases_ITHRiskMap.png

World Health Organization

www.who.int

or Google title of the WHO Factsheet required

an extremely useful website with so much information
e.g.

Substandard and falsified medical products

Finding travel clinics abroad www.istm.org

Additional websites and resources on my website

Interim work between the two study days listed on your webpage

- Do the module on dose sparing guidance for hepatitis A vaccine
- Look around my website
- Find out what travel PGDs you have at work
- See if you have a vaccine storage protocol at work
- Do the practice case study e learning on your page if you have time left

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Don't forget to view the tasks suggested if you can for the interim period.
See you on Friday 26th October 2018

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