

Tropical First Aid

A framework for treatment and travel in developing countries

by Joe Piper & Andy Haynes

Whatever your background, this presentation based on the talk of 2008 aims to provide a basis for approaching First Aid in developing countries. It will describe some of the conditions that could be faced while travelling / volunteering in the developing world. An approach to planning and dealing with situations will be described using the framework based on the Ambulance service. Some scenarios and pointers on personal safety, preparations, resources and some kit will be presented.

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This talk aims to provide a framework for approaching First Aid in developing countries:

- 1) Description of differences
- 2) Likelihood vs severity – some scenarios
- 3) Generalised approach to situations
- 4) Resolution of scenarios
- 5) Resources, tips and kit etc.

Description of differences

Travel can appear chaotic: there is a need to be flexible, plan in advance, alert – even when crossing the road.

Road traffic accidents are extremely common throughout the developing world, from congested streets to remote villages with unsafe roads, vehicles, wild animals, drink driving, overloading, poor brakes, little training etc.

Volunteering projects may be in remote areas with no emphasis on health and safety. Building sites will be performing tasks / confronting situations that may be unexpected.



Street Traffic in Jaipur, India



Water treatment installation, Northwest Thailand



Meat market, 4am, Northwest Thailand



Local lady with own stew

Consider the safety of what you're eating (more later). Don't let this stop you sampling local food and hospitality, but eat what the locals eat, and generally: "Boil it, peel it, wash it or throw it"

Try to plan for where you're travelling and what conditions and weather you'll find. This will affect kit and health precautions, e.g. hot and humid: think of fungal infections (athletes foot, thrush etc...)





Mount Snowdon

For expeditions, consider what kit you'll need, e.g. goggles (could be blind without them) and gloves (fingers could be numb without them).



Jaipur, night traffic

Night time provides a whole new set of issues: frequent power cuts (consider packing 2 torches), road safety (drunk driving, random holes – especially as drain covers are often stolen!). If locals advise not to go out at night due to crime – listen to them!



Lusaka main bus station, 5am

When travelling, **PLAN AHEAD**: avoid night travelling, get the early bus and have some idea of where you're going to stay (don't forget that well-known guides can be up to 3 years out of date!). **ASK THE LOCAL HOSTEL AND PEOPLE FOR ADVICE** on most recent, safe bus companies, departure times, etc... Assume there will be delays!

Respect the wildlife: follow the local rules!! Do not treat the countryside like your back yard – the bush is full of stories of people who didn't follow the rules...



Remember animals will generally show aggression only through fear – don't intimidate them by getting too close. Beware of aggression, bites and disease transmission – especially from animals that you may consider less harmful: for instance, baboons may pose more risks than lions.



Don't let this put you off! Volunteering and travelling in developing countries is tremendously rewarding, especially if you share food, journeys and live with local people. This short document is aimed just to consider some preparations and minimise the risks.

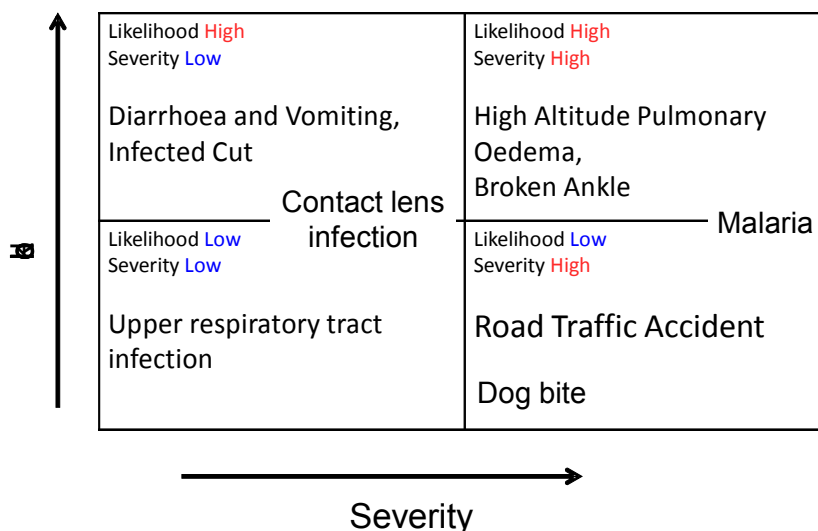
Differences in First Aid: UK vs Travel in Developing Countries

- New and various dangers: infection, transport, safety, bites & allergies
- Your pills & kit may be the most reliable (counterfeit medicines are problematic)
- May be no ambulance (many countries have no emergency referral system)
- Lack of sterility - unlikely to be running water for washing wounds.
- You may appear the most qualified and have most kit there
- Ask for local help & advice on improvising, where to go, who to take with you etc.
- Respect the local rules!! E.g. Find out how safe areas are, in daytime and at night
- Have an idea of major diseases of region & when they occur (e.g. Dengue fever in daytime, malaria at dusk)

- Take preventative measures: e.g. for malaria: mosquito repellent, long sleeves, mosquito net, anti-malarials
- Water: Is it safe? If not, boil it (best) or iodine it with iodine drops. Avoid ice as it's frequently made with contaminated water!
- Food: peel it, cook it, wash it or throw it. Avoid salads, mayonnaise, cream and fruit you can't peel- the water they are washed or stored in may be contaminated.
- Eat where everyone eats & what they eat- a fast turnover of food with locals eating it is a good sign. A reheated, lonely hotel buffet is not so good. Remember meat is less safe where power cuts occur- refrigeration may be unreliable.
- Use rehydration salts for stomach bugs- dehydration makes people feel far worse, and there is a need to replace the salts and sugar.

Below is a useful way of considering different scenarios, depending on where you travel. e.g. a stomach bug is highly likely, but if properly treated its severity is low. By contrast, when travelling in mountains, high altitude pulmonary oedema is very severe and highly likely in unacclimatised individuals. All of these can move between the different quadrants, but notice how malaria can be decreased in likelihood with simple precautions: mosquito nets, repellent, long sleeves/ trousers and antimalarials. Contact lens infections can be reduced by packing sterile solutions, or wearing glasses if hygiene is problematic.

Risk Assessment



Three scenarios to consider

Scenario 1: Diarrhoea and Vomiting

- Doesn't wash hands
- Quiet restaurant

- Buffet with lots of meat, power cuts earlier that day
- Salad with lettuce
- Strawberries and cream
- Drinks with ice
- i.e. Does everything wrong so... diarrhoea and vomiting
So need to stabilise patient, relieve symptoms

Scenario 2: Infected cut / bite

- Trekking remote from any road
- Hot and tired,
- Didn't look where putting feet / hands
- Bitten on leg / scratches, open wound
- Need to clean, stop bleeding, prevent infection, get to help if suspect animal bite

Scenario 3: road accident in Malawi

- Driving along roads and see branches cut down and put in road (common sign of danger in Africa)
- Lorry has overturned
- 35 year old male, Stephen, injured sitting on roadside
- Face lacerations
- Open fracture of the lower leg
- Possible dislocated shoulder

Framework for Incident Management

Our aim here is not to provide detailed First Aid knowledge- we recommend a course with hands on training. For those with no First Aid at all, in 3 lines for developing world travel it would be:

- Unconscious: Open the Airway- open mouth and tilt head back (assuming no C-spine injury)
- Bleeding: CLEAN, apply PRESSURE and ELEVATE the affected limb.
- Burns: apply WATER and COOL the area down.

The next section provides a framework to approaching scenarios based on ambulance training for those with First Aid knowledge. You may recognise some of these acronyms:

- **DR ABC**
- **AcBCDE**
- **<C>AcBCDEE**
- **SAFE <C>AcBCDEE EAAA**

Where SAFE stands for:

- **S** Shout

- **A** Assess
- **F** Form a plan (delegate)
- **E** Evacuate casualty from immediate danger (if necessary)

Primary Survey <C>AcBCDE

- <Catastrophic external haemorrhage>
 - Airway
 - c-spine
 - Breathing
 - Circulation
 - neurological Defecit
 - Expose
- Treat as you go through this*

Secondary Survey

- Examine
 - Environment
 - Analgesia
 - Ambulation (evacuation)
 - Antimicrobial
- Examine everything, plan, then treat*

Key Concepts:

- Primary Survey saves life & prevent deterioration
- Secondary Survey prevents deterioration & promotes recovery
- Some primary survey problems can't be solved
- Secondary Survey problems can become primary survey problems if they deteriorate

Scenarios revisited

1) Diarrhoea and Vomiting

- At home
 - Re-hydrate until vomiting stopped
 - Dry plain food thereafter
 - No role for antibiotics or antiemetics
- In the wilderness:

<C>AcBCDE EEAAA

- C - circulation Do you have enough water?
- A - Ambulation Mobile with severe D&V?
- A - Antimicrobial Need for systemic antibiotics and/or anti-emetics?

2) Bite / Infected cut

<C>AcBCDE EEAAA

- Expose and Examine- Hand Injury
- Environment - Protect from contamination
- Analgesia- Can't walk easily when in pain
- Ambulatory- Can't self evacuate if can't walk
- Antimicrobial- Possible primary contamination from animal



3) Road Traffic Accident

<C>AcBCDE EEAAA

- Airway Facial bleeding is possible airway problem
- C-spine Injuries above the clavicle plus high mechanism
- Breathing Shoulder injury -> ?chest injury
- Circulation Open Fracture
- Expose Ankle Fracture, Shoulder dislocation
- Analgesia Obvious analgesia requirement- Makes Examination and conversation easier
- Ambulatory Can't self evacuate, Probably no Emergency Medical Service, Road difficult
- Antimicrobial Open Fracture

Management: Road accident Malawi

- Apply traction to foot to restore circulation
- Support + bandage foot: wound dressings, branches as splints, clothes for more bandage if needed
- Support for shoulder
- Melolin for face laceration



- Move to passenger seat: ask who want informed + who to take with
- Get directions + drive to hospital
- **ENSURE adequate provision once at hospital-** It is possible the patient may not be monitored much after having arrived, so if you can, it is worth staying with them until they are sent into a ward / operating theatre.

Some ideas of what to pack

- Foldable resus facemask, Gloves, possible eye protection
- Multitool- scissors, knife- really useful for wide range of
- Waterproof elastoplast roll
- Few standard dressings- e.g. 4 Medium sterile dressings
- Betadine SPRAY: iodine-based (Ointment carries more infection risk)
- Gamgee, clingfilm (burns)
- Celox / Quickclot / Haemcon (for massive bleeds) , Tourniquet
- Antimalarials, Antibiotics (arrange through travel GP)
- Thermometer
- Imodium,Senna,Rennies,
- Travel sickness pills, Buccastem
- Rehydration sachets: can also make your own
- Eyedrops
- Antihistamines (loratidine)
- Corticosteroid (allergies: hydrocortisone or hydrocortisol cream)
- Antifungal: Athletes' Foot, Clotrimazole
- Pain relief: ibuprofen, aspirin, paracetamol

Resources & Further Reading

- Local GP surgery, travel clinic
- “The Essential Guide to Travel Health: Don't let Bugs, Bites and Bowels spoil your Trip” 5th edition 2009 Cadogan, Jane Wilson-Howarth: *Superb guide to wealth of travel issues*
<http://www.wilson-howarth.com/default.asp?contentid=11#>
- IAMAT: International Association For Medical Assistance to Travellers:
<http://www.iamat.org/>
Gives you the addresses of English speaking Dr's who will charge a set amount.
- Foreign office website: <http://www.fco.gov.uk/en/travelling-and-living-overseas/>
- Health sections of guide books