

# Wilderness Medicine



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# Wilderness Medicine

- Access to 'sophisticated' health care is difficult or impossible. Self reliance essential. Rural GP!
- Land, sea, space (its coming!)
- Adventure: private or commercial
- Charity fundraising trips
- Extreme sports, record setting attempts
- Disaster Relief: war, famine, earthquake
- Industrial: film, oil, mining etc
- Governmental & Military activities

# South Pole





# Everest Base Camp



# North Pole Marathon





# Everest Marathon



# Antarctic Filming



# Turkey Youth Adventure





# High Altitude trekking



# Alps





# Helmand, Afghanistan





# What's it all about?

- Identify, facilitate and support aims of group.
- Clarify objectives + inject dose(s) of reality.
- 99% of the work is done before leaving home!
- Research area, its hazards, politics, health support, customs & so on
- Weapons?
- Medical questionnaire + information for all.
- Obtain med kit
- Vaccination, malaria, personal med kit advice for trip members .

# Medics role

- Experience required in Primary Care, A&E + pre-hospital, environmental, occupational and sexual health + diplomacy + expedition activities
- Heat illness, hypothermia, endurance, altitude & dive medicine, tropical beasties etc.
- Water supply? Food supply?
- Management of human waste?
- Disease vectors (insect, animal, human etc)
- Communications? Evacuation routes/options?
- Important function is to prevent illness/injury & to prevent unnecessary evacuations.

# Occupational hazards





# The 7 Ps

- Proper Planning & Preparation Prevents Piss Poor Performance
- You must be fit for multi-tasking role.
- Most wilderness medical problems can be anticipated & prevented, without decreasing the aims or enjoyment of the trip.
- Training: pre-trip & in field
- Remember TLC may be required.

# TLC Training: one thing leads to another!



# Training (18,000ft)





# Remote area considerations

- You are it; no back-up for hours/days/weeks. (have sat/telemedicine coms)
- Limited range of kit & limited re-supply.
- Conserve resources, take multi-use drugs.
- Reliant on good Clinical skills
- Improvise all the time.
- Re-align fractures with ice, haematoma blocks or under sedation (? alcohol).

# Remote area considerations

- Evaluate nearest hospitals.
- Never believe anyone who says there is good kit out there!!
- Difficulties with customs/drugs etc
- Drug security & degradation problems
- Language & Cultural issues
- Do you treat locals?
- Never underestimate the cunningly stupid pranks your group is capable of! (Ice floe)

# Arctic Ocean dip





# Equipment

- Go light unless someone else is carrying it!
- Be realistic about what you can do and downscale kit!
- Security of kit
- Must have items: Soft toilet paper, lomotil, cipro, nsaid, alcohol gel & superglue

**POPULAR CLINIC** (PHYSICIAN SURGEON)  
Dr. A. HAMEED KHAN - B.M.S.



# Field Management

- Early diagnosis + effective treatment ASAP.
- No place for watch and wait for URTI, gut upsets, minor wounds.
- Revise evac. options as you go
- Train group members so they can look after you!
- If one person is unwell, others will be too; find them!
- Confidentiality can be v difficult.



# Remote trauma



# Casualty Evacuation



# Casualty evacuation





# Moribund with pneumonia



# Military Casualty Recovery



# Scene safety





# Scene Safety



# Scene Safety



# Civil unrest





# Fauna Hazards



- Rabies
- Malaria
- Dengue
- Encephalitis A-Z
- Vaccinate & cover up!!

# Common problems

- Gut upset (HAM & Sharting))
- Soft tissue infections (blisters, bites)
- Respiratory infections
- Environmental; heat, cold, altitude
- Thermal injuries: (burns & UV)
- Alcohol/drug withdrawal
- Psychiatric problems
- DEHYDRATION
- COMPLACENCY KILLS !!
- Concealment of medical problems

# Dehydration

- V common & underestimated, esp at altitude; (AMS symptoms similar to dehydration)
- Pee light yellow-clear
- Slow oral rehydration
- Rectal fluids ~700ml/day
- IV fluids: heavy, bulky, IV access
- Hyponatremia due over-hydration: cure with coke + pringles!

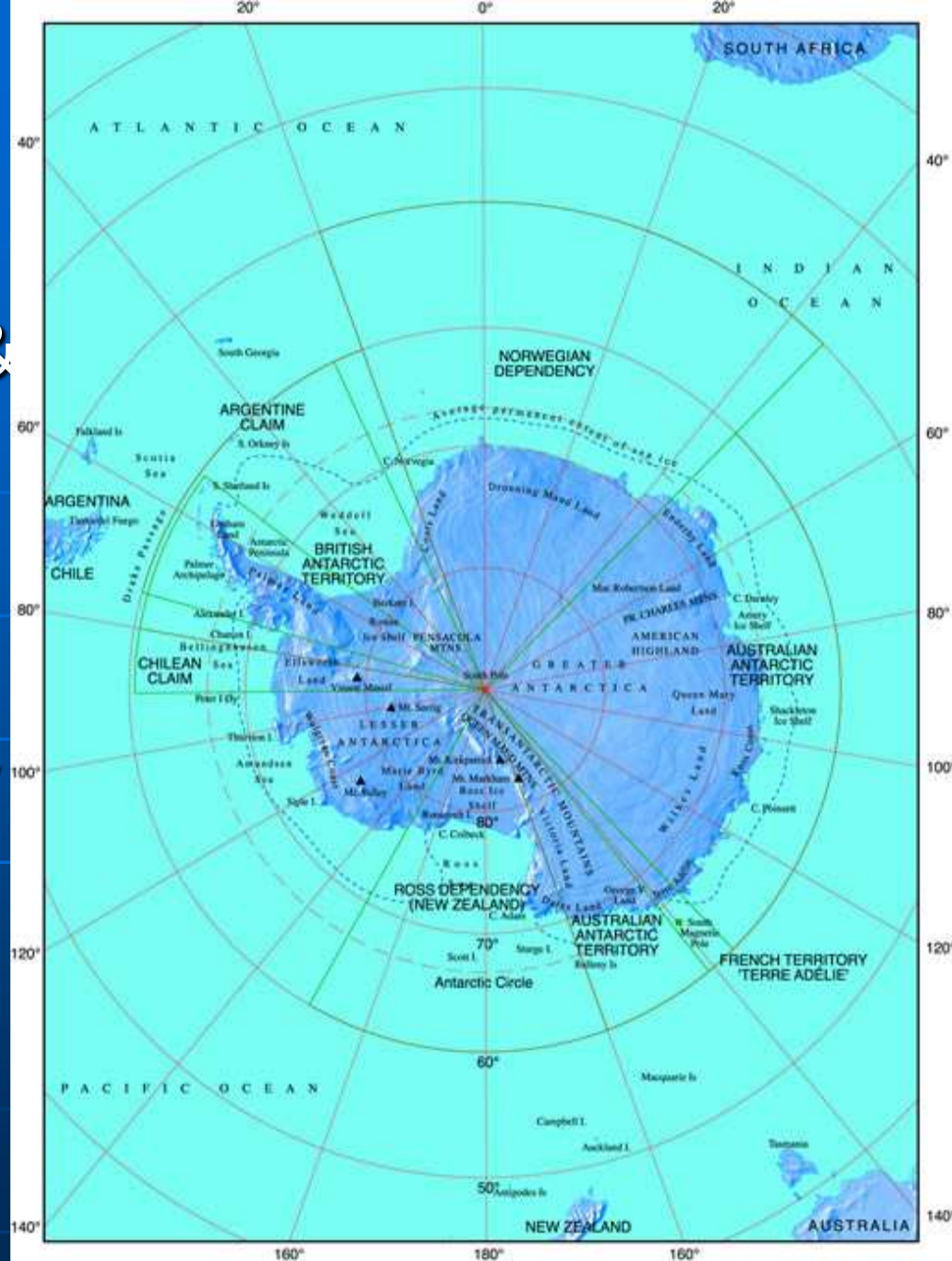


# Problem Concealment

- Through fear of not being allowed to join trip
- Denial of problem & effects
- Knock on effects for other members
- Chemo on ice expectation
- Concealed psychiatric illness
- Raynauds on polar sledging trip
- 'No hands' climber needing his bum wiped
- Rectal leakage post colectomy on 60 day sledge trip (only brought 30 days of pads).
- If concealed from insurance company, their cover is void.

# Antarctica

- Coldest, highest & driest desert on earth.
- Usually windy
- Land of penguins, dreams & disasters!



# IL76





# Patriot Hills Camp 80°S



# Medicine on ice

- High end, high expectation clients.
- Record setting attempts push endurance & nutrition to the limit.
- \$300,000 medical evac costs.
- Limited fly days due weather.
- Equipment failure common.





# Frostbite after concealed laceration



# One thing leads to another!

- Solo skier with navigational & traction problems
- Walks into crevasse zone & slots in
- Near death experience
- Saved by sat phone, able to give GPS location.
- Prolonged rescue, risking personnel & vehicles









# One thing leads to another!

- Team of 5 descending Vinson
- Caught by bad weather in fatigued state.
- Incomplete glacier travel preparations.
- Crevasse fall leading to frostbite & loss of equipment.
- V poor comms
- 2 days to reach due storm: expecting bodies, another 3 days to reach base camp.
- Extensive preparations made for victim handling and prolonged CPR
- Guides nominated for alpine rescue award











# Polar thigh



# Frostbite Day1



# Frostbite Day 9





# Frostbite Day 43



# Frostbite Day 70





# Military



# Heat illness





# Rehydration



# Mines etc widespread



# Sexual Health

- Significant risk of HIV, Hep A-Z, syphilis, crabs, lice etc
- Pre-departure safe sex advice.
- Concern with OCP at high altitude
- Raise awareness, lower activity!!
- Matter rests in your own hands!







# Primary Care Role

- 'Fit to participate' forms ??????
- Encourage honest & complete disclosure of problems.
- DR -DR info request.
- Pre travel advice re vaccinations, malaria, meds to travel with, safe sex etc.
- Direct patients to 'fit for travel' website

# Insurance

- Written confirmation of MPS cover specific to your trip; be especially careful of USA.
- Written confirmation of adequate rescue & medical evacuation insurance for everyone (including the doc!).

# Wilderness Dilemmas

- Rescue or abandon above 8000m
- Drug assisted summits?????
- Removing/restraining at risk clients:  
(altitude illness, ill equipped, inexperienced)
- Children pushed to set records?  
(Everest, polar marathons, solo sailing)
- Responsibility of remote area travel:  
(Environmental impact, tourism impacts, rescue demands )
- Post trip follow-up: whose job?

Chill out





# Useful books

- High Altitude Medicine Handbook
- Oxford Handbook of Expedition & Wilderness Medicine
- Jim Duff's 1<sup>st</sup> Aid & Wilderness Medicine
- Auerbach's Wilderness Medicine (needs a porter to carry it)

# Information Sources

- Royal Geographic Society
- Web searches
- Foreign Office website
- Previous expeditions to area
- Doctors net
- Wilderness Medicine Society
- Expedition Medicine courses
- Fit for travel website

# Wilderness Medical Training

- [Expeditionmedicine.co.uk](http://Expeditionmedicine.co.uk)
- [Acrossthedivide.com](http://Acrossthedivide.com)
- [Wemsi.org](http://Wemsi.org)
- Queenstown AWLS course
- Diploma in Mountain Medicine
- PRIME