

Pre-travel assessment: special populations

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- International travellers should arrange a pre-travel consultation with either a specialised travel clinic or a primary care practice with expertise in travel medicine

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Pre-travel evaluation

- Duration of travel
- Season of travel
- Countries and regions that will be visited
- Planned activities
- Place of residence

Travel related medical advice

- Behavioral precautions and environmental exposures
- The appropriate immunizations
- Prophylaxis against travellers diarrhea and malaria

Special populations

- Immunosuppression
- Diabetes
- Pregnancy
- Childhood

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Immunocompromised hosts

- Leukemia, lymphoma
- Aplastic anemia
- General malignancy
- Graft-versus-host disease
- Congenital immunodeficiency
- Radiation therapy (current or recent)
- Solid organ or bone marrow transplant
- Moderately: asplenia, renal failure, chronic liver disease, diabetes

Immunocompromised hosts

- Are at risk for exposure to endemic pathogens
- The vaccine response rate is diminished
- More likely to have adverse effects from live attenuated virus vaccines

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Immunocompromised hosts

- Should be evaluated by a travel medicine specialist familiar w the patients IC state and medications
- An assesment of risk is an important part of the pretravel visit
 - 66% sought pre-travel advice
 - 63% traveled where hepatitis A is endemic, but only 5% had received immunization
 - 50% traveled to dengue and malaria endemic areas, but only 25% adhered to mosquito prevention measures
 - 10% reported behaviours that exposed them to blood or body fluids

Travel related infections

- Travellers diarrhea (30-80%)
 - ETEC diarrhea (10%)
- Malaria
- Respiratory infections
- Hepatitis A
- Dengue
- Typhoid
- Gonorrhoea



Immunocompromised hosts

Routine vaccines

- Tetanus/diphtheria: booster after 10 yrs
- Pertussis: once w Td
- Influenza: parenteral, yearly
- Pneumococcus: booster after 5 yrs
- Hepatitis B
- **MMR, Varicella, VZ vaccine contraindicated**

Travel vaccines

recommended for travel to endemic regions

- Hepatitis A
- Typhim Vi
- Inactivated Polio
- Meningococcal conjugate
- Rabies w HRIG
- Japanese encephalitis ARE SAFE
- Yellow fever: contraindicated
- Bacille Calmette-Guerin: contraindicated

Yellow fever risk areas

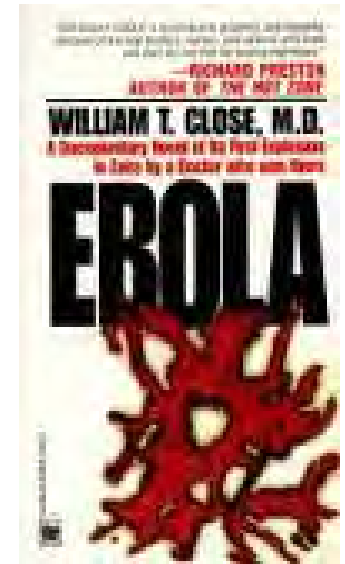
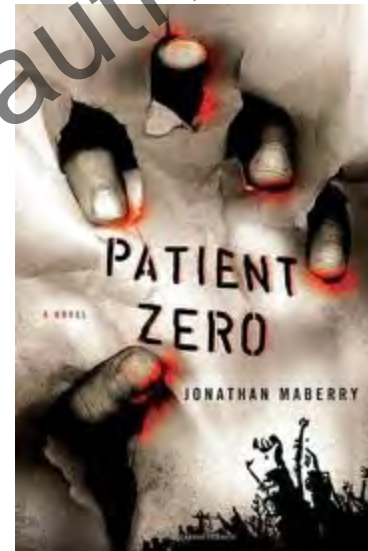
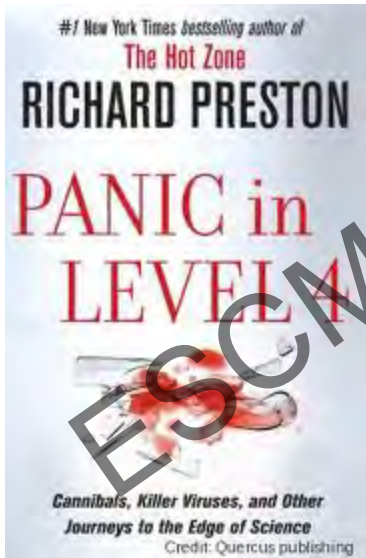


- Vaccination should be initiated several months prior to travel : allow time for serologic testing and additional boosters if needed
- In general, a fourfold ↑ in antibody titer is considered evidence of seroconversion
- No live vaccines, e.g. Yellow fever, MMR, BCG, oral poio, nasal influenza in pregnancy an IC host

Vaccine	Indication								
	Pregnancy	Immuno-compromising conditions (excluding human immunodeficiency virus [HIV]) ‡,†,**,ΔΔΔ	HIV infection ‡,**,††,ΔΔΔ CD4+ T lymphocyte count <200 ≥200 cells/μL	Men who have sex with men (MSM)	Heart disease, chronic lung disease, chronic alcoholism	Asplenia ^{††} (including elective splenectomy and persistent complement component deficiencies)	Chronic liver disease	Diabetes, kidney failure, end-stage renal disease, receipt of hemodialysis	Health-care personnel
Influenza ^{Δ◇}		1 dose TIV annually		1 dose TIV or LAIV annually	1 dose TIV annually			1 dose TIV or LAIV annually	
Tetanus, diphtheria, pertussis (Td/Tdap) ^{◇§}	Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 years								
Varicella ^{◇‡}	Contraindicated		2 doses						
Human papillomavirus (HPV) ^{◇‡} , female	3 doses through age 26 years			3 doses through age 26 years					
Human papillomavirus (HPV) ^{◇‡} , male	3 doses through age 26 years			3 doses through age 21 years					
Zoster [†]	Contraindicated		1 dose						
Measles, mumps, rubella (MMR) ^{◇, **}	Contraindicated		1 or 2 doses						
Pneumococcal (polysaccharide) ^{ΔΔ, ◇§}	1 or 2 doses								
Meningococcal ^{◇, §§}	1 or more doses								
Hepatitis A ^{◇, ‡‡}	1 dose			2 doses			1 dose		
Hepatitis B ^{◇, ‡‡}	1 dose			3 doses					

- For all persons in this category who meet the age requirements and who lack documentation of vaccination or have no evidence of previous infection
- Recommended if some other risk factor is present (eg, on the basis of medical, occupational, lifestyle, or other indications)
- Contraindicated
- No recommendation

The most exotic stuff is also the least likely,
so don't worry
too much about Ebola!



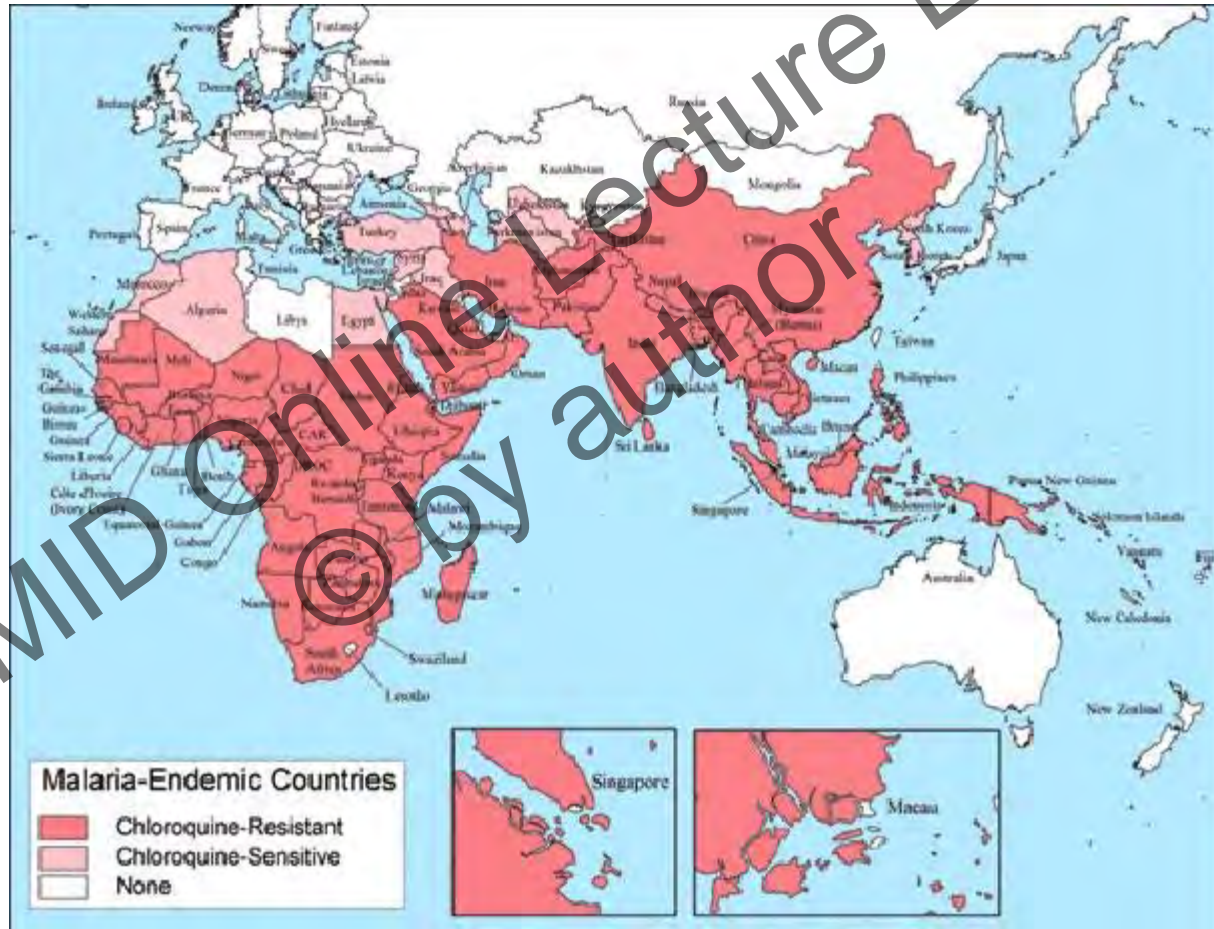
Immunocompromised hosts

Prophylaxis

- Travellers diarrhea (10-60%)
 - ▣ Dehydration
 - ▣ Increase toxicity of immunosuppressants
 - ▣ Bacteremia
 - ▣ Altered intestinal absorption
- Should be counseled for appropriate food and water precautions
- Should carry ciprofloxacin or azithromycin
 - Since fluoroquinolones are contraindicated in pregnancy, a third generation cephalosporin or azitromycin is an acceptable choice for travelers diarrhea
- Antimotility agents may delay clearance of toxins from gut

Immunocompromised hosts

Prophylaxis



Immunocompromised hosts

Prophylaxis

- **Insect Repellents**

- Frequent application is required

- **DEET** (OFF[®], Repel[®])

- 40 years use, 8 billion human applications

- **Picaridin** (Bayrepel[®], Hepidanin[®])

- **Permethrin**

- Applied to clothing/fabric
- Extremely safe and effective
- Works on ticks, mosquitoes



DOD Insect Repellent System



Permethrin on Uniform

+



Deet on exposed skin

+



Properly worn uniform

=

Maximum Protection

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Malaria prophylaxis

- Atovaquone-proguanil (1X1 tb/day), 1-2 days prior, during & 7 day following exposure
- Mefloquine (1 tb/week) 2 weeks prior, during & 4 weeks following exposure. Cloroquine & mefloquine may be safely administered during all trimesters who cannot avoid travel to endemic areas and children
- Doxycycline (1 tb/day) 1-2 days before, during & for 4 weeks after exposure

Malaria prophylaxis

Pregnancy

- Avoid travel to malaria-endemic areas
- Chloroquine is OK
- Mefloquine is OK in trimesters 2 and 3
- Avoid pregnancy for 3 months after mefloquine is stopped, and 1 week after doxycycline is stopped

Childhood

- No travel to malaria-endemic areas
- Chloroquine is OK (weight dosed)
- Mefloquine (Lariam) OK after 5 kg
- Doxycycline – not under 8 years of age
- Atovaquone/proguanil (Malarone)- not under 11 kg

Immunocompromised hosts

Preventive measures

- **Respiratory infections:** endemic fungal inf
- **Sun:** ↑↑ risk of skin Ca
- **Altitude**
- Food and water
- Vector avoidance
- Swimming and beaches
- Animal avoidance
- STD



Transportations

□ Cruise ships

- ▣ Sanitation

□ Air travel

- ▣ Not have any known negative effects on immunocompromised & pregnancy
- ▣ Complicated pregnancies should avoid extensive travel, prolonged immobilisation during flight may cause venous thrombosis in ind w preexisting thrombotic or venous disease
- ▣ Jet aircrafts are not pressurised to sea level, so passengers exposed to high-altitude environments, \downarrow PaO₂ tension: (pat impaired cardiopulmonary function or sickle cell disease) suppl O₂ may be needed
- ▣ In travellers w URTIs, impair hearing or pain in the ears/sinuses
- ▣ Jet lag



Diabetes mellitus

- East-west travel across time zones often requires adjustments in insulin dosing.
- Travellers need to carry their syringes, medications, snacks in carry-on bags, glucose testing supplies, insulin, glucagon
- If you are in Cuba and lack of medication, call Michael Moore

Conclusion

- Be carefull
- Have fun
- But not too much fun
- Choose your destination wise



- Thanks

