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Travel Medicine. Quick Tips

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Disclosures

- Shirley S. Sharp, D.O.
 - I have no relevant financial relationships.

Objectives

- Review pretravel evaluation to help identify risk factors based on information to recommend vaccines and counsel on particular travel risks.
- Review the presentation of potential infections that travelers may present with.
- Review treatment options for common traveler's infections

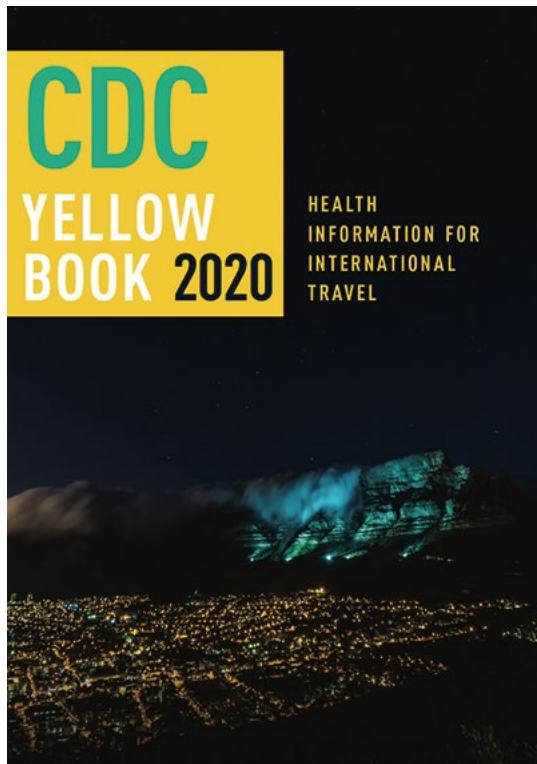
Statistics

- 1.1 billion persons crossed an international border in 2014, there is a projected increase to 1.8 billion by 2025.
- Only about 36% international travelers seek pre-travel counseling. About 60% of those see a PCP.
- Pre-travel consultation is particularly useful for people visiting low income countries.

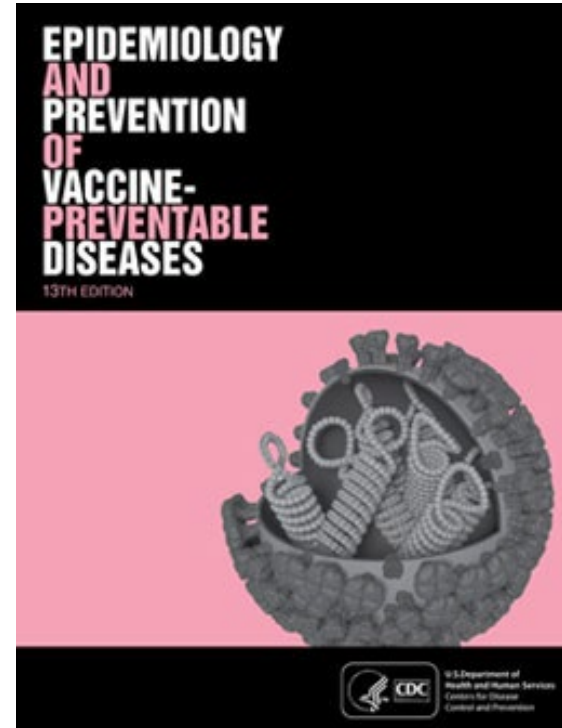


Am Fam Physician. 2016 Oct 15;94(8):620-627.

Pre-Travel resources



- Available online
- Updated every 2 years



- ▶ Available online
- ▶ Provides information on routinely used vaccines and the diseases they prevent.

PRETRAVEL CONSULTATION

- Usually 6 weeks prior to departure.
- Travel and patient information.
- Patients with higher risk of travel
 - MI or bypass within the previous 2 weeks
 - Complicated MI within 6 weeks.

General Recommendations

- Routine domestic immunizations as well as travel required (A)
- Malaria prophylaxis (A)
- Zika



Other Recommendations

- Altitude sickness – Areas above 8000 ft
- Medical volunteers - HIV Prophylaxis
- VTE

Routine Immunizations

- Update routine immunizations
- Hepatitis B
 - Travel to areas endemic for Hep B
 - Need for medical care abroad
 - People moving to the US who continue to travel abroad.
- Polio
 - Travel to India, Nigeria, Pakistan, Egypt, Afghanistan, Niger and Somalia.
 - Age >65

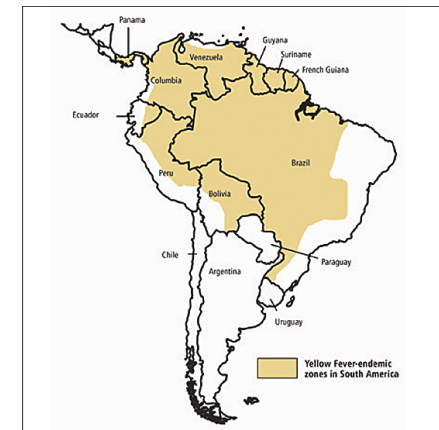
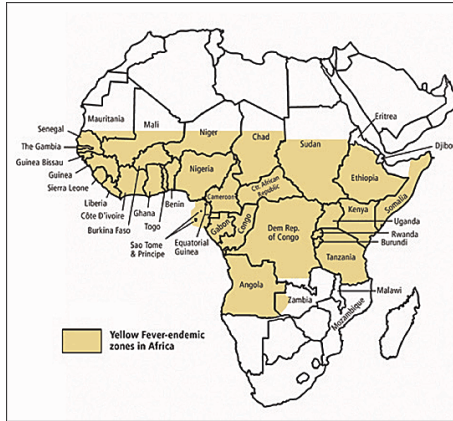


Routine Immunizations

- Pneumococcal vaccine
 - H/O CV disease, asplenia, cirrhosis, DM
 - Prolonged stay
 - Work near animals or activity attracting animals
- Rabies
 - Anywhere where animal bites can't be reported.
- Varicella
 - 1 dose for kids 1-12yo
 - >13, 2 doses at 4 and 8 weeks
 - Women of child bearing age without vaccination or negative titers.

Required immunizations

- Yellow Fever
 - Day biting mosquitoes
 - Patients older than 9 months
 - Not recommended in pregnancy.



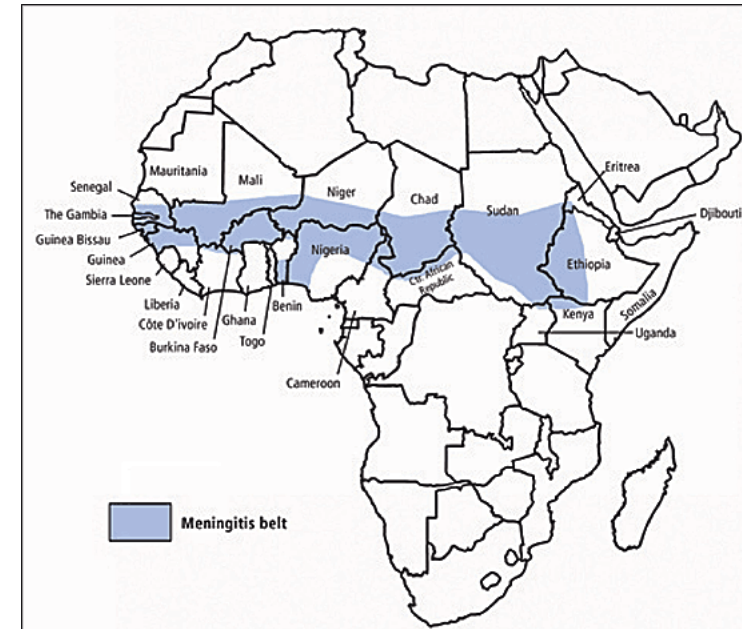
Centers for Disease Control and Prevention.

Recommended immunizations

- Hepatitis A
 - All international destinations for travel.
 - 1 IM dose 4 weeks before departure, as close as 2 weeks can be useful.
- Typhoid Fever
 - Central and south America, Indian subcontinent and Africa
 - 2 options
 - Oral
 - IM
- Japanese Encephalitis
 - Travel to Indian subcontinent or SE Asia

Recommended Immunizations

- Meningococcal
 - Usual epidemics occur during December-June in the “meningitis belt”
 - Required for pilgrims to Saudi Arabia during the Hajj and other holidays.



“Meningitis Belt” in Africa. *Information from the Centers for Disease Control and Prevention.*

Malaria Prophylaxis

- For all patients traveling to endemic areas.
- Based on location to choose the correct agent (chloroquine resistant vs sensitive)
- The CDC and the WHO provide country specific information for prophylaxis.
http://www.cdc.gov/malaria/travelers/country_table/a.html
- Chloroquine sensitive



https://wwwnc.cdc.gov/travel/yellow_book/2018/infectious-diseases-related-to-travel/malaria

Malaria Prophylaxis

- Chloroquine resistant
 - Atovaquone/Proguanil
 - Avoid in patients with severe renal impairment.
 - Avoid in pregnant women and breastfeeding mothers.
 - Doxycycline
 - Not for kids <8yo, and pregnant/lactating women
 - Mefloquine.
 - Avoid in patients with epilepsy, psych disorders and cardiac conduction disturbances.
 - May be used in pregnancy

Febrile Illnesses

- Malaria
- Dengue
- Yellow Fever
- Zika
- Chikungunya



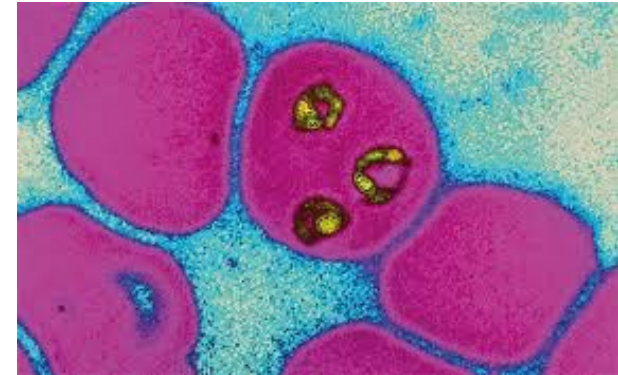
Malaria

- Transmitted via the *Anopheles* Mosquito
- 4 plasmodium species
 - P. Falciparum
 - P. Vivax
 - P. Ovale
 - P. Malaria
- Symptoms may present 7 days to several months after return.
- Prevent – Nets, DEET (>30%), permethrin clothing/nets.



Malaria

- No vaccine available
- Symptoms
 - Early
 - Advanced disease
- *P. Falciparum* particularly may cause fatal cerebral involvement, ARDS and severe anemia.



Malaria

- Treatment
 - Chloroquine, Mefloquine, Quinine, Doxycycline, clindamycin and tetracyclines.
 - Specific Guidelines are available also at the CDC website
 - https://www.cdc.gov/malaria/diagnosis_treatment/treatment.html



Dengue

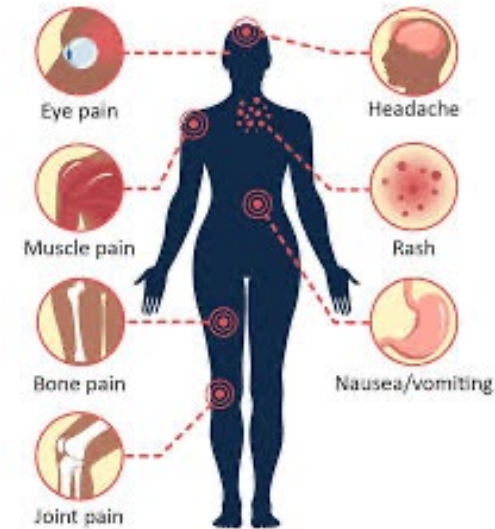
- Transmitted by the Aedes Mosquito
- 1 in 4 patients are symptomatic.
- 1 in 20 people who get sick progress to severe dengue.
- When treated, mortality rate is 2-5% untreated is about 20%.
- No vaccine or prophylaxis



<https://bewareofthebugs.com/diseases/dengue-fever/>

Dengue

- Signs and symptoms
 - Early Disease
 - Untreated disease progression
- No treatment available.
- Severe dengue will need ICU admission



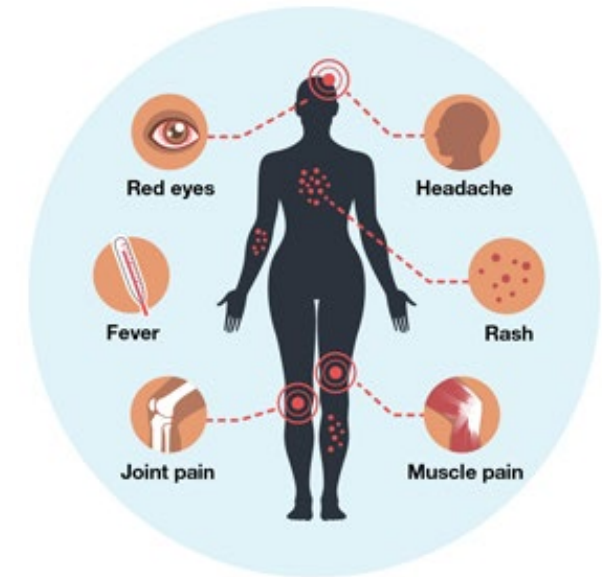
Yellow Fever

- Rare but potentially fatal
- Day biting mosquitoes
- 3 stages
- Usually self limited
- Symptoms
 - Initial
 - Progressive disease
- No treatment – primarily supportive.



Zika

- Transmitted by Aedes mosquito, but can also be sexually transmitted.
- Symptoms include maculopapular rash, fever and arthralgias.
- Supportive treatment
- Greatest concern is risk to child-bearing women



<https://www.cdc.gov/zika/about/overview.html>

Chikungunya

- RNA virus from the Togaviridae – It means “to become contorted”
- Occurs in Africa, Asia and Indian subcontinent.
- Abrupt onset of fever, joint pain, myalgias, headache, nausea, fatigue and rash.
- Usually diagnosed with ELISA, if needed.
- No treatment available



Travelers' Diarrhea

- Most common travel related illness
- Primarily bacterial (ETEC) but viruses (norovirus) and parasites (giardia) may present.
- High risk areas include most of Asia, middle east, Africa, Mexico and Central and South America.



<https://www.emrap.org/episode/june2015/travelers>

Travelers' Diarrhea

- Presentation
 - Cramps, diarrhea, abdominal pain, vomiting and bloody diarrhea
 - Norovirus – Vomiting more prominent
 - Giardia/Enterobacter – More gradual onset of low grade symptoms (some loose stools)
- Incubation times may help guide diagnosis
 - Bacterial toxins – Within a few hours
 - Bacteria/viruses – 6-72h incubation.
 - Protozoa – 1-2 weeks and rarely in the first few days of travel.

Travelers' Diarrhea

- Prevention is Key!
- Non-antimicrobial agents
 - Bismuth Subsalicylate
 - Not recommended in patients less than 12 or pregnant women.
 - Probiotics – Inconclusive data.
- Antibiotics are **not recommended** for prophylactic use for travel.

Travelers' Diarrhea

- Treatment
 - Oral Rehydration Therapy
 - Antimotility agents
 - Antibiotics
 - Ciprofloxacin or Levaquin
 - Azithromycin
 - Rifaximin – Non invasive E. Coli.
 - Antiparasitic – Metronidazole, tinidazole or TMP-SMX for Cyclospora.

Altitude Sickness

- Seen primarily at places >8000ft
- Symptoms
 - Headache, fatigue, nausea, anorexia, insomnia, dizziness.
- Prevented by slow ascent
- May turn into HACE and HAPE
- Treatment and prevention - Acetazolamide
- Definitive treatment – Descent.



Clinician Resources.

- American Society of Tropical Medicine and Hygiene: <http://www.astmh.org>
- Centers for Disease Control and Prevention, Travelers' Health Information: <http://www.cdc.gov/travel>
- International Association for Medical Assistance to Travelers: <http://www.iamat.org>
- International Society of Travel Medicine: <http://www.istm.org>
- MD Travel Health: <http://www.mdtravelhealth.com>
- Pan American Health Organization: <http://www.paho.org>
- Shoreland's Travel Health Online: <http://www.tripprep.com>
- U.S. Department of State, Bureau of Consular Affairs: <http://www.travel.state.gov> (202-647-5225)
- World Health Organization, International Travel and Health: <http://www.who.int/ith>

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- <https://www.cdc.gov/dpdx/malaria/index.html>
 - <https://www.aafp.org/afp/2004/0701/p89.html>
 - <https://www.aafp.org/afp/2016/1015/p620.html>
 - <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6411a4.htm>
 - <https://emedicine.medscape.com/article/232244-overview#a1>
 - <https://emedicine.medscape.com/article/215840-overview>
 - <https://www.cdc.gov/dengue/symptoms/index.html>
 - <https://www.hopkinsmedicine.org/zika-virus/what-is-zika-virus.html>
 - <https://www.who.int/news-room/fact-sheets/detail/chikungunya>
 - <https://wwwnc.cdc.gov/travel/yellowbook/2018/the-pre-travel-consultation/travelers-diarrhea>
 - <https://www.merckmanuals.com/professional/injuries-poisoning/altitude-diseases/altitude-diseases>
 - [Handbook of medicine in developing countries, palmer and wolf.](#)