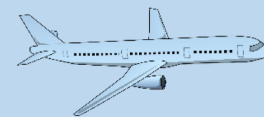
ADULT PRE-TRAVEL CLINIC TWO-PAGER



VISIT AGENDA

1. Intake questions for the patient:
    - medical history, itinerary, duration of travel, rural vs urban, activities, animal exposure, history of malaria prophylaxis or infection
2. Road traffic injuries (RTI)/road safety
3. Immunizations
    - routine, required, recommended
4. Bug avoidance measures and malaria
5. Traveler's diarrhea
6. Everything else

ROAD TRAFFIC INJURIES/ROAD SAFETY

- Injuries (RTI followed by drowning) are the **leading cause of death** among non-elderly travelers to low and middle income countries (Stewart 2016)
- **Travelers are 10x more like to die from injury** than infection (Stewart 2016)
- Road traffic injuries are the leading cause of death globally for people 15-29 (WHO 2018)
- Morbidity and mortality from road traffic injuries are higher in low and middle income countries
- **Avoid speeding, avoid driving under the influence of EtOh/psychoactive substance, avoid distractions, avoid driving at night, ride in marked taxis, avoid overcrowded buses/minivans, use seat belts and helmets, be alert when crossing streets** (CDC and WHO 2018)

BUG AVOIDANCE MEASURES

- Mosquitos bite all day, not just dawn and dusk!
- **DEET** goes on exposed skin, 30-50% is effective, must be applied 3x per day
- **Picaridin** goes on exposed skin, must be applied 3x per day = **DEET** 35%
- **Permethrin** goes on clothes/tent; if spray/wash clothes, lasts many washes, up to 1 mos; nets dipped in permethrin last 3 washes vs 20, much variability
- Apply sunscreen then mosquito repellent
- Personal protective equipment reduces dengue fever by 99%, vaccines don't cover everything
- Bug Hut is good brand of net, supplies at REI

MALARIA CHEMOPROPHYLAXIS

Chloroquine-sensitive: few areas: Mexico and Central America to the west of Panama Canal, Hispaniola

- **Chloroquine:** 500mg weekly; start 1-2 weeks before, weekly on same day each week, continue 4 wks after

Chloroquine-resistant: most endemic areas

- **Malarone (atovaquone/proguanil):** 250/100mg daily; start 1-2 days before, daily, continue 7 days after; *very well tolerated, a favorite*
- **Doxycycline**: 100mg daily; start 1-2 days before, daily, continue for 4 wks after; *photosensitivity*
- **Mefloquine** = many contraindications, uncommonly used, OK if tolerated in the past

TRAVELER'S DIARRHEA

Redefined by Riddle et al, ISTM 2017

MILD	MODERATE	SEVERE
Tolerable	Distressing, interferes with activities	Incapacitating, dysentery vs not
No abx; May use loperamide or bismuth (e.g. Pepto-Bismol)	*May use abx*; May use loperamide alone or with abx	*Should use abx*; May use loperamide as adjunct *if not dysentery*

Abx is **azithromycin**; 500mg daily x 1-3 days or 1,000mg x 1; 80-90% of the time its bacterial (ETEC is most common pathogen)

EVERYTHING ELSE

- Discuss: contraception, HIV pre- and post-exposure prophylaxis, have documents online, barotrauma, jet lag, motion sickness, water safety (drowning, shallow pools), lodging inspection (lead, electrical), respiratory illness, fever, medical kit, resources when abroad, register with STEP via State Department
- Evacuation insurance and travel insurance
- High altitude illness (HAI) includes acute mountain sickness (AMS), high altitude cerebral edema (HACE), and high altitude pulmonary edema (HAPE)
- Treatment of HACE/HAPE is descent; consider if ataxia, lassitude, confusion, wet cough, shortness of breath; pre-travel steroids controversial
- **Acetazolamide** prevention for AMS: 125mg BID, start day before biggest ascent, continue for 3 days

FUN FACTS

- Non-infectious risks are bigger than infectious risks
- If visiting friends and relatives, 8-10x more likely to get malaria stay longer, higher risk destinations, less likely to seek pre-travel care (CDC 2016/2017)
- Commercial passenger jet is the safest mode of transportation
- Women who vacation every 6 years or less have higher risk of heart attack or coronary death (Framingham 20-year follow-up)

HANDY RESOURCES

PATIENT	
state.gov	travel advisories, embassy messages
cdc.gov	health notices, packing checklist, vaccines
squaremouth.com	compare travel insurance policies
IAMAT.org	English-speaking medical clinics world-wide
PROVIDER	
Shoreland Travax	UW: username/password available
cdc.gov	recommended vaccines, non vaccine-preventable illnesses

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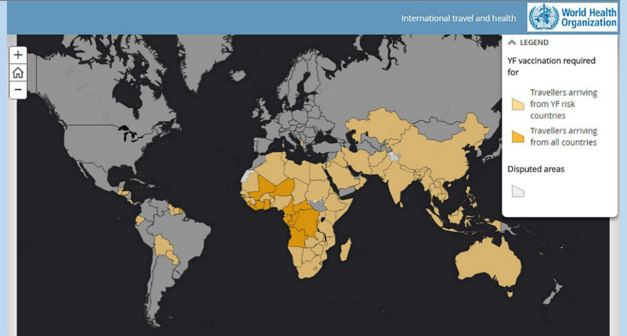
ROUTINE IMMUNIZATIONS

MORE IMPORTANT THAN TRAVEL IMM, ADRESS FIRST!

- Address **routine, then required, then recommended!**
- **Seasonal influenza is the most frequent vaccine-preventable infectious disease in travelers**
- Risk of domestic vaccine-preventable diseases such as **influenza, hepatitis A** is higher in international travelers than that of exotic illnesses
- Flu season off by 6 months in southern hemisphere; year round at equator
- There is no such thing as "one question about vaccines," avoid

Review CDC adult immunization schedule by age group; additional considerations relating to travel:

- **Influenza**: important; southern hemisphere vaccine not available in northern hemisphere; risk of dirty needle may outweigh benefit of getting abroad
- **Hepatitis A:** recommended for travel; schedule: 0, 6-12 mos
- **Hepatitis B:** recommended for travel to countries with high or intermediate hepatitis B endemicity
- **MenACWY**: see below; recommended for travel where endemic
- **MMR**: 2 doses 28 days apart or immunity is recommended
- **RZV** recommended for age 50+ regardless of receipt of ZVL



TYPHOID FEVER

- Severe illness with fever and abdominal pain, fecal oral transmission
- May develop typhoid encephalopathy and become chronic carrier
- Caused by *Salmonella enterica*
- **Vaccination recommended except for travel to US, Canada, W Europe, Japan, Australia, and other high income countries**
- **IM is protective for 2 years; give if immunocompromised; give 2 wks prior to exposure**
- **Oral is protective for 5 years**; take days 1, 3, 5, 7; take 1 week prior to exposure (takes 2 wks); needs to be refrigerated

RABIES

- Caused by lyssavirus; spreads PNS to CNS; migrates retrograde up axoplasm 50 to 100mm/day, always fatal
- 36 cases of rabies in the US between 2003 and 2016; 9 due to dog bites outside US
- Recommended if >1mos and rural and animal exposure; kids much higher risk
- **Given IM at 0, 7, 21-28 days, costs approx. $1500 in US**
- **If wash wound, 90% of rabies virus killed**

JAPANESE ENCEPHALITIS

- Leading cause of childhood neurological infection and disability in Asia; <1 case of JE/ 1 million travelers to Asia
- <1% of cases result in symptomatic neuroinvasive disease, but mortality 20-30%, 30-50% of survivors have long-term neurological sequelae
- Cost high, risk low, but disease severe, uncommonly given; consider if going to endemic area for >1 mos during season, especially if going rural
- **IXIARO is 0, 7-28 days (1 week before travel)**

MENINGITIS

- Outbreaks in the Sahel in Africa (b/w Sahara, N, and Savanna, S), occur during dry season, Dec to June
- **Required by Saudi Arabia** (remember Umrah, Haij)
- **1 dose MenACWY for travel to endemic country**

COMMON	SOMEWHAT COMMON	SOMETIMES REQUIRED	IF AT INCREASED RISK
Influenza **Hepatitis A** **Typhoid**	**Yellow fever**	**Yellow fever** **Meningococcal**	**Rabies** **Japanese encephalitis** **Cholera**

YELLOW FEVER

- RNA virus transmitted by mosquito, sub-Saharan Africa and South America
- Subclinical/abortive nonspecific/life-threatening with fever, jaundice, renal failure, hemorrhage, shock
- If you enter period of intoxication day 3-6, mortality 20-50%
- **As of 2016 WHO, ACIP says 1 dose good for life**
- **Give booster in 10 years if pregnant, HIV, stem cell transplant, prolonged period in endemic area or lab worker**
- Contraindicated if allergy, organ transplant recipient, malignant tumor, thymus d/o, primary immunodeficiency, immunosuppressed, CD4<200
- Legally required for entry into many countries
- Vaccine is live attenuated, protects against all strains
- There is an **international shortage of YF-Vax**, the only vaccine licensed in the US; **we are using Stamaril** – comparable in safety and efficacy to YV-Vax; approved under the FDA's investigational new drug program; **YV-Vax anticipated 2020**
- In Seattle: available at Hall Health, Katterman's, UVillage Bartell's, others

OTHER FUN VACCINE FACTS

- There is a **cholera vaccine**, but "Cholera in travelers is extremely rare, and the vaccine is not routinely recommended for most travelers" – CDC 2018
- Consider if humanitarian aid work or VFR in outbreak setting
- BCG: not given or available in the US

Vaccine interactions:

1. Give live vaccines at same time or 30 days apart
2. Don't give oral (live) typhoid with mefloquine or doxycycline
3. Give MMR and varicella 2 weeks before receipt of blood products such as immune globulin
4. Delay MMR and varicella 3-11 mos after receiving blood products as response can be diminished
5. Consult interaction monograph for oral (live) polio, bcg, and smallpox vaccines
6. Give PPD and live vaccine on same day or wait 6 weeks after live vaccine to give PPD

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