

Bringing It Together – Travel Medicine



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Thanks to:

Patrick Hickey, MD

IDSA/ISTM Standard of Care

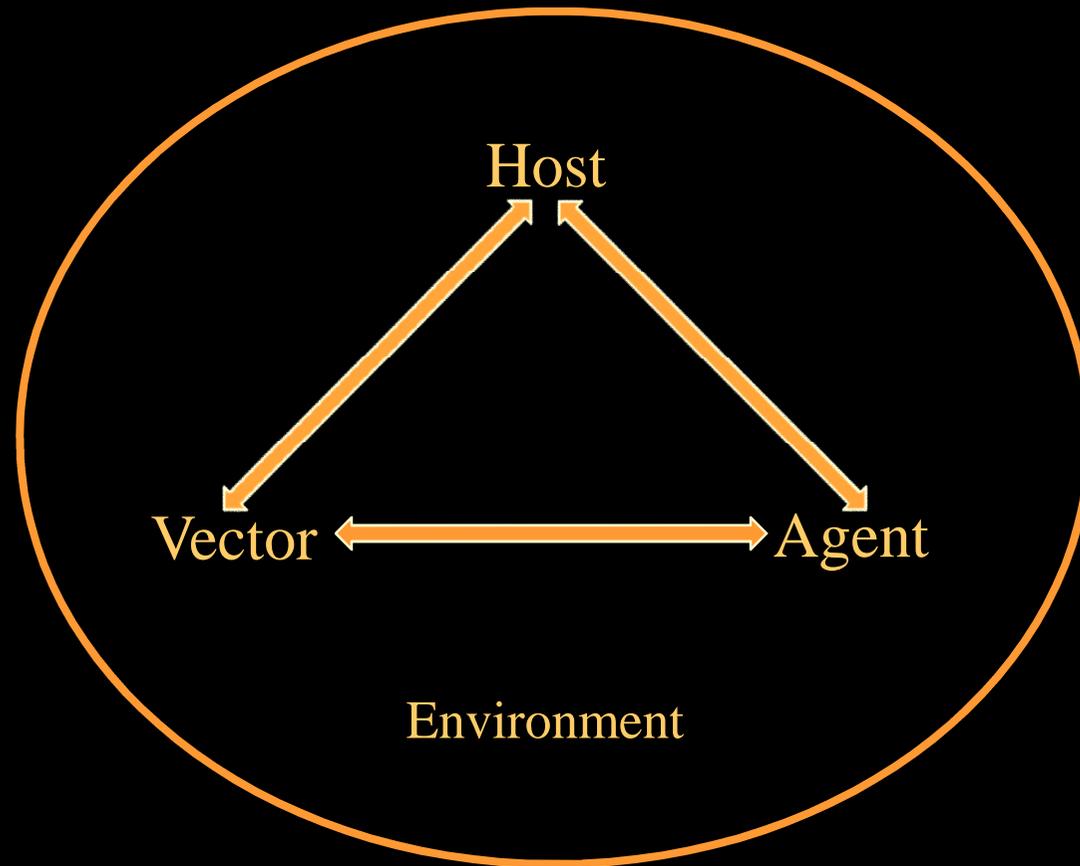
- Pre-travel risk assessment
- Vaccine preventable diseases
- Malaria
- Vector-borne precautions
- Traveler's diarrhea
- Personal safety/environmental health
- Post travel care

What Will Get Your People In Trouble



- Malaria
- Vaccine preventable diseases
- Malaria
- Traveler's diarrhea
- Malaria
- Injuries
- Malaria

“Epidemiologic Triad”



The Host



- Demographics
 - Age, sex, race
- Behaviors
 - Smoking, EtOH
- Immunity
 - Natural or vaccine
 - Other conditions
- Operational factors
 - Fatigue, nutrition

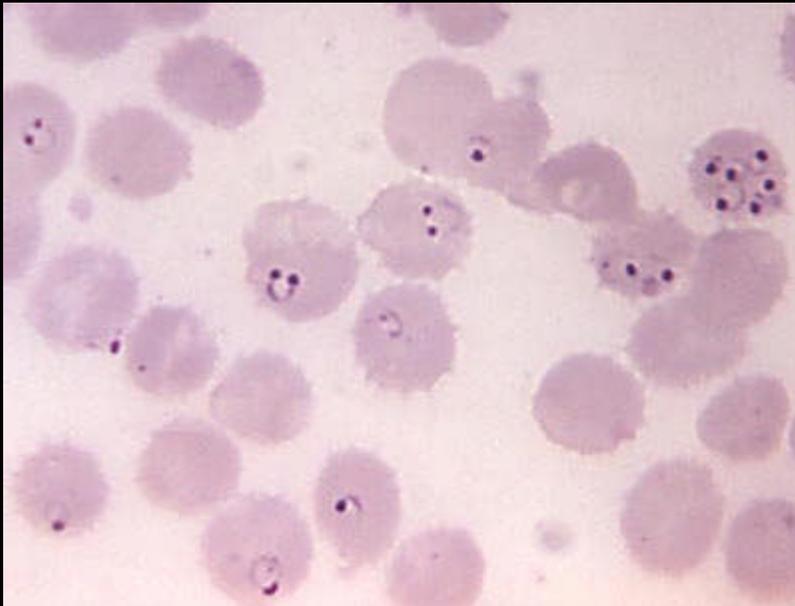
The Vector

- Presence of competent vectors
- Presence of reservoirs
- Vector behavior
- Not just insects!!!



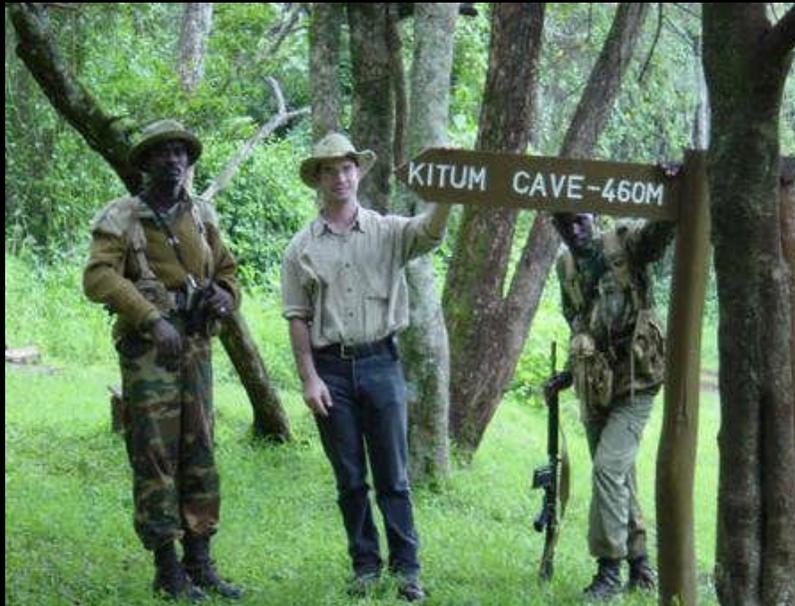
The Agent

- Infectivity
- Pathogenicity
- Strain
- Mutations



The Environment

- Ecological
- Cultural
- Political
- Access to medical care



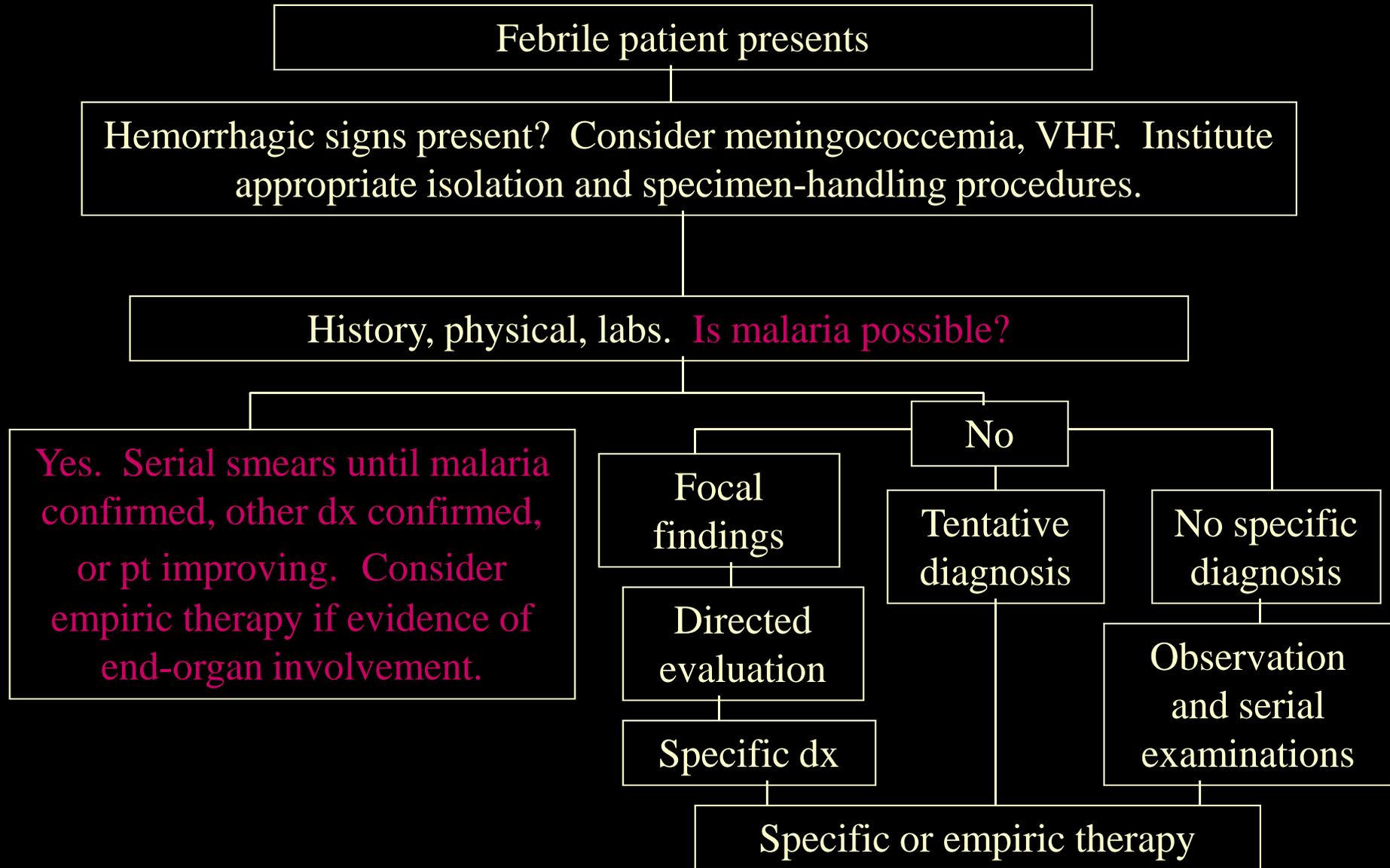
Pre-Travel Risk Assessment

- **Who** is traveling
- **Where** are they traveling
- **How long** will they be there
- **What** will they be doing
- IS IT A **MALARIOUS** REGION???
- There are good sources of information about location-specific risks...more later

Malaria

- This is the #1 threat if you are traveling to a malarious region
- Any fever in any traveler who is in or who has been to a malarious region is malaria until proven otherwise
- **MALARIA KILLS SERVICE MEMBERS**

Evaluation of the Febrile Patient



Arthropod Protection

- Diseases (malaria, dengue, filariasis, etc.)
- Correct wear of uniform/clothing
- Permethrin treated clothes
- Nets, screens, air-conditioning
- DEET 25-30%
 - No safety benefits by using lower concentrations



permethrin
on
uniform

+



deet on
skin

+



properly
worn
uniform

=

*Maximum
Protection*

New Problem: New Fire-Retardant ACUs

- FRACUs reduce incidence of fabric burning into the skin of SMs following blast injury or fire
 - Label states, “This garment is fire resistant”
- The new fabric doesn’t absorb or adhere to permethrin well, so guidance is not to treat
 - Because of possibility of environmental contamination
 - Thought experiment: new contingency operation in hyperendemic area, most troops have FRACUs
- If treated, does not affect fire retardancy

Pop-Up Bednet

(Woodland) NSN 3740-01-516-4415

(Desert) NSN 3740-01-518-7310

Self-supporting

No cot or pole set
needed

Zips open and closed
on both sides

Factory-treated with
permethrin – 25
washings or one year



Water resistant

Flame retardant

Fits on standard cot

Has attached floor for
use on ground

2 pounds

Set-up: throw it

www.iguanallc.com

Arthropod Protection - Summary

- Be aware of the arthropod risk – time of day, diseases and/or symptoms
- Cover skin with permethrin-treated clothing, tuck pants into socks/boots prn
- Apply permethrin to clothing shortly before travel, reapply if length of exposure exceeds limit of protection
 - Can't take aerosol spray cans onto aircraft
- Apply approp. strength DEET to skin
- A/C, screening, or insecticide-treated nets
- Prophylaxis?

Vaccine Preventable Diseases

- Make sure routine vaccines up to date
(tetanus, influenza...)
- Specific vaccines for travel

Vaccine Preventable Illnesses of Travel

- Meningococemia
 - meningitis belt
- Yellow Fever
 - South America, Africa
- Japanese Encephalitis
 - East / S.E. Asia
- Hepatitis A
 - (global)
- Polio
 - (focal in Africa)
- Measles
 - (global)
- Rabies
 - (global)
- Hepatitis B
 - (global)
- Typhoid
 - (Global-South Asia)

Diarrhea

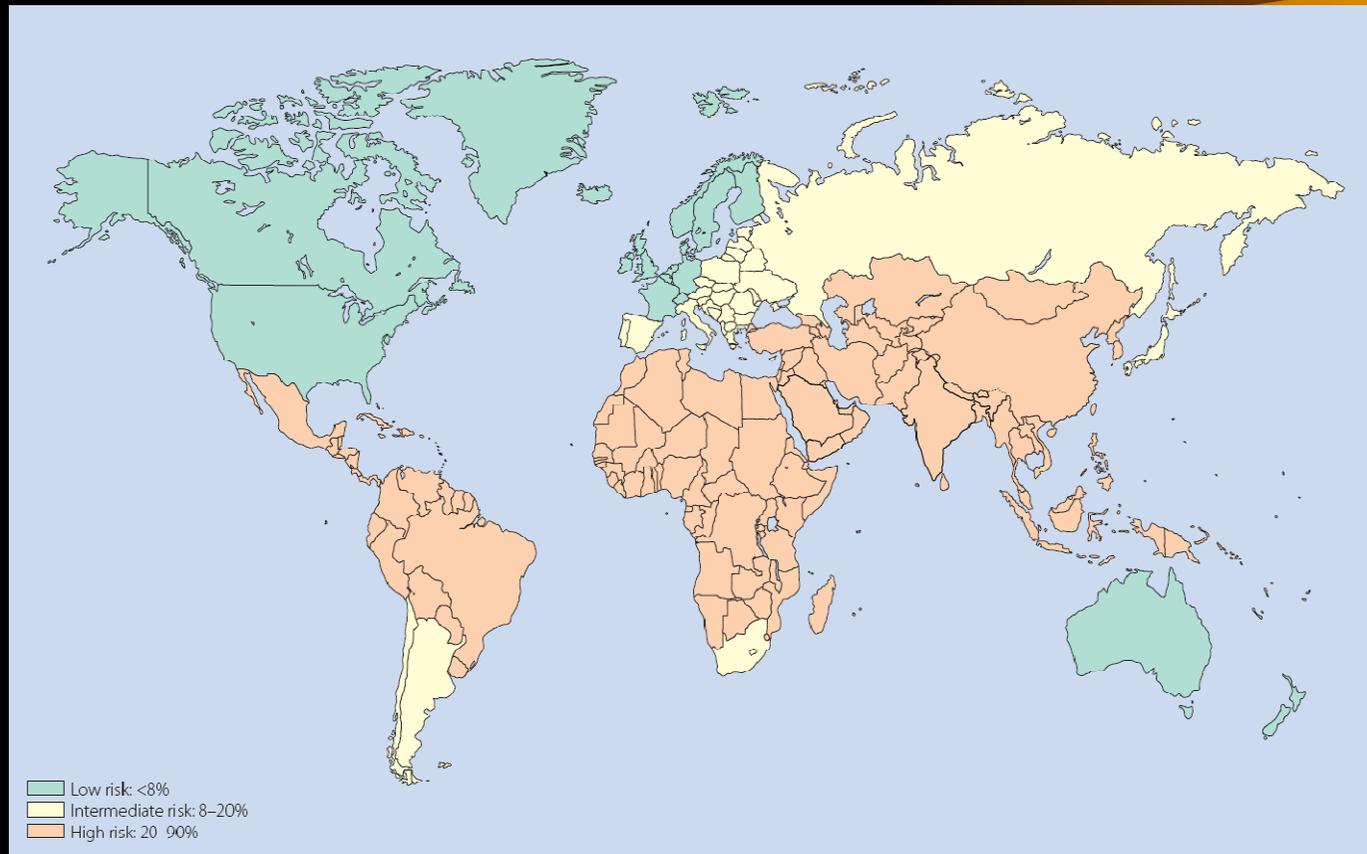


Figure 2.2 Worldwide risk areas of traveler's diarrhea.

Water Source



- Don't assume bottles are safe
- Don't assume that, just because a hotel filters its water that the water is safe...
- Assume nothing.

สลัด / Salads

สลัดปู	Soft shell crab salad
สลัดผัก	Green salad
สลัดชีส	Chef's salad
สลัดกรีก	Greek salad
สลัดซีซาร์	Caesar salad



Travelers Diarrhea

Diarrhea self treatment

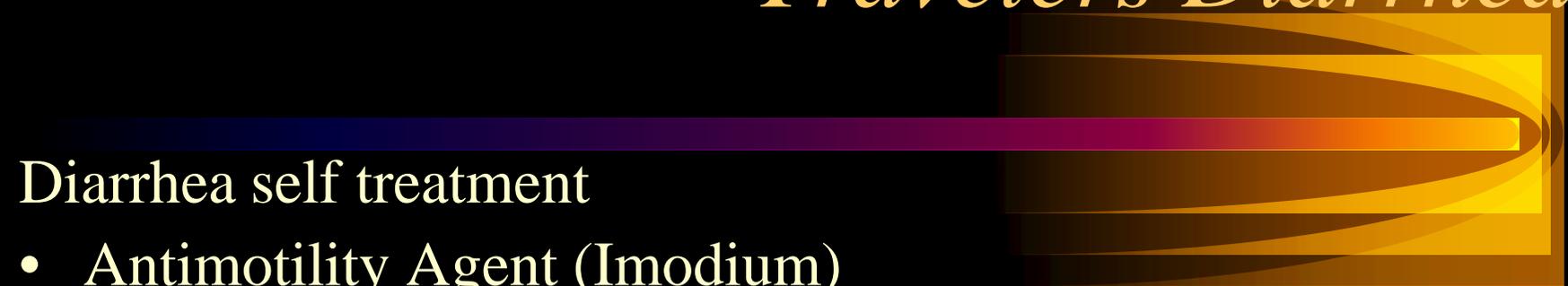
- Antibiotics + antimotility agent = fastest resolution
- Quinolones
 - Ciprofloxacin (Cipro) 500 mg bid x 1-3 days
 - Ofloxacin (Floxin) 400 mg bid x 1-3 days
 - Levofloxacin (Levaquin) 500mg qd x 1-3 days

Travelers Diarrhea

Diarrhea Self Treatment

- Azithromycin (Zithromax) 500mg qd x 1-3 days (or single dose 1g x 1)
 - Peds: 10 mg/kg qd x 3 days
 - Drug of choice for SE Asia, India
- Rifaximin (Xifaxan)
 - Not for *Campylobacter*, so not for SE Asia/India; not for dysentery [blood/fever])

Travelers Diarrhea



Diarrhea self treatment

- Antimotility Agent (Imodium)
 - Adults: 2-4mg at onset, then 2mg after each loose stool, not to exceed 8 2mg caps in 24 hrs
 - Older children: 8mg/kg/day divided in 3 doses
- Oral Rehydration Solution (ORS): Co-transport of glucose and sodium
 - WHO Formula
 - CeraLyte
 - 1 tsp salt, 2-3 TBSP sugar per liter
 - 1 tsp salt, 1 cup orange juice, 3 cups water
 - ½ tsp salt, 1 c dry baby rice cereal, 1L water

Trauma

- Motor vehicle accidents biggest risk
- Driving patterns different
- Wear of seatbelt important
- Use only authorized transportation methods





P. Hickey

Animal Bites

- Bite avoidance
- Bite management
- Rabies prophylaxis?
 - Individual risk
 - Remote itinerary
 - Duration / intensity of exposure



P. Hickey

Fresh Water Contact

- Leptospirosis
 - doxycycline 200mg po q week
- Schistosomiasis
 - Counseling and Avoidance
 - No effective prophylaxis

Jet Lag

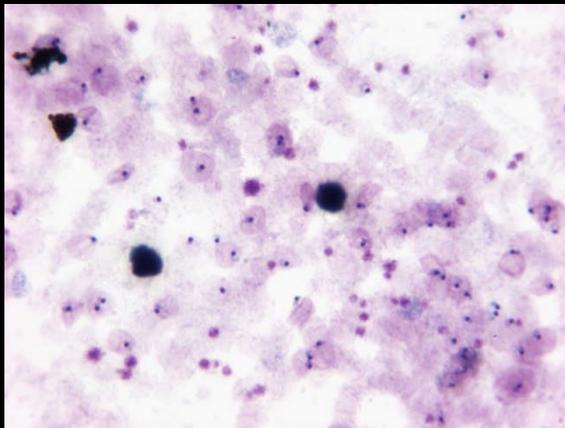
- Don't use caffeine or alcohol to “reset your clock”
- Schedule time at the other end for adjustment; morning light
- Melatonin
- Ramelteon (Rozerem)
 - Melatonin receptor agonist
- Ambien
- Restoril

Environmental exposures

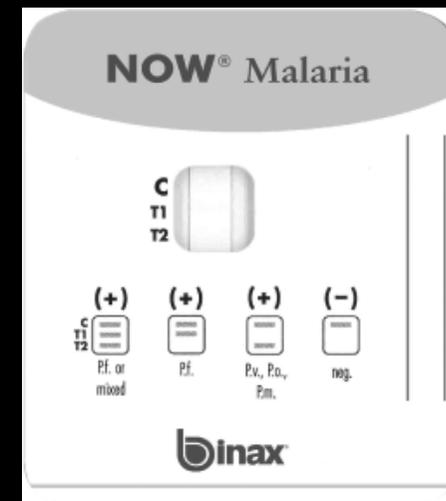
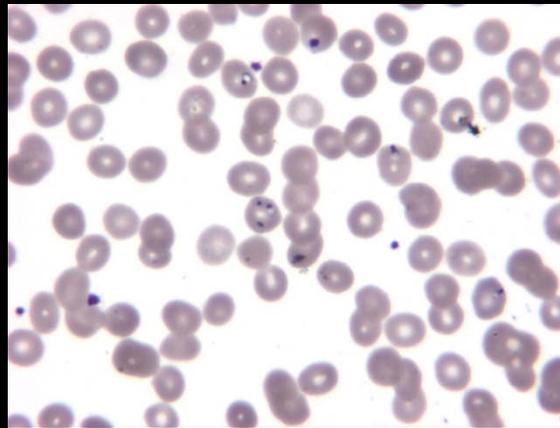
- Heat - Acclimatization, clothing, activities, fluids
- Sun - Sunscreen, hats, clothing, time of day
- Altitude - AMS, HAPE, HACE
 - Highest risk >9,000 feet
 - Slow ascent (2000-3000 feet per day)
 - Climb high, sleep low
 - Medication: Acetazolamide (Diamox) 125mg bid (kids 5 mg/kg) starting day of ascent until 2-3 days at altitude
 - Sulfa derivative; paresthesias, carbonated drinks
 - Treatment: descent

Fever in the Returned Traveler

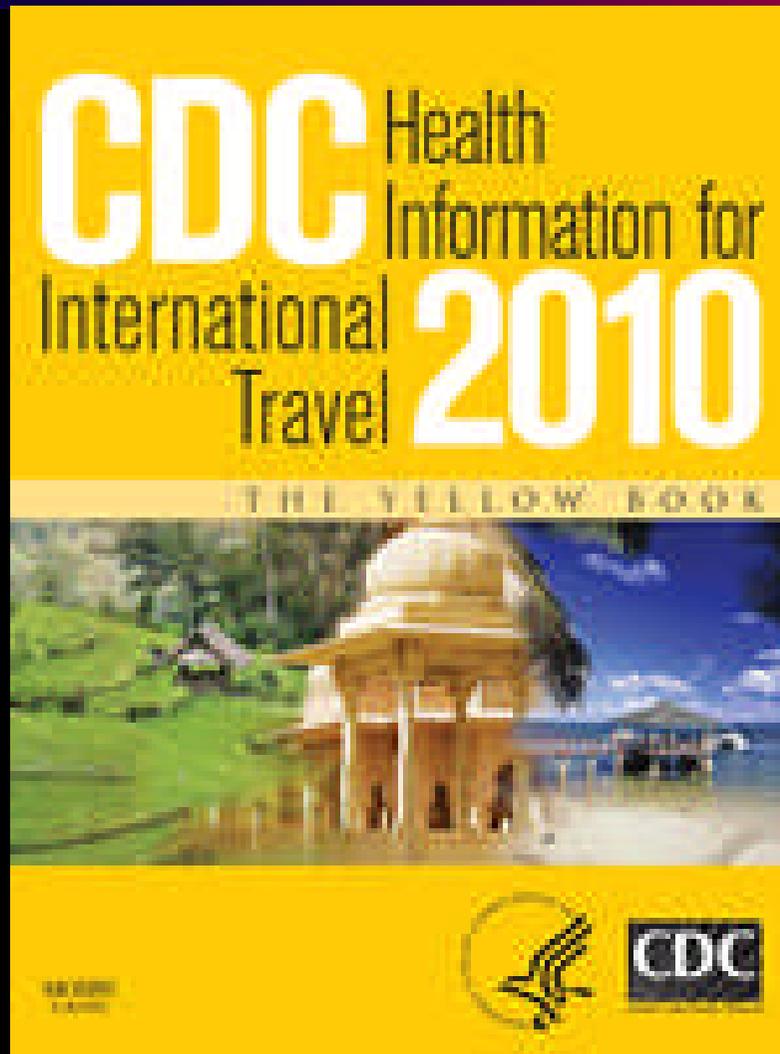
- “Seek competent care”
- Rule out malaria in ALL febrile patients who have traveled to an endemic country in the past year.
- Blood smears +/- rapid diagnostic test q8hrs x 3



P. Hickey



Resources: www.CDC.gov/travel



Resources:

<http://usachppm.amedd.army.mil>



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Medical Threat Briefing: Haiti

Format: Presentation
Language: English

Product Categories

Deployment Health

- Medical Threat Briefing

Product Specifications

- Format: PowerPoint Presentation
- Pub Date: February 2005
- Content: Information to help reduce the risk of injury and disease while deployed.
- Proponent: Health Information Operations
- Users: Personnel deploying to this area
- Notes: Distribution restricted

Resources: <http://www.vaccines.mil>

MILVAX

Monday, September 13, 2010 9:15:13 AM ET

What's New | Quick Reference | Contact Us | Site Map

QUICK REFERENCE CHART

Quick Reference Chart | Policies | Service Messages | Vaccine Recommendations | AOR Map

	Clinical	ACIP Guidelines	DHB Rec's	Info Paper	VIS	Consumer	MMQC	Shortages	Package Insert	Brochures
General Vaccine	X	X	X	X	X	X	X	X		X
Adenovirus	X		X	X		X	X			
Anthrax	X	X	X	X	X	X	X		X	X
Botulism	X			X		X				
Chickenpox		X	X	X	X	X	X	X	X	
Diphtheria	X	X		X	X		X	X	X	
DTaP, Td, Tdap		X		X	X		X		X	
Haemophilus B	X	X		X	X		X	X	X	
Hepatitis A	X	X	X	X	X	X	X		X	
Hepatitis B	X	X	X	X	X		X		X	
Human Papillomavirus	X	X		X	X	X	X		X	
Influenza - H1N1	X	X	X	X	X	X	X		X	
Influenza - Pandemic	X	X	X	X	X		X		X	
Influenza - Seasonal	X	X	X	X	X	X	X		X	X
Japanese encephalitis		X	X	X	X		X		X	
Lyme Disease	X	X	X							
Measles	X	X		X	X	X	X		X	
Meningococcal	X	X	X	X	X	X	X	X	X	
Mumps	X	X		X	X	X	X		X	
Pertussis	X	X		X	X		X		X	

National Center for Medical Intelligence



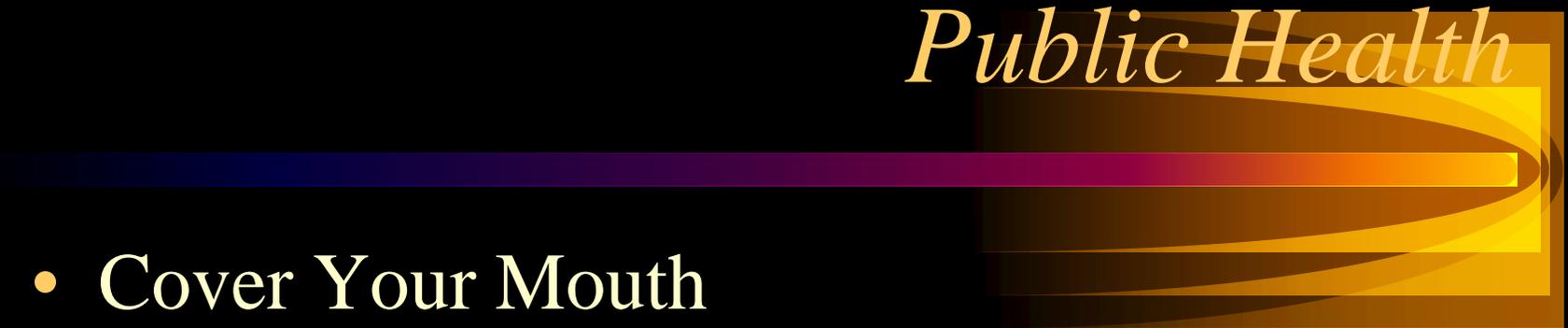
- DIA
- Contact your 2 shop for information
- Has both classified and unclassified information

The Ten Commandments of Public Health



- Wash Your Hands
- Eat Right
- Don't Smoke
- Get Plenty of Rest
- Don't Play in Traffic

The Ten Commandments of Public Health



- Cover Your Mouth
- Bundle Up
- Drink Plenty of Water
- Don't Mess With Animals
- Keep it Zipped

Questions

