



Rare & Imported Infections

Fever in the returned traveler, plus hantavirus, Ebola and Cyclospora · the exposure history and the phone call matter more than the drug

Malaria first
then isolate, then call

⚠️ FEVER IN A RETURNED TRAVELER: EXCLUDE MALARIA BEFORE ANYTHING ELSE

Malaria is the diagnosis that kills while you consider the interesting ones. *Plasmodium falciparum* can progress from fever to death within days, it is treatable, and **most US cases occur in travelers who did not take prophylaxis**. Send thick and thin smears plus a rapid diagnostic test urgently, and a single negative set does not exclude it: repeat every 12 to 24 hours over three sets. Do not wait for the result to seek expert advice if the patient is unwell. **Any traveler from a malarious area with fever gets tested, regardless of prophylaxis taken or how typical the story sounds.**

THE EXPOSURE HISTORY *this is the test that actually narrows it*

WHERE AND WHEN

Exact countries, rural versus urban, and the dates, because the incubation period is the strongest discriminator. Under 10 days: arboviral (dengue, chikungunya), rickettsial, enteric bacteria. **10 to 21 days:** malaria, typhoid, viral hemorrhagic fevers. **Over 21 days:** malaria still, tuberculosis, hepatitis, leishmaniasis, schistosomiasis.

WHAT THEY DID

Fresh water (schistosomiasis, leptospirosis), **animals and rodents, insect bites**, unpasteurized dairy (brucella), **raw or undercooked food**, caves (histoplasmosis), sexual exposure, and **healthcare or funeral contact**, which is the key question for viral hemorrhagic fever.

ASK THE TRAVEL QUESTION OF EVERYONE

Take a travel and exposure history in every febrile patient, not only the obviously exotic ones, and include **occupational and recreational exposure at home**. Several of the infections on this sheet are **domestically acquired in the US**, so "no travel" does not exclude them.

THE THREE ON THIS SHEET *each has one fact that changes what you do*

Infection	Recognize	The fact that changes management
Hantavirus <i>HPS in the Americas</i>	Rodent exposure , classically deer mice in rural western US, cleaning sheds, cabins or barns. A viral prodrome of fever and severe myalgia, then abrupt cardiopulmonary deterioration with non-cardiogenic pulmonary edema and shock. Notably no significant cough or coryza early	The blood film is the early clue: thrombocytopenia with hemoconcentration, a left shift and immunoblasts. There is no specific antiviral, so the treatment is getting them to an ICU before the cardiopulmonary phase , with ECMO for refractory shock. Only Andes virus, in South America, transmits person to person; the North American strains do not, so isolation is not required for US cases
Ebola <i>and other VHF</i>	Fever within 21 days of travel to an outbreak area , or contact with a case, a body, or bats and bushmeat. Nonspecific fever, myalgia, then vomiting and profuse diarrhea. Bleeding is a late and inconsistent feature , so its absence proves nothing	Identify, isolate, inform, and do it at the front door. Isolate immediately in a single room with dedicated PPE, limit staff and phlebotomy , and notify the health department and your facility's special pathogens plan before further workup . Patients are not contagious until symptomatic , and transmission is by direct contact with body fluids. Effective monoclonal antibody therapies and a vaccine exist, but access runs through public health, which is why the call comes first
Cyclospora	Prolonged, watery, relapsing diarrhea with profound anorexia, fatigue and weight loss, lasting weeks if untreated. Linked to imported fresh produce such as berries, basil and cilantro, with domestically acquired US outbreaks each spring and summer	Routine ova and parasite testing does not detect it. You must specifically request Cyclospora testing , which needs special stains, UV autofluorescence or a molecular panel. A single negative stool does not exclude it: send several specimens on different days. Treatment is TMP-SMX one double-strength tablet twice daily for 7 to 10 days , and there is no well-established alternative for sulfa allergy, so discuss those cases with infectious diseases

ISOLATE AND NOTIFY *the two actions that protect everyone else*

Action	Detail
Isolate on suspicion, not on confirmation	Airborne plus contact and eye protection for suspected tuberculosis, measles, or an undifferentiated severe respiratory illness in a traveler. Enhanced contact precautions with a dedicated team and strict PPE for suspected viral hemorrhagic fever. Standard precautions are not enough while you are still thinking , and downgrading later is easy
Warn the laboratory	Tell the lab before sending specimens on suspected VHF, brucella, coccidioides or tularemia. These cause laboratory-acquired infection when handled on an open bench, and the technologist has no way to know unless you say so
Notify public health early	Do not wait for confirmation. Public health arranges specialized testing that hospitals cannot perform, initiates contact tracing, and can access therapeutics and vaccines. Malaria, typhoid, viral hemorrhagic fevers, measles, cyclosporiasis and hantavirus are all reportable , and reporting is what turns a single case into a detected outbreak
Take a travel history from staff too	In a suspected VHF or novel pathogen, record everyone who has entered the room from the moment of arrival, since contact tracing starts with your own team and reconstructing it later is unreliable

The initial panel for an undifferentiated febrile traveler: **thick and thin malaria smears with a rapid diagnostic test** (repeated), CBC with differential looking for **eosinophilia, thrombocytopenia and lymphopenia**, liver and renal function, **two sets of blood cultures**, urinalysis and culture, chest radiograph, HIV, and **stool studies including a specific Cyclospora request** where the history fits. Add arboviral and rickettsial serology, and hold an **acute serum sample** so a convalescent titer can be paired with it later, which is frequently how the retrospective diagnosis is finally made.

PEARLS & PITFALLS

- Common things are still common in travelers.** Influenza, pneumonia, urinary infection and gastroenteritis account for a large share of post-travel fever. **Work them up in parallel** rather than pursuing the exotic diagnosis alone, and remember a traveler can have both.
- Dengue and malaria look alike and are managed very differently.** Both give fever, headache and myalgia after tropical travel. **Avoid NSAIDs and aspirin until dengue is excluded**, because of the bleeding and platelet risk, and watch for the deterioration that occurs as the fever defervesces.
- Eosinophilia in a returned traveler points at helminths**, particularly strongyloides, schistosomiasis and filariasis. **Screen for strongyloides before any corticosteroid or other immunosuppression**, since steroids can precipitate fatal hyperinfection syndrome years after exposure.
- Call for help early rather than late.** Infectious diseases, the health department and, for imported disease, a tropical medicine service will all take the call on suspicion. **The commonest failure with these infections is not the wrong drug, it is the delayed phone call.**

