
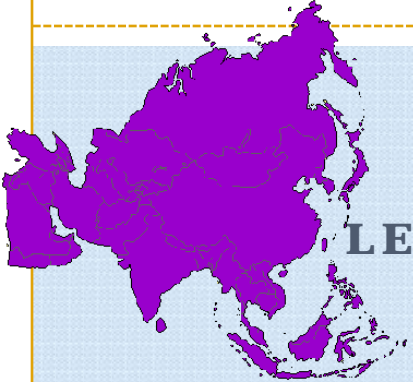





Overseas Workers : Screening and Repatriation of the ill



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Can we physicians prepare them for what they might find?

- physicians assessment of the work plans
- destination country's risks & resources
- expatriate's & family health needs
- Consider policies & practices

- Within 24 hours, employees and their families can be physically transported from secure safe shores to a new assignment in a country with many health risks, some known, some unknown



Who is an expatriate?

- Someone who takes up residence in a foreign country for a period ≥ 6 months
- Deemed to live overseas for occupational reasons
- Have longer and different exposures intensity from that of short-term travelers
- Higher risk for hepatitis, protozoal enteric infections and typhoid
- Less risks for diarrheal illness, staying longer time in a country confers protection
- Significance of moving to ***developed*** or ***developing***

Expatriates include



- Expedition team, technical staff in construction, mining companies, scientists, members of armed services, intelligence communities, humanitarian relief workers, and home helpers
- Health threats vary depending on: itinerary, duration of travel, environmental factors, risk activity, and adaptation to culture
- Usually accompanied by their families
- Can modify the risks because of more awareness of their surroundings

Possible consequences of poor infrastructure



- No access to medical care
- No access to dental care (usually neglected)
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- Poor access to safe blood
- Underdeveloped Ambulance services
- Exposure to poor medical infrastructure can increase risk
- Deficient nursing care





Predispositions & Risks

At DESTINATION COUNTRY

- Accidents
- Security (targets or victims of muggers and kidnappers)
- Climatic factors
- Water quality and food hygiene
- Air quality
- Psychological factors
- Sexual health
- Occupational health risks
- Exposure to transmissible diseases

Behavioral and psychological factors



- Anderzon et al, followed prospectively a large group of expatriates & their families for 3 years
- Perception of well being of spouse was better than employee
- Increase in substance abuse& inappropriate use of prescription drugs
- The longer the assignment, the more negative the attitudes while away, and the more difficult to adjust when come back homeland
- More prevalence of chronic fatigue syndrome
- More withdrawal sleep and low affect

Sexual Health



- A study from Netherlands showed that 23% of expatriates have unprotected sex with partners in HIV endemic areas
- In UK, 25% of newly heterosexually acquired HIV resulted from exposures overseas.
- For a married expatriate, risks associated with casual sex are were determined by whether they are “single at post” or accompanied
- Single at post increases likelihood of sexual contact, substance abuse and psychological problems

Occupational Health risks

- Many consider that expatriates health hazards are occupational in nature
- Work in remote location may involve noise, vibrations & chemical, physical, and ergonomic hazards, etc,...
- Hazards because of less health surveillance (asbestos, benzene, etc,...)
- Pattern of work cycles (rotator worker)



Preparation before travel

WORK

- Adjustment of expectations (those over seas work longer hours than at home)
Need guidance on what is reasonable
- Protection from bad managers and unreasonable demands
- Expatriate show at one year of work higher stress levels, feelings of not being in control compared to a control group at home
- Increase in smoking and alcohol consumption

Preparation before travel

Living
Abroad

- Preparing the family
- Information about language, safety (religion, customs, accommodations local schooling etc,...)
- Need for a package of policies aimed at ensuring that those working abroad are not disadvantaged (how well individuals will access medical care in home-land, supplies of prescriptions)

Company medical inspection visits by medical advisors



terms of reference

- Objective of advisors visit is to assess standards of care and make recommendations .

They should review:

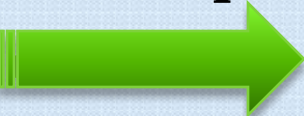
- Standard medical and dental care, visit range of doctors used by the company
- Visits to local hospitals and nursing care and select which facilities to be used

- Check on emergency care
- Company clinic facilities, assess competence of medical and nursing staff
- Existing arrangement of medical evaluation
- First aid facilities at company property

Pre-travel screening tests for expatriates



 Highly recommended

- Thorough history & PE
 - Make sure each medical condition can be managed
 - Define their self capabilities
 - Blood group, pertinent blood testing(LFT,HepB,C)
 - TST, dental care
 - HIV part of application process for visa application
-  Immunization -might be different from that for of short -traveler

Support while overseas



- take appropriate vaccinations
- 24 hour access to ED
- Need to know what to do if an emergency medical evacuation is needed
- Periodic medical examination to identify any medical or psychological difficulties and lend counseling
- Counseling services, work-related risks
- Source of medication should be available
- Medication across international borders should have the adequate supporting documentation

Medically related company policies for expatriates



- Ex-location Medical referral (provide for expatriate's travel expenses for next-best or home country)
- Emergency leave to see ill-relatives
- Medical evacuation
- Surgeries overseas
- Connection to the home country medical system

Case Scenario

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A 28 year old medical student during his summer vacation worked for an International Rescue Committee in Congo.

He was given yellow fever vaccine, Hep A, polio booster, and typhoid vaccine. He was provided information on avoidance of vector, food & water-borne disease including schistosomiasis.

He was given mefloquine for malaria prophylaxis

Stopped Mefloquine

Had hematuria -Schistosomiasis (no Rx)

Commentary 1



- False and exaggerated information circulating among the development community-need for consistent preventive advice
- Side effects
- Limited availability of certain medication
- Limited budgets
- In case of long-term malaria prophylaxis, several alternative approaches to the management of malaria (take prophylaxis during rainy season, travel to high risk areas, protective measures)

Morbidity in Expatriates



- In a cohort of 2020 Foreign expatriates followed up for 1 year revealed:
- Incidence of health events were 21%
- Trauma (5%),
- musculoskeletal (4%),
- infections (3%) were the principle causes of morbidity
- Psychological disorders were low 1%
- Expatriates were at an increased risk compared to partners WRT health events and traumatic injuries
- Unaccompanied were at increased risk compared to companied employees



End of assignment- returning home

- Receiving physician should receive medical records
- Expedite a medical evaluation
- Take extensive history including sexual history
- Do a standard examination, emphasis on skin and organomegaly
- Immunizations may be reviewed
- Social and psychological history

Is the person who returns the same as the one who left...?



Screening tests
to consider in
asymptomatic
returning
expatriate

Highly recommended

- PE
- CBC, assess eosinophilia
- Liver function tests
- Routine screening based on gender and sex
- TST
- Urine analysis
- Stool evaluation



Screening test to consider in asymptomatic returning expatriate

If returning from endemic area and asymptomatic eosinophilia is present or if risk factors are present:

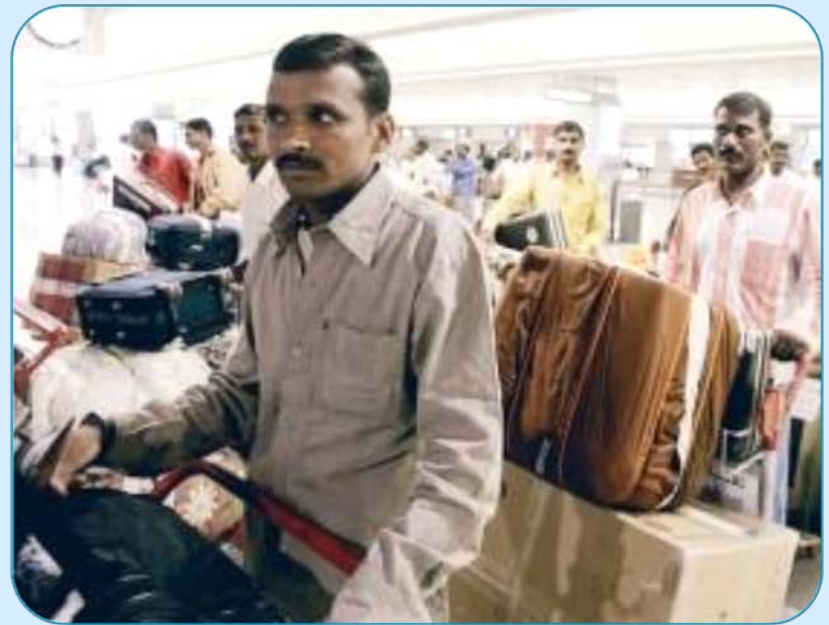
- Schistosomiasis antibody
- Strongyloides antibody
- HIV assay
- Syphilis assay
- Stool ova and parasite analysis

Returning Expatriate

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- Correlation of infection with geographic area, lifestyle overseas,
 - duration of time spent
Time of illness WRT repatriation
 - Issues of health maintenance
 - Immunization and adherence to chemoprophylaxis
 - Exposures while overseas

Approach to expatriate with fever

- First diagnosis is malaria, needs admission
- Thorough physical exam & history
- CBC; look for eosinophilia, thrombocytopenia and anemia
- If suspect hemolysis measure LDH
- Presence of conjunctival suffusion : suspect dengue or leptospirosis
- Blood should be cultured
- Empiric therapy is not recommended unless limited diagnostic capabilities



Eosinophilia



- Definition: count $> 400-600 \times 10^3$ cell/ml
- Causes:
- Drug reactions & allergy
- Viral: HIV, HTLV1
- Bacterial: bartonellosis, resolving scarlet fever, TB, leprosy, & syphilis
- Fungal: coccidiomycosis, allergic broncho-pulmonary aspergillosis
- Parasitic: *Dientamoeba fragilis*, *I belli*

Eosinophilia



Clues and associated symptoms:

- Reactive air –way disease should suggest Loffler’s syndrome (ascariasis, strongyloidiasis, hookworm infection)
- High eosinophile count: filariasis
- Right upper quadrant pain :fasioliasis
- Hematruia :schistosomiasis
- Arthropathy, lymphadenopathy, hepatosplenomegaly: toxocariasis
- Dermatitis: scabies & onchocerciasis

Gastrointestinal issues



- Diarrhea duration since departure:
- 1-2 weeks (has identifiable cause): salmonella, shigella, campylobacter, *E.coli*. Less common, *vibrio*, *plesiomonas* & *Aeromonas* sp.
- 2-4 weeks (10-30%): Giardiasis, cryptosporidium parvum, Isospora belli, *E. histolytica*, Strongyloides stercoralis, *trichurus trichuria*, *capillaris philippensis* (rectal prolaps and hemorrhoids)
- More than 4 weeks (cause may not be identifiable): may need serologic testing –empirical RX

The Zebra principle



If a person hears hooves in a London street a commonly encountered type of horse and NOT a Zebra would be expected to be seen

The physician taking care of a returning expatriate is in a good position to consider the zebra



Zebra principle is the importance of not missing the right diagnosis