



PAEDIATRIC ACUTE CARE GUIDELINE

Fever in the Returned Traveller

Scope (Staff):	All Emergency Department Clinicians
Scope (Area):	Emergency Department

This document should be read in conjunction with this DISCLAIMER
<http://kidshealthwa.com/about/disclaimer/>

Fever in the Returned Traveller

Background

- Returned travellers commonly suffer from health problems related to travel, which can present as minor self-limited illnesses or potentially life threatening infections.¹
- Non-specific viral illness, diarrhoeal diseases and respiratory illnesses are the most common clinical syndromes.^{3,4} The most common specific diagnoses among returned travellers with fever are malaria, dengue and salmonella infections including typhoid.^{3,4}
- Clinicians who are evaluating returned travellers who are ill must maintain a broad differential diagnosis that includes routine infections, as well as exotic infections and illness that may be non-infectious in nature.²
- Returned travellers from Bali will still need investigation for Malaria, even if they have not travelled to rural/remote or the Lombok area

Assessment

Travel history checklist	
Where did you travel?	Information regarding country specific risks can be found at: <ul style="list-style-type: none">• The WHO website who.int/ith under 'disease distribution maps'• The Centers for Disease Control and Prevention website http://wwwnc.cdc.gov/travel/destinations/list
When did you travel?	<ul style="list-style-type: none">• Include travel dates and duration of travel to establish possible incubation period

Vaccination status including routine vaccines and travel vaccines?	<ul style="list-style-type: none"> • Vaccines such as typhoid, provide incomplete protection and travellers are still at risk.^{2,6} • Travellers unimmunised to standard vaccines, such as measles, are at increased risk of exposure abroad.⁶
Malaria prevention strategies	<ul style="list-style-type: none"> • Malaria prophylaxis is never 100 percent effective and the use of bed nets is the most effective strategy • Type of medication and dosing regimen • Adherence to medication and duration of therapy prior to and after leaving an endemic area

Differential Diagnosis

Infection	Incubation Period	
Malaria	Variable	P.Falciparum: 7 days-12 weeks Other malarial species: weeks to several years
Typhoid (Salmonella)	Variable	3 days - 3 months (usually 8-14 days)
Rickettsial infection	Variable	3-21 days (depending on type)
Dengue	Short	3-14 days (usually 5 days)
Chikungunya	Short	1-12 days (usually 3-7 days)
Influenza	Short	1-5 days (usually 2 days)
Campylobacter	Short	1-10 days (usually 3 days)
Shigella	Short	12 hours-7 days (usually 2 days)
Measles	Intermediate	7-18 days (usually 10 days)
Viral haemorrhagic fever (Ebola)	Intermediate	2-21 days (usually 8 days)
Hepatitis A	Long	2-7 weeks (usually 30 days)
Rabies	Long	3-8 weeks (sometimes years)

Management

Children are unlikely to present as severely unwell, if indicated please refer to the management for the [severely unwell patient](#).

Non Severely Unwell Patient
Always consider infection control precautions - refer to Rash Management
Take a travel history

Perform a thorough examination including:

- Rashes / skin lesions (dengue, typhoid, rickettsia, measles, leptospirosis)
- Hepatomegaly (malaria, typhoid, dengue, viral hepatitis)
- Splenomegaly (malaria, typhoid, mononucleosis)
- Acute abdomen or GI haemorrhage (typhoid)
- Cough, coryza, conjunctivitis (respiratory viruses, measles)
- Jaundice (viral hepatitis, malaria)
- Lymphadenopathy (rickettsia, toxoplasmosis, brucellosis, HIV, infectious mononucleosis)
- Petechiae (meningococcal disease, viral haemorrhagic fever, rickettsia)
- Neurologic findings: confusion, lethargy, meningism (malaria, meningitis)
- Insect bites and eschars (malaria, dengue, rickettsia)

Investigations (to be performed on all returned travellers with a history of fever):

- Blood culture
- Thick and thin blood film for malaria (purple top) - this must be performed on 2-3 separate occasions, 12-24 hours apart, to be reliably negative
- Rapid diagnostic test for malarial Ag (purple top) (only positive in *P. falciparum*: call Hematology lab for urgent results available 24hr/day)
- FBC
- LFT, EUC

Other tests to consider:

- Serology for dengue/arboviruses (+/- the dengue NS1 Ag in the 1st week of illness) (red/gold top)
- Measles PCR on PNA/urine/blood and IgM + IgG for Measles in suspected cases (most frequently identified in unimmunised cases)
- CXR +/- NPA for respiratory viruses
- Stool bacterial cultures and enteric viruses
- Urine microscopy and culture

Management

- Depends on the patient's clinical presentation and specific diagnosis.
- If the patient is suitable for outpatient management, consult Infectious Diseases (in hours) prior to discharge. If urgent advice is required after hours contact Clinical microbiology on call.
- If the patient requires admission, the primary admitting team will be General Paediatrics with consideration for obtaining an Infectious Diseases Consultation

Severely Unwell Patient

- Haemodynamic compromise
- Altered conscious state
- Seizures
- Bleeding

Refer to the [Serious Illness](#) guideline

Always consider infection control precautions - refer to [Rash Management](#)

Initial Investigations

- Blood cultures
- FBC and thick and thin blood film for malaria (purple top)
- Rapid diagnostic test for Malaria Ag (purple top) - label urgent and call Haematology Lab for result (available 24hrs/day)
- Microscopy and culture of urine, CSF and stool (including rectal swab for ESBL)
- LFT and EUC (green top)
- Coagulation profile (blue top)
- PCR (meningococcal, malaria) (purple top)
- Serum tube (dengue and other serology) (red/gold top)

Treatment


- Malaria positive - refer to [Malaria](#) guideline
 - Otherwise treat with empirical antibiotics
 - First: IV Meropenem 40mg/kg (maximum 2 grams) 8 hourly
- then
- IV Vancomycin 15mg/kg (maximum 750mg) 6 hourly

For Further advice contact the Infectious Diseases Fellow or Clinical Microbiologist (after hours)

References

1. Ryan ET, Wilson ME, Kain KC. Illness after international travel. N Engl J Med 2002; 347:505-16.
 2. Looke DF, Robson JM. Infections in the returned traveller. MJA 2002; 177:212-219.
 3. Wilson ME, Weld LH, Boggild A, Keyston JS, Kain KC, Sonnenburg FV,
 4. West NS, Riordan FA. Fever in returned travellers: a prospective review of hospital admissions for a two and a half year period. Arch Dis Child 2003 88:432-434.
 5. Phillips-Howard PA, Radalowicz A, Mitchell J, Bradley DJ. Risk of malaria in British residents returning from malarious areas. BMJ. 1990;300(6723):499.
 6. Hill DR, Ericsson CD, Pearson RD, Keystone JS, Freedman DO et al. The practice of travel medicine: Guidelines by the Infectious Diseases Society of America. Clin Infect Dis 2006; 43:1499-1539.
 7. Dorsey G, Gandhi M, Oyugi JH, Rosenthal PJ. Difficulties in the prevention, diagnosis, and treatment of imported malaria. Arch Intern Med. 2000;160(16):2505.
 8. Traveller's diarrhoea. In: eTG complete [Internet]. Melbourne: Therapeutic Guidelines Limited; 2015 Mar
 9. Simmons CP, Farrar JJ, Nguyen VV, Wills BS. Dengue. N Engl J Med. 2012 Apr;366(15):1423-32
 10. Kumar N, Lewis DJ. Fever and rash in a returning traveller. BMJ. 2012;344:e2400
 11. WHO Dengue. Guidelines for diagnosis, treatment, prevention and control. New Edition, 2009 http://whqlibdoc.who.int/publications/2009/9789241547871_eng.pdf
 12. Sanchez-vargas FM, Abu-el-haija MA, Gomez-duarte OG. Salmonella infections: An update on epidemiology, management, and prevention. Travel Medicine and Infectious Disease (2011) 9, 263-277.
 13. Typhoid In: eTG complete [Internet]. Melbourne: Therapeutic Guidelines Limited; 2015 Mar
 14. Princess Margaret Hospital CHAMP guidelines. Presumed Bacteraemia, Sepsis. Last revised 4th November 2013
 15. Malaria In: eTG complete [Internet]. Melbourne: Therapeutic Guidelines Limited; 2015 Mar
- Guideline Developed by: Anita Campbell (Infectious Diseases Fellow) July 2015
 External Review: PMH Infectious Diseases Team August 2015
 External Review: Zoy Goff (PMH Pharmacy Department) August 2015

This document can be made available in alternative formats on request for a person with a disability.

File Path:			
Document Owner:	Dr Meredith Borland HoD, PMH Emergency Department		
Reviewer / Team:	Kids Health WA Guidelines Team		
Date First Issued:	26 August, 2015	Version:	
Last Reviewed:	26 August, 2015	Review Date:	26 August, 2017
Approved by:	Dr Meredith Borland	Date:	26 August, 2015
Endorsed by:	Medical Advisory Committee	Date:	26 August, 2015
Standards Applicable:	NSQHS Standards: 		
Printed or personally saved electronic copies of this document are considered uncontrolled			