Communicable Diseases Protocol

Malaria

Last updated: 16 September 2016

Public health priority: Routine
PHU response time: Enter confirmed cases on NCIMS within 5 working days of notification
Case management: Investigate likely source of infection
Contact management: Nil

1. Reason for surveillance

- To monitor the epidemiology and so inform the development of better prevention strategies
- To demonstrate to WHO Australia's malaria-free status.

2. Case definition

A confirmed case requires laboratory definitive evidence.

Laboratory definitive evidence

- Detection and specific identification of malaria parasites by microscopy on blood films with confirmation of species in a laboratory with appropriate expertise, **or**
- Detection of *Plasmodium* species by nucleic acid testing.

Clinical evidence
Not applicable

Epidemiological evidence
Not applicable

3. Notification criteria and procedure

Malaria is to be notified by laboratories on diagnosis (ideal reporting by routine mail).

Only confirmed cases should be entered onto NCIMS.

4. The disease

Infectious agents
The parasites *Plasmodium vivax, P. malariae, P. falciparum* and *P. ovale*.

Humans occasionally become infected with Plasmodium species that normally only infect non-human primates, such as *P. knowlesi*.

Mode of transmission
Malaria is transmitted by the bite of an infective female *Anopheles* mosquito.

Australia was declared free of local malaria transmission in the 1980's but sporadic locally-acquired cases have been reported in some parts of northern Australia in recent decades. [1]

Timeline
The incubation periods are quite variable, depending on the species of parasite:

- *P. falciparum*: 9-14 days
- *P. vivax and P.ovale*: 12-18 days
- *P. Malariae*: 18-40 days.

Some strains of *P.vivax* may have an incubation period up to 6 months. Prolonged incubation periods may also occur due to partial suppression of the parasites from the use of sub-optimal malaria prophylaxis.

Malaria is not transmitted from person to person. Malaria may be transmitted through contaminated blood or blood products, or from mother to infant *in utero*.

Clinical presentation
The usual clinical presentation is an acute febrile illness. In the early stages of malaria the clinical symptoms may resemble many other febrile illnesses caused by other pathogens. Symptoms include fever, chills, sweating, sometimes with cough and diarrhoea. In a young child there may be irritability, refusal to eat and vomiting.

Severe illness is more common in *P. falciparum* infections and may include shock, coagulation defects, liver and renal failure, and pulmonary oedema. Untreated severe falciparum malaria is almost always fatal. [2]

5. Managing single notifications

Response times

Investigation
Within 5 working days of notification, begin follow up investigation. On the day the information is obtained notify the Communicable Diseases Branch of any cases that were acquired in Australia. Within 5 working days of notification enter on NCIMS confirmed cases only.

Response times
The response to a notification will normally be carried out in collaboration with the case's health carers. PHU staff should:

- Confirm the diagnosis and onset date
- Identify the likely place of acquisition.

Case management

Treatment and investigation
Refer to *Therapeutic Guidelines: Antibiotic* (http://www.tg.com.au/).

Education
The case or relevant care-giver should be informed about the nature of the infection and the mode of transmission. In particular, emphasis should be placed on completing the recommended therapies.

Isolation and restriction
None.

Environmental evaluation
None.

Exposure investigation
Call the patient to review the patient's travel history, determine the most likely place of acquisition of the infection and if anti-malaria prophylaxis was used while travelling. The most likely place of acquisition (country and region within the country) should be entered in the Clinical package section of NCIMS. The travel history and prophylaxis information should be entered in the Risk History package.

If there is no travel history consistent with exposure to malaria discuss with Communicable Diseases Branch.

Contact management
Not applicable.

6. References

1.Webb, Doggett, Russell. A guide to mosquitoes of Australia (2016). CSIRO Publishing.

2.American Public Health Association. Control of Communicable Diseases Manual 20th Edition (2015).

7. Further information

Follow the link to the CDC Malaria Information and Prophylaxis, by Country:
http://www.cdc.gov/malaria/travelers/country_table/index.html