NSW Health

Malaria

NSW Control Guidelines for Public Health Units

Revision History			
Version	**Date**	**Revised by**	**Changes**
1.0	16 September 2016	Communicable Diseases Branch	
2.0	15 January 2025	One Health Branch	Revision to include updated information

NSW guidance

There are no Series of National Guidelines for malaria. This document provides NSW guidance on the surveillance and management of malaria.

1. Summary

Public health priority:	Routine
PHU response time:	Enter confirmed cases on NCIMS within five working days
Case management:	Determine possible exposures
Contact management:	Nil

2. Reason for surveillance

- To identify and control cases of disease
- To monitor the epidemiology and so inform the development of better prevention and control strategies.
- To demonstrate to the World Health Organization (WHO) Australia's malaria-free status.

3. 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

4. Notification criteria and procedure

Malaria is to be notified by laboratories on diagnosis. Only confirmed cases should be entered onto NCIMS.

5. The disease

Infectious agents

The parasites *Plasmodium vivax, Plasmodium malariae, Plasmodium falciparum* and *Plasmodium ovale*.

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

Mode of transmission

Malaria is transmitted by the bite of an infective female Anopheles mosquito. Only certain species of Anopheles mosquitoes can transmit malaria to humans. These competent malarial vectors are found throughout the tropics and sub-tropics, predominantly Asia, central and southern Africa, central America and tropical South America. In Australia, the receptive area for malaria - where *Anopheles* mosquitoes occur - is considered to be north of the 19th parallel which is a line just north of Townsville in Queensland and just south of Broome in Western Australia.

Australia was declared free of local malaria transmission in the 1980s but sporadic locally-acquired cases have been reported in some parts of northern Australia in recent decades[1], primarily in north Queensland and the Torres Strait.

Timeline

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

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

Some strains of *Plasmodium 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, some types of organ transplantation from infected donors, 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 *Plasmodium falciparum* infections and may include shock, coagulation defects, liver and renal failure, and pulmonary oedema. Untreated severe falciparum malaria is almost always fatal[2].

Prevention

Malaria prevention is via anti-malarial medicines and preventing mosquito bites. Anti-malarial medicines reduce the risk of infection and people should still take measures to prevent mosquito bites.

Anti-malarial medication should be taken before, during and after travel to malaria-infected areas. Only some anti-malarial medicines are considered safe to take during pregnancy and breastfeeding. People travelling to malaria prone areas should speak to their doctor or healthcare professional about malaria prevention. Medical attention should be sought if fever develops during travel or within 12 months of returning from a malarious area. Urgent medical review is required in first 24 hours of illness in malaria endemic areas, especially if known to have *Plasmodium falciparum*.
Avoid being bitten by mosquitoes by:

- Staying indoors at dusk and dawn when mosquitoes are most active
- closing windows and using insecticide sprays indoors
- wearing light-coloured, long-sleeved shirts, long trousers, and enclosed shoes
- using an insect repellent containing DEET (diethyl toluamide) or picaridin
- using mosquito nets or screens
- burning mosquito coils when outdoors
- using fans or air conditioning units
- ensuring there is no stagnant water around e.g., in discarded containers, fallen palm fronds or gutters.

For further information, see Healthdirect and NSW Health Factsheets: Malaria and Mosquitoes are a health hazard.

6. 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 One Health Branch of any cases that were acquired in Australia. Within 5 working days of notification enter on NCIMS confirmed cases only.

Data entry

Within five working days of notification enter on NCIMS confirmed cases.

Response procedure

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.

If no overseas travel is identified in the previous four weeks, contact One Health Branch.

Case management

Investigation and treatment

Refer to *Therapeutic Guidelines: Antibiotic* (http://www.tg.org.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.

Exposure investigation

Speak to the patient or patient's GP to obtain the patient's travel history and determine the most likely place of acquisition of the infection and if anti-malaria prophylaxis was used while travelling. For cases with no overseas travel, PHUs should consider exposure to northern Australia where *Anopheles* mosquitoes are found. If there is no overseas travel history consistent with exposure to malaria, please contact the One Health Branch to discuss potential for local transmission.

Data management

When entering potential exposures on NCIMS, the following variables are considered minimum data requirements:

Required data	**Where to enter data in NCIMS**
Place of exposure (Country and region)	Both the Clinical and Risk History packages
Prophylaxis	Clinical package

In the event of an outbreak or enhanced public health investigation, additional data points may be required.

Isolation and restriction

None.

Environmental evaluation

None.

Contact management

Not applicable.

7. 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).

8. Further Information

Follow the link for CDC Malaria Information and Prophylaxis, by Country:

For information about health and travel, please see Staying safe and healthy overseas.

9. Appendices

Appendix 1. Malaria Factsheet

Appendix 2. Mosquitoes are a health hazard Factsheet

Appendix 3. Disease investigation form

Appendix 4. Staying safe and healthy overseas