

DISEASE: MALARIA

Role profile	Competencies	Gaps in competencies	Gaps in information they need
(P)NS planning for epidemic response (outbreak response)			

Disease Tool 9.7 Malaria

Fact Sheet	Importance	<p>In 2016, 91 countries and areas had ongoing malaria transmission. The WHO estimates there were 216 million cases of malaria in 2016 and 445 000 deaths. Countries in Africa reported 90% of cases and 92% of deaths of malaria globally. Malaria epidemics do not generally occur in high-transmission areas (other than when there is migration of non-immune persons into these areas). This is because the population has developed partial immunity to the disease. Continuous exposure to malaria infection provides immunity in people after a certain age but this immunity is transient. People who remain uninfected over a short period (less than one year) become newly susceptible to the disease. Therefore, those living in areas of seasonal or low transmission do not develop adequate immunity and can be vulnerable to the disease every season.</p> <p>Since epidemics occur in areas where populations have inadequate immunity, malaria cases can be high, with very high rates of morbidity and mortality.</p>
	Case definition	<p>Case definitions for malaria control (different case definitions are used for malaria elimination):</p> <p>Suspected malaria case: Patient illness is suspected by a health worker to be due to malaria. The criteria for suspected malaria usually include fever or a history of fever. These criteria vary according to local circumstances and are established by the national malaria control programme. All suspected cases of malaria are tested by either microscopy or a rapid diagnostic test (RDT).</p> <p>Presumed (not tested) malaria case: In a suspected malaria case, the patient did not receive a diagnostic test but was nevertheless treated for malaria. Such cases have also been referred to as “probable” cases. However, in most settings, the chance that a suspected case will be confirmed is < 50%, so the use of the term “probable” is inappropriate. Such cases are also referred to as “unconfirmed” cases. In this guide, the term used is “presumed malaria case”.</p> <p>Confirmed malaria case: A suspected case of malaria in which malaria parasites have been demonstrated, generally by microscopy or an RDT, becomes a confirmed case. The definition implies that the patient displayed symptoms of malaria and the presence of parasites was confirmed. In some suspected cases with a positive test, particularly in populations that have acquired immunity to malaria, febrile illness may be due to other causes. Nevertheless, a diagnosis of confirmed malaria is still given. If a concurrent disease is suspected, it should be further investigated and treated.</p>
	Risk assessment	<p>Event description: type of disaster, characteristics of displacement</p> <p>Host: community practices, cultural practices, chemoprophylaxis coverage</p> <p>Agent: endemicity, recent epidemics, ongoing prevention and control interventions, disease incidence, mortality, seasonality</p> <p>Environment: presence of vectors, shelter, availability and access to health and social care</p>

Fact Sheet	Alert/epidemic threshold	Twice the average number of cases seen in the previous three weeks for a location
	Risk assessment	<ul style="list-style-type: none"> • Event description: type of disaster, characteristics of displacement • Host: community practices, cultural practices, chemoprophylaxis coverage • Agent: endemicity, recent epidemics, ongoing prevention and control interventions, disease incidence, mortality, seasonality • Environment: presence of vectors, shelter, availability and access to health and social care
	Attack rate	• It depends on the level of natural immunity of the population. Infections are often asymptomatic.
	Vulnerable people	<ul style="list-style-type: none"> • Infants, children under five years of age • Pregnant women • People living with HIV • Non-immune migrants, mobile populations and travellers
	Infectious agent	There are five <i>Plasmodium</i> (parasite) species that cause malaria in humans, and two of these species – <i>P. falciparum</i> and <i>P. vivax</i> – pose the greatest threat.
	Reservoir/Host	Humans (monkey for <i>P. knowlesi</i> , present in South-Eastern Asia, particularly on Borneo)
	How disease is spread (modes of transmission)	Vector-borne <ul style="list-style-type: none"> • <i>Anopheles</i> mosquito bite • The mosquitoes usually bite between sunset and sunrise during the night.
	Incubation period	Seven to forty days. Antimalarial drugs taken for prophylaxis by travellers can delay the appearance of malaria symptoms by weeks or months, long after the traveller has left the malaria-endemic area.
	Period of infectiousness	Not directly transmitted person to person. Humans may infect mosquitoes if infectious parasites are in the blood. This varies with parasite species and with response to treatment.
	Community case definition	A fever that goes up and down, with spells of extreme heat and shivering Any person with fever in a malaria-endemic area Any under-five child who has an illness with high fever and a danger sign Danger signs include lethargy, unconsciousness, vomiting everything, convulsions, and in children less than five years, inability to drink or breastfeed)
	Community-level disease tools	<ul style="list-style-type: none"> • CBHFA module • ECV disease tools (all relating to malaria)

Which interventions are most effective for prevention and control of malaria?

Activity	Evidence of effectiveness			
	High	Moderate	Low	No evidence
(Referral for) Early and effective treatment (aligned with national anti-malarial drug policy)	✓			
Use of insecticide-treated bed nets (coverage must be at least 80% to be effective)	✓			
Use of insecticide-treated curtains	✓			
Indoor residual spraying	✓			

Activity	Evidence of effectiveness			
	High	Moderate	Low	No evidence
(Referral to) Intermittent prevention therapy (IPT) – infants and pregnant women	✓			
Social mobilisation and health promotion	✓			
Larvicide			✓	
Ultra-low volume aerosol spraying and fogging				✓
Scrub removal around houses/communities				✓
For malaria vector <i>Anopheles arabiensis</i> : Community application of “DEET” mosquito repellent to ankles and feet		✓		
Indicators and targets				
The indicators and targets below can be adapted to specific contexts and should be used for monitoring and evaluation of: i) progress of the epidemic and characteristics, and ii) measuring Red Cross/Crescent activities.				
Indicator				Target
Epidemic characteristics and progression				
Malaria cases per week (population and children < 5 years)				#
Malaria deaths per week (population and children < 5 years)				#
Case-fatality rate in all malaria cases				%
Case-fatality rate in severe malaria cases				< 5%
Malaria parasite prevalence: children six months to five years with malaria infection				%
Districts above epidemic threshold				#
Red Cross/Crescent activities				
Number of volunteers trained				#
Suspected cases detected by volunteers and referred to health facility				#
Children < 5 years of age presenting with malaria receiving effective anti-malarial treatment within 24 hours of symptom onset				100%
Insecticide-treated bed nets distributed to at-risk population				# or %
Population/children < 5 years/pregnant women who reported sleeping under a net the night before				%
Households that have installed window and/or door screens				#
Households that receive indoor residual spraying (specific time period)				# or %
Community campaigns conducted to eliminate mosquito breeding sites				#
Social and behaviour change communication (SBCC) plan developed				Plan available
Functional feedback mechanism in place				# and type
Households visited by volunteers (door-to-door visits)				# or %
People who attended group session held by volunteers				#
Radio spots/SMS messages/television spots broadcast				#
Respondents who correctly recall messages on symptoms/transmission/prevention/case definition for referral				%

Impact on other sectors and programme areas

Sector	High Impact	Medium impact	Low impact
WASH	✓		
Food security			✓
Nutrition			✓
Shelter and settlements (including household items)	✓		
Psychosocial support and mental health			✓
Restoring family links			✓
Education			✓
Livelihoods			✓