



Central Health Board of the Federation of Khoja Shia-Ithna-Asheri Jamaats of Africa

P. O. Box: 6710 Tel: 255-22-2150617 Fax: 255-22-2150964
Email: health@africafederation.org, Dar es Salaam, Tanzania



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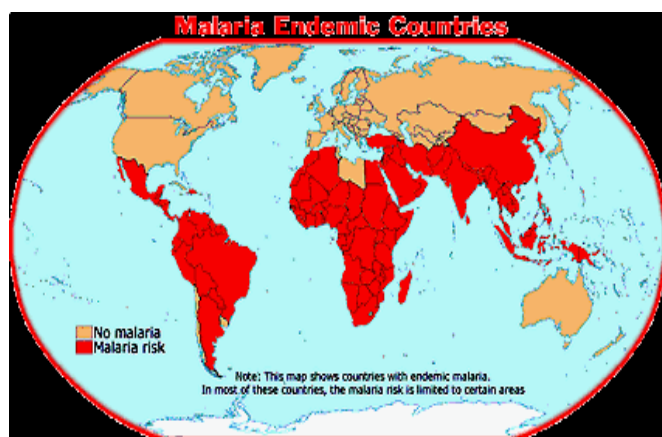
Malaria

There has been a reported outbreak of malaria and so the reason of this Newsflash. There is no particular season for malaria, but it has been found that incidence is particularly high during or after the rainy season.

Malaria is mosquito-borne infectious disease of humans caused by a parasite of the genus *Plasmodium*. Historical records suggest malaria has infected humans since the beginning of mankind. The name "malaria" (meaning "bad air" in Italian) was first used in English in 1740 by H. Walpole when describing the disease. The term was shortened to "malaria" in the 20th Century.



"According to WHO (World Health Organization), the majority of Malaria deaths occur among children in sub-Saharan Africa, killing an African child every 30 seconds. In the *World malaria report 2011*, there were about 216 million cases of malaria and an estimated 655,000 deaths in 2010. People living in the poorest countries are the most vulnerable to malaria. In 2010, 90% of all malaria deaths occurred in the WHO African Region, mostly among children under five years of age." [1]



The *anopheles* mosquito which is the vector for the *Plasmodium* parasite exists in most tropical and many sub-tropical countries of Latin America and the Caribbean, Africa, Oceania, and Asia.

Of the four common species that cause malaria, the most serious type is *Plasmodium falciparum* malaria. It can be life-threatening. However, another relatively new species, *Plasmodium knowlesi*, is also a dangerous species that is

typically found only in long-tailed and pigtail macaque monkeys.

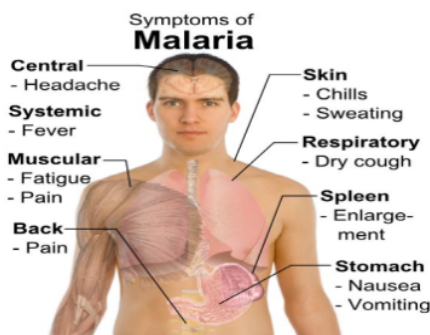
The other three common species of malaria (*P. vivax*, *P. malariae*, and *P. ovale*) are generally less serious and are usually not life-threatening. It is possible to be infected with more than one species of *Plasmodium* at the same time.

How does a human become infected with Malaria?

The disease is transmitted to humans when an infected female *Anopheles* mosquito bites a person and injects the malaria parasites (sporozoites) into the blood. Sporozoites travel through the bloodstream to the liver, mature, and eventually infect the human red blood cells. *P. ovale* and *P. vivax* can further complicate the cycle by producing dormant stages (hypnozoites) that may not develop for weeks to years. The period between the mosquito bite and the onset of the malarial illness is usually one to three weeks (seven to 21 days)

What are the symptoms of Malaria?

The severity of the Malaria depends on three things: 1. The type of parasite. 2. Your immunity. 3. Whether you still have your spleen. The symptoms characteristic of malaria include flulike illness with fever, chills, muscle aches, and headache. Some patients develop nausea, vomiting, cough, diarrhea and yellowing (jaundice) of the skin and whites of the eyes due to destruction of red blood cells and liver cells. Cycles of chills, fever, and sweating that repeat every one, two, or three days are typical.



People with severe *P. falciparum* malaria can develop bleeding problems, shock, liver or kidney failure, central nervous system problems, coma, and can die from the infection or its complications. Cerebral malaria (coma, or confusion or seizures) can occur with severe *P. falciparum* infection. It is lethal if not treated quickly; even with treatment, about 15%-20% die.

Some complications that can develop with untreated Malaria are:

Cerebral malaria. If parasite-filled blood cells block small blood vessels to your brain (cerebral malaria), swelling of your brain or brain damage may occur.

Breathing problems. Due to congestion in the blood vessels with parasites, accumulated fluid in your lungs (pulmonary edema) can make it difficult to breathe.

Organ failure. Malaria can cause your kidneys or liver to fail, or your spleen to rupture. Any of these conditions can be life-threatening.

Severe anemia. Malaria damages red blood cells, which can result in severe anemia if there are a lot of malaria parasites in circulation.

Low blood sugar. Severe forms of malaria itself can cause low blood sugar, as can quinine — one of the most common medications used to combat malaria. Very low blood sugar can result in coma or death.

In pregnancy: Mother having low hemoglobin, premature delivery, slow growth of the baby, delivery of low birth-weight infants (<2500 g) or even death of the baby in the womb. It is always

better to have an early diagnosis and treatment than to wait for the symptoms to increase and then get tested. By then complications may develop. Seek medical advice sooner than later.

Diagnosis:

Diagnosis is made from presenting symptoms and a blood test. The classic and most used diagnostic test for malaria is the blood smear on a microscope slide that is stained (Giemsa stain) to show the parasites inside red blood cells.



Another test based on immunologic principles exists that is RDTs (rapid diagnostic tests). These tests use finger-stick or venous blood, take only 10 to 15 minutes, and do not require a laboratory. Even non-clinical staff can easily learn to perform the test and interpret the results.

Malaria RDTs rely on the detection of parasite specific antigens produced by malaria parasites circulating in the bloodstream of infected or recently infected individuals. RDTs are used to test for placental malaria in pregnant ladies. This is something that is often missed if done by microscopy blood slide. A point to note is that the RDT is 93% sensitive and 85% specific

RDT is progressing to be the test for choice over microscopic blood slide because many factors affect the quality of microscopic diagnosis of malaria. The experience and training of the microscopist along with the quality of the slide preparation, staining, and reading are paramount to accurate diagnosis. Other important factors include the quality of the equipment, availability of electricity, and necessary reagents.

Treatment:

Three main factors determine treatments: the infecting species of *Plasmodium* parasite, the clinical situation of the patient (for example, adult, child, or pregnant female with either mild or severe malaria), and the drug susceptibility of the infecting parasites depending on the geographic area.

A person who is infected with *P. falciparum* and has severe symptoms, but cannot take oral medications, is given treatment intravenously

Preventing malaria:

The two main ways of preventing malaria are:

1. Avoiding mosquito bites - this can be achieved in various ways:

- Using insect repellent on your body and home.
- Covering your arms and legs by wearing long sleeves and being covered when going out at night.

- Using an insecticide treated net (ITN) while sleeping.
- Removal or permanent destruction of mosquito breeding sites: The habitats may be destroyed by filling holes that collect water. Also removing tin cans, disused flower pots, empty bottles, old tires (which can breed thousands of mosquitos in one season) and containers left out in the garden or rooftops which may collect water hence breed mosquitos.

2. Preventing disease:

- Using anti-malarial medications when travelling to an area that is endemic for malaria. These drugs do not prevent the parasite from entering your bloodstream, but they stop it from developing in the blood.
- Intermittent preventive treatment (IPTp) in pregnant women. This entails administration of a curative dose of an effective antimalarial drug.

3. Always Consult a Doctor:

- One must seek doctor's consultation before taking any kind of antimalarial drugs or treatment.

Source:

<http://www.who.int/mediacentre/factsheets/fs094/en/index.html>

“Community’s health – CHB’s priority”