CMS
Council for Medical Schemes

CMScript

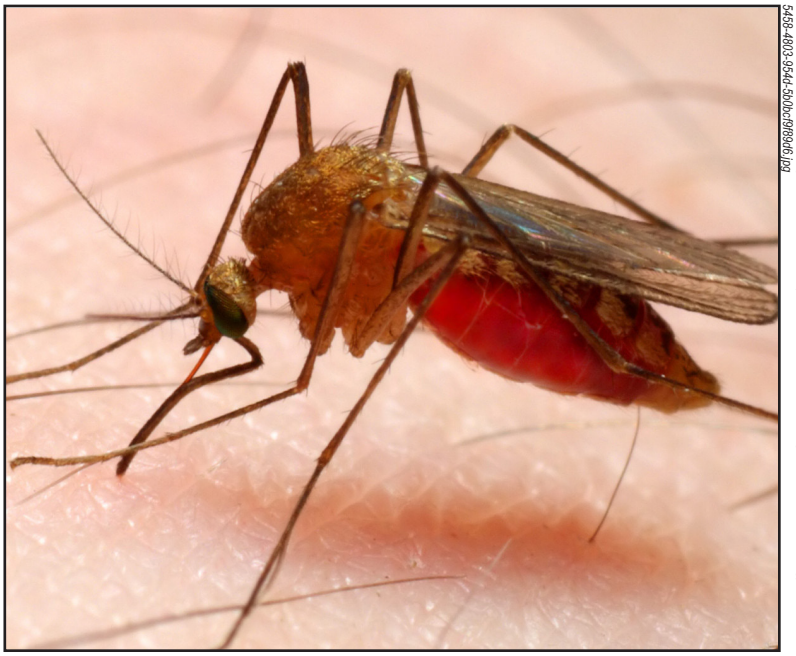
Member of a medical scheme?
Know your guaranteed benefits!

Issue 12 of 2014

Malaria is a major public health concern in many parts of the world, especially in sub-Saharan Africa where about 81% of the global malaria cases and 90% of the deaths occur. Malaria is a notifiable disease in South Africa in terms of the National Health Act. Malaria is a PMB condition under Diagnostic Treatment Pair (DTP) code 172S. The treatment component of this DTP is specified as Medical management.

Background

Malaria control can be achieved by scaling up existing proven interventions. South Africa has a well-established malaria control programme, and has implemented malaria control interventions since the 1930s. Malaria transmission in the country has decreased over the years, and is now limited to the low-lying, north-eastern parts of Limpopo, Mpumalanga and KwaZulu-Natal Provinces, along the borders with Zimbabwe and Mozambique. In these areas malaria transmission is mostly seasonal, unstable and epidemic prone. Over the past decade the Limpopo Province has reported largest proportion of the malaria cases diagnosed in South Africa every year. South Africa has set a target to eliminate local mosquito-borne transmission of malaria by the year 2018. However, almost all South Africans, including residents of seasonal malaria transmission areas, are non-immune and are therefore at risk of developing severe malaria.



http://cityconnects.in/NewsImage/Possible%20to%20prevent%20malaria%20through%20new%20technology-12b12bb52-5458-4803-954e-50bcf9f89d6j.jpg

Since malaria is a notifiable disease in South Africa in terms of the National Health Act, when the patient tests positive for malaria, the health worker completes a malaria case notification form and reports the patient to the provincial malaria control programme. The case report form collects patient demographic information, clinical information, pregnancy status (for female patients), travel history and possible place of infection

How is malaria transmitted?

Malaria is transmitted through the bite of an infected female Anopheles mosquito. Infection is caused by the Plasmodium parasite. The parasite can be spread to humans through the bites of infected mosquitoes. There are many different types of Plasmodium parasite, but only five types cause malaria in humans.

These are:

- Plasmodium falciparum – mainly found in Africa, it is the most common type of malaria parasite and is responsible for most severe malaria symptoms and most deaths.
- Plasmodium vivax – mainly found in Asia and South America. This parasite causes milder symptoms than Plasmodium falciparum, but it can stay in the liver for up to three years, which can result in relapses.
- Plasmodium ovale – fairly uncommon and usually found in West Africa. It can remain in the liver for several years without producing symptoms.
- Plasmodium malariae – this is quite rare and usually only found in Africa.
- Plasmodium knowlesi – this is very rare and found in parts of South East Asia.

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Nature of disease

Malaria is an acute febrile illness with incubation period of 7 days or longer. Therefore, a fever illness developing less than 1 week after the first possible exposure is not malaria.

Signs and Symptoms of Malaria

Signs and symptoms of uncomplicated malaria[3]		
Uncomplicated signs and symptoms	**Danger Signs**	**High-risk groups**
Fever	Unable to drink or breastfeed	Pregnant (and postpartum) women
Headache	Repeated vomitting	Infants and young children
Rigors (cold shivers/hot sweats)	Recent history of convulsions	Elderly patients (>65 years)
Mylagia	Lethargy	Splenectomised patients
Weakness	Unable to sit or stand	Immunocompromised patients, including patients with HIV/Aids
Dizziness		Non-immune patients
Loss of appetite/ poor feeding		
Diarrhoea, nausea and vomiting		
Cough		
Splenomegaly		

Source: Baker (2010:29)

Diagnostic tests

Early diagnosis and treatment of malaria reduces disease and prevents deaths. It also contributes to reducing malaria transmission.

Typically, malaria presents with fever, rigors, headache and body pains, but the clinical features are non-specific and may be confused with many other diseases, especially influenza. A definitive diagnosis should be made promptly by demonstrating the parasite on microscopy of a blood smear or by using a rapid malaria antigen test.

The health worker should therefore collect a blood specimen to confirm the diagnosis using the available testing method. Treatment solely on the basis of symptoms should only be considered when a parasitological diagnosis is not possible.

Management

Precautions

There is a significant risk of getting malaria if travelling to an affected area. It is very important therefore to take precautions to prevent the disease. Malaria can often be avoided using the ABCD approach to prevention which stands for:

- *Awareness of risk* – find out whether you are at risk of getting malaria, the incubation period, the possibility of delayed onset, and the main symptoms.
- *Bite prevention* – avoid mosquito bites by using insect repellent, cover the arms and legs and using a mosquito net, especially between dusk and dawn.
- *Check the need to take malaria prevention tablets (chemoprophylaxis)* – if medication is indicated, take the right antimalarial tablets at the right dose, and finish the course to prevent infection from developing into clinical disease.
- *Diagnosis* – seek immediate medical advice if experiencing malaria symptoms , including up to a year after returning from travelling

Surveillance

Stronger malaria surveillance systems are needed to enable a timely and effective malaria response in endemic regions, to prevent outbreaks and reoccurrences, to track progress, and to hold governments and the global malaria community accountable.

Vector control

Female Anopheles mosquitoes due to their nature of transmitting Malaria to humans are called vectors. Vector control is the main way to reduce malaria transmission at community level. It is the only intervention that can reduce malaria transmission from very high levels to close to zero.

For individuals, personal protection against mosquito bites is the first line of defence for malaria prevention. Two forms of vector control are effective in a wide range of circumstances.

- Insecticide-treated mosquito nets (ITNs)

Long-lasting insecticidal nets (LLINs) are the preferred form of ITNs for public health distribution programmes for coverage for all at-risk persons; and in most settings. The most cost effective way to achieve this is through provision of free LLINs, so that everyone sleeps under a LLIN every night.

- Indoor spraying with residual insecticides

Indoor residual spraying (IRS) with insecticides is a powerful way to rapidly reduce malaria transmission. However, the spraying must be done by professional as it can be deadly when inhaled. Its full potential is realised when at least 80%

of houses in targeted areas are sprayed. Indoor spraying is effective for 3–6 months, depending on the insecticide used and the type of surface on which it is sprayed. DDT can be effective for 9–12 months in some cases. Longer-lasting forms of existing IRS insecticides, as well as new classes of insecticides for use in IRS programmes, are under development.

Antimalarial medicines or Chemoprophylaxis

Antimalarial medicines can be used to prevent malaria. For travellers, malaria can be prevented through chemoprophylaxis to suppress the blood stage of malaria infections, thereby preventing malaria disease. The World Health Organisation (WHO) recommends intermittent preventive treatment with sulfadoxine-pyrimethamine (Fansidar) for pregnant women living in high transmission areas, at each scheduled antenatal visit after the first trimester. For infants living in high-transmission areas of Africa, 3 doses of intermittent preventive treatment with sulfadoxine-pyrimethamine (Fansidar) is recommended delivered alongside routine vaccinations. However, sulfadoxine-pyrimethamine is no longer recommended in South Africa, due to the availability of more effective combination therapy, coupled with high-level resistance in some parts of the country.

Vaccines against malaria

There are currently no licensed vaccines against malaria or any other human parasite.

Insecticide resistance

Much of the success to date in controlling malaria is due to vector control. Vector control is highly dependent on the use of pyrethroids, which are the only class of insecticides currently recommended for ITNs or LLINs. In recent years, mosquito resistance to pyrethroids has emerged in many countries. Fortunately, this resistance has only rarely been associated with decreased efficacy, and LLINs and IRS remain highly effective tools in almost all settings. The development of new, alternative insecticides is a high priority and several promising products are in the pipeline.

Medication

For patients with uncomplicated malaria, the recommended first line therapy is the fixed dose artemisinin-based combination (ACTs), artemether-lumefantrine (Coartem®). (ACTs) are now generally considered as the best current treatment for uncomplicated falciparum malaria

Alternatively, quinine plus either doxycycline or clindamycin can be used if artemether-lumefantrine is not available, contraindicated or failed. Clindamycin and doxycycline are slow acting antimalarials and should never be used as monotherapy, but are added to quinine treatment regimens to improve cure rates.

For severe malaria, intravenous artesunate or quinine with the addition of doxycycline or clindamycin is recommended.

Chloroquine is not recommended following the emergence of high-level resistance in most parts of the world including South Africa. However, pure infections of P. malariae can be treated with chloroquine monotherapy.

Mefloquine is registered only for prophylaxis but not treatment, given the higher incidence of severe psychiatric adverse effects associated with treatment doses.

Halofantrine treatment is not advisable given the associated cardio toxicity, variable bioavailability and drug interactions in patients who have taken mefloquine prophylaxis.

Sulphadoxine-pyrimethamine is no longer recommended in South Africa, due to the availability of more effective combination therapy, coupled with high-level resistance in some parts of the country.

Hospitalisation

Patients with severe malaria require hospital admission. All patients with malaria require careful clinical and parasitological follow-up.

Complications

Malaria is a serious illness which can be fatal if not diagnosed and treated quickly, particularly in pregnant women, babies, young children and the elderly. As complications of severe malaria can occur within hours or days of the first symptoms, it is important to seek urgent medical help as soon as possible. Possible complications that may occur include:

- **Anaemia**

Anaemia is caused by the destruction of red blood cells by the malaria parasite resulting in the body not being able to carry enough oxygen to the body's muscles and organs, leaving the person feeling drowsy, weak and faint.

- **Cerebral malaria**

In rare cases, malaria can affect the brain known as cerebral malaria. The condition can cause brain swelling, sometimes leading to permanent brain damage. It can also cause seizures (fits) or coma (a state of unconsciousness).

- **Malaria in pregnancy**

Complications include:

- premature birth (birth before 37 weeks of pregnancy)
- low birthweight
- restricted growth of the baby in the womb
- stillbirth
- miscarriage
- death of the mother

Pregnant women should avoid travelling to areas where there is a risk of malaria.

Other complications

Other complications that can arise due to severe malaria include liver failure and jaundice (yellowing of the skin and whites of the eyes), shock (a sudden drop in blood pressure), pulmonary oedema (a build-up of fluid in the lungs), acute respiratory distress syndrome (ARDS), abnormally low blood sugar (hypoglycaemia), dehydration, kidney failure and swelling and rupturing of the spleen.

What is covered by the Prescribed Minimum Benefits (PMBs?)

All medical schemes are required by law to pay for the diagnosis, treatment and care costs of PMB conditions in full. Therefore, the management of Malaria in hospital and out of hospital constitutes PMB level of care. Malaria Chemoprophylaxis is however not a PMB. For Malaria to be funded as PMB, pathology results confirming the diagnosis or a letter from the provider if point of care test is used will be needed.

It is very important to confirm with the medical scheme about the benefits available for the condition. If the doctor deems it necessary for the medication, tests or procedures to be done that the medical scheme does not normally fund, the doctor should write a clinical motivation to the scheme for payment to be considered as PMB.

Code of Conduct in respect of PMB benefits explains that schemes may ask providers to register members for the condition; may insist that the member use a Designated Service Provider; and that only the Basket of Care (BoC) tests and medication are funded. The Scheme on the other hand must ensure that the member and provider know the application process to register for PMBs.

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information@medicalschemes.com
Hotline: 0861 123 267
Fax: 012 430 7644

PMBs

Prescribed minimum benefits (PMBs) are defined by law. They are the minimum level of diagnosis,treatment, and care that your medical scheme must cover – and it must pay for your PMB condition/s from its risk pool and in full. There are medical interventions available over and above those prescribed for PMB conditions but your scheme may choose not to pay for them. A designated service provider (DSP) is a healthcare provider (e.g. doctor, pharmacist, hospital) that is your medical scheme's first choice when you need treatment or care for a PMB condition. You can use a non-DSP voluntarily or involuntarily but be aware that when you choose to use a non-DSP, you may have to pay a portion of the bill as a co-payment. PMBs include 270 serious health conditions, any emergency condition, and 25 chronic diseases; they can be found on our website by accessing the link provided (www.medicalschemes.com/medical_schemes_pmb/index.htm).