

Scientific Facts on

Malaria

status & challenges of the epidemic

Source document:

WHO (2008)

Summary & Details:

GreenFacts

Context - Malaria is one of the most common infectious diseases and a great public health problem worldwide. About one million people die each year from malaria, and half of the world's population lives in areas where there is a risk of getting the disease through the bites of infected mosquitoes.

What is being done to control the spread of malaria? Can the disease be eradicated?

- 1. Introduction.....2
- 2. Which strategies were adopted to prevent and treat malaria?.....2
- 3. How many people were affected by malaria in 2006?.....3
- 4. What is being done to prevent and treat malaria?.....3
- 5. How much funding is allocated to malaria control?.....4
- 6. How effective is malaria control?.....4
- 7. Can malaria be completely eradicated?.....5

This Digest is a faithful summary of the leading scientific consensus report produced in 2008 by the World Health Organization (WHO):
"World Malaria Report"

The full Digest is available at: <https://www.greenfacts.org/en/malaria/>

i This PDF Document is the Level 1 of a GreenFacts Digest. GreenFacts Digests are published in several languages as questions and answers, in a copyrighted user-friendly Three-Level Structure of increasing detail:

- Each question is answered in Level 1 with a short summary.
- These answers are developed in more detail in Level 2.
- Level 3 consists of the Source document, the internationally recognised scientific consensus report which is faithfully summarised in Level 2 and further in Level 1.

All GreenFacts Digests are available at: <http://www.greenfacts.org/>

1. Introduction

Malaria is one of the most common infectious diseases and a great public health problem worldwide, particularly in Africa and south Asia. It is caused by a microscopic parasite transmitted by mosquito bites. Only certain species of mosquitoes of the Anopheles genus – and only females of those species – can transmit malaria.

About half of the world's population lives in areas where people are at risk of getting malaria through the bites of infected mosquitoes.

Each year, about 250 million persons suffer from the disease and one million of them die, mostly African children under five years of age.

There is growing agreement on the best available prevention and treatment methods, and international organizations such as the World Health Organization (WHO) have set up ambitious objectives for a large-scale fight against malaria.



Anopheles mosquito, the vector for malaria
Source: CDC

2. Which strategies were adopted to prevent and treat malaria?

2.1 To **prevent malaria** in areas where malaria cases are reported, the WHO recommends two main methods.

First, people should sleep under mosquito nets treated with long lasting insecticides. This prevents bites from malaria-infected mosquitoes and kills them. Such nets should be used as a priority by pregnant women and children under five years of age, who are most vulnerable.



Mosquito nets are a major prevention measure.

Second, the inside walls of houses should be sprayed with insecticide to kill large numbers of mosquitoes.

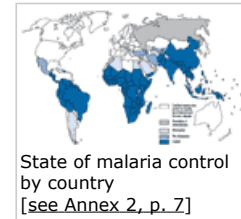
To be more effective, in high risk areas (i.e. with one or more malaria cases per 1000 inhabitants per year), these two methods can be combined or even be complemented by other methods when needed. It is crucial to check whether mosquitoes transmitting the malaria parasite are becoming resistant to the insecticides used. Moreover, pregnant women in high-risk areas should be given suitable preventive malaria treatment at least twice during pregnancy, and three times if they are also HIV positive.

Currently, the best way to **treat malaria** is to use a combination of two or several anti-malarial drugs including artemisinin. In order to prevent the development of drug-resistant parasites, the treatment of malaria infections should only be administered to infected individuals, based on preliminary detection of the parasite in the blood. Children under five years of age with malarial symptoms are the exception and should be treated straight away.

2.2 For 2010, the WHO had set the ambitious target of offering prevention and treatment services to over 80% of the people who need them. The objective is to cut the proportion of people who get ill or die from malaria by at least half by 2010 and by at least three quarters by 2015.

3. How many people were affected by malaria in 2006?

3.1 Approximately half of the world's population lives in countries where there is some risk of being infected with malaria and one fifth in high-risk areas (i.e. with one or more malaria cases per 1000 inhabitants). Globally, malaria is a problem in 109 countries. Most of the people at high risk of getting malaria live in Africa and South-East Asia.



3.2 In 2006, an estimated 247 million malaria cases occurred. Most cases were reported in Africa and half of these in just five countries: Nigeria, the Democratic Republic of the Congo, Ethiopia, Tanzania and Kenya. India accounted for one third of the malaria cases occurring outside the WHO African Region.

In 2006, close to one million people died from malaria, the vast majority of which were African children under five years of age.

3.3 It is very difficult to estimate with great accuracy the number of malaria cases and deaths, and figures vary among different studies. Estimates of the WHO World Malaria Report 2008 are based, in part, on the number of cases reported by national malaria control programmes. The reliability of these estimates depends on how complete the national data are, on how many people use public health facilities compared to private facilities, and on how many suspected malaria cases are confirmed by laboratory analysis.

4. What is being done to prevent and treat malaria?

4.1 The WHO developed policy recommendations to prevent and treat malaria. Many of these policies were adopted, but the extent to which they are implemented varies between countries and WHO Regions.



4.2 Regarding **malaria prevention**, despite big increases in recent years in the supply of mosquito nets, notably to pregnant women and children, the number of nets available is still by far insufficient in most countries. The other main prevention measure of spraying the inside walls of houses with insecticide is typically used in specific areas where risk is the highest, and only in a few countries does this method protect a significant proportion of the population.



Child holding a mosquito net in Togo. There are still insufficient numbers of nets in many countries.
Source: Leslie Hallman

4.3 Regarding **malaria treatment**, the distribution of anti-malarial drugs through public health services increased sharply between 2001 and 2006. However, most of these drugs were distributed in a limited number of countries and access to treatment was inadequate. Also, the distribution of rapid diagnostic tests remained insufficient and very uneven.

4.4 **In the WHO African Region**, despite some progress, most countries are still far from meeting the WHO targets for prevention and treatment. For instance, in 2006, only one fifth of the mosquito nets needed were distributed and less than one in five pregnant women were given preventive malaria treatment. However, a few African countries are performing well and there are some hopeful signs that the numbers of malaria cases and deaths are decreasing in these countries (see also question 6.2).

4.5 Outside the WHO African Region, it is more difficult to estimate the coverage of prevention measures because, among other things, they often only target areas with the highest risk and the actual number of people covered remains unknown. In terms of treatment, only a handful of countries were well supplied with anti-malarial drugs. Some South-East Asian countries that implemented strong malaria control campaigns reported decreasing numbers of malaria cases and deaths.

5. How much funding is allocated to malaria control?

Although many countries have not provided information, funding for malaria control in 2006 was reported to be greater than ever before. However, it is currently impossible to tell which countries have enough money to fight malaria or whether the money available was used effectively.

The sharpest increase in reported malaria funding occurred in the WHO African Region, where the amount of money allocated to the fight against malaria was three times greater in 2006 than in 2004. Still, it remains insufficient to meet the WHO targets for prevention and treatment.

The two major sources of funding for malaria control are the national governments of the affected countries and the Global Fund to Fight AIDS, Tuberculosis and Malaria. The relative share of the funding from each source varies between countries. African countries received support from the greatest number of external agencies.

6. How effective is malaria control?

6.1 National records of malaria cases and deaths are not always reliable but are nonetheless useful to identify trends and to estimate whether changes from one year to the next are due to specific malaria control measures or to other factors.

6.2 In the WHO African Region, the number of reported malaria cases and deaths more than doubled between 2001 and 2006; this reflects either an improvement in surveillance or more complete records for recent years. Furthermore, since control campaigns in most African countries had only reached a small share of the population by 2006, an overall reduction in the number of malaria cases and deaths in the region is not yet expected.



Mural to promote the use of mosquito nets.
[see Annex 1, p. 6]
Source: Eric Thibodeau

Nevertheless, in four African countries with relatively small populations (Eritrea, Rwanda, Sao Tome and Principe, and Zanzibar) nationwide effects of malaria control were particularly clear. Good surveillance and high coverage of the prevention and treatment measures reduced the number of malaria cases and deaths by half or more between 2000 and 2006-2007.

However, in other African countries where a large share of the population has access to anti-malarial drugs and insecticidal nets, malaria figures should have declined but did not, which seems to indicate that either the data are incomplete or the control programmes are not very effective.

6.3 Outside the WHO African Region, the number of reported malaria cases declined in at least 25 countries between 1997 and 2006, by more than half in most of them. In some countries, this decline can be attributed to specific malaria control policies but, in others, the cause is not so clear.

7. Can malaria be completely eradicated?

Approximately half of the world's countries are affected by malaria and each one is at a different stage of malaria elimination. The aim of the WHO Global Malaria Programme is not only to reduce the burden of the disease in areas where malaria is present, but also to limit the geographical extent of malaria in the world. By 2008, out of the 109 countries still affected by malaria:

- 11 reached the **pre-elimination** phase. In those countries, laboratory tests showed that less than 5% of suspected malaria cases are actually malaria.
- 10 reached the **elimination** phase. Those countries have less than one malaria case per 1000 people at risk per year.
- 6 were taking **prevention measures to avoid malaria reintroduction**. These countries have no local malaria transmission by mosquitoes. If this is achieved for three or more consecutive years, countries are certified malaria-free by the WHO.

The United Arab Emirates is the latest country to succeed in eliminating malaria bringing the total number of malaria-free countries or territories in the world to 92. It is not clear whether it is possible to eliminate malaria completely and permanently in areas where the rate of infection is currently high (with one or more malaria cases per 1000 inhabitants per year).

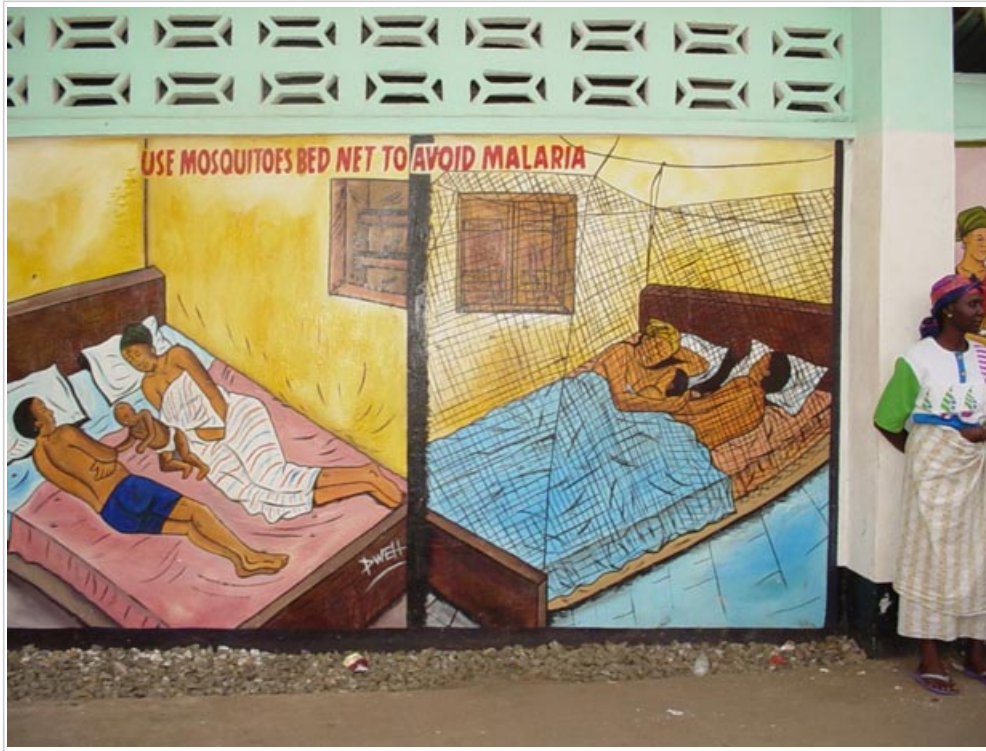
Determining the impact of control measures on malaria is not easy. There are hopeful signs from a few countries with small populations, that widespread preventive measures and prompt treatment can have a nationwide impact and significantly reduce the number of malaria cases and deaths. However, the effects of malaria control measures are less obvious in countries with larger populations.

When data on the number of malaria cases and deaths are gathered and used properly, they are very useful to measure the trends in illness and death and the effectiveness of control programmes at local, national and international levels. This information is essential to improve prevention and treatment programmes.

Annex

Annex 1:

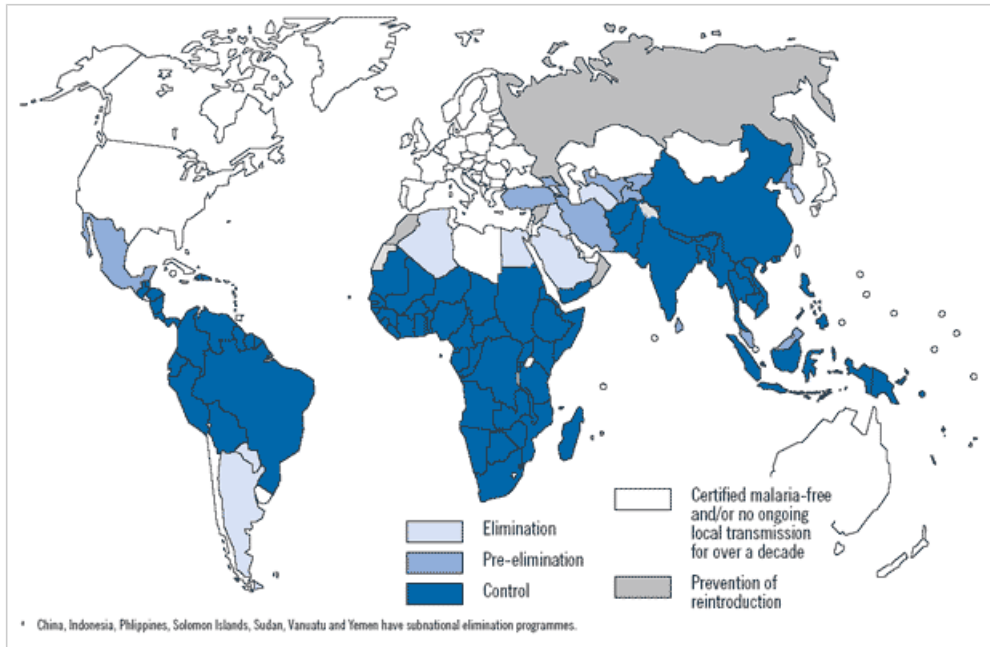
Campaign to promote the use of mosquito nets.



Source: Eric Thibodeau

Annex 2:

Fig.3.1 Malaria-free countries and malaria-endemic countries in phases of control, pre-elimination, elimination and prevention of reintroduction (end 2007).



China, Indonesia, Philippines, Solomon Islands, Sudan, Vanuatu and Yemen have subnational elimination programmes.

Source: WHO, *World Malaria Report (2008)* [see <http://www.who.int/malaria/wmr2008/>], Chapter 3: *Estimated burden of Malaria in 2006*, p.9.

Partner for this publication

The Levels 1 & 2 are summaries written by GreenFacts with financial support from the **Swiss Agency for Development and Cooperation (SDC)**.

