

# New malaria study reveals huge underestimation of disease

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A new study using epidemiological, geographical and demographic data has demonstrated that there are over 500 million cases of malaria each year. This figure is more than double that previously estimated by the World Health Organisation (WHO) of around 210 million. Of these cases, 70 percent occur in Africa and 25 percent in Southeast Asia. Around 2 billion people, i.e., a third of the world's population, are at risk of contracting the disease.

The results of the study were published this month in the science journal *Nature*. According to one of the report's authors, Professor Robert Snow of the Wellcome Trust Research Laboratories in Nairobi, Kenya and the Centre for Tropical Medicine at Oxford University, even the new figure may be an underestimate. "We have taken a conservative approach to estimating how many attacks occur globally each year but even so the problem is far bigger than we previously thought," he explained.

This deadly form of malaria is caused by a single cell organism, *Plasmodium falciparum*, which is transmitted by mosquito bite. It is endemic in the tropical and subtropical regions of the world and was completely eliminated from the West over 50 years ago.

The study explains that previous estimates of the extent of the disease have been based on reported cases by the governments of the affected countries and data on the intensity of the transmission within a particular region. This "passive" reporting was an underestimate because many countries lacked the resources to be able to present an accurate picture.

Although the figures for Africa were about 50 percent higher than those previously given, estimates for the rest of the world were up to 200 percent higher than previously estimated. Professor Snow pointed out that

"our work has demonstrated that nearly 25 percent of worldwide cases occur in southeast Asia and the western Pacific, whereas most people regard *Plasmodium falciparum* as a problem particular to Africa."

This study did not examine deaths from malaria, but previous studies showing that it results in the death of a million people each year are presumably also an underestimate. The majority of deaths occur in children under five years of age. 90 percent of the deaths are in sub-Saharan Africa.

In 1998 an initiative was set up by WHO partnered by the World Bank, UNICEF and NGOs called Roll Back Malaria. Its aim was to halve the number of deaths from malaria by 2010. In fact, deaths have increased by at least a quarter and in some areas by as much as 50 percent since the WHO initiative started.

Similarly, one of the Millennium Development goals set by the United Nations was to halt and begin the reversal of the spread of malaria by 2015. A report published last year by the World Bank and International Monetary Fund admitted that the Millennium goals would not be met, with only 15 percent of the sub-Saharan African population likely to reach the targets.

Malaria had been treatable by drugs such as chloroquine for many years. However, drug-resistant strains of *Plasmodium falciparum* now occur in 90 percent of cases in Africa. More effective drugs are available, such as artemisinin, which is especially effective when given as part of a combination therapy known as ACT. According to a Médecins Sans Frontières report published in February, when used in Vietnam ACT led to a 98 percent drop in the mortality rate due to malaria. Prevention methods such as use of bed nets coated in insecticide are also available but

such resources are not available to the vast majority of the two billion at risk.

An insight into the harrowing impact of malaria was provided recently by a British Broadcasting Television documentary. Shot in the hill village of Kiagware in western Kenya, the programme emphasised that globally a child dies every 30 seconds from malaria.

The Kiagware village chief Peter Kombo acts as the local government administrator. He explained that in July, the high point of the malaria season, he devotes his whole time to the effects of the disease on the village. Although employed by the government, Kombo explains that he is not allocated any health budget to deal with malaria, so he is reduced to merely visiting the villagers and offering advice and sympathy.

At an emergency meeting called by local village chiefs to discuss the malaria outbreak, a spokesman for a local aid agency, Merlin, explains that the organisation has no funds to distribute bed nets or medication. He says that their main role is to educate people on how to prevent malaria. One of the chiefs responds by explaining that the main problem is poverty—no one can afford the nets or medication.

Peter Kombo arranges for Walter, a child suffering from malaria, to be taken to hospital for treatment, and agrees to lend the money needed for the treatment to his mother, Mary. The village has no road so Walter has to be carried on a stretcher for four hours by villagers, to the nearest road, where there is a bus that can take him to the hospital at Ogembo.

After the long bus journey the child arrives at Ogembo hospital, which has to serve 500,000 people. Although the Kenyan government has recently made malaria medication free for children, there are hidden costs.

Mary has to buy a medical book before her son can be seen. She then learns that although the clinical officer has agreed Walter should be admitted, she must buy another medical book first. Now she has no money left but eventually Walter is admitted on the understanding the money will be owed.

Peter Kombo then has also to travel to the hospital to lend Mary the 400 shillings (\$5.43) the hospital is charging for Walter's stay. This represents a month's income, which she must attempt to pay back from her earnings as a maize farmer. The documentary explains that although Walter was responding to medication he

is discharged with a prescription for further medication which his mother is unable to afford. Once back at home Walter suffers recurrent attacks of the malaria fever.

The documentary finishes by explaining that in the course of that particular malaria season 134 people from the village of Kiagware had died. In the same period 5,000 people died in Kenya, with 200,000 dying in Africa as a whole.



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