

# MALARIA

**The world is at a potential turning point in the fight against malaria. We are better placed than ever before to scale up efforts using existing tools and proven solutions to tackle malaria.**

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## **The Burden of Malaria:**

- Malaria is a life-threatening and devastating parasitic disease transmitted by mosquitoes. It is one of the leading causes of death and disease worldwide, especially in the developing world. It affects 40 percent of the world's population – putting 3.2 billion people at risk in 107 countries.<sup>1</sup>
  - An estimated 500 million cases of malaria every year cause up to 3 million deaths, of which an estimated 90 percent occur in Sub-Saharan Africa, the majority children under the age of five.<sup>2</sup>
  - Transmission is usually through the bite of an infected female mosquito and those most at risk are people with little or no immunity to malaria, such as young children and pregnant women.
  - Whilst malaria has been brought under control and even eliminated in much of Europe, the Americas and parts of Asia, Africa is home to the most severe and life-threatening form of malaria which, combined with increasing drug resistance and crumbling health systems, have actually seen a rise in the number of infections over the last three decades. While good progress has been made in Asia and Latin America, the burden in some areas is still too high.
  - Symptoms of malaria usually appear 9-14 days after an infectious mosquito bite. If not promptly diagnosed and treated, infection by the most deadly type of malaria (*Plasmodium falciparum*) can lead to life-threatening illness, causing severe anaemia, seizures, mental confusion, coma and death. Those who survive may still suffer from learning impairments or brain damage.
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## **The Impact and Cost of Malaria:**

- Malaria is intimately linked with poverty – as both a root cause and a consequence of poverty. Malaria is most intractable for the poorest countries in the world and those living on low incomes and in rural areas that lack the information, money or access to health care are the most vulnerable.
- The human suffering and loss of life caused by malaria is often matched by the economic burden placed on families who bear the costs from their own pockets for nets, doctors' fees, antimalarials and transport to health facilities. This can put an unbearable strain on household resources – in Ghana malaria care can cost up to 34 percent of a poor household's income.<sup>3</sup>
- For malaria-endemic countries, public expenditure is also high as they endeavour to maintain health facilities and infrastructure, manage malaria control



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campaigns and provide education. For those with a high malaria burden, the disease may account for as much as 40 percent of public health expenditure, with malaria accounting for up to 50 percent of outpatient visits.<sup>4</sup>

- Economic growth in countries with high malaria transmission has also historically been lower than in countries without malaria. Every year malaria is estimated to cost Africa \$US 12 billion in lost Gross Domestic Product (GDP). It is estimated to have slowed economic growth in Africa by 1.3 percent per year as a result of lost life and lower productivity.<sup>5</sup>

## Malaria Control:

Ministries of Health and their partners in malaria endemic countries are making greatly intensified efforts to control the disease. In addition, an increasing number of Non-Governmental Organizations (NGOs) and Civil Society Organizations (CSOs) are contributing to the efforts.

## Prevention:

- Malaria is entirely preventable and an integrated package of malaria control interventions that focuses on relatively simple but proven solutions can greatly reduce the suffering.

- Most malaria-carrying mosquitoes bite at night and Insecticide-Treated Nets (ITNs), if properly used and maintained, provide an effective protective barrier. A net treated with special insecticides offers about twice the protection of an untreated net, and through its presence can also protect other people in the room, even if outside the net.
- Regular use of ITNs can reduce malaria mortality by some 20 percent and malaria incidence by 50 percent in children less than five years of age. When combined with early diagnosis and treatment, use of ITNs can reduce malaria mortality by over 50 percent.<sup>6</sup>
- There have been advances in producing longlasting insecticide-treated net (LLIN) technology, which means a net can retain residual insecticidal protection for three years or more. However, there are some technological and production limitations and increased support and investment are required to increase capacity, effectiveness and coverage.



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- In addition to ITNs, it is sometimes appropriate to use specialized teams to spray an insecticide on the inside walls of houses – known as Indoor Residual Spraying (IRS). This helps kill the mosquitoes after feeding on a person, reducing malaria transmission to others.
- Prevention efforts for pregnant women include administering at least two monthly treatment doses of antimalarials during routine antenatal clinic visits – known as Intermittent Preventive Treatment (IPT). This helps protect pregnant women from possible death and anaemia and also

prevent malaria-related low birth weight in infants which causes some 100,000 infant deaths annually in Africa.<sup>7</sup>

- Information and education are key for prevention efforts. Education campaigns are crucial, focusing on how to make proper and consistent use of ITNs, on how to recognize the illness in a child and know what measures to take, how to protect pregnant women and unborn children, and the importance of indoor residual spaying where it is appropriate.

## Treatment:

- In general, malaria is a curable disease if diagnosed and treated promptly and correctly. The majority of deaths from severe malaria in children are caused by delayed diagnosis and treatment – people simply cannot get their children to health facilities in time. Death can come in a matter of hours or days so minimizing delays to treatment is vital.
- Even if a patient is taken to a health facility or hospital, there may not be adequate stocks of antimalarial drugs or trained health workers to supervise diagnosis and treatment of severe malaria. Many national health systems in malaria endemic countries remain weak, unresponsive, inequitable and even unsafe. Strengthened health systems with sustainable financing are fundamental to effectively treating malaria.
- One of the greatest challenges in the fight against malaria is drug resistance. Resistance to the cheapest and previously most widely used antimalarial chloroquine is common throughout Africa. New artemisinin-based combination therapies (ACTs) now provide a highly effective alternative medicine to treat malaria and

can slow resistance. The drawback is cost. An adult dose of ACT costs around US\$ 1-3 - 10-20 times more expensive than previously used antimalarials.

- For most countries in Africa, external funding for ACTs will be required. The global demand was estimated to soar from some 20 million per year to between 130-220 million adult treatments in 2005. In the following years and at current prices, approximately US\$ 1 billion per year will be required to provide for 60 percent of the population who need ACTs.<sup>8</sup>



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- There is currently no malaria vaccine approved for human use. The malaria parasite is a complex organism and scientists do not yet totally understand the immune responses that protect humans against malaria. However, many scientists around the world are working on developing an effective vaccine.

## Malaria R&D:

- Drug research and development (R&D) is expensive and time consuming, but there remains a pressing need to continue efforts to find effective and inexpensive anti-malarial drugs to keep one step ahead of drug resistance and to discover and deploy new safe insecticide technology and malaria diagnostics. At least US\$ 30 million a year is required for core R&D needs.<sup>9</sup>
- Most R&D into new prevention and treatment tools for malaria is funded by the private sector – either pharmaceutical



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and petrochemical (insecticide) companies, or through public-private partnerships for product development which have a vital role to play as part of translating basic scientific research into life-saving solutions.

- Malaria has been a neglected disease for drug development. Between 1975 and 2004 some 1,556 new drugs were approved, of which only 8 (0.5 percent) were for malaria.<sup>10</sup>
- In 2005 the Bill and Melinda Gates Foundation became the largest private donor to malaria research in the world, committing US\$ 258.3 million.
- Another important area of neglect is investment in operational and implementation research. This would help identify and record successful programmes, tools, interventions and models of delivery for effective malaria control and ensure the tools that work reach those who most need them.



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## Financing for Malaria:

- Accurate figures on the amount spent in global efforts to tackle malaria are difficult to obtain, in part because funding that affects malaria control is often directed to health systems as a whole, rather than disaggregated by disease or health issue.
- However, it is estimated the financial resources devoted to malaria from international donors have grown dramatically, increasing 10-fold in the last ten years.<sup>11</sup> Already this injection of new resources is being translated into impacts on child mortality and malaria prevalence in some places.

- However, if global malaria targets are to be met a total of US\$ 3.2 billion per year is needed; in 2004 a total of US\$ 0.6 billion was available leaving a financing gap of US\$ 2.6 billion.<sup>12</sup> US\$ 1.9 billion of this would be needed for African countries, and US\$ 1.3 billion for the rest of the world.
- The Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM) was created in 2001 to finance a dramatic turnaround in the fight against these diseases. The majority of international funding for malaria control is now channelled through GFATM with a current allocation of US\$ 1.8 billion or the next five years – some 27 percent of GFATM spending.
- The European Union (EU) funds malaria-related activities through several routes including geographic funding (such as through special cooperation mechanisms with African, Caribbean and Pacific countries) and thematic budget lines on health, the Commission's 7th Framework Research Programme (FP7). The Commission's contributes to at least seven percent of the GFATM's resources.
- The launch of the US President's Malaria Initiative (PMI) in June 2005 is expected to contribute an additional \$US 240 million a year<sup>13</sup>, while the World Bank Malaria Booster Programme is to contribute \$US 500 million over three years.<sup>14</sup>
- The new French-led UNITAID launched in 2006 and currently supported by the UK, Norway, Brazil and Chile, will use the air ticket solidarity tax and long-term budget commitments to provide bulk purchasing of drugs for poor countries. This will complement existing financing mechanisms such as GFATM and aims to lower the costs of drugs including for malaria, and improve their availability.



## Political Commitments on Malaria:

- In 2000, African Heads of State met in Abuja, Nigeria, and agreed a political plan of action to halve the malaria burden by 2010. The Abuja Declaration of April 2001 included a commitment for African Union countries to allocate 15 percent of national budgets to the health sector.
- They reconvened in 2006 to assess their progress. Although the Abuja targets

had not yet been met, there has been appreciable progress and agreement that accelerated action was needed towards universal access to malaria services.

- The Millennium Development Goals (MDGs) at the heart of the global development agenda include both specific and related goals for addressing malaria. MDG 6 sets targets for malaria control to reduce morbidity and mortality. Those goals referring to poverty reduction, infant and maternal morbidity and mortality will also require malaria to be tackled if they are to successfully reach the targets by 2015.
- The Roll Back Malaria (RBM) partnership was launched in 1998 by the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP) and the World Bank to provide a coordinated global approach to fighting and preventing malaria. By bringing together donors, NGOs, endemic countries, the private and public sectors and local community groups, RBM aims to ensure malaria remains high on the development agenda.

### Malaria & HIV/AIDS:

Although early studies failed to demonstrate significant interaction, there is now good evidence that an interaction does indeed exist. We can divide the interaction into two sub-groups: impact of malaria on HIV/AIDS, and the impact of HIV/AIDS on malaria.

1. Impact of malaria on HIV/AIDS: malaria contributes to an increase in viral load among HIV-infected adults not receiving HIV treatment
2. Impact of HIV/AIDS on malaria: for adults HIV increases the risk of malaria and death due to malaria, and may compromise malaria treatment, with an increased risk for those with advancing HIV-related immunosuppression. For children HIV infection increases rates of malaria fever, severe disease and coma, with parasite density higher in children with advanced immunosuppression. For pregnant women HIV increases the risk of malaria infection and clinical malaria, with heavier infection in the placenta and at the time of delivery, again impairing treatment and prophylaxis. The resultant impact on the new born child may contribute to anaemia, low birth weight and premature birth.<sup>15</sup>



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The effect on malaria is strongest where there has been good acquired immunity to malaria i.e. for adults in highly endemic areas and in pregnant women in the later stages of pregnancy, although this is less clear in children.

### Malaria & the Climate:

Climatic factors such as temperature, humidity and rainfall play an important role in where malaria is found. Yet it is not entirely clear what effect climate change might have on the geographical spread and intensity of malaria. Some predict that malaria will move into more temperate regions as temperatures increase; others believe that if climate change reduces the amount of rain and standing water in endemic countries, it could reduce malaria in these areas.

What is necessary therefore is adequate monitoring and surveillance to ensure any trends linked to climate change are identified and appropriate action taken swiftly to deal with any change in malaria burden. Several research teams are working on this.

## Members of the European Alliance Against Malaria:

- **Red Cross EU Office**, Belgium
- **German Foundation for World Population (DSW)**,  
Head Office, Germany and  
Brussels office, Belgium
- **European Parliamentary Forum**,  
Belgium
- **German Red Cross**, Germany
- **Friends of the Global Fund Europe**,  
France
- **Equilibres et Populations**, France
- **Spanish Red Cross**, Spain
- **Spanish Federation of Family Planning**,  
Spain
- **Malaria Consortium**, United Kingdom
- **Global Health Advocates**,  
United Kingdom
- **Bartley Robbs Consultants**,  
United Kingdom

<sup>1</sup> World Malaria Report 2005, p.11. 2005, Geneva.

<sup>2</sup> WHO & UNICEF, The Africa Malaria Report 2003, p.17. 2003, Geneva.

<sup>3</sup> WHO & UNICEF, The Africa Malaria Report 2003. 2003 Geneva.

<sup>4</sup> RBM InfoSheet.

<sup>5</sup> RBM.

<sup>6</sup> UNICEF 2003.

<sup>7</sup> Malaria No More.

<sup>8</sup> WHO.

<sup>9</sup> WHO, RBM & UNICEF, World Malaria Report 2005. 2005, Geneva.

<sup>10</sup> Chirac, P. & E. Torreele, Global framework on Essential Health R&D, Lancet, 2006. 367 (9522): p.1560-1561.

<sup>11</sup> All Party Parliamentary Malaria Group (APPMG) Report, Financing Mechanisms for Malaria. 2007. From Martinez et al., Global Co-ordination of Malaria Control Efforts. 1998, and Waddington, C., J. Martin, and V. Walford, Trends in International Funding for Malaria Control: Prepared for the Roll Back Malaria Partnership, August 2005. 2005, HLSP Institute.

<sup>12</sup> World Malaria Report 2005.

<sup>13</sup> PMI, [www.fightingmalaria.org](http://www.fightingmalaria.org).

<sup>14</sup> World Bank, [www.worldbank.org](http://www.worldbank.org).

<sup>15</sup> WHO, Malaria and HIV interactions and their implications for public health policy. 2005.



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**EUROPEAN ALLIANCE AGAINST MALARIA**  
Working for a malaria-free world