

Get Back on Track To End the Epidemics

#endtheepidemics

Spotlight on
 malaria

Ending the three epidemics is possible. But there is a warning. Significant increases in international funding are needed, immediately, if the global goal to end the three epidemics is to be met.



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Spotlight on malaria



Nearly half of the world's population – about 3.2 billion people – are at risk of malaria.¹ In 2016, an estimated 216 million cases of malaria occurred worldwide, and approximately 445,000 people died because of the infection. **Over 300,000 of those deaths were among children under the age of five.** A total of 91 countries reported malaria transmission in 2016, but countries of sub-Saharan Africa had 88% of the world's malaria cases and 90% of the world's deaths.

Through a major global health effort during the past 18 years, the world has made progress in controlling malaria. A total of 582 million insecticide-treated mosquito nets (ITNs) were distributed globally during 2014–2016, including 505 million in Africa alone. Approximately 4 million buildings in high-burden African countries were treated with indoor residual spraying (IRS) to control mosquito populations. An estimated 312 million rapid diagnostic tests (RDTs) for malaria were delivered globally in 2016, with 269 million of these going to Africa, and an estimated 409 million treatment courses of artemisinin-based combination therapy (ACT) were procured by countries in 2016.

As a result of such efforts, **annual malaria cases have dropped by 42% since 2000, and annual malaria deaths have been cut by 60%. This translates into nearly 7 million lives saved, most of them infants and children.** Kyrgyzstan and Sri Lanka were certified by WHO as malaria free in

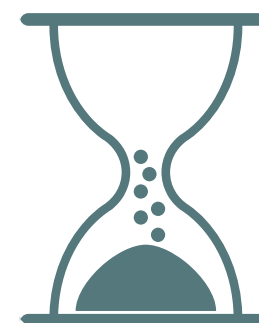
2016, and thousands of deaths were prevented in countries such as Ethiopia, India, and Nigeria. Elimination of malaria transmission by 2030 is now a goal for 35 countries, and experts have set targets of a 90% reduction in malaria cases and malaria deaths in the remaining 56 countries and preventing 3 billion malaria cases and over 10 million deaths. These ambitious goals have been taken up by global and regional initiatives that are promoting collaboration across borders in regions such as Central America, West and Central Africa, Southern Africa, and Southeast Asia.^{2,3}

Despite these achievements, WHO in its 2017 World Malaria Report warns that global progress made against malaria since 2000 is now stalling and that further progress is not certain, placing millions of people at risk of resurgent epidemics.

Malaria is a disease prone to fast resurgence if investments in malaria control are not sustained or reduced. In 61 countries during the past century, especially in the late 1960s when malaria programs were scaled back due to lack of funding and political commitment, malaria resurged, increasing by 10-fold in many cases during a period of five years or less.^{4,5} People lose partial immunity to malaria when not continually exposed, and so resurgence of malaria after years of control can be especially costly in causing widespread illness in newly susceptible populations. The only way to prevent this from happening is an acceleration of the effort



Nearly half of the world's population - about **3.2 billion people** are at risk of malaria



A child still dies every **2 minutes** from malaria

to completely eliminate malaria transmission in the 35 countries where it is most possible and then focus resources on achieving and sustaining malaria control in the remaining 56 countries.

The world is not on target. Action is needed now to meet international targets in the face of plateauing global funding, substantial coverage gaps, competing political priorities and the emergence of drug and insecticide resistance. Getting back on track requires urgent attention to several issues.

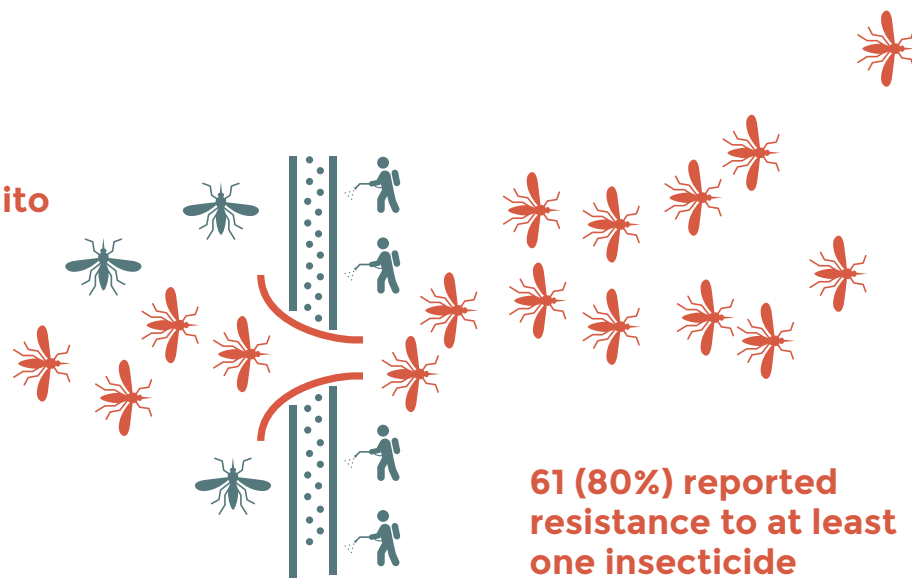
OFF-TRACK!

Substantial coverage gaps in Africa

More than 30 countries have significant gaps in malaria prevention and treatment. They include large African countries with high rates of malaria, such as the Côte d'Ivoire, the Democratic Republic of the Congo, Mozambique, Nigeria, and Tanzania, and smaller yet extremely low-income and resource-constrained countries such as Burundi, the Central African Republic, Niger, and Guinea-Conakry. Some notable challenges in such countries include the following:

- **Although 80% of African households now have at least one insecticide-treated net (ITN), nearly half (46%) of people are not yet sleeping under a net and therefore are not benefitting from this protection.**
- In African clinics, nearly 90% of fevers suspected as malaria are now tested. This is

Of 76 countries tracking mosquito resistance to insecticides



positive for those who make it to see a health worker, but too many people are not accessing health care when they have a fever. Experts calculate that **in 2016, more than two-thirds (39%) of African children who fell ill with fevers did not get access to any form of health care, and thus were not tested for malaria.**⁶

Issues of drug and insecticide resistance also highlight the urgent need to further scale up malaria prevention and treatment programs to maintain control of epidemics and prevent resurgence:

- Pyrethroids, until recently the leading class of insecticide used on bed nets and in indoor residual spraying, are becoming less effective for mosquito control in many high-burden African countries because of mosquito resistance. Switches are required to more expensive organophosphate insecticides.⁷
- Current methods for mosquito control, notably insecticide-treated nets and indoor residual



10,000 women and 200,000 infants die annually as a result of malaria infection during pregnancy⁴

spraying, only reduce mosquito populations that feed and rest indoors. Yet mosquito populations that can feed and rest outdoors are not affected by these prevention methods. Even in the best-case scenario of universal bed net coverage, novel strategies are needed to target malaria transmission carried out by outdoor-biting mosquitoes.

- Furthermore, artemisinin, the leading drug in malaria treatment, is facing resistant strains of the malaria parasite. If this trend is not controlled, artemisinin will need replacement by yet-to-be-developed alternative treatments, which will potentially increase the cost and difficulty of achieving universal treatment coverage.

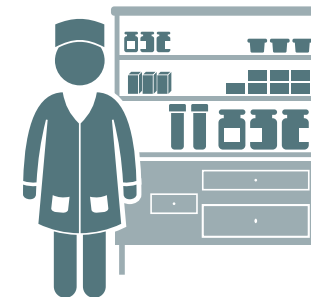
Accelerated investment is needed now to close the gap in malaria prevention and treatment, especially in Africa.

OFF-TRACK! **Prevention for women, children, and other vulnerable populations**

In all regions of the world, malaria control programs are needed to improve the health of women, children, and key and vulnerable populations, by improving people's living situations to better protect them from mosquitoes and expanding access to basic health services as an essential part of public health.

Children under the age of five and pregnant women

are biologically more susceptible to falling ill from malaria and suffer the highest rates of malaria-related illness. Their vulnerability translates to days of caring for sick family members, days of missed work and school, and greater economic insecurity. All women and children also face barriers



in accessing appropriate prevention, treatment, and care, and bear a disproportionate burden from malaria (and thus disproportionate need):

- In 2016 in the highest-burden countries of Africa, some 4 million pregnant women were given at least three doses of preventive treatment (IPTp) to protect them from malaria during pregnancy. However, the coverage achieved that year represented only 19% of pregnant women in the countries reporting and only 11% of the estimated 35 million pregnant women in Africa who could benefit from IPTp each year.
- In countries of the Sahel region of Africa with highly seasonal malaria, a major campaign in 2016 reached 15 million children with preventive treatment to protect them from

malaria during the months when malaria is most likely to be transmitted. But this success showed the distance yet to be travelled, for this preventive treatment campaign reached only 54% of the children in the region who could have benefitted from that intervention.

Throughout the world, malaria rates are also higher among the economically poorest populations, including mobile and migrant populations, people in humanitarian crises, and indigenous and rural communities. Susceptibility and high rates are often driven by environmental circumstances that increase exposure to mosquitoes, reduce access to prevention interventions or diagnosis and treatment, and cause poor nutrition and weakened immune systems that increase susceptibility to illness.

People in humanitarian emergencies and in fragile states are particularly vulnerable to malaria because of the breakdown of health services, displacement of health workers, movement of non-immune people to endemic areas, and concentrations of people in high-risk, high-exposure settings.^{8,9} Examples of malaria-related vulnerability in cases of conflict or political, social, or environmental upheaval include recent malaria outbreaks in the Rohingya refugee camps in Bangladesh, Nigeria (Borno State), South Sudan, and Yemen; the rapid spread of malaria cases in Venezuela as people flee national economic and social crises; and persistently high rates of malaria-related illness and deaths in West and Central African countries such as the Central African Republic, the Democratic Republic of the Congo, and Guinea-Conakry.

Intensified and expanded programming is needed to

address malaria among the world's women, children, and other vulnerable populations.

OFF-TRACK! International and domestic financing of the malaria response

In high-burden countries, malaria costs countless days lost to illness, days absent from school or work, and household costs and health system costs related to illness. **Preventing a case of malaria costs only an average of \$5–\$8, making it one of the world's most cost-effective public health interventions, second only to routine immunizations. Cost-benefit analyses suggest a 40:1 return on malaria-related investments, with every dollar spent on malaria control resulting in as much as \$36 in economic gain.**^{10,11} In some parts of Africa, it has been postulated that lifting the heavy burden of malaria-related illness from households, health systems, and economies could boost national economies by over 1%.¹²

Analysis shows that the projected gains during 2019–2030 of achieving the 2030 targets set by the RBM Partnership to End Malaria, when compared to reverting to 2007 levels of effort, would be 3.7 million fewer malaria deaths (including 2.5 million fewer deaths among children), 2 billion fewer malaria cases, 1 billion fewer working days lost to illness, and over \$4 trillion in increased economic output and \$5 billion in savings to health systems and households.

Malaria control is thus a high priority toward achieving the SDGs, especially for countries in sub-



To reach the 90-90-90 targets by 2020 there needs to be a **37% increase over current spending**

Saharan Africa. In 2016, approximately \$2.7 billion was invested in efforts to control malaria. Nearly a third of this investment was from malaria-endemic countries – mostly middle-income countries of Asia and Latin America – for health programs inside their own countries. Over two-thirds of global investment (\$1.9 billion) was contributed from the world's wealthiest countries, with most of this, about \$1 billion, directed through the Global Fund.

WHO and other global health experts calculate that \$6.5 billion is needed annually by 2020, with a total of \$100 billion needed by 2030, to achieve the significant and steady reductions in malaria cases and deaths and elimination of malaria transmission in target countries called for by global strategies.

Global investments in 2016 of \$2.7 billion were less than half (41%) of what experts calculated as the sum needed.

Significant increases in international funding are needed to get back on track toward ending malaria epidemics.

Acknowledgements

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All data in this document are from the Global Fund, UNAIDS, the Stop TB Partnership, or the RBM Partnership to End Malaria unless otherwise cited.

Endnotes

- 1 Unless otherwise notes, all statistics are derived from the WHO World Malaria Report (2017), the WHO Global Technical Strategy for Malaria (2015), and the 2015 Roll Back Malaria Action and Investment to defeat Malaria (AIM) Strategy 2016 -2030.
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- 3 Unitaid. Unitaid sharpens and intensifies its interventions against malaria. April 2018. <https://unitaid.eu/news-blog/unitaid-sharpens-and-intensifies-its-interventions-against-malaria>
- 4 Cohen, J. M. et al. Malaria resurgence: a systematic review and assessment of its causes. *Malar. J.* 11, 122 (2012). https://media.springernature.com/full/springer-static/image/art%3A10.1186%2F1475-2875-11-122/MediaObjects/12936_2012_Article_2184_Fig5_HTML.jpg
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- 6 As one strategy to increase the numbers of children tested for malaria, Unitaid and others are investing in rapid diagnostic tests. See <https://unitaid.eu/investment-area/malaria-diagnostics>
- 7 The World Health Organization, Unitaid, and other agencies are working to deliver affordable new insecticides and insecticide-treated nets. See <https://unitaid.eu/news-blog/new-insecticide-used-fight-malaria/>
- 8 World Health Organization. Malaria: The control in humanitarian emergencies: An inter-agency field handbook. Second Edition Field Handbook. http://apps.who.int/iris/bitstream/handle/10665/90556/9789241548656_eng.pdf;jsessionid=21014D5117ED2BAB1E3C1D32B8194332?sequence=1
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