ELIMINATING MALARIA





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Foreword

Each year, the World Health Organization and our partners unite around a common theme for World Malaria Day. This year's theme – "End Malaria for Good" – reflects the vision of a world free of malaria set out in the *Global Technical Strategy for Malaria 2016–2030*.

This strategy, adopted by the World Health Assembly in May 2015, was the result of an extensive consultative process involving 400 malaria experts from more than 70 countries. It sets ambitious but attainable goals aimed at dramatically lowering the global malaria burden in the next 15 years. They include:



This report, presented on World Malaria Day 2016, focuses on the third goal: malaria elimination. It offers a brief analysis of recent country-level progress towards elimination and spotlights countries that are poised to reach the finish line in the next five years.

A number of countries have had remarkable success in controlling malaria, and these achievements are hard-won. But in many respects, the hardest work is yet to come. Our report highlights the considerable challenges countries will face in their efforts to drive down malaria cases to zero and to prevent resurgences of this deadly disease.

Dr Pedro Alonso

Director, Global Malaria Programme World Health Organization

A quick primer on malaria

	Malaria is a life-threatening disease caused by parasites that are transmitted to people through the bites of infected female <i>Anopheles</i> mosquitoes. There are five parasite species that cause malaria in humans, and two of these species, <i>Plasmodium</i> <i>falciparum</i> and <i>Plasmodium vivax</i> , pose the greatest threat.		
P. falciparum	is the most prevalent malaria parasite on the African continent and responsible for most malaria deaths globally.		
P. vivax	is the dominant malaria parasite in most countries outside of sub-Saharan Africa.		
	Symptoms of malaria – including fever, headache, chills and vomiting – typically appear 10 to 15 days after the infective mosquito bite. Without treatment, <i>P. falciparum</i> malaria can progress to severe illness and death.		
	In countries with high rates of malaria transmission, young children and pregnant women are particularly vulnerable to the severe consequences of infection, including death. Outside of highly endemic areas, where populations do not acquire significant immunity to malaria, the risk of the disease is spread		

mosquito bites.

across all age groups and depends on the level of exposure to

Background

In 1955, the World Health Organization (WHO) launched the Global Malaria Eradication Programme (GMEP), an ambitious plan to eradicate malaria worldwide. The Programme relied heavily on two tools: the drug chloroquine for prevention and treatment of malaria and the chemical DDT for mosquito control.

Over the course of the GMEP era, 15 countries and one territory eliminated malaria (Table 1). A number of other countries succeeded in greatly reducing their malaria burden.¹ But no major success occurred in sub-Saharan Africa and, in many settings, a failure to sustain the Programme resulted in resurgences of malaria. In 1969, GMEP was discontinued, but the longer-term objective remained unchanged. WHO reaffirmed the "ultimate goal of eradication" at the Twenty-second World Health Assembly through resolution WHA22.39.

The next two decades saw a marked increase in malaria incidence worldwide – a result of the abandonment of GMEP and of reduced investment in malaria control. Following the economic crisis of the early 1970s, funding for malaria control was cut further. In parallel, a rise in mosquito resistance to DDT and parasite resistance to chloroquine was reported in some regions. In many areas, substantial gains in malaria control were lost in resurgences of the disease.

TABLE 1.

Countries certified as malaria-free by WHO (1955-2015) and future elimination targets

1955-1969

GLOBAL MALARIA ERADICATION PROGRAMME

1960	1970	1980	1990	2000
1955-1972		1972-1987		1987-2007
15 COUNTRIES AND 1	TERRITORY	7 COUNTRIES AND 1 TERRITORY		NONE
Bulgaria, Cyprus, Dominica, Grenada, Hungary, Italy, Jamaica, Netherlands, Poland, Romania, Saint Lucia, Spain, Taiwan, Trinidad and Tobago, United States of America, Venezuela		Australia, Brunei, Cuba, Mauritius, Portugal, Réunion, Singapore, Yugoslavia (Bosnia Herzegovina, Croatia, The former Yugoslav Rep. of Macedonia, Montenegro and Serbia)		

GTS elimination targets: The Global Technical Strategy for Malaria (GTS) calls for the elimination of malaria in at least 10 countries by 2020. To meet this target, a country must achieve at least one year of zero indigenous cases by 2020. According to the WHO analysis presented in this report, 21 countries have the potential to reach this target: Algeria, Belize, Bhutan, Botswana, Cabo Verde, China, Comoros, Costa Rica, Ecuador, El Salvador, Iran (Islamic Republic of), Malaysia, Mexico, Nepal, Paraguay, Republic of Korea, Saudi Arabia, South Africa, Suriname, Swaziland and Timor-Leste.

RENEWED POLITICAL AND TECHNICAL LEADERSHIP

A Ministerial Conference in Amsterdam, convened by WHO in 1992, marked a turning point in global efforts to contain malaria. In view of the increasing gravity and complexity of malaria, senior health leaders from 65 countries called for a renewed attack on the disease. A new WHO Global Malaria Control Strategy, endorsed by the Conference, was adopted the following year by the World Health Assembly.

In 1998, WHO, the World Bank, the United Nations Development Programme (UNDP) and the United Nations Children's Fund (UNICEF) created the Roll Back Malaria initiative with the goal of halving the global burden of malaria by 2010. Two years later, leaders of malaria-endemic countries in Africa signed the



Certification of malaria elimination: Countries that achieve at least three consecutive years of zero indigenous cases are eligible to apply for a WHO certification of malaria-free status. Between 1955 and 2015, 27 countries and two territories received this WHO certification. Three countries recently started the certification process: Argentina, Kyrgyzstan and Sri Lanka.

*Zero indigenous cases: In 2014, 13 countries reported 0 indigenous cases of malaria. They are: Argentina, Azerbaijan, Costa Rica, Georgia, Iraq, Kyrgyzstan, Oman, Paraguay, Sri Lanka, Syrian Arab Republic, Tajikistan, Turkey and Uzbekistan.

Abuja Declaration on Roll Back Malaria in Africa, which aimed to reduce malaria mortality on the African continent by 50% by the year 2010.

In 1997, the Multilateral Initiative on Malaria brought together prominent scientists and key funding organizations to identify priority research areas for malaria.² Over the next decade, increased investment in research yielded the development of highly effective malaria control tools – notably, long-lasting insecticide-treated nets (LLINs), rapid diagnostic tests (RDTs), and artemisinin-based combination therapies (ACTs).

The creation of the Global Fund to Fight AIDS, Tuberculosis and Malaria, the President's Malaria Initiative and other financing mechanisms allowed for the wide-scale deployment of these new tools.³ Between 2005 and 2014, global investment for malaria control increased from US\$ 960 million to US\$ 2.5 billion annually.

² This conference was held in Dakar, Senegal from 6–9 January 1997.

³ The Global Fund and the President's Malaria Initiative (PMI, an initiative of the Government of the United States of America) were launched in 2002 and 2005, respectively.

IMPACT OF MALARIA CONTROL TOOLS

The massive rollout and use of these core malaria control tools led to a dramatic decline in the global malaria burden. According to WHO estimates, malaria incidence (the rate of new malaria cases) fell by 37% between 2000 and 2015. The malaria-focused target of the 2000 Millennium Development Goals, which called for halting and beginning to reverse the global incidence of malaria by 2015, has been achieved.

Since 2000, malaria mortality rates have declined by 60% globally. Among children under 5 years of age, malaria death rates fell by 65%. In the WHO African Region, where the disease is heavily concentrated, malaria mortality rates fell by 66% among all age groups and by 71% among children under 5 years.

A LONG ROAD AHEAD

But the fight is far from over. About 3.2 billion people – nearly half the world's population – remain at risk of malaria. In 2015 alone, there were 214 million new cases of the disease and more than 400 000 malaria-related deaths. Millions of people around the world are still not accessing the health services they need to prevent and treat malaria.

Global progress in malaria control masks disparities between and within countries. The African Region continues to shoulder the heaviest burden: in 2015, this one Region accounted for approximately nine in 10 malaria cases and deaths globally. Two countries, Nigeria and the Democratic Republic of the Congo, together account for more than 35% of global malaria deaths.

As the alobal malaria burden declines emerging biological



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