World Malaria Day
25 April 2018

Summary

World Malaria Day takes place on 25 April each year and has been observed since 2008.[1] It developed from Africa Malaria Day—an event which had been held since 2001 by African governments—during the 60th session of the World Health Assembly (a meeting sponsored by the World Health Organisation (WHO)). During the Assembly, which was held in 2007, it was proposed that Africa Malaria Day should be changed to World Malaria Day in order to "recognise the existence of malaria in countries worldwide and to bring greater awareness to the global fight against the disease".[2] Since then, the purpose of the day has been to raise awareness of the global effort to control and ultimately eradicate malaria.

In 2018, World Malaria Day is taking place under the theme 'Ready to Beat Malaria'. Explaining the theme, the WHO has stated:

> This theme underscores the collective energy and commitment of the global malaria community in uniting around the common goal of a world free of malaria. It highlights the remarkable progress achieved in tackling one of humanity's oldest diseases, while also calling out worrying trends as captured in the 2017 *World Malaria Report*.[3]

Stating that the issues raised in the 2017 report show that the global response to malaria is at a crossroads, with countries effected by malaria either moving towards elimination or reporting significant increase, the WHO has also highlighted the following message for 2018: "on this World Malaria Day, WHO continues to call for greater investment and expanded coverage of proven tools that prevent, diagnose and treat malaria".[4]

This Briefing provides background information on malaria—including what malaria is and how is it prevented and treated—statistics on the impact of malaria and policy information on both a global and domestic level.

Background

What is Malaria?

Malaria is a life-threatening disease caused by parasites that are transmitted to humans through the bites of infected female *Anopheles* mosquitos.[5] There are five parasite species which cause malaria, with two of these species—*P. falciparum* and *P. vivax*—posing the greatest threat to humans. *P. falciparum* is the most prevalent malaria parasite in Africa and accounted for 99 percent of cases of malaria in sub-Saharan Africa in 2016.[6] It is also responsible for the most malaria deaths globally.[7] However, *P. vivax* is the most common parasite outside of sub-Saharan Africa, and in 2016 caused 64 percent of the cases in the

WHO Region of the Americas and more than 30 percent of the cases in the WHO South-East Asia Region.

If an individual contracts malaria, the symptoms will not usually appear until 10 to 15 days after the mosquito has bitten.[8] However, when the first symptoms do appear—which include fever, headache and chills—they can be mild and therefore difficult to attribute to malaria. This is problematic as if *P. falciparum* malaria is not treated within the first 24 hours after the bite, it can progress to severe illness and often leads to death.[9] As all types of the disease progress, symptoms for children include: severe anaemia; respiratory distress in relation to metabolic acidosis (where there is too much acid in your blood, potentially causing nausea, vomiting, drowsiness and breathlessness); or cerebral malaria (where malaria causes the brain to swell, possibly leading to permanent brain damage, seizures or coma).[10] In adults, multi-organ failure is also common.[11]

Who is at Risk of Malaria?

The WHO has reported that in 2016 nearly half of the world's population was at risk of malaria, with 91 countries and areas having ongoing malaria transmission.[12] The most cases of, and deaths due to, malaria occur in sub-Saharan Africa, with the WHO regions of South-East Asia, the Eastern Mediterranean, the Western Pacific and the Americas also at risk.[13]

Within these populations, some groups are more at risk of contracting malaria and developing a severe disease. These groups include: infants; children under five years of age; pregnant women; patients with HIV/AIDS; non-immune migrants; as well as mobile populations and travellers.[14] As a result, the WHO has argued that national malaria programmes need to take account of the specific circumstances of their populations and employ special measures to protect these groups from the disease.[15] In addition, the WHO has contended that malaria disproportionately affects poor and disadvantaged people "who have limited access to health facilities and can barely afford the recommended treatment".[16] The UK Government has also highlighted that gross domestic product per capita in malaria-endemic countries is as much as 1.3 percentage points lower than in countries without malaria—showing that malaria also hinders economic development, as well as it being more prominent in areas which are already disadvantaged.[17]

How is Malaria Prevented and Treated?

To prevent and reduce malaria transmission, the WHO recommends both vector control and anti-malaria drugs.[18] The two types of vector control recommended are insecticide-treated mosquito nets (ITNs) and indoor residual spraying (IRS). However, the emergence of parasite resistance to antimalarial medicines and mosquito resistance of insecticides, have both been identified as challenges to the elimination of malaria by the WHO, which is currently evaluating a vaccine (known as Mosquirix) which would provide partial protection against malaria for young children.[19]

According to the WHO, prompt diagnosis and treatment is "the most effective means of preventing a mild case of malaria from developing into severe disease and death",[20] with a reduction in the transmission of malaria also an outcome.[21] In suspected cases, it is recommended suspicions should be confirmed using parasite-based diagnostic testing when possible. Should the result be positive, the "best available treatment"—particularly for *P. falciparum* malaria—is artemisinin-based combination therapy (ACT).

Statistics: Impact of Malaria

The *World Malaria Report 2017* provides an update on the progress made in the global fight against malaria in 2016. Overall, the report shows that after a period of success in controlling malaria, progress has stalled. This is demonstrated by statistics which illustrate that while decreases in the incidence of malaria and the number of deaths were seen between 2010 and 2016 overall, since 2014 the numbers have begun to increase. A similar pattern can be found in the areas of prevention, treatment and elimination.[22] Evidence of success in these areas includes an increase in testing for malaria in most WHO regions. However, the need for further improvement is also evident and shown by reports from 11 of 21 countries, who are working towards malaria elimination by 2020, that there has been an increase in the number of cases.[23]

Incidence of Malaria

In 2016, the WHO estimated that 216 million cases of malaria occurred worldwide, compared with 211 million in 2015 and 237 million in 2010.[24] The majority (90 percent) of cases occurred in the WHO African Region. However, the WHO has stated that new data from improved surveillance in several African countries has shown that the number of cases reported for 2016 are a conservative estimate.[25]

Looking at trends in malaria incidence between 2010 and 2016, the WHO reports that the incidence rate is estimated to have decreased by 18 percent globally, from 76 to 63 cases per 1,000 population at risk.[26] However, despite these reductions, between 2014 and 2016 the WHO Region of the Americas saw a substantial increase in case incidence, with marginal increases occurring in other regions (WHO South-East Asia, Western Pacific and African regions).

Malaria Deaths

The fight against malaria has been described as "one of the biggest public health successes of the 21st century" with the number of deaths due to the disease declining by 50 percent between 2000 and 2015, averting an estimated 6.8 million deaths.[27] However, the WHO has estimated that in 2016, there were 445,000 deaths from malaria globally.[28] The majority of these deaths (91 percent) occurred in the WHO African Region.[29] All WHO regions saw a reduction in recorded mortality in the period from 2010 to 2016 overall, apart from the Eastern Mediterranean Region, which remained virtually unchanged.[30] However, between 2015 to 2016, the WHO South-East Asia, the Western Pacific and African regions saw mortality rates stalling, while the Eastern Mediterranean and Americas regions experienced an increase.[31]

A large proportion of the deaths caused by malaria are of children under 5 years of age, with 70 percent of all malaria deaths occurring in this age group.[32] Between 2010 and 2016, the number of deaths of under 5s due to malaria declined from 440,000 to 285,000. However, malaria remains a major killer of children under 5, with a child dying from the disease every two minutes.[33]

Prevention, Treatment and Elimination of Malaria

According to the WHO, between 2014 and 2016, 582 million insecticide-treated mosquito nets (ITN) were delivered globally.[34] Of this number, 502 million were delivered in sub-Saharan Africa, compared with 301 million in the preceding three years (2011 to 2013). This has meant that household ownership of at least one ITN increased from 50 percent in 2010 to 80 percent in 2016. However, the proportion of households with sufficient nets (one for every two people) in the region in 2016 remained insufficient

at 43 percent. Fewer people are protected by use of indoor residual spray (IRS), with usage dropping from a peak in 2010 (5.8 percent) to 2.9 percent in 2016. The WHO argues that this decrease is due to countries changing insecticides to more expensive chemicals.

Between 2014 and 2016, 41 percent of children with a fever in sub-Saharan Africa received an anti-malarial drug, with children who attended public rather than private health facilities more likely to be given artemisinin-based combination therapy (ACT).[35] In addition, in 2016, 15 million children in Africa's Sahel sub-region were protected by seasonal malaria chemoprevention (SMC) programmes.[36] However, another 13 million children who could have benefited from the programmes were not covered, mainly due to a lack of funding.[37]

Testing of suspected cases of malaria in public health systems has increased in most WHO regions since 2010.[38] The biggest rise was seen in the WHO African Region with diagnostic testing in the public health sector increasing from 36 percent of suspected cases in 2010 to 87 percent in 2016. The majority of the 312 million rapid diagnostic tests (RDTs) delivered globally in 2016 were also delivered in the WHO African Region (269 million).[39] The number of treatment courses for ACT procured by countries also increased in 2016 (409 million) compared to 2015 (311 million).

Malaria elimination is described by the WHO as "the interruption of local transmission of a specified malaria parasite species in a defined geographical area as a result of deliberate activities", with the continuation of measures required to prevent the re-establishment of transmission.[40] In the *World Malaria Report 2017*, the WHO reported that globally "more countries are moving towards elimination".[41] It stated that in 2016, 44 countries reported fewer than 10,000 cases of malaria—an increase from 37 in 2010.[42] Looking forward in terms of elimination, the WHO identified 21 countries with the potential to eliminate the disease by 2020. These countries are known as 'E-2020 countries' and the WHO are working with their governments in order to "support their elimination acceleration goals".[43] However, 11 of the E-2020 countries have reported increases in indigenous malaria cases since 2015, with five seeing an increase of more than 100 cases in 2016 compared to 2015.[44]

Policy: Global Response

In the early part of the 21st century, malaria received worldwide attention as a global health priority.[45] The disease was a focus of the UN Millennium Development Goals, with target 6C aiming to "have halted by 2015 and begun to reverse the incidence of malaria and other major diseases".[46] This Goal was achieved, with the WHO reporting in 2013 that, "55 of the 106 countries that had malaria transmission in 2000 are on track to achieve the goal of reducing malaria incidence by 75 percent by 2015".[47] Despite this progress however, the WHO has argued that the gains achieved are "fragile and unevenly distributed".[48]

Post-2015, malaria was included in the UN's Sustainable Development Goals, with Goal 3 stating: "by 2030, end the epidemics of AIDS, tuberculosis (TB), malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases".[49] In addition, in May 2015, the WHO adopted the *Global Strategy for Malaria 2016–2030*, which argued that:

> Although the implementation of core interventions expanded greatly between 2000 and 2014, the gains achieved are fragile and unevenly distributed. The human toll of malaria, and the global risk it still poses, remains unacceptably high.[50]

Responding to the issues highlighted, the strategy set out the following targets for 2030:

Table 1: Goals, Milestones and Targets for the WHO Global Technical Strategy for Malaria 2016–2030[51]

Goals	Milestones		Targets
	2020	2025	2030
1. Reduce malaria mortality rate globally compared with 2015	At least 40 percent	At least 75 percent	At least 90 percent
2. Reduce malaria case incidence globally compared with 2015	At least 40 percent	At least 75 percent	At least 90 percent
3. Eliminate malaria from countries in which malaria was transmitted in 2015	At least 10 countries	At least 20 countries	At least 35 countries
4. Prevent re-establishment of malaria in all countries that are malaria-free	Re-establishment prevented	Re-establishment prevented	Re-establishment prevented

In connection to these goals, the strategy also set out three pillars to support efforts to move towards malaria elimination:

- **Pillar 1:** Ensure universal access to malaria prevention, diagnosis and treatment.
- **Pillar 2:** Accelerate efforts towards elimination and attainment of malaria-free status.
- **Pillar 3:** Transform malaria surveillance into a core intervention.[52]

The Global Fund to Fight Aids, Tuberculosis and Malaria (Global Fund)—a financing institution which provides support to countries in response to these three diseases—has also published a strategy covering the period 2017 to 2022.[53] Focusing specifically on malaria, the strategy sets out the following global plan: "scale up and maintain interventions to reduce malaria transmission and deaths and support countries to eliminate malaria, in line with the global technical strategy and AIM [Action and Investment to Defeat Malaria 2016–2030]".[54]

In addition, a Malaria Summit, convened by Bill Gates, was held during the 2018 Commonwealth Heads of Government Meeting. It aimed to highlight the stalled progress in the fight against malaria and saw the Prime Minister, Theresa May, urging countries to commit to halving malaria across the Commonwealth by 2023.[55]

Funding

In 2016, an estimated US$2.7 billion was invested in malaria control and elimination efforts globally.[56] The governments of malaria endemic countries contributed 31 percent of this total (US$800 million), while the United States of America (US) was the largest international source of malaria financing, providing US$1 billion (38 percent). The United Kingdom and other international donors—including France, Germany and Japan—contributed the largest amounts following the US. Over half of the funding (57 percent) was channelled through the Global Fund, with the majority spent in the WHO African Region. However, this funding figure represents less than half the 2020 funding target and means that among all 41 high-burden countries, the funding per person remained below US$2.[57] In addition, it shows that in 34 out of 41 high-burden countries—which mainly rely on external funding—the average level of funding available per person at risk has decreased in the last three years (2014 to 2016) in comparison to 2011 to 2013 (with some exceptions).[58] To put these figures in context, the UK

Government has stated that it can cost as little as £3.25 to avert a case of malaria, with a return of £36 in social and economic benefits for every pound spent on malaria control.[59]

Challenges

Focusing on World Malaria Day, the WHO has stated that "the global response to malaria is at a crossroads", with progress stalling and the current pace insufficient to achieve the 2020 milestones set out in the *WHO Global Technical Strategy for Malaria 2016–2030*.[60] Countries with ongoing transmission are increasingly falling into two categories the WHO has argued—either they are moving towards elimination, or those with a high burden are reporting significant increases in the number of cases.

The Global Fund has also argued that despite the progress made to eliminate malaria, there are ongoing challenges. Outlining these issues, the Fund stated:[61]

- The Greater Mekong Region is ground zero for the emergence of drug-resistant malaria.
- Insecticide resistance is widespread across Africa, where the disease burden is highest.
- Climate change, migration and political instability impact malaria transmission dynamics and service delivery.
- Sub-standard and counterfeit drugs can still be found in many markets.
- Attention and focus can dissipate as the malaria burden drops, or progress stalls.

The Fund specifically highlighted the significance of the last issue, arguing that evidence has shown that "the disease will exploit any let up in efforts to control it" and that a "rebound" can make the situation worse than previously, as people lose the partial immunity they have built up through repeated exposure.[62]

Policy: Domestic Response

The Secretary of State for International Development, Penny Mordaunt, recently described the UK Government as "a leader in the fight against malaria".[63] Highlighting the UK as the second largest international donor in relation to malaria, in April 2018 the Government announced a new fund of £100 million, to be matched by the private sector, which will support priority countries through the distribution of 26 million mosquito nets, the supply of indoor sprays to more than five million households and the strengthening of health systems. This fund forms part of a pledge by the Government to halve malaria in the next five years and reaffirm its commitment to spend £500 million a year on malaria between 2016 and 2021. [64]

Other Government actions include £9.2 million of research funding to develop "two new safe and effective malaria treatments" and a £50 million programme for malaria control in Nigeria.[65] In addition, the Government has highlighted the following activities it has undertaken:

- Since 2011, the Department for International Development (DFID) has distributed 49.7 million long-lasting, insecticide-treated bed nets—saving up to 808,000 lives.
- In September 2016 DFID announced the UK pledge of £1.1 billion to the Global Fund to Fight AIDS, Tuberculosis and Malaria over the next three years. In 2016 UK support helped the Global Fund to save 2.2 million lives and avert 50 million new infections from malaria, TB and HIV.

- UK funded research that supported the development of child-friendly malaria drugs has now been used for more than 350 million treatments in malaria-endemic countries.

The UK Government is also assisting governments in Africa to gather data on malaria to demonstrate progress, identify better use of resources and "achieve the greatest long-term impact across the continent".[66]

Further Information

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