The Global Malaria Epidemic

Malaria, caused by parasites transmitted to humans by mosquitoes, is one of the world’s most common and serious tropical diseases:

- Half the world’s population is at risk for malaria. Children are at particular risk, accounting for most malaria deaths globally.1
- Although preventable and treatable, malaria causes significant morbidity and mortality, particularly in resource-poor regions. Sub-Saharan Africa is the hardest hit region in the world, and parts of Asia and Latin America also face significant malaria epidemics.2
- Widespread regional and international efforts to address malaria began in the 1940s and 1950s, and strategies have evolved over time.2,3 From the early 1950s until 1978, malaria was eliminated in parts of the Americas, Europe, and Asia.2,3 But such efforts did not reach or were unsuccessful in many of the hardest hit areas, particularly sub-Saharan Africa.2,3 More recent attention to these regions by the United States, other donor governments, multilateral institutions, and affected countries, has helped to increase access to prevention and treatment and reduce cases and deaths.1,4,5
- Still, while access to interventions has increased, gaps remain and many challenges continue to complicate malaria control efforts in hard-hit areas, including poverty, poor sanitation, weak health systems, limited disease surveillance capabilities, drug and insecticide resistance, natural disasters, armed conflict, migration, and climate change.1,2,3,4,6

Current Global Snapshot

The Anopheles mosquito, which transmits malaria parasites to humans, thrives in warm, tropical, and subtropical climates.2 While anyone living in or visiting an endemic country may be at risk, certain groups, particularly children and pregnant women, are more vulnerable. The World Health Organization (WHO) estimates that:1,3

- There were 97 countries with ongoing malaria transmission in 2013, and approximately half the world’s population is at risk for infection, worldwide.
- There were an estimated 207 million cases of malaria and 627,000 deaths, mostly among children under the age of five, in 2012.
- Malaria is a leading cause of death for children under five, who represent 77% of all malaria deaths. Children are at risk because they lack developed immune systems to protect against the disease.
- Tens of millions of pregnant women living in endemic regions become pregnant each year.7 Pregnancy reduces immunity to malaria, increasing the risk of infection, severe illness, and death for the woman; other adverse outcomes include spontaneous abortion, stillbirth, low birth weight, and neonatal death.7,8
- Other high-risk groups include travelers, refugees, displaced persons, and migrant workers entering endemic areas.
- Scale-up of malaria control programs has helped to greatly reduce malaria cases and deaths.1,5 Since 2000, eight African countries have experienced at least a 75% reduction in newly reported malaria cases; 37 countries outside of Africa have experienced at least a 75% reduction in newly reported malaria cases.1
BY REGION

AFRICA. With 43 countries with ongoing malaria transmission, Africa accounts for the majority of estimated malaria cases (80%) and deaths (90%), but only about 13% of the world’s population. Recent data, however, indicate that effective programs have helped reduce newly reported cases by at least 75% in eight countries (Botswana, Cape Verde, Eritrea, Namibia, Rwanda, Sao Tome and Principe, South Africa, and Swaziland).

SOUTH-EAST ASIA. There are 10 countries with ongoing malaria transmission in South-East Asia which accounts for 27 million (13% of estimated cases worldwide), the second highest number after Africa. India, Indonesia, and Myanmar comprise most of the region’s estimated cases (97%). Bangladesh, Bhutan, the Democratic Republic of Korea, Nepal, and Sri Lanka have made notable achievements in programmatic activities targeting malaria which have led to at least a 75% reduction in reported cases in each country between 2000 and 2012.

EASTERN MEDITERRANEAN. There are 10 countries with ongoing malaria transmission in the Eastern Mediterranean. Together, Pakistan, South Sudan, and Yemen made up 88% of the region’s estimated cases in 2012.

WESTERN PACIFIC. Representing less than 0.5% of estimated global cases, there are 10 countries with ongoing malaria transmission in the region. Cambodia, Lao People’s Democratic Republic, and Papua New Guinea represented 90% of the region’s estimated cases in 2012.

AMERICAS. There are 21 countries with ongoing malaria transmission in the region, which includes the Caribbean and North, Central, and South America. Over the past decade, Brazil and Colombia have consistently accounted for over half of the region’s reported cases.

EUROPE. With five countries with ongoing malaria transmission in Europe, in 2012, the region accounted for less than 0.02% of the estimated cases and none of the deaths worldwide.

<p>| Estimated Malaria Incidence and Deaths by Region, 2012 |</p>
<table>
<thead>
<tr>
<th>WHO Region (# of Countries with Ongoing Transmission)</th>
<th>Estimated No. (%) of Cases</th>
<th>Estimated No. (%) of Deaths</th>
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</thead>
<tbody>
<tr>
<td>Global Total (99)</td>
<td>207 million (100%)</td>
<td>627,000 (100%)</td>
</tr>
<tr>
<td>Africa (43)</td>
<td>165 million (80%)</td>
<td>562,000 (90%)</td>
</tr>
<tr>
<td>South-East Asia (10)</td>
<td>27 million (13%)</td>
<td>42,000 (7%)</td>
</tr>
<tr>
<td>Eastern Mediterranean (10)</td>
<td>13 million (6%)</td>
<td>18,000 (3%)</td>
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<tr>
<td>Western Pacific (10)</td>
<td>1 million (&lt;0.5%)</td>
<td>3,500 (&lt;1%)</td>
</tr>
<tr>
<td>Americas (21)</td>
<td>1 million (&lt;0.5%)</td>
<td>800 (&lt;0.5%)</td>
</tr>
<tr>
<td>Europe (5)</td>
<td>30 (&lt;0.02%)</td>
<td>0 (0%)</td>
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</tbody>
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Prevention and Treatment

Malaria control efforts involve a combination of prevention and treatment strategies and tools. While access to both prevention and treatment services has grown over time, gaps remain.

PREVENTION

Prevention efforts include mosquito-control activities and antimalarial drugs to prevent infection, comprised of:

- Insecticide-treated bed nets (ITN). The number of ITNs delivered to sub-Saharan Africa increased from 6 million in 2004 to 145 million in 2010, and is estimated to be 136 million in 2013. However, while ITN ownership and use is growing, access remains limited – in 2013, while 54% of African households owned at least one ITN, only 36% of the population slept under an ITN.
- Indoor residual spraying (IRS). IRS is commonly used in the Americas, South-East Asia, and Europe, and to a lesser extent in Africa, the Eastern Mediterranean, and the Western Pacific. In 2012, 88 countries were implementing IRS, and the share of people in Africa protected by IRS increased from less than 5% of those at risk in 2005 to 11% in 2010, but fell to 8% in 2012. Resistance to insecticides has emerged as a problem in Latin America, South-East Asia, and the Western Pacific.
• Intermittent Preventive Treatment in Pregnancy (IPTp). IPTp coverage for pregnant women is still limited. In Africa, data suggest that 38% of women attending antenatal clinics received the second dose of IPTp in 2012.

• A malaria vaccine is not yet available, although clinical trials are underway and initial results have been released.

**TREATMENT**

Treatment for malaria includes chloroquine, primaquine, and highly effective artemisinin-based combination therapy (ACT). ACT is recommended for areas with drug resistance or more deadly malaria strains.

• The number of ACT treatments procured by the public and private sectors has increased from 11 million in 2005 to 331 million in 2012.

• Multidrug-resistant malaria is now prevalent in Africa, South America, the Western Pacific, and South-East Asia. While ACTs have been introduced to treat resistant strains, evidence suggests ACT resistance is occurring in parts of Asia.

• In response to the prevalence of drug resistance, in 2011, WHO published a plan outlining five key recommendations for the management of resistance to ACT, and in 2013 it released a framework that describes priority areas for ACT resistance in the Mekong region.

**The U.S. Government Response**

• The U.S. government’s international response to malaria began in the 1950s through activities at the U.S. Centers for Disease Control and Prevention (CDC) and what is now the U.S. Agency for International Development (USAID). Early efforts focused on technical assistance but also included some direct financial support. Over time, U.S. efforts expanded and the 2003 passage of the President’s Emergency Plan for AIDS Relief (PEPFAR) explicitly included malaria in its mandate, authorizing bilateral funding for malaria (although no amounts were specified) and multilateral support to the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund), an independent, international financing institution which in turn provides grants to countries to address malaria (as well as HIV and tuberculosis).

• U.S. attention to malaria was elevated in 2005 with the launching of the President’s Malaria Initiative (PMI), a five-year, $1.2 billion effort originally targeting 15 focus countries in Africa (four more countries and a region have since been added), with a goal of reducing malaria-related deaths in these countries by 50%. In addition to PMI activities, USAID and CDC also reach other countries by providing malaria assistance through regional programs.

• In 2010, the Obama Administration released a six-year strategic plan to address malaria globally, known as the Lantos-Hyde U.S. Government Malaria Strategy, which proposed “an expanded approach to USG-supported malaria control efforts”. This strategy is integrated into the U.S. Global Health Initiative (GHI) – the government’s effort to develop a comprehensive strategy for global health announced in May 2009 by President Obama – and is directed at reaching malaria-specific targets set forth in the GHI. Most funding is provided to PMI focus countries. U.S. bilateral support also includes significant amounts for malaria research.
The Global Response

- While regional malaria elimination campaigns first started in the 1940s, it was not until 1955 that the WHO announced a Global Malaria Eradication Program. By the 1970s, the goal of eradication had given way to one of control, although discussion of eradication had once again emerged. Still, global efforts to combat malaria intensified only in the last decade. In 1998, the WHO established the Roll Back Malaria Program; in 2000, all nations agreed to international malaria targets as part of the United Nations (UN) Millennium Development Goals; and in 2001, the newly created Global Fund included malaria as one of its three target diseases (to date, it has committed over $8.2 billion to 80 countries for malaria-related initiatives).

- Other significant international efforts include the World Bank’s Booster Program for Malaria Control in Africa, which committed more than $1 billion, and private sector support, particularly from the Bill & Melinda Gates Foundation, which has committed billions to malaria to date and additional funding to the Global Fund.

- As a result of increased efforts, global commitments for malaria rose from less than $100 million in 2000 to an estimated $1.97 billion in 2013. In 2008, through the Global Malaria Action Plan, donors pledged nearly $3 billion with the intent to reduce malaria deaths to near zero by 2015. Increases in funding have led to dramatic scale-up of malaria control efforts. Still, annual need is projected at $5.1 billion, leaving a significant gap.

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2. CDC. *Malaria*: www.cdc.gov/malaria/.
23. Kaiser Family Foundation analysis of data from: FY 2015 Budget of the United States and Congressional Budget Justifications; Congressional Appropriations Bills and Conference Reports; Agency operational plans; ForeignAssistance.gov; Office of Management and Budget, personal communication; April 2014.
25. The World Bank: go.worldbank.org/87UGUEG8LO.