AFRICAN REGION

- The WHO African Region continues to shoulder the heaviest burden of the disease. Globally in 2019, the region accounted for:
  
  » 94% of all malaria cases (215 million cases);
  
  » 94% of all malaria deaths (384 000 deaths).

- The region made major gains in reducing its malaria burden in the 2000–2019 period:
  
  » Case incidence fell from 362.8 to 225.2 cases per 1000 population at risk (Fig. 3.3 a);
  
  » Mortality incidence fell from 121.1 to 40.3 per 100 000 population at risk (Fig. 3.3 b);
  
  » Total malaria deaths were reduced by 44%, from 680 000 to 384 000.

- While case incidence was reduced substantially over the last two decades, there was a small increase in the total number of malaria cases – from approximately 204 million in 2000 to 215 million in 2019 – reflecting a rapidly increasing population in the region. The population in sub-Saharan Africa increased from 665 million in 2000 to 1.1 billion in 2019.

- Six countries accounted for approximately half of all malaria deaths globally in 2019 – Nigeria (23%), Democratic Republic of the Congo (11%), United Republic of Tanzania (5%), Niger (4%), Mozambique (4%) and Burkina Faso (4%) (Fig. 3.2 d).
Since 2014, the rate of progress in both cases and deaths has slowed, mainly due to the stalling of progress in several African countries with moderate or high transmission.

In view of recent trends, the region will miss two critical 2020 milestones of the Global technical strategy for malaria 2016–2030 (GTS): a 40% reduction in case incidence and mortality compared to a 2015 baseline. Without urgent action to reverse this trend, the GTS 2030 targets for reductions in case incidence and mortality will not be achieved (Fig. 8.4).

FIG. 3.2.
Global trends in (a) malaria case incidence rate (cases per 1000 population at risk) and b) mortality incidence rate (deaths per 100 000 population at risk), 2000–2019 and c) distribution of malaria cases and d) deaths by country, 2019 Source: WHO estimates.

FIG. 3.3.
Trends in (a) malaria case incidence rate (cases per 1000 population at risk) and b) mortality incidence rate (deaths per 100 000 population at risk), 2000–2019 and c) malaria cases by country in the WHO African Region, 2019 Source: WHO estimates.
Global progress towards the GTS milestones

8.2 WHO AFRICAN REGION

Analysis of the trends by region shows that the WHO morbidity and mortality 2020 GTS milestones, by 37% and 25%, respectively (Fig. 8.4). Only Botswana, Cabo Verde, Ethiopia, the Gambia, Ghana, Namibia and South Africa are on track to achieve the GTS 2020 target of a 40% reduction in malaria case incidence, and Algeria has already been certified malaria free. Although not on track, 17 countries (Equatorial Guinea, Gabon, Guinea, Guinea-Bissau, Kenya, Malawi, Mali, Mauritania, Mozambique, Niger, Senegal, Sierra Leone, South Africa, Togo, United Republic of Tanzania, Zambia and Zimbabwe) were estimated to have achieved reductions in malaria case incidence by 2020 compared to 2015 (Fig. 8.2).

<5% increase or decrease) in case incidence in 2020 compared with 2015 in Benin, Burkina Faso, Cameroon, Central African Republic, Liberia, Madagascar, Nigeria, South Sudan and Uganda. Case incidence was higher in 2020 than in 2015 by less than 25% in Angola, Chad, Congo, Côte d’Ivoire, Democratic Republic of the Congo, FIG. 8.4.

Comparison of progress in malaria: a) case incidence and b) mortality incidence rate in the WHO African Region considering two scenarios: current trajectory maintained (blue) and GTS targets achieved (green) Source: WHO estimates.

REGION OF THE AMERICAS

- Since 2000, the region has reduced its malaria burden significantly. Between 2000 and 2019:
  - **Case incidence** fell from 14.1 to 6.4 per 1000 population at risk (Fig. 3.7 a);
  - **Total malaria cases** were reduced by 40%, from 1.5 million to 0.9 million;
  - **Mortality incidence** fell from 0.8 to 0.4 per 100 000 population at risk (Fig. 3.7 b);
  - **Total malaria deaths** were reduced by 39%, from 909 to 551.

- Belize and El Salvador reported zero malaria cases in 2019. In 2020, El Salvador became the first country in Central America to apply for the WHO malaria-free certification.

- Three countries in the region – Brazil, Colombia and the Bolivarian Republic of Venezuela – account for nearly 90% of all cases.
  - The region-wide trend in cases has been heavily impacted by a worsening malaria epidemic in the Bolivarian Republic of Venezuela. Urgent control of the epidemic in Venezuela is needed to get the regional trend back on track.

- Since 2014, the WHO Region of the Americas has seen a dramatic increase in cases. In view of recent trends, the region will miss the GTS 2020 milestones for reductions in case incidence and mortality. Progress towards the GTS 2030 targets is also off track (Fig. 8.5).

**FIG. 3.7.**
Trends in a) malaria case incidence rate (cases per 1000 population at risk) and b) mortality incidence rate (deaths per 100 000 population at risk), 2000–2019 and c) malaria cases by country in the WHO Region of the Americas, 2019 *Source: WHO estimates.*
FIG. 8.5. Comparison of progress in malaria: a) case incidence and b) mortality incidence rate in the WHO Region of the Americas considering two scenarios: current trajectory maintained (blue) and GTS targets achieved (green) Source: WHO estimates.
SOUTH-EAST ASIA REGION

- In 2019, the region had nine malaria-endemic countries that contributed to about 3% of the global burden of malaria.

- Over a 20-year time period, the region achieved excellent progress in reducing its malaria burden. Between 2000 and 2019:
  
  » **Case incidence** fell from 18.1 to 3.9 per 1000 population at risk (Fig. 3.4 a);
  
  » **Total malaria cases** were reduced by 69%, from 23 million to 6.3 million;
  
  » **Mortality incidence** fell from 2.8 to 0.6 per 100 000 population at risk (Fig. 3.4 b);
  
  » **Total malaria deaths** were reduced by 74%, from 35 000 to 9000.

- In 2019, India contributed to the largest absolute reductions in cases, from 19.7 million in 2000 to 5.6 million cases. However, India still accounted for 88% of malaria cases and 86% of malaria deaths in this region.

- Sri Lanka was certified malaria free by WHO in 2015 and Timor Leste reported zero indigenous malaria cases for two consecutive years (2018, 2019).

- South-East Asia is the only WHO region that is on track to reach the GTS 2020 milestones of a 40% reduction in malaria case incidence and mortality. At the current trajectory, progress towards the corresponding GTS 2030 targets is also on track (Fig. 8.7).
The WHO South-East Asia Region is on track for both mortality and morbidity (Fig. 8.2, Fig. 8.3, Fig. 8.7). Sri Lanka was certified malaria free in 2015 and remains malaria free. Timor-Leste reported zero malaria cases and deaths in 2019. All other countries reduced malaria case incidence by between 40% or more, and mortality incidence rate by more than 40% in all, except in Indonesia where it reduces by between 25% to less than 40% in 2020 when compared with 2015 (Fig. 8.2, Fig. 8.3).

**FIG. 8.7.**
Comparison of progress in malaria: a) case incidence and b) mortality incidence rate in the WHO South-East Asia Region considering two scenarios: current trajectory maintained (blue) and GTS targets achieved (green) Source: WHO estimates.

EASTERN MEDITERRANEAN REGION

- There was good progress seen region-wide in reducing malaria cases and deaths between 2000 and 2019:
  
  » **Case incidence** fell from 21.4 to 10.4 per 1000 population at risk (Fig. 3.5 a);

  » **Total malaria cases** were reduced by 26%, from an estimated 7 million to 5 million;

  » **Mortality incidence** fell from 3.8 to 2.0 per 100 000 population at risk (Fig. 3.5 b);

  » **Total malaria deaths** were reduced by 16%, from about 12 000 to 10 100.

- Sudan carries the heaviest malaria burden in the region, accounting for 46% of cases, followed by Yemen, Somalia, Pakistan, Afghanistan and Djibouti.

- Saudi Arabia reported only 38 malaria cases in 2019, while the Islamic Republic of Iran had no indigenous malaria cases in 2018 and 2019. Iraq has reported zero indigenous cases since 2009.

- Since 2014, the rate of progress has slowed. In view of recent trends, the region will miss the GTS 2020 milestones for reductions in case incidence and mortality (Fig. 8.6).

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**FIG. 3.5.**

Trends in a) malaria case incidence rate (cases per 1000 population at risk) and b) mortality incidence rate (deaths per 100 000 population at risk), 2000–2019 and c) malaria cases by country in the WHO Eastern Mediterranean Region, 2019. Source: WHO estimates.
Global progress towards the GTS milestones

8.4 WHO EASTERN MEDITERRANEAN REGION track for both the 2020 GTS milestone for malaria morbidity and mortality, by double the expected levels (Fig. 8.6). However, the Islamic Republic of Iran has reported no indigenous malaria cases in 2018 and 2019, and Saudi Arabia has reduced case incidence by more than 40%. Although not on track for the GTS 2020 case incidence milestones, Pakistan and Somalia have reduced case incidence but by less than 40% in 2020 track, with malaria case incidence higher by more than 40% in 2020 compared with 2015. Afghanistan and Yemen’s case incidence was higher in 2020 compared with 2015, but was less than 25% and between 25% and less than 40%, respectively (Fig. 8.3). Malaria mortality incidence rate had decreased by less than 25% in Afghanistan and Somalia, and by between 25% and 40% in Pakistan by 2020 compared with 2015.

FIG. 8.6. Comparison of progress in malaria: a) case incidence and b) mortality incidence rate in the WHO Eastern Mediterranean Region considering two scenarios: current trajectory maintained (blue) and GTS targets achieved (green) Source: WHO estimates.
WESTERN PACIFIC REGION

- Over the last 20 years, the region has reduced its malaria burden substantially. Between 2000 and 2019:
  - **Case incidence** fell from 4.5 to 2.3 per 1000 population at risk (Fig. 3.6 a);
  - **Total malaria cases** were reduced by 43%, from approximately 3 million to 1.7 million;
  - **Mortality incidence** fell from 1 to 0.4 per 100 000 population at risk (Fig. 3.6 b);
  - **Total malaria deaths** were reduced by 52%, from about 6600 to 3200.

- China has had no indigenous malaria cases since 2017 and two countries reported fewer than 5000 cases in 2019: Republic of Korea (485) and Vanuatu (1047).

- Malaysia had no human malaria cases in 2018 and 2019. However, the country reported 3212 cases of *P. knowlesi* (zoonotic malaria) in 2019.

- In recent years, the region-wide trend in case incidence has been heavily impacted by the burden in Papua New Guinea: in 2019, the country accounted for nearly 80% of all cases in the region.

- In view of current trends, the region will miss the GTS 2020 milestones for reductions in case incidence and mortality. Progress towards the corresponding GTS 2030 targets is also off track (Fig. 8.8).

FIG. 3.6.
Trends in a) malaria case incidence rate (cases per 1000 population at risk) and b) mortality incidence rate (deaths per 100 000 population at risk), 2000–2019 and c) malaria cases by country in the WHO Western Pacific Region, 2019 Source: WHO estimates.
FIG. 8.8.
Comparison of progress in malaria: a) case incidence and b) mortality incidence rate in the WHO Western Pacific Region considering two scenarios: current trajectory maintained (blue) and GTS targets achieved (green) Source: WHO estimates.


Global progress towards the GTS milestones 8.6 WHO WESTERN PACIFIC REGION for both malaria morbidity and mortality 2020 GTS milestones by 50%, and at the current trajectory the burden could increase through to 2030 (Fig. 8.8).

However, most of this increase in burden is attributable to Papua New Guinea, which accounts for about 80% of the burden of malaria in the region. Malaria case incidence was higher by 25% or less in Vanuatu, by between 25% and 40% in Papua New Guinea and the Philippines, and by 40% or more in the Solomon Islands.
EUROPEAN REGION

Since 2015, the WHO European region has been free of malaria. The last country to report an indigenous malaria case was Tajikistan in 2014. Throughout the period 2000–2019, there were no indigenous malaria deaths reported in this region.

Goals, milestones and targets for the Global technical strategy for malaria 2016–2030

<table>
<thead>
<tr>
<th>GOALS</th>
<th>MILESTONES</th>
<th>TARGETS</th>
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<tbody>
<tr>
<td>1. Reduce malaria mortality rates globally compared with 2015</td>
<td>At least 40%</td>
<td>At least 90%</td>
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<td></td>
<td>16% global reduction achieved</td>
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<td></td>
<td>22% off track</td>
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<tr>
<td>2. Reduce malaria case incidence globally compared with 2015</td>
<td>At least 40%</td>
<td>At least 90%</td>
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<td></td>
<td>3% global reduction achieved</td>
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<td></td>
<td>37% off track</td>
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<tr>
<td>3. Eliminate malaria from countries in which malaria was transmitted in 2015</td>
<td>At least 10 countries</td>
<td>At least 35 countries</td>
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<td>On track</td>
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<tr>
<td>4. Prevent re-establishment of malaria in all countries that are malaria-free</td>
<td>Re-establishment prevented</td>
<td>Re-establishment prevented</td>
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<td></td>
<td>On track</td>
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