South Africa reported an 86 percent decrease in malaria cases from 2000 to 2013 and is working to achieve national elimination by 2018.

**Overview**

South Africa has experienced a substantial drop in malaria cases, from 64,624 in 2000 to 8,851 in 2013. During the same period, malaria-related deaths decreased from 424 to 105. Despite this large overall decline in the malaria burden, cases and deaths actually increased between 2012 and 2013, by 29 percent and 46 percent respectively. Heavy rainfall and a subsequent rise in imported cases from Mozambique across South Africa’s northeastern border fueled this increase. All malaria cases reported in 2013 were due to *Plasmodium falciparum*. Anopheles arabiensis is the primary vector of transmission, with *An. funestus* contributing as a secondary vector to an extremely limited degree.

Due to a long history of successful malaria control efforts, malaria transmission in South Africa is now confined to three provinces in the north and northeastern parts of the country: KwaZulu-Natal, Limpopo, and Mpumalanga. Population movement across the northeastern border with Mozambique and the northern borders with Botswana and Zimbabwe, in large part related to occupation, contribute to sustained transmission in the three provinces. Malaria transmission in South Africa is seasonal, with the majority of cases occurring during the rainy summer months of September through May, peaking in January and April.

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**At a Glance**

- **8,851** Reported cases of malaria (100% *P. falciparum*)
- **105** Deaths from malaria
- **10** % of population living in areas of active transmission (total population: 53 million)
- **0.17** Annual parasite incidence (cases/1,000 total population/year)
- **1.47** % slide positivity rate

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**Malaria Transmission Limits**

*Plasmodium falciparum*

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*P. falciparum* malaria risk is classified into no risk, unstable risk of <0.1 case per 1,000 population (API) and stable risk of ≥0.1 case per 1,000 population (API). Risk was defined using health management information system data and the transmission limits were further refined using temperature and aridity data. Data from the international travel and health guidelines (ITHG) were used to identify zero risk in certain cities, islands and other administrative areas.
Although malaria interventions vary somewhat by province due to South Africa’s decentralized health system and different eco-epidemiological settings, the mainstay activities include active and passive case detection, surveillance, case management, vector control, including indoor residual spraying (IRS), and cross-border collaborations with neighboring countries. Funding for malaria program activities comes entirely from the South African government. The National Department of Health (NDOH) is currently implementing an overarching malaria elimination strategy that aims to strengthen key interventions, particularly targeted vector control and active surveillance, with the goal of achieving malaria elimination by 2018. South Africa is also a member of the Elimination Eight (E8), a regional initiative composed of eight countries wherein the four “front-line” countries embarking on elimination—Botswana, Namibia, South Africa, and Swaziland—coordinate their efforts with the four “second-line” countries—Angola, Mozambique, Zambia, and Zimbabwe.

**Progress Toward Elimination**

South Africa has a long history of malaria control. In 1905, malaria was first identified in what was then Natal Province (modern-day KwaZulu-Natal). Epidemics were frequent in both Natal and Transvaal Province (which encompassed the modern-day provinces of Limpopo and Mpumalanga) from the 1900s through the 1930s. In Transvaal, the malaria situation got progressively worse during the 1920s after a large influx of settlers developed the land for farming. Anti-larval measures in malarious areas were launched in 1924, and by 1927, a national surveillance system with annual reporting had been established. The first malaria research centers were created in 1931 after an intense outbreak in Transvaal that killed more than 2,000 people; community education on prevention and treatment, identification and reduction of mosquito breeding sites, and quinine distribution were all coordinated through these centers. Throughout the 1930s, localized control efforts consisting of IRS with pyrethrin,

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**Goal:** Achieve zero local malaria transmission nationwide by 2018.

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**Reported Malaria Cases**

Due to increasing drug and insecticide resistance and the discontinuation of DDT, the malaria burden in South Africa spiked dramatically in the 1990s. Reintroduction of DDT, large-scale distribution of ACTs, and robust cross-border collaboration with Mozambique and Swaziland have helped bring cases down, but importation remains a constant threat.

*South Africa does not distinguish between local and imported when reporting case numbers.

Eliminating malaria in SOUTH AFRICA

Eligibility for External Funding

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Global Fund to Fight AIDS, Tuberculosis and Malaria</td>
<td>Yes*</td>
</tr>
<tr>
<td>U.S. Government’s President’s Malaria Initiative</td>
<td>No</td>
</tr>
<tr>
<td>World Bank International Development Association</td>
<td>No</td>
</tr>
</tbody>
</table>

*South Africa is eligible for regional Global Fund malaria grants only; it is not eligible for national grants
Cross-border coordination
South Africa's malaria burden is now confined to nine districts in the three provinces that border Botswana, Mozambique, and Zimbabwe, and the majority of its annual cases are thought to be imported from southern Mozambique. However, increased population movement across these borders in recent years has made it very difficult to distinguish imported cases from those acquired within South Africa's borders.\textsuperscript{2,10} LSDI was successful in reducing malaria incidence along the Mozambique border, but it is no longer being funded. Other cross-border collaborations such as the Trans-Limpopo Spatial Development Initiative and MOZIZA, a regional initiative between Mozambique, Zimbabwe, and South Africa, have been slow to start but could help improve surveillance and response in border areas. Regional cooperation facilitated through E8 membership will also help to strengthen cross-border coordination of malaria activities.\textsuperscript{7,8}

Conclusion
South Africa has made great progress in reducing its malaria burden over the past decade and has been successfully working toward national elimination since 2011. Maintaining adequate funding for its malaria program and improving the coordination of control activities in border areas through regional collaboration are the key challenges the country must overcome in order to meet its national goal of malaria elimination by 2018.

### Economic Indicators\textsuperscript{20}

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNI per capita (US$)</td>
<td>$7,190</td>
</tr>
<tr>
<td>Country income classification</td>
<td>Upper middle</td>
</tr>
<tr>
<td>Total health expenditure per capita (US$)</td>
<td>$645</td>
</tr>
<tr>
<td>Total expenditure on health as % of GDP</td>
<td>9</td>
</tr>
<tr>
<td>Private health expenditure as % of total health expenditure</td>
<td>52</td>
</tr>
</tbody>
</table>

### Challenges to Eliminating Malaria

Prioritizing malaria in the face of other challenges
An estimated 6.4 million South Africans are living with HIV/AIDS and over 60 percent are co-infected with tuberculosis, yet the annual malaria parasite incidence is 0.21 percent.\textsuperscript{2,21} Thus, maintaining focus and adequate resources for malaria elimination is a serious challenge. Historical malaria rates in South Africa strongly suggest that once attention and funding for control efforts are diverted, the disease will resurge.\textsuperscript{22} Therefore, it is critical to maintain malaria control and surveillance efforts to reach elimination and prevent reintroduction.

### Sources

Eliminating malaria in SOUTH AFRICA


Transmission Limits Maps Sources


About This Briefing

This Country Briefing was developed by the UCSF Global Health Group’s Malaria Elimination Initiative in collaboration with the South Africa National Department of Health. Malaria transmission risk maps were provided by the Malaria Atlas Project. This document was produced by Gretchen Newby; to send comments or for additional information about this work, please email Gretchen.Newby@ucsf.edu.