Zambia's strategy to move from accelerated burden reduction to malaria elimination (2016–2020)

1549

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Introduction

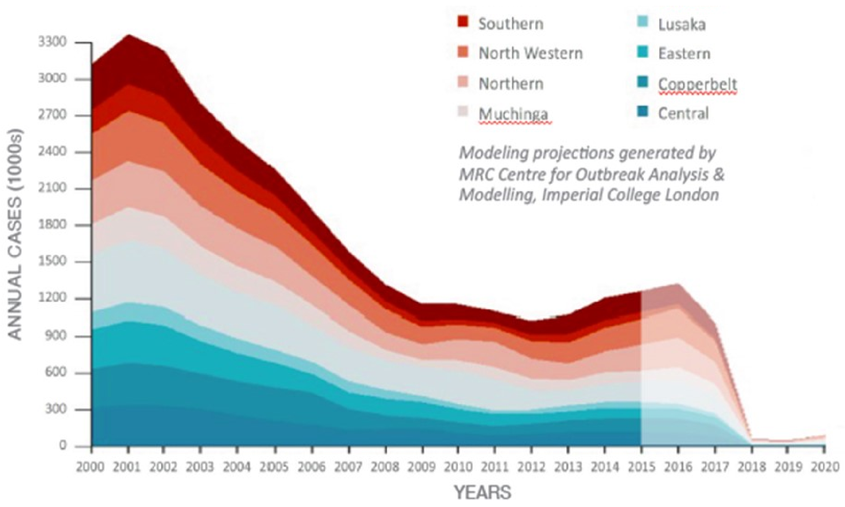
Despite significant progress made over the past decade, malaria continues to be a major issue in Zambia, causing more than 2,000 deaths per year (Health Management Information System 2016). All four *Plasmodium* species are found in Zambia with 98% of cases caused by *P. falciparum*. Prevalence of malaria varies across districts with 14 million Zambians at risk, especially vulnerable groups, such as pregnant women and children. The country's last two National Malaria Strategic Plans aimed to reduce transmission through multiple strategies, including the distribution of long-lasting insecticide treated nets (LLINs), increased indoor residual spaying (IRS), improved case management using rapid diagnostic tests (RDTs), and treatment with artemisinin-based combination therapy (ACT). The country looks to pursue an increasingly aggressive strategy in the next few years in pursuit of a malaria-free Zambia.

Context

Zambia has a medium to high malaria burden by WHO criteria. The most recent large-scale national survey (Malaria Indicator Survey 2015) indicated a prevalence of 19.4% among children under five years of age with substantial variation by region. Administratively, Zambia is divided into ten provinces and 106 districts. The capital city is Lusaka and approximately 40 percent of the population resides in urban areas. Zambia shares borders with eight countries: the Democratic Republic of Congo and Tanzania to the north, Malawi and Mozambique to the east, Botswana and Zimbabwe to the south, Namibia to the southwest, and Angola to the west.

Zambia's efforts to reduce the burden posed by malaria and address other challenges to the health of its citizens are part of a broader agenda aimed at the attainment of significant and sustainable socio-economic development. The country's long-term development agenda is guided by the Vision 2030 Strategy, which seeks to transform Zambia into 'a prosperous middle-income nation by 2030.' The Vision 2030 Strategy is being implemented through successive five-year national development plans, with the current one being the Revised Sixth National Development Plan. Vision 2030 identified malaria control as a key priority area. Zambia has markedly reduced malaria in the last fifteen years, as demonstrated in Figure 1.

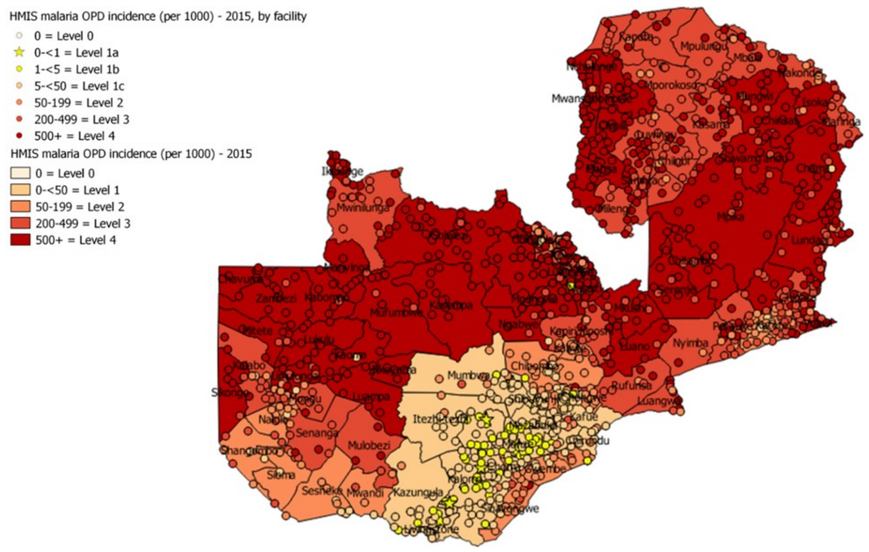
Figure 1. Annual cases by province 2000–2020 (projected)
Projections generated by Malaria Modelling Research Group, Imperial College



Elimination strategy

Zambia has varied levels of malaria geographically, with variation by district shown in Figure 2. The National Malaria Strategic Plan (NMSP) distinguishes different strategies based on the level of malaria.

Figure 2. Levels of malaria by district



***Lowering burden in high-transmission settings*:** despite visible progress in reducing the burden of malaria across Zambia, the goal of eliminating malaria is more distant in some areas because of the relatively high burden of the disease, low coverage of interventions, insufficient development of the local health system, and technical and operational constraints. In these settings, specific actions include:

- Achieving effective coverage with malaria curative and preventive services.
- Improving the quality and timeliness of information systems to further reduce transmission of malaria.
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***Eliminating malaria in low-transmission settings*:** in settings with pre-existing low transmission or where recent progress has markedly reduced transmission, priority should be given to elimination. In these settings, the specific actions include:

- Interrupting transmission of malaria.
- Reporting and responding to all confirmed cases, detecting and stopping any possible continuation of malaria transmission.
- Determining the underlying causes of residual transmission.
- Maintaining and documenting elimination of malaria.

***Preventing the re-establishment of malaria transmission*:** Health facility catchment areas, districts, and provinces that have become malaria-free need to implement measures to prevent the reintroduction of malaria transmission. The probability of malaria becoming re-established in a malaria-free area varies with the product of the degrees of receptivity and vulnerability of the area. In these settings, the specific actions include:

- Notifying all confirmed cases of malaria.
- Detecting any possible re-establishment of transmission.
- Determining the underlying causes of resumed transmission.
- Applying rapid curative and preventive measures.

Interventions by level

A variety of interventions will be used depending on the incidence of malaria. Key interventions and actions will include:

- Surveillance: parasitological and entomological surveillance and potential use of molecular testing techniques for monitoring at clinic and community level.
- Vector control: high community-level ITN ownership (seeking the highest possible coverage) and usage (improvement to >80% from 55% currently) and increased IRS coverage (improvement in targeting highest risk areas and seeking higher coverage to >50% from 29% currently).
- Enhanced vector control: increased emphasis on proper use of ITN and IRS coverage to >85% in targeted areas, introducing additional interventions where specifically appropriate (e.g., larviciding, baited traps or adulticides, space spraying, etc.), and vector surveillance (abundance, species, resistance) to direct updated action.
- Community case management: extension of infection detection and case management into communities through community health worker outreach—including integrated community case management (iCCM).
- Malaria case investigation and malaria foci investigation and transmission containment: extension of case surveillance at community level, including reporting of confirmed cases and investigation of households and local neighborhoods.
- Use of 'malaria elimination accelerator strategies' (e.g., mass drug administration [MDA]): time-limited, geographic targeted, population-wide treatment with DHAp (80% coverage) to clear the infectious reservoir and prevent infection for a time interval.

Figure 3. Intervention by level

LEVEL	MALARIA INDICATOR	INTERVENTION PACKAGE/ACTIVITIES	ACCELERATOR
LEVEL 0	0 cases, no local transmission	**No malaria, maintenance of malaria-free zone** • High-quality surveillance and vigilance • Core vector control and case management • Case investigation capacity maintained	
LEVEL 1	1–49 cases/1,000 population/yr; typical range <1% parasite prevalence	**Very low malaria transmission** • High-quality surveillance • Vector control (possibly enhanced) • Community and facility-based case management • Case and foci investigation	Mass drug administration (may be considered under certain circumstances)
LEVEL 2	50–199 cases/1,000 population/yr; range 0.5%–<5% parasite prevalence	**Low malaria transmission** • Build high-quality surveillance • Vector control (possibly enhanced) • Community and facility-based case management • Establish case and foci investigation capacity	Mass drug administration
LEVEL 3	200–499 cases/1,000 population/yr; range 5%–<15% parasite prevalence	**Moderate malaria transmission** • Improve quality surveillance • Vector control (possibly enhanced) • Facility-based case management; build community case management and outreach • Establish case and foci investigation capacity	Mass drug administration (may be considered for specific areas with case investigation capacity) Enhanced vector control if relevant
LEVEL 4	>500 cases/1,000 population/yr; range >15% parasite prevalence	**High malaria transmission** • Build quality surveillance • Vector control to high coverage • Facility-based case management; begin to build community case management and outreach • Prepare for case and foci investigation capacity • Prepare for MDA	Prepare for mass drug administration Enhanced vector control if relevant

Conclusions

Zambia has embarked on an ambitious programme to eliminate malaria by 2020. The NMSP is intended to support this plan and lays out specific interventions based on the level of transmission within a given geographic area. The timing and combination of interventions is designed with the hope of maximizing reduction of malaria and supporting the country-wide elimination agenda.