

# Getting Better Value for Money in Malaria Control

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Malaria kills hundreds of thousands of people every year and is among the leading causes of death for children under five.<sup>1</sup> While funding for malaria control increased dramatically in recent years, gains are fragile and budgets are now stagnating. In that fiscal reality, getting better value for money is more important than ever. In this brief, we present a framework for increasing the efficiency of malaria-control initiatives that addresses where to intervene, what interventions are best, and how to deliver them most effectively. Much of what is spent on malaria control is already spent well, but health policymakers and practitioners could get better value and save more lives by implementing the following recommendations:

- Improve procurement procedures for bednets.
- Reduce overlap of insecticide-spraying and bednet programs.
- Expand the use of rapid diagnostics.
- Scale up intermittent presumptive treatment for pregnant women and infants.

## Global Malaria Burden and Spending

After years of rising death tolls, many African countries are making progress in controlling malaria. Basic interventions—effective drugs, rapid diagnostics, bednets, and spraying—are being scaled up, and they are working: Malaria incidence and deaths have fallen in a growing number of countries. A dramatic increase in international resources for malaria control, from about \$200 million in 2004 to more than \$1.5 billion in 2009, made the progress possible; more than 90 percent of it comes from two sources, the Global Fund to Fight AIDS, Tuberculosis and Malaria and the U.S. President’s Malaria Initiative.

But these gains are fragile. Donor funding is not secure, and even at current levels it is insufficient to achieve and maintain universal coverage of basic interventions in all malaria-endemic countries. With that reality, getting better value for money is essential, as malaria programs need to achieve the greatest benefit from limited funds.

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1. World Health Organization, “Children: Reducing Mortality,” online factsheet, <http://www.who.int/mediacentre/factsheets/fs178/en/index.html>, last accessed June 25, 2012.

Figure 1. A framework for increasing value for money for malaria prevention

### Where do we intervene?

- Choice of countries
- Spatial targeting within countries

### What do we do?

- Allocation of resources among vector control, treatment, diagnosis, surveillance
- Choice of specific interventions

### How do we do it?

- Delivery efficiency
- Commodity costs
- Administrative and aid efficiency

## A Framework for Increasing Efficiency

The value for money spent against malaria results from three kinds of decisions: where to intervene, what to do, and how to do it (see figure 1).

Spatial targeting happens at the international level, as donors allocate aid among countries, and at the country level, as program officers decide where to focus resources, especially for disease-vector control. As malaria transmission can vary greatly based on location, these decisions have important implications for efficiency.

At the same time, donors and program officials must make decisions about allocative efficiency, or which interventions to provide in which circumstances. As with spatial targeting, these choices are most pronounced in vector control, since the appropriateness of insecticide-treated bednets, indoor residual spraying, and other interventions varies from place to place. Some activities, such as diagnosis and efforts to change behavior, influence value for money in part by making other prevention or treatment interventions more effective or less costly.

The way that malaria interventions are implemented affects efficiency through several channels, each of which has a bearing on value for money. Delivery efficiency can be optimized by choosing the most efficient ways to bring commodities or services to those who need them, particularly

when providing preventive and case management services. At the international level, costs can be minimized by efficient procurement of bednets and other commodities and by altering market structures or helping suppliers reduce manufacturing costs. Potential gains in efficiency based on aid or donor implementation styles are reflected in the large differences in cost between models of aid delivery, such as the relatively hands-on U.S. model and the proposal-driven and country-implemented Global Fund model. Finally, administrative efficiency subsumes a range of important dimensions of program implementation, including the quality of program management as well as the extent of fund or commodity diversion.

## Recommendations

There is little chance of *transformative* efficiency gains in malaria programming in the short to medium term. This conclusion derives primarily from the need to sustain high coverage of vector control interventions even in relatively low-risk areas. There are nonetheless some opportunities for meaningful improvements in value for money, including the following:

- **Improved procurement procedures for bednets.** Vector control is already the most important target of malaria spending, and its share can be expected to rise as vector-control interventions are scaled up and treatment costs fall. More efficient procurement, including pooled

procurement, could save up to 10 percent of bednet costs. There would be some savings, in both the short and long run, from consolidating demand on a small number of net types, but these gains must be balanced against losses in quality or in fit to local conditions and preferences.

- **Reduced overlap of spraying and bednet programs.** Evidence shows that bednets and spraying are both effective in reducing malaria incidence. Although the two interventions are increasingly combined in high-transmission areas to drive down the incidence of malaria more rapidly or more completely than either could do on its own, there is little rigorous evidence on the incremental benefits of combination. The stakes are quite high: If in fact there is little additional benefit from combination, there are potentially large savings from forgoing indoor residual spraying in areas with high bednet coverage or from restricting free net distribution in areas where spraying is judged to be the superior intervention. Reducing the overlap of net and spraying programs, at least until we know more about the costs and benefits of combining the two interventions, could save 5 percent or more on vector-control expenditure.
- **Expanded the use of rapid diagnostics.** The use of Rapid Diagnostic Tests (RDTs) as a replacement for presumptive treatment offers the potential to improve patient outcomes through more appropriate treatment of nonmalaria fevers while slowing the development of drug resistance. These effects are potentially decisive: Shilcutt et al.'s detailed analysis found that RDTs would have a 95 percent likelihood of being cost-effective relative to presumptive diagnosis at any prevalence below 62 percent.<sup>2</sup> Expanding the use of RDTs and strengthening adherence to test results could cut expenditure on case management commodities such as pharmaceuticals in some areas, but would improve the quality of fever treatment in all areas.
- **Scaled-up intermittent presumptive treatment for pregnant women and infants.** Intermittent preventive treatment (a form of prevention) involves giving pregnant women

and infants doses of relatively inexpensive antimalarials such as sulfadoxime-pyrimethamine to purge parasites from their system. It is exceptionally cost-effective in areas of high transmission. Studies in Tanzania have found that treatment for infants in concert with vaccines costs just \$0.68 and \$1.57 per malaria case averted,<sup>3</sup> and as little as \$2.90 per disability-adjusted life year (DALY) averted.<sup>4</sup> Treatment for pregnant women has been shown to have incremental cost-effectiveness ratios as low as \$1.02 per DALY averted.<sup>5</sup> Despite its affordability and demonstrated effectiveness, coverage of intermittent preventive treatment is currently low: The WHO estimates from household surveys that only 23 percent of pregnant women in sub-Saharan Africa received two doses of antimalarials in 2009–2011, in part because of low antenatal care attendance.<sup>6</sup> Increasing coverage of treatment for pregnant women and introducing it for infants on a larger scale in high-burden areas would be highly cost-effective.

## Conclusions

Malaria control is a very good investment. Numerous studies have already established that the interventions on which malaria programs increasingly rely and that account for the great bulk of donor's spending on malaria—insecticide-treated bednets, indoor residual spraying, treatment with artemisinin-combination therapy—are highly cost-effective. However, as global health budgets become increasingly constrained, methods to improve value for money need to be identified and exploited to maximize inputs. The aforementioned recommendations would make the most of specific efficiencies in malaria control, allowing for the better treatment and prevention of malaria within existing budgets.

2. Samuel Shilcutt et al., "Cost-Effectiveness of Malaria Diagnostic Methods in Sub-Saharan Africa in an Era of Combination Therapy," *Bulletin of the World Health Organization* 86(2): 81–160.

3. L. Conteh et al., "The Cost-Effectiveness of Intermittent Preventive Treatment for Malaria in Infants in Sub-Saharan Africa," *PLoS ONE* 5 (6): e10313. doi:10.1371/journal.pone.0010313. PMC 2886103. PMID 20559558; G. Hutton et al., "Cost-Effectiveness of Malaria Intermittent Preventive Treatment in Infants (IPTi) in Mozambique and the United Republic of Tanzania," *Bulletin of the World Health Organization* 87 (2): 123–129. doi:10.2471/BLT.08.051961. PMC 2636201. PMID 19274364.

4. Conteh, et al., "The Cost-Effectiveness."

5. E. Sicuri, "Cost-Effectiveness of Intermittent Preventive Treatment of Malaria in Pregnancy in Southern Mozambique," *PLoS ONE* 5 (10): e13407. doi:10.1371/journal.pone.0013407. PMC 2955525. PMID 20976217.

6. WHO, *World Malaria Report 2011* (Geneva: WHO, 2011), 35. Available at [http://www.who.int/malaria/world\\_malaria\\_report\\_2011/en/index.html](http://www.who.int/malaria/world_malaria_report_2011/en/index.html).

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