



National Audit Office

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Department for International Development

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# Malaria

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## Key facts

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**17**

countries in which the Department funds programmes against malaria

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**£252m**

estimated total spend by the Department on malaria in 2011-12

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**3rd**

largest global donor for tackling malaria by 2014-15

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**660,000**

estimated number of deaths caused by malaria in 2010

**US\$2.8 billion**

the gap between the \$5.1 billion estimate by the World Health Organization of required annual funding to tackle malaria and the \$2.3 billion offered by international donors and governments in 2011

**£494 million**

the Department's forecast expenditure on malaria in 2014-15

**\$150**

international benchmark for cost-effectiveness in health programmes, measured by the cost of gaining one year of healthy life, through averting chronic illness or death

**\$8–\$110**

the estimated costs of gaining one year of healthy life through bed nets, based on published research. Range reflects local context and performance

**25 million**

the number of bed nets the Department's bilateral (country to country) programme has helped to fund since 2010

**\$89**

the estimated cost of gaining one year of healthy life through the use of a drug subsidy funded by the Department

**By end 2013**

planned publication of the Department's mid-term assessment of progress on malaria

# Summary

- 1** In 2010, there were an estimated 219 million cases of malaria worldwide. Symptoms include fever, headache and vomiting. Left untreated, malaria can become severe, cause anaemia and make people more vulnerable to other life-threatening diseases. The World Health Organization estimated malaria to have caused 660,000 deaths in 2010, representing progress on the estimated 755,000 deaths in 2000, particularly since 2007. Malaria particularly affects low-income countries with weak public health systems, constraining their economic growth. Of all deaths, 80 per cent occur in just 14, mainly African, countries.
- 2** With no effective vaccine, tackling malaria requires interrupting the cycle whereby mosquitoes draw infected blood from one person and transmit it to others. The main interventions to prevent malaria include bed nets and insecticide spraying, and diagnostic tests and drugs are used to identify and treat people infected. As the malaria parasites and mosquito behaviour differ across regions, the prevention and treatment measures need to be tailored to local contexts.
- 3** The Department for International Development (the Department) aims to contribute to at least halving malaria deaths in at least ten countries with high malaria prevalence by 2014-15. It is seeking international agreement on a standard method of measuring progress before reporting against this target. Total departmental spend on malaria increased from £138 million in 2008-09 to £252 million in 2011-12 (3.4 per cent of the Department's budget). The Department currently estimates that it will spend £494 million in 2014-15 (4.8 per cent of its aid budget) through bilateral programmes (aid provided directly to some 17 countries), funding to multilateral organisations (such as United Nations agencies), and commissioned research.
- 4** This report examines whether the Department has made well-informed and cost-effective choices in the way it supports the sustained reduction of malaria, through programmes to prevent, detect and treat the disease. Assessing value for money is challenging in international development, given the numerous agencies affecting progress, gaps in key data and the difficulties in establishing counterfactuals showing what progress would have been without the intervention. While our examination (Appendix One), covered the Department's overall approach, we have also drawn on detailed fieldwork in Sierra Leone, Tanzania, Nigeria and Burma, where the Department has important anti-malaria programmes, for deeper insight.

## Key findings

### On the allocation of resources

**5 The Department gives high priority to tackling malaria, as it recognises that the disease is a serious threat to development and needs a sustained effort to tackle it.** The absence of a fully effective vaccine, high levels of prevalence and low health system capacity make eradication unfeasible in the near future. Worldwide, there has been a significant increase in total funds to fight malaria since 2008. However, global funding from donors and host governments is levelling off at less than half of the US\$5.1 billion annual requirement estimated by the World Health Organization. There is a need to complete coverage of malaria prevention and treatment. In April 2013, the Global Fund estimated that a more concerted effort would save a further 196,000 lives a year. Research into previous malaria elimination campaigns show that gaps or delays in funding lead to rapid and severe resurgence of the disease, with increased deaths in communities that have not maintained immunity through exposure to it over time (paragraphs 1.4 to 1.7, Figures 3 and 4, paragraph 4.1 and Figure 15).

**6 The Department's allocation of bilateral aid through a review process to different country programmes was reasonable given the time and capacity then available.** The Department's bilateral aid review in 2010 invited country teams to bid for resources for malaria. The Department had previously issued an extensive summary of research on 'what works' in malaria control, and guidance on how to demonstrate value for money in each bid. The approved bids were for types of interventions that studies have shown to be cost-effective, compared with a World Bank benchmark of \$150 per year of healthy life gained. However, the global evidence indicates very wide ranges in cost-effectiveness according to local contexts and the efficiency of health delivery in each country; bed net cost-effectiveness ranges between \$8 and \$110 per year of full health gained. Bids did not capture this variation. Deeper analysis of cost-effectiveness at country level, such as approaches being developed by the Department's team in Nigeria, would help direct resources to where they should have most benefit (paragraphs 2.4 to 2.13 and Figure 9).

**7 More choice, between a wider range of bids from country teams, would provide greater assurance that those selected represent best value for money.** The Department's aid review aimed to provide alternative proposals and stimulate innovation through a 'market in ideas'. In the event, there was limited choice between alternative bids on health relative to the increasing resources available, and 83 per cent of health bids by value were accepted. The Department approved malaria bids in 17 countries, extending beyond its target of contributing to halving malaria deaths in at least ten high-burden countries. One constraint on the bilateral aid review was a shortage of advisers in some countries. The Department has increased the number of its health advisers in countries from 37 in 2010 to 46 in 2013. Our visits confirmed the importance of in-country advisers' local knowledge for identifying and monitoring programmes and influencing partners (paragraphs 2.7, 2.8 and 4.7).

**8 The Department's planned increase in malaria funding from £252 million in 2011-12 to some £494 million in 2014-15 includes increasing its financial support to, or channelled through, multilateral organisations.** The Department's plans, if fully implemented, suggest its annual malaria expenditure through multilaterals, principally through the Global Fund, will increase by 71 per cent from £46 million to £79 million over the period, whereas its country programmes would increase by 56 per cent from £70 million to £110 million. The largest increases are for non-country-specific malaria spending, which although officially classified as bilateral comprises mainly spending through multilateral organisations, such as the Global Fund and UNITAID. Current plans are for this to increase from £36 million in 2011-12 to £114 million in 2014-15.

**9** In 2010-11, the Department reviewed its multilateral aid programme. It rated the Global Fund and UNITAID as respectively 'very good' and 'good' value for money for UK aid. Our September 2012 report concluded that the review did not always test the cost-effectiveness of multilaterals against alternatives. We recommended that the Department should make more systematic comparisons between multilateral and bilateral aid, informed by clear criteria and using a range of quantitative and qualitative information. In particular, the Department should continue to press multilaterals to provide higher-quality data on results and costs (paragraphs 2.2 to 2.3 and Figure 7).

**10 Directly-funded programmes can give added insight into cost-effectiveness achieved through multilaterals.** The Department has so far committed £129 million to the Global Fund's Affordable Medicines Facility – malaria, an innovative subsidy scheme to increase the affordability and availability of quality-assured malaria drugs. This recognises that private retailers are an important source of medication in developing countries. However, problems including insufficient drug supply, caused by an underestimate of demand compared with funds, and shortfalls in supporting training and marketing interventions meant performance across the eight pilot countries was mixed. Although modelling suggests that this scheme is already cost-effective compared with global benchmarks, the Department needs to work with the Global Fund to get better information to enable it to monitor the cost-effectiveness of the subsidy and compare it with alternative delivery models. So far, the cost-effectiveness of the first year of the operational pilot stands at \$89 per year of healthy life gained. The original technical design for a completed five-year global scheme was estimated at \$33–\$56 (paragraphs 3.12 to 3.16).

## On securing sustained impact

**11 Although the Department's bilateral programmes are well chosen, there are areas where it can improve.** The key challenges it faces are achieving consistently good implementation of bed net programmes and sufficient pace of change in increasing diagnosis, specifically:

- The Department has provided 5.3 million bed nets since 2010 in our case study countries, helping increase the number of households owning a bed net by an average of 23 percentage points across three of the four countries with data. However, bed net usage increased much less (by just six percentage points) in targeted groups such as young children. The Department's programmes include education to encourage use of nets, but these are not yet consistently well coordinated with net distribution (paragraphs 3.3 to 3.5 and Figure 10).
- The Department has funded the introduction of rapid diagnostic tests in public health services in five countries to increase the number of people diagnosed before receiving treatment, therefore reducing unnecessary drug consumption. But coverage was incomplete in the countries we visited, and so the full benefits have yet to be realised (paragraphs 3.8 to 3.9 and Figure 11).
- Although the Department supports subsidies for private sector drug distribution, it does not yet support diagnostic tests on the same scale. Trials in several countries show that tests can be used successfully by private sector retailers given appropriate training, oversight and incentives. We did not find private sector testing on a national scale in countries we visited, or specific targets for achieving it. However, the Department said that it plans to support trials in Nigeria and Burma (paragraph 3.10).

**12 International donors, including the Department, have made limited progress in mobilising domestic resources for tackling malaria in developing countries:**

- International donors provide some 73 per cent of dedicated anti-malaria resources, and a higher proportion still in highly malarial Africa. African governments have missed Abuja Declaration targets they set in 2001 to raise spending on health. The Department usually seeks to influence governments through dialogue without directly linking its own funding to increased local funding (paragraphs 4.4 to 4.8 and Figure 16).
- Free distributions of imported bed nets reduce incentives for households to purchase nets from retailers. We found no evidence that the mass distributions the Department had supported in Nigeria were accompanied by effective measures to stimulate weak commercial markets. The Department now supports market development, which it expects to stimulate sales (paragraphs 4.10 to 4.12 and Figure 17).

**13 The Department is active in shaping the international response to malaria, both globally and within assisted countries.** In our case study countries, the Department coordinated well with other donors through stakeholder groups sharing information and pooling resources to reduce duplicated efforts. Its presence and activity in-country is valued by partners. We welcome, for example, the World Health Organization's acknowledgement of the Department's leadership in areas such as reaching the private sector with essential malaria services, and support for global programmes. Its influence globally includes pressing for greater value for money, such as in reducing the amount of undiagnosed treatment. The Department is likely to become the third-largest provider of malaria support by 2014-15, behind the United States and the multilateral Global Fund. It is important that it uses this position to encourage ongoing global support (paragraphs 1.8 and 3.20).

**14 To maintain international support in tackling malaria, it is important that the Department works with other donors to measure impacts more effectively.** The infrequency of good data on malaria prevalence makes it difficult to measure progress against targets and to assess programmes' relative cost-effectiveness. The Department should accelerate its joint work with other donors to mitigate these problems. It currently relies too much on output indicators to measure progress, such as the number of bed nets distributed, rather than the number used (paragraphs 3.3, 3.17 to 3.18 and Figure 13).

**15 The Department has a robust process to identify research priorities that complement what other donors are doing and commissions research through open competition.** However, decisions to allocate funding are typically judgements unsupported by quantified estimates of the effect on levels of disease. The Department's network of advisers gives it a comparative advantage in identifying the need for research on operational issues within countries, to improve programme effectiveness. However, there is little research activity in this area (paragraphs 4.14 to 4.18 and Figure 18).

## Conclusion on value for money

**16** Malaria represents a serious health risk which constrains the development of low-income countries. In the absence of a vaccine, tackling the disease is a long-term challenge. Insufficient global support raises the risk of resurgence, undermining the cost-effectiveness of progress already made. Progress requires the Department to leverage more developing country resources while obtaining the best value from its own bilateral programmes and from the support it channels through multilaterals.

**17** This report shows that donor contributions are peaking, despite the increase in the UK's allocation. Further progress will depend on international aid being complemented by a growth in recipient country commitment and capacity. Developing countries do not yet have the systems and infrastructure needed to tackle the disease themselves. It is important, therefore, that the Department pursues visible increases in country government resources to expand local capacity and effort, in order that the UK effort contributes to continuous improvement.

**18** The Department's bilateral programmes to tackle the disease use proven interventions which compare favourably with global benchmarks for cost-effectiveness in health. While this is encouraging, the Department still has further to go to demonstrate that it has fully secured value for money. Sustained impact depends as much on changing attitudes and behaviours of populations at risk, as it does on distributing nets and drugs. Addressing gaps in data on actual costs and outcomes would give the Department better information to compare cost-effectiveness between alternative programmes and enable it to demonstrate progress more clearly.

**19** An increasing proportion of the UK malaria aid is channelled through multilateral agencies, where it is more difficult for the Department to gather reliable comparable data on cost-effectiveness. As we have reported previously, we would also expect to see clearer evidence of a sustained campaign to work with other donor countries to improve the cost-effectiveness of spend channelled through multilateral agencies.

## Recommendations

**20** Recognising the steps the Department has already taken to better understand value for money, our recommendations focus on the need to use improved information on cost-effectiveness to direct its investments, and to step up the pace and consistency of implementation. The Department should:

**a** **Increase the informed choice it has when selecting between proposals.** The approach used in 2010 has the potential to obtain increased value for money if in future exercises country teams submit a wider range of proposals accompanied with country-specific data on cost-effectiveness. The Department should make comparisons with delivery through key multilaterals where possible.

**b** **Ensure that country teams adopt the following lessons from implementing programmes:**

- Ensure that net supply is more consistently supported by timely information campaigns to increase net usage.
- Specify milestones and targets to reduce unnecessary treatment by focusing drug consumption on positively tested cases, in public and private sectors.
- When supporting free net distributions, ensure that plans are also in place to sustain local commercial markets. Large-scale free distributions of imported nets produce quick progress, but can also reduce capacity for future net replacement.
- Obtain more frequent data to reveal trends on malaria prevalence as its programmes progress.
- Ensure that more operational research is completed, in sufficient time and volumes to identify and address the key local barriers to commodity use.



- c** The Department should extend the range of its key progress indicators beyond output measures to include better predictors and indicators of outcomes. It should capture how far the number of nets it distributes are used and complete its work with partners to agree a measure of deaths averted.
- d** The Department should more consistently influence country governments, where appropriate, to match its own rising investment in health in general and malaria control, in particular by increasing its use of matched funding where this can attract additional contributions and grow national ownership, especially in lower-middle income countries.
- e** On its support for subsidised drugs, the Department should:
  - Ensure that the lessons of the Affordable Medicines Facility – malaria pilot stage are reflected in future practice. It should closely monitor the Global Fund’s new arrangements to balance drug supply and demand, and the coordination of supporting training and marketing with drug supply and with rapid diagnostic tests.
  - Ensure that the Global Fund compares subsidy cost-effectiveness with alternative ways to reach consumers.