

Opinion

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Roll Back Malaria? The scarcity of international aid for malaria control

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Abstract

The WHO announced the Roll Back Malaria (RBM) movement in 1998, with the goal of halving malaria deaths by 2010, and halving again by 2015. It is widely agreed that reaching this goal requires a major increase in international aid funding for malaria control, to a budget of perhaps \$1.5 – \$2.5 billion annually. To ascertain whether progress is being made, we compiled data self-reported by the donors to the Development Assistance Committee of OECD, and also to ourselves directly. We find that, in fact, the total amount of international aid dedicated to malaria control, from the 23 richest donor countries plus the World Bank, remains in the range of \$100 million annually – a figure that is virtually unchanged since the start of RBM. This lack of progress toward increasing funding very seriously threatens RBM and demands that WHO regularly audit and report on malaria control funding, with the certainty that RBM will fail to meet its deadline of 2010 if this is not done.

In 1998, the WHO, World Bank, UNDP and UNICEF conceived and partnered to create the Roll Back Malaria movement, with the welcome and necessary goal of halving malaria deaths by 2010 – the first major effort against the disease in four decades [1,2]. The need for such an effort is abundantly clear: malaria places a huge burden on Sub-Saharan Africa, with 300 million people suffering acute illness each year, and one million dying, at least 70% of whom are children or pregnant women. In countries with a heavy malaria burden, the disease accounts for as much as 40% of public health expenditure, 30–50% of inpatient admissions, and up to 50% of outpatient visits [3]. Those children who do not die can suffer brain damage or experience cognitive and learning deficiencies [4]. These events of illness and childhood retardation are so common in the tropics that entire countries fail to develop economically, cementing a future of desperation and pov-

erty that spans generations [5]. Only the HIV/AIDS pandemic among infectious diseases is more deadly [6].

Roll Back Malaria was, therefore, called into being to promote an effective control strategy to combat the disease. This emphasizes rapid clinical case detection and treatment, use of insecticide treated bednets, management of malaria during pregnancy, and focal control of malaria transmission in emergency or epidemic situations. RBM's ambition is to expand the use of these interventions in all countries where malaria is endemic, but especially in sub-Saharan Africa, where 90% of malaria deaths occur [7].

However, making malaria control operate on large scale requires money – far more money than African countries can afford, but not so much by the standards of the rich countries that donate international aid. A declaration

signed by over 20 African Heads of State in Abuja, Nigeria in April 2000 pledges African commitment to malaria control and calls on international aid donors to furnish "substantial new resources of at least \$1 billion per year to Roll Back Malaria" [8]. This political declaration appears to be a modest underestimate of what the actual needs would be: researchers estimate that by 2007, a scaled-up effort of malaria control would cost from \$1.5 – \$2.5 billion annually worldwide, of which \$0.5 – \$1.1 billion is needed just in sub-Saharan Africa [9].

The trouble is, such sums far exceed the available international aid finance for malaria control. An extensive survey by the London-based Malaria Consortium concluded that the total amount of public aid for malaria research *and* control was only \$100 million in 1998 [10]. This figure is not far from the estimate of the WHO Commission on Macroeconomics and Health, which estimates that international aid for malaria control averaged about \$87 million annually in the late 1990s [11].

Consequently, by the late 1990s, the actual levels of international aid for malaria control were at least an order of magnitude less than what all agree is necessary to achieve RBM's goal of halving malaria deaths by 2010. We, therefore, set out in this paper to assess whether, since the start of RBM in 1998, these international aid levels have increased to approach the several billion dollars a year that are needed worldwide. One would hypothesize that this should be true: RBM was conceived by the international aid donors themselves, who collectively lead this effort as "RBM Partners", with the help of a small secretariat based at the WHO. The current list of RBM Partners includes four major United Nations agencies (WHO, the World Bank, UNDP and UNICEF), plus most of the national aid agencies of the wealthy, Organization for Economic Cooperation and Development (OECD) countries [12]. Yet, despite this assembly of agencies, as we show in this cross-sectional survey, the necessary increases in funding are not happening as promised, with serious results.

Reporting methods

The major donors of official development assistance (ODA) for malaria control are the 23 national aid agencies of the OECD Development Assistance Committee (DAC), which comprises the wealthy governments of the Asia Pacific, North America, and Western Europe (including the European Commission). These donors provide either direct bilateral funding (country-to-country), or multilateral funding through agencies such as the World Bank (agency-to-country), and as such, they represent close to the total amount of public money that exists for malaria control in the world. Additional funds may be given by private charities, such as the Gates Foundation or

the Wellcome Trust, but as non-governmental funders they are not considered in this study.

We assessed ODA amounts in two stages. First, we used the official statistical database of the OECD DAC, known as the Creditor Reporting System (CRS), which compiles all funding commitments by donor country, purpose, recipient country, and whether the type of funding is a grant or loan. Importantly, these CRS data are self-reported by the donors themselves, and are, for that reason, presumably accurate. However, the accounting methods of the CRS make it difficult to precisely separate and discern malaria control funding discretely. We, therefore, performed a second stage of inquiry to verify and refine the CRS-based data, in which we asked each donor to complete a written survey disclosing their malaria control financing and projects. Results of both research stages are reported here.

CRS Data

The DAC donors supported health projects totalling approximately \$3 billion in 2000, the most recent year for which data are available [13]. This sum comprises many individual projects, each of which is catalogued in the CRS database under a category and standardized 5-digit "purpose code" [14]. Although the CRS has no discrete category and purpose code for malaria the way it does for HIV/AIDS (which is a major and problematic omission), selecting the malaria control projects is still possible by screening the individual project titles and descriptions which donors self-reported to the database.

We screened six categories and purpose codes in the CRS database, to identify new malaria control projects funded by the DAC donors, UNDP, or UNICEF in 2000 (Table 1). We generously assumed that a project could be related to malaria control if its title or description referred to: (i) malaria; (ii) an anti-malaria intervention; (iii) unspecified "infectious disease control" without specific reference to malaria; or the appropriate foreign language equivalents for any of these (e.g. "paludisme", the French for malaria).

This procedure selected 83 projects, which is a crude estimate of the number of new malaria control projects in 2000. Two degrees of uncertainty are associated with this project selection. First, because the CRS database is cross-sectional, we include only funding commitments as they occurred in 2000 (e.g. a funding commitment occurring in 1999 but spent in 2000 is excluded) [15]. Second, because the screening method is necessarily subjective, we purposefully erred on the side of inclusiveness and conservatism, counting projects even if their connection to malaria control was questionable. For example, we include several American projects whose short description in the CRS database is "malaria", but with incongruous-

Table 1: CRS Analysis Overview

Broad Sector	Purpose Code	Sector	Description of Sector	Dollar Total For Category US\$ 000 (grants + concessional and non-concessional loans)	Number of Projects	Malaria-related projects (see text)	Dollar Total For Malaria Related Projects US\$ 000
Health	12000		General Category	20096	61	3	6051
Basic Health	12200		General Category	7885	22	0	0
	12220	Basic health care	Basic and primary health care programmes; paramedical and nursing care programmes; supply of drugs, medicines, and vaccines related to basic health care.	714991	686	3	4398
	12230	Basic health infrastructure	District-level hospitals, clinics and dispensaries and related medical equipment; excluding specialized hospitals and clinics	194473	289	0	0
	12250	Infectious Disease Control	Immunisation; prevention and control of malaria, tuberculosis, diarrhoeal diseases, vector-borne diseases (e.g. river blindness and guinea worm)	494971	347	74	39964
	12281	Health Education Control	Information, education and training of the population for improving health knowledge and practices; public health awareness and campaigns	32493	158	3	103
	12282	Health personnel development	Training of health staff for basic health care services	205215	125	0	0
Health, General	12100	No malaria related projects found in these purpose codes					0
Population Policies and Reproductive Health	13000	No malaria related projects found in these purpose codes					0
Totals				1,642,143	1688	83	50516

seeming titles (e.g. "rapid increase of HIV/AIDS prevented").

Beyond project selection, however, there are three smaller sources of uncertainty in the CRS data. First, there may be instances where donors simply erred in reporting their project data to the CRS, leading us to misstate their contribution (e.g. a Canadian project recorded under CRS purpose code 12250, but valued at zero dollars). Second, the CRS data report donor *commitments*, not actual disbursements, which are less owing to planned disbursement delays, or unplanned cancellations. Taking commitments as a proxy for actual disbursements leads us to overestimate the amount of international aid that developing countries actually receive from aid donors, perhaps greatly so (e.g. the European Commission's health sector funds in Africa, where disbursements amounted to just 17% of commitments from 1995–2000) [16]. Third, because the CRS requires donors to report each project's funding by an "all or nothing" rule, this assigns the whole of the project's funding to a single CRS category based on its principal component. This causes mis-reporting where a single project consists of mixed activities, some part of which is relevant to malaria, and the rest of which is not. If that part forms the majority of the project (> 50%), then the whole project (100%) is reported under one of the six

CRS categories that we screen, leading us to overestimate those malaria control funds. The converse situation can also exist, where that part forms the minority of the project (< 50%), and the whole project is reported under another category which we do not screen, leading us to underestimate those funds.

Because donors frequently amalgamate malaria control into general health systems funding, where it can be a small part, we believe that the "all or nothing" rule is likely to cause underestimation more often than overestimation. We, therefore, accept the conservative interpretation that our CRS-based sums likely understate actual ODA commitments for malaria control. On the other hand, actual disbursements to recipient countries will always be less than the commitments that the CRS records. For these reasons, we recommend taking the CRS data as indicative, and not definitive.

Survey Data

In order to improve on the data uncertainties and subjectivity accompanying the CRS data, we distributed a written survey to each DAC donor, requesting detailed information about their funding for malaria control projects in 2000 (See Additional file: 1 for the original survey form used to perform this study). Donor agencies

Table 2: Bilateral Data Summary – CRS and Survey (\$US 000's, 2000)

Country	CRS Malaria Control Estimate [36]	Survey Response	Total Malaria Funding (Survey responses used if available)	% of Total Malaria Spending	% of GDP Spent on Malaria [37]
Australia	133	217	217	0.4%	0.00004%
Austria	0	0	0	0.0%	0.00000%
Belgium	952	Failed To Reply	952	1.7%	0.00035%
Canada	0	Failed to Reply	0	0.0%	0.00000%
Denmark	0	Refused	0	0.0%	0.00000%
Commission of the European Communities	0	0	0	0.0%	n/a
Finland	0	0	0	0.0%	0.00000%
France	4571	Failed To Reply	4571	8.3%	0.00033%
Germany	1,000	3,000	3,000	5.4%	0.00015%
Greece	0	Failed To Reply	0	0.0%	0.00000%
Ireland	50	250	250	0.5%	0.00023%
Italy	6,500	Failed To Reply	6,500	11.8%	0.00046%
Japan	0	Failed To Reply	0	0.0%	0.00000%
Luxembourg	0	Failed To Reply	0	0.0%	0.00000%
Netherlands	1,860	Failed To Reply	1,860	3.4%	0.00043%
New Zealand	0	Failed to Reply	0	0.0%	0.00000%
Norway	28	0	0	0.0%	0.00000%
Portugal	0	Failed To Reply	0	0.0%	0.00000%
Spain	864	Failed To Reply	864	1.6%	0.00011%
Sweden	0	0	0	0.0%	0.00000%
Switzerland	0	Refused	0	0.0%	0.00000%
United Kingdom	6,000	10,000	10,000	18.1%	0.00070%
United States	28,000	27,000	27,000	48.9%	0.00027%
TOTALS			55214	100%	.00023%

were contacted either at the e-mail address officially lodged with the OECD DAC secretariat, or at an e-mail address specific to the health programme officer. Donors who failed to answer the survey received at least two reminder e-mails between April and December 2001, with later e-mails employing a return receipt to track (when technically possible) that they were received and opened. Where donors cooperated with the survey and furnished data, we base our conclusions on their responses instead of the less reliable CRS data previously obtained.

World Bank Data

Because the World Bank has historically been one of the larger donors for malaria control (larger than all the bilaterals combined from 1994–1998), we surveyed its activities separately. The Bank is also different from bilateral donors in that it provides loans, which are repayable, rather than grants, which are not, although the loans that the poorest countries receive through the Bank's International Development Agency (IDA) bear only token service charges and no interest. The Bank also sets a positive example for transparency, and it is the only donor to maintain a public database with detailed information for

each of its projects. A single link from the Bank's malaria website returns a list of all malaria-related projects in the Bank's portfolio, plus background documents for each [17].

For each of the 16 projects listed on the Bank's malaria website as of July 2002, we examined up to three different sorts of Bank background documents – Project Information Documents; Staff Assessment Reports; and Project Appraisal Documents – to ascertain how much of the total funding for each project was destined for malaria control. Often this was answerable by a discrete line-item or percentage for malaria in the project budget or description (8/16 projects). Where this did not exist (2/16 projects) and the project related to several diseases simultaneously (e.g. a project in Eritrea for HIV/AIDS, malaria, STDs and TB), we assumed that each disease obtained an equal fraction of the total project value. The remaining projects (6/16 projects) contained no mention of malaria control objectives or interventions anywhere in their background documents, leading us to conclude that the Bank erroneously counts these as malaria projects. Where funds were allocated to malaria control projects over several years, we

Table 3: World Bank Malaria Projects (\$US millions, 2002)

Country	Total loan	Duration (years)	Total malaria component	Annual malaria average
Yemen	\$27.53	5	\$2.13	\$0.43
Eritrea	\$40	5	\$10 (assumed)	\$2.00
Solomon Islands	\$4	5	\$1.22	\$0.24
Madagascar	\$40	6	\$10.8	\$1.80
Comoros	\$8.4	5	\$2.3	\$0.46
India	\$164.8	5	\$164.8	\$32.96
Senegal	\$14.9	5	\$4.97	\$0.99
Cambodia	\$30.4	5	\$3.5	\$0.70
Vietnam	\$101.2	7	\$22.7	\$3.24
Laos	\$19.2	7	\$5.9	\$0.84

report these funds in the final column of Table 3 as annual averages.

Levels of Donor Support for Malaria Control

The basic conclusion of our study is this: overall ODA for malaria control remains extremely low, and incommensurate with the magnitude of the disease. This is true both for bilateral grants, which we measure at \$55.2 million in new commitments in 2000, and for World Bank concessional loans, which we measure at an annual average of \$43.7 million in commitments for active projects in 2002.

This makes an "annual" total (based on two different data years) of just \$98.9 million in grant and loan assistance for malaria control. This figure represents our best estimate for the amount of international aid that is available from all the major aid donors, and is committed to recipients in all parts of the world (excepting the new Global Fund for AIDS, Tuberculosis and Malaria, which did not exist during this research). In relation to the needs identified elsewhere, it is between 1/15th and 1/25th of the cost of malaria prevention and treatment worldwide, and is far from the \$1 billion that African Heads of State requested for RBM in the *Abuja Declaration*. It is also less than the \$130 million that others have estimated WHO and bilateral donors would make available by 2002 [18].

We recognize that these figures are alarming and are likely to attract challenge. We concede that possibly 2000 was an exceptionally lean year for new malaria control funding commitments, though this seems unlikely where the 1990s were comparably bad. We also concede that a limitations of the CRS database and its "all or nothing" rule are such that some spending on malaria control is certainly invisible in this analysis. This is especially likely for the European donors, whose support for malaria control is often subsumed within broader, more "horizontal" programmes for primary health care. But even allowing for the (quite remote) possibility that the actual commit-

ments for malaria control could exceed our estimates by two-fold, the amount of available international aid finance, particularly as disbursements, would still be greatly inadequate for RBM's task and the promises made at Abuja.

It would, of course, be preferable to state our conclusions without this uncertainty. However, the reason we cannot do so is often attributable to the bilateral donors themselves.

Although our data collection methods relied primarily on CRS data, we tried diligently to improve on this by surveying the bilateral donors directly. This is an unprecedented step: all previous peer-reviewed studies of this kind are based solely on CRS data only, but the surprising results of those data (Table 2) persuaded us to advance the state-of-the-art and introduce survey methodology [19,20]. Yet after nine months and several survey requests, only ten of the 23 bilateral donors agreed to furnish their funding data, while the other 13 donors – a majority – either failed to reply or refused outright to provide data. We accordingly were obliged to rely on CRS data in those cases as past studies have always done [19,20].

Seen in this way, we believe that the neglect of malaria control possesses two components. The first is, obviously, a lack of money. But the second is an alarming lack of transparency and public accountability on the part of bilateral donors, which causes that neglect to persist.

Bilateral donors are funded purely by public taxes, which implies an obligation of disclosure to the public of how aid money is spent. Yet most of the donors in this study failed to provide data on their malaria control funding when asked. The reason evidently is that donors often lack the *ability* to reply. The Swiss Agency for Development and Cooperation answered that it was "not realistic" and "just impossible" to determine "the amount allocated to

malaria specific interventions", because this amount is subsumed within general, integrated health programmes, and because no central repository for budgetary data exists. To collect those data from the agency's staff around the world "would take one person...at least 2 full working weeks", with the probable result that "most [would] say that they can not make a reasonable guess" about the actual funding levels.

In short, the Swiss answer, which seems likely to apply to some other donors too, is that the extent of malaria control funding is not just unknown, but actually unknowable. Leaving aside the reasons why this is true (*e.g.* it is found in integrated health programmes and not easily disaggregated), this poses a huge strategic threat to RBM's goals: What is the likelihood of increasing malaria control funding, when the donors lack the accounting procedures and ability to know how much they are spending? Without reliable financial surveillance, there is good reason to suspect that aid to malaria control will stagnate, as it has done for decades, without triggering public pressure to demand improvement. We note with alarm that nobody knows – or can know, if they want to – how much of the \$750 million that RBM counted as promises from various donors after the *Abuja Summit* has actually been delivered [21]. If the RBM secretariat is to answer this question definitively, it must urgently insist that donors in the RBM partnership participate in routine, transparent, and independent financial accounting and auditing, with public reporting to show if aid funding follows an upward trend.

Some may find it surprising that financial accounting and independent auditing should become an urgent RBM priority, when this appears tangential to malaria. The case of the World Bank illustrates why auditing is crucial.

While the World Bank deserves praise for its exemplary transparency, a close examination of the evidence shows that it seriously exaggerates its contribution to malaria control. Although the Bank publicly claims that "at present, World Bank direct financing for malaria control activities is over \$200 million in more than 25 countries", we find on the Bank's own project list only 10 countries having "active" malaria control projects [22]. In India, where in 1997 the Bank pledged its largest malaria control effort (\$164.8 million), the project neared its close in 2003 after disbursing little over a quarter of this amount. In Africa, where 90% of malaria deaths occur, the Bank has only 4 active projects: in the Comoros, Eritrea, Madagascar, and Senegal. Yet not one of these countries suffers particularly intense or sustained malaria transmission – three are hardly malarious at all by African standards – meaning that the Bank's efforts will contribute little to halving the burden of malaria.

Worst of all, the Bank has practically reneged on the dramatic pledge it made to two dozen African heads of state at Abuja in April 2000 to provide "up to \$500 million more...for the fight against malaria in Africa" [23]. Nearly three years after that pledge, Eritrea is the only country to receive a new loan expressly including malaria control (the loan package is \$40 million, split among 4 diseases). Assuming that the each disease in the Eritrea loan package receives an equal share, then the Bank's new lending for malaria control since Abuja amounts to only \$10 million; and three years after Abuja, up to \$490 million of the \$500 million that the Bank promised remains uncommitted and unspent. Furthermore, at this writing (December 2002), the Bank's own malaria project list shows *not one* new African malaria control project in the planning pipeline. There seems to be no activity underway at the Bank to keep the promise that was made.

This illustrates why the RBM secretariat must demand routine and independent auditing of ODA for malaria control, both to assist donors in improving their procedures, and if necessary, to enforce accountability. For example, the Bank could improve its performance by appointing a "malaria czar" in charge of a new, well funded programme for African malaria control, exactly as it did for African HIV/AIDS control. That programme, called ACTAfrica, led to a huge increase in the Bank's HIV/AIDS lending: from an annual average of \$13 million during the 1990s, to about \$500 million in 2002 [24]. A similarly bold decision is now overdue for malaria, and if the Bank demurs, WHO must hold the Bank accountable by stripping it of the "RBM Partner" status – not as punishment, certainly, but simply to reflect accurately that the Bank has no efforts underway to deliver the funding it promised at Abuja.

But assuming that donors lived up to past promises and made more money available, are their current ways of doing business suited to the task? Any serious effort to Roll Back Malaria deaths by half must concentrate overwhelmingly on Africa, because that is where 90% of malaria deaths are found. Yet current malaria control efforts miss that obvious focus. Of the \$98.9 million in donor grants and loans we identify, \$37 million, or just 37%, is committed to Africa. Thus whatever criteria donors apply when selecting countries for aid (an issue that we asked the 23 bilateral donors in our survey, but failed to receive a single reply for), disease burden itself is insufficiently considered.

Certainly, if rich countries sought to control malaria as a priority, they have abundant financial and political latitude to do so. At \$98.9 million, current donor assistance represents just 0.0004% of DAC countries' gross domestic product of \$24 trillion – or 4¢ on every \$10,000 of

income in the donor countries [25]. In popular terms, the Hollywood film, *The Titanic*, had a production budget *twice* as much as the worldwide total of international aid for malaria control [26]. Even the most meager diversion of government spending from less important objectives – for example, the agricultural subsidies in the European Union, Japan or the United States (at \$106 billion, \$59 billion, and \$95 billion, respectively) – would yield the \$0.5 – 2.5 billion that it costs to save half a million lives a year [27]. Politically, this has been done before: the United States under President John F. Kennedy spent billions on malaria in the 1960s [28].

Institutionally, the new Global Fund for AIDS, Tuberculosis and Malaria offers a better mechanism than bilateral or World Bank aid has in the past. Although the Fund's first round of grants reveals teething problems, the Fund's core principle of allocating international aid on the basis of applications received from developing countries was originally proposed by one of the authors (Attaran) and continues to be the most promising approach to aid-giving [29–31]. Also important are the partnerships that RBM has forged with pharmaceutical companies and NGOs, both to supply the latest malaria medicines at not-for-profit prices to poor countries, and to implement their use in the field [32,33]. Philanthropies such as the Gates Foundation, Rockefeller Foundation and Wellcome Trust are also driving important new research, including development of malaria medicines and vaccines for the future. And most importantly, African Heads of State have themselves reached a consensus on tackling malaria, though the median public health budget in sub-Saharan Africa at just \$9 per year (1998 dollars) makes it effectively impossible to do that without outside financial help [34].

Thus a strategy exists; the leaders of malarious countries have endorsed the goals; and NGO, philanthropic and corporate contributions are helping to provide the tools. It is only the international aid donors who are missing, as we find in this study where 12 of the 22 richest countries on Earth – including some Group of Seven (G-7) countries – appear to have not committed one dollar explicitly to malaria control (subject to the data uncertainties already discussed).

The reasons for such staggering underinvestment are difficult to understand. One insight is found in a recent, revealing study of donors' attitudes, which found that "funding is not viewed [by donors] as the most fundamental obstacle to improved health status." [35]. Instead, most donors believe that a lack of "absorptive capacity" is the key constraint in poor countries. As one donor candidly stated, sharply increasing aid funds in most African countries would be tantamount to "pouring water on the desert".

This contention is equally mistaken as it is contemptuous. Where absorptive capacity is deficient, finance is the most essential ingredient to acquire it – as clinics, doctors, managers, and so on. Donors who complain now about reaching an impasse because of limited absorptive capacity have themselves to blame for this, because it is hard to see how capacity in 2003 is any worse than it was in 1998, when the RBM Partners – i.e. *the donors themselves* – decided on the goal of halving malaria deaths by 2010, with full awareness of the capacity limitations in Africa

The seriousness of the problem we identify necessitates this blunt, perhaps undiplomatic conclusion: if some aid donors continue to underspend in coming years and cause RBM to fail in meeting its goal by 2010, millions of lives will be lost unnecessarily. Should that occur, the only "capacity" that must be questioned is that of the donor agencies to act in accordance with past promises. Politicians will then be correct to demand extreme – even punishing – scrutiny of the donor agencies involved, including to hold some leaders personally accountable, no differently than in other fatal disasters (*e.g.* an airplane crash). The donors and the poor with malaria are thus in this together, and with only 7 years to go, neither has time to waste.

Additional material

Additional file 1

Malaria Funding Survey

Click here for file

[<http://www.biomedcentral.com/content/supplementary/1475-2875-2-8-S1.htm>]

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