Countdown to 2015: assessment of official development assistance to maternal, newborn, and child health, 2003–08

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Summary

Background Achievement of high coverage of effective interventions and Millennium Development Goals (MDGs) 4 and 5A requires adequate financing. Many of the 68 priority countries in the Countdown to 2015 Initiative are dependent on official development assistance (ODA). We analysed aid flows for maternal, newborn, and child health for 2007 and 2008 and updated previous estimates for 2003–06.

Methods We manually coded and analysed the complete aid activities database of the Organisation for Economic Co-operation and Development for 2007 and 2008 with methods that we previously developed to track ODA. By use of newly available data for donor disbursement and population estimates, we revised data for 2003–06. We analysed the degree to which donors target their ODA to recipients with the greatest maternal and child health needs and examined trends over the 6 years.

Findings In 2007 and 2008, US$4·7 billion and $5·4 billion (constant 2008 US$), respectively, were disbursed in support of maternal, newborn, and child health activities in all developing countries. These amounts reflect a 105% increase between 2003 and 2008, but no change relative to overall ODA for health, which also increased by 105%. Countdown priority countries received $3·4 billion in 2007 and $4·1 billion in 2008, representing 71·6% and 75·6% of all maternal, newborn, and child health disbursements, respectively. Targeting of ODA to countries with high rates of maternal and child mortality improved over the 6-year period, although some of these countries persistently received far less ODA per head than did countries with much lower mortality rates and higher income levels. Funding from the GAVI Alliance and the Global Fund to Fight AIDS, Tuberculosis and Malaria exceeded core funding from multilateral institutions, and bilateral funding also increased substantially between 2003 and 2008, especially from the USA and the UK.

Interpretation The increases in ODA to maternal, newborn, and child health during 2003–08 are to be welcomed, as is the somewhat improved targeting of ODA to countries with greater needs. Nonetheless, these increases do not reflect increased prioritisation relative to other health areas.

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Introduction

Despite some notable success stories, many countries are faltering in their efforts to achieve the Millennium Development Goals (MDGs) for child and maternal health.[1] The Countdown to 2015 Initiative, which tracks the progress of 68 priority countries, recently announced that only 19 countries are on track to achieve MDG 4 (to reduce child mortality by two-thirds) and even fewer are on track for MDG 5A (to reduce the maternal mortality ratio by three-quarters).[2] In many of the countries failing to make progress, essential health interventions with proven effectiveness, such as postnatal care and insecticide-treated bednets, reach less than one-third of those in need of them.[2] Although the reasons for this failing are complex, lack of financing is often a key factor.

Internally generated financing accounts for more than 85% of total health expenditure on average across the 68 priority countries;[3,4] however, external donors have a potentially important part in expanding coverage of health interventions and improving health. The health budgets of governments in low-income countries are often greatly tied up in expenditures on salaries[5] and hospitals, making reallocation politically difficult.[6] Donor contributions are much greater relative to health budgets in countries with the highest levels of maternal and child mortality and provide a key source of discretionary financing that can be used strategically to implement new health programmes.

In recent years, there have been calls for substantial increases in both the quality and quantity of donor funding. The Paris Declaration on Aid Effectiveness and the Accra Agenda for Action were motivated by concerns that official development assistance (ODA) could and should be better spent.[7,8] These agreements stressed the need for more predictable financing in the form of grants rather than loans, increased channelling of aid through recipient country budgets, and better coordination between donors. International advocacy in relation to maternal, newborn, and child health has expanded enormously as the MDG deadline draws near, and there is an expectation that these efforts should lead to increased ODA flows to countries most in need.

Independent and timely examination of ODA flows from donors for maternal, newborn, and child health is crucial for tracking progress and holding donors to account. Several recent reports have provided estimates and analysis of aid flows to the health sector as a whole in developing countries,[9–12] as well as to specific subsectors and groups of countries, such as reproductive health in countries affected by conflict.[13] Only two studies, however, have provided estimates specific to MDGs 4 and 5A. Powell-Jackson and others[14] and Greco and others[15] provided estimates of ODA to maternal and newborn health and to child health for the years 2003–06.

This report provides estimates for 2007 and 2008, and revises previous estimates for 2003–06 by use of newly available expenditure data for donors who did not report disbursements in previous years (eg, the World Bank) and updated population estimates. Additionally, this analysis looks in greater detail at ODA contributions to the 68 Countdown priority countries and assesses the degree to which ODA for maternal, newborn, and child health is targeted towards countries with the greatest needs.

Methods

Data sources

We manually coded and analysed the complete aid activities database of the Organisation for Economic Co-operation and Development (OECD) for the years 2007 and 2008 with methods described previously.[14]

Disbursement data were obtained from the OECD's Creditor Reporting System (CRS) database.[16] On April 9, 2010, a major update of the CRS database became publicly available, providing more complete data not only for 2008 but also for previous years as far back as 2003. GAVI Alliance provided data on request, which was added to the CRS data for 2003–07, and was used to cross-check CRS data for 2008. Similarly, data obtained online from the Global Fund to Fight AIDS, Tuberculosis and Malaria was included for 2003–04, and used to cross-check CRS data for 2005–08. In both cases, sources were found to be consistent.

Population-related data, including the crude birth rate, the proportion of the population younger than 5 years of age, and the total under-5 population, were taken from World Population Prospects 2008[17] (assuming medium fertility) and used to calculate estimates for each year in the 2003–08 period. Some of these population estimates have been revised since the World Population Prospects 2006 report used in previous analyses, in some cases substantially. For example, in the 2006 report, the under-5 population for the Republic of the Congo was estimated at 750 000, whereas in the 2008 report it is 531 000 for 2005, 29·2% lower.

Donors and recipients

See Online for webappendix

All 22 bilateral donors, five multilateral donors, and two global health initiatives that were included in previous analyses were included in this study. Additionally, the United Nations Development Programme (UNDP) reported data for the first time in 2009 and South Korea in 2010. UNDP included data for 2004–08 and South Korea included data for 2006–08.

In the previous analysis, five donors with one or more years of missing data in 2003–06 were excluded from time trend analyses and estimates of ODA to each recipient country to ensure comparability across years, and World Bank (International Development Association) data were based on commitments, because this organisation did not report disbursements.[14,15] The April, 2010, update of the CRS database allowed inclusion of the following disbursement data to create more complete and consistent time trends: World Bank, 2003–07; Italy, 2006; Finland, 2004–05; UN Population Fund (UNFPA), 2005–06; and UNAIDS, 2003–04, 2006. Regional development banks and WHO were not included in the analysis because they did not report disbursements to the CRS during the analysis period. Loans by the World Bank's International Bank for Reconstruction and Development do not meet the criteria for ODA.

The definitions of bilateral and multilateral aid are the same as those used by the OECD: bilateral aid is assistance over which a sovereign donor government retains at least some degree of control, whereas multilateral ODA refers to outflows from the regular budgets of UN agencies and the World Bank over which the multilateral institution retains control.[18] Thus, if the US Government funds UNICEF to implement a water and sanitation project in Cambodia, this project would be identified as bilateral aid from the USA. Conversely, if France were to provide core funding to UNICEF, and UNICEF, in turn, decided to use its core funds to implement a project in Cambodia, the project would be identified as multilateral aid from UNICEF.

In the 2008 revision of the list of ODA recipients, the OECD identified 151 "developing" countries and territories deemed eligible to receive ODA,[19] of which 68 are included as Countdown priority countries and 83 are not. In some cases, ODA is disbursed to an international non-governmental organisation or programme, such as the Global Polio Eradication Initiative, or to several countries, and the share received by each recipient cannot be identified. Although one or more of the 68 Countdown priority countries might be among the ultimate beneficiaries, we have separated disbursements to unspecified recipients from those clearly identified as targeting the 68 Countdown priority countries.

Data analysis

Each disbursement record in the CRS database in 2007, 2008, and previously missing donor years was manually coded on the basis of the framework previously developed (webappendix pp 8–12).[14] This framework defined maternal and newborn health activities as

health sector activities aiming to restore or maintain health within the pregnancy, intra-partum, and post-partum periods. Child health activities were defined as health sector activities that aim to restore or maintain the health of children between 1 month and 5 years of age. An additional category, treatment of childhood HIV, was added and relevant projects previously coded as prevention of mother-to-child transmission or childhood infectious diseases were re-coded as appropriate. The database for 2008 included 181 000 records.[14]

For each disbursement record, the CRS purpose code and three text fields (project title, short description, and long description), were read to code the disbursement. The purpose code, which identifies the development objective of the disbursement, was assumed to be correct unless at least two of the remaining three fields contradicted it, but information in any field was assumed to be correct if it did not contradict data in other fields. Thus, for example, records under the CRS purpose code "13040—STD control including HIV/AIDS" were coded as generic HIV project, prevention of mother-to-child transmission, or childhood HIV treatment. If the project was clearly misclassified within the original CRS database, it was categorised on the basis of the project description contained within the three text fields.

The code assigned to each disbursement record was used to establish whether all, some, or none of the value of the disbursement contributed towards maternal, newborn, and child health activities, as detailed in previous reports.[14] Data were converted into constant 2008 US$ with the same methods and deflators as the OECD: donor-specific deflators were applied to bilateral disbursements and worldwide aggregate deflators were applied to multilateral and global health initiative disbursements.[20] Although these deflators might not reflect the value of aid to recipient countries, they maintain consistency with the CRS and show the opportunity cost of aid to donor countries.

The degree to which donors target their ODA to recipients with the greatest maternal and child health needs was also explored. Need for ODA was defined as a combination of high maternal and child mortality and low resources per head. The relationship between ODA per head and mortality[21] was explored in two series of scatter plots, one for child health and one for maternal and newborn health. The income group of each country, based on World Bank classifications, was highlighted in the scatter plots.[22] This analysis did not aim to assess the effect of donor funding on health outcomes, but rather to examine the extent to which ODA is allocated on the basis of need. The software used to analyse the data was Microsoft Excel 2007.

Role of the funding source

The sponsor of the study had no role in study design, data analysis, data interpretation, or writing of the report. All authors had full access to all the data in the study, and the corresponding author had final responsibility for the decision to submit for publication.

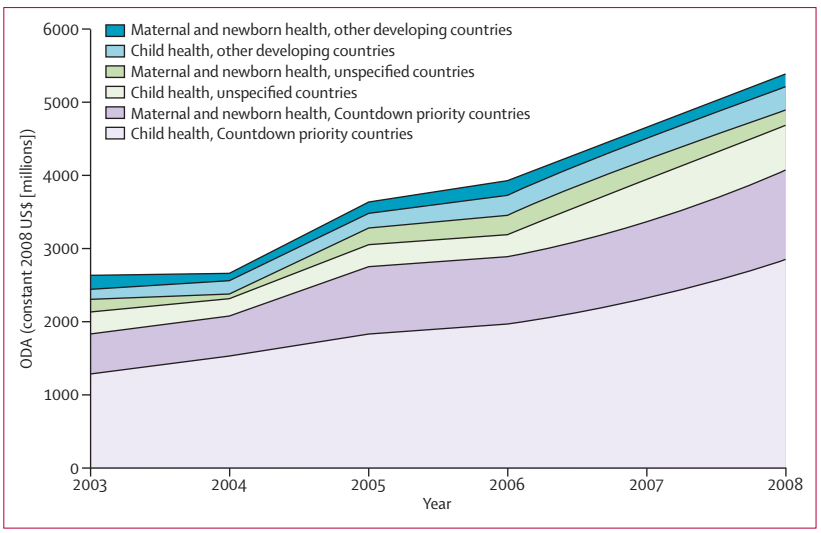

Figure 1: **Worldwide official development assistance for maternal, newborn, and child health, aggregated by Countdown priority countries, unspecified recipients, and other developing countries**
ODA=official development assistance.

Results

In 2007 and 2008, US$4·7 billion and $5·4 billion (constant 2008 US$), respectively, were disbursed in support of maternal, newborn, and child health activities in all developing countries. As a group, the 68 priority countries in the Countdown to 2015 Initiative received $3·4 billion in 2007 and $4·1 billion in 2008, representing 71·6% and 75·6% of all maternal, newborn, and child health disbursements, respectively.

Data for all ODA recipients are shown in figure 1 and table 1 and show a pattern of increasing aid to maternal, newborn, and child health between 2003 and 2008. ODA for maternal, newborn, and child health activities in all developing countries increased in real terms by 105% between 2003 and 2008 and increased as a share of all non-debt ODA from 3·7% in 2003 to 4·6% in 2008. Since ODA for the overall health sector also increased by 105% and as a share of all non-debt ODA, from 10·7% in 2003 to 13·3% in 2008, the ratio of ODA for maternal, newborn, and child health to ODA for the health sector remained constant throughout the period.

The 68 Countdown priority countries consistently received more aid each year than the year before and in 2008 their ODA for maternal, newborn, and child health in real terms was 120% higher than in 2003. Disbursements that could not be disaggregated by recipient country were more variable, but increased by 77·2% between 2003 and 2008. Disbursements to maternal, newborn, and child health in developing countries other than the Countdown recipients rose by 68·4% between 2003 and 2008; however, they showed a 24·6% decrease between 2003 and 2004,

	2003	2004	2005	2006	2007	2008
All ODA (excluding debt forgiveness; %)	71 101·4	79 067·0	97 275·1	97 415·1	103 612·8	117 738·3
All ODA by purpose (% of all ODA)						
ODA for health	7629·8 (10·7%)	8717·4 (11·0%)	11 132·7 (11·4%)	12 366·0 (12·7%)	13 394·8 (12·9%)	15 675·7 (13·3%)
ODA for MNCH	2632·2 (3·7%)	2668·1 (3·4%)	3636·7 (3·7%)	3928·0 (4·0%)	4699·6 (4·5%)	5395·3 (4·6%)
Ratio of ODA for MNCH to ODA for health	0·34	0·31	0·33	0·32	0·35	0·34
ODA for MNCH by recipient type (% of ODA for MNCH)						
68 Countdown priority countries	1849·5 (70·3%)	2077·8 (77·9%)	2750·9 (75·6%)	2873·9 (73·2%)	3365·6 (71·6%)	4077·5 (75·6%)
Other developing countries	324·0 (12·3%)	275·5 (10·3%)	354·0 (9·7%)	461·5 (11·7%)	468·5 (10·0%)	504·8 (9·4%)
Unspecified	458·7 (17·4%)	314·9 (11·8%)	531·8 (14·6%)	592·6 (15·1%)	865·5 (18·4%)	813·1 (15·1%)

Official development assistance (ODA) to maternal, newborn, and child health (MNCH) given as a percentage of all non-debt ODA, and as compared against ODA for health as defined in the Creditor Reporting System sector codes (120 and 130). ODA for MNCH is disaggregated by recipient type: Countdown priority countries (n=68), other countries (n=83), and unspecified recipients, 2003–08. Disbursements are in constant 2008 US$ (millions).

Table 1: **Worldwide official development assistance to maternal, newborn, and child health, 2003–08**

	2003	2004	2005	2006	2007	2008
Broad purpose						
Child health	1286·2 (69·5%)	1536·1 (73·9%)	1832·2 (66·6%)	1974·0 (68·7%)	2311·3 (68·7%)	2849·9 (69·9%)
Maternal and newborn health	563·3 (30·5%)	541·7 (26·1%)	918·7 (33·4%)	899·9 (31·3%)	1054·2 (31·3%)	1227·5 (30·1%)
Type of aid flow						
Grant	1454·4 (78·6%)	1530·3 (73·6%)	2276·0 (82·7%)	2461·9 (85·7%)	3036·3 (90·2%)	3790·0 (93·0%)
Loan	395·1 (21·4%)	547·5 (26·4%)	474·9 (17·3%)	412·1 (14·3%)	329·3 (9·8%)	287·4 (7·0%)

Disbursements are in constant 2008 US$ (millions). Percentages represent the proportion of total official development assistance to maternal, newborn, and child health in the 68 priority countries in the Countdown to 2015 Initiative (see table 1).

Table 2: **Official development assistance to maternal, newborn, and child health by type and source of aid flow for the 68 Countdown priority countries, 2003–08**

and a 1·2% decrease between 2007 and 2008. The 68 priority countries received between 70·3% and 77·9% of all ODA for maternal, newborn, and child health activities in developing countries; this proportion varied from year to year without showing a clear trend.

For the 68 Countdown priority countries, ODA for maternal and newborn health activities has remained within the range of 26·1% to 33·4% of total aid to maternal, newborn, and child health and has shown no clear trends during the 6-year period (table 2).

In line with principles of the Paris Declaration, donors have disbursed an increasing proportion of ODA to maternal, newborn, and child health as grants, rather than as loans. Although less than 80% of disbursements in 2003–04 were grants, more than 90% were grants in 2007–08 (table 2). This change is mainly attributable to the World Bank (International Development Association), which increased the proportion of its ODA disbursed as grants from less than 10% in 2003 to more than 30% in 2008.

Bilateral donors, the GAVI Alliance, and the Global Fund have led increases in aggregate ODA to maternal, newborn, and child health in the 68 priority countries. Bilateral donors more than doubled their aggregate aid during the 6-year period and accounted for 55·7% of maternal, newborn, and child health disbursements to priority countries in 2008. Although multilateral institutions increased their overall aid volume by 23·3% between 2003 and 2005, their aid stagnated in real terms between 2005 and 2008 and their share of overall disbursements fell consistently, from 37·5% in 2003 to just 21·2% in 2008. Together, GAVI Alliance and the Global Fund increased their aid by a factor of nearly five during the 6-year period and more than doubled their share of the total, reaching 23·2% in 2008, which exceeded aid from multilateral organisations (table 3).

The USA and the UK stand out as by far the largest bilateral donors to maternal, newborn, and child health. Although bilateral aid increased by 136% between 2003 and 2008, their combined share of bilateral aid increased from 48·4% to 58·7%. Both countries increased aid to child health, but their increased focus on maternal and newborn health is particularly marked: UK aid to maternal and newborn health increased by 249% and US aid increased by 637%, resulting in $353 million in additional funds for maternal and newborn health in 2008 from these two donors alone. Germany, Canada, and some smaller bilateral donors, including Belgium, also made substantial increases in their disbursements between 2003 and 2008. Exceptions to this increasing trend include Australia, whose aid fluctuated but decreased overall, and France, Switzerland, Portugal, and Greece, all of which decreased aid in real terms over the period. In 2005, Italy did not record any disbursements

for maternal, newborn, and child health in the 68 Countdown priority countries; the previously reported figure of $2·7 million[15] was disbursed to Argentina, which is not a priority country (table 3).

Among multilateral donors, the World Bank (International Development Association) is the largest single donor; however, UNFPA is a very close second in providing funds specific to maternal and newborn health. The World Bank's disbursements to maternal, newborn, and child health activities seemed to be substantially lower in 2007 and 2008 than in previous years. The European Union has taken on a growing role, increasing its aid by a mean of $42·8 million per year, so that by 2008, it disbursed $263 million for maternal, newborn, and child health. UNICEF increased its disbursements by a mean of $20·9 million per year, and in doing so substantially increased the proportion of its funding allocated to maternal and newborn activities. Neither UNDP nor UNAIDS contributed substantial sums from their core budgets to maternal, newborn, and child health.

Funding through general budget support did not show a substantial or sustained increase between 2003 and 2008 and fell as a proportion of overall funding to maternal, newborn, and child health (table 4). In 2008, general budget support accounted for 2·2% of ODA to maternal, newborn, and child health in the 68 Countdown priority countries. Sector-wide approaches, health sector basket funding, and direct budget support to ministries of health increased both in absolute terms and as a proportion of funding to maternal, newborn, and child health, but in 2008 still accounted for only 7·2% of ODA for maternal, newborn, and child health. Project-based aid accounted for more than 90% of ODA to maternal, newborn and child health throughout the 6-year period (table 4).

Funding to integrated health-care projects, including primary health care, hospitals, and health systems strengthening activities, accounted for 30·6% of all project-based aid to maternal, newborn, and child health in 2008. Malaria and HIV projects, including both generic vertical projects and those specific to mothers and children, accounted for 20·4% of funding, although this varied substantially, from 62·0% in The Gambia to 0% in Mexico and Morocco, where neither disease is common. The Integrated Management of Childhood Illness is the only project type for which value decreased over the 6-year period, from $8·5 million in 2003, to virtually no funding in 2008.

In 2008, donors spent on average (unweighted mean) $31·0 for maternal and newborn health per livebirth and $15·9 for child health per child across the 68 Countdown priority countries (table 5). The population-weighted mean disbursements were substantially lower, at just $11·4 per livebirth and $5·8 per child, because countries with the largest populations consistently received far less ODA per head than did countries with very small populations. Mexico, Brazil, and China each received less than $1 per child and less than $1·20 per livebirth. By contrast, Botswana was an extreme outlier in 2008, receiving a single USAID-funded HIV project that increased its ODA to $151·5 for child health per child and $427·8 for maternal and newborn health per livebirth that year. Equatorial Guinea, Liberia, and Djibouti each received more than $40 per child and more than $60 per livebirth in 2008. Overall, countries receiving high levels of ODA for child health tended to receive high levels for maternal and newborn health.

	2003	2004	2005	2006	2007	2008	Mean change (%)	Mean annual change, US$ (millions; SD)
Bilateral donors	962·6	946·3	1346·2	1406·3	1782·2	2267·2	27·1%	260·9 (506·4)
Australia	38·2	32·9	1·1	69·9	34·4	33·8	–2·3%	–0·9 (21·8)
Austria	2·4	2·5	2·8	4·2	4·1	3·2	6·9%	0·2 (0·8)
Belgium	11·1	0·8	25·2	31·4	42·5	38·8	50·0%	5·5 (16·2)
Canada	52·2	53·0	93·5	97·4	125·4	120·3	26·1%	13·6 (31·7)
Denmark	0·0	29·8	34·5	27·7	32·0	35·6	NA	7·1 (13·4)
Finland	5·5	0·0	0·0	7·5	11·5	14·1	31·7%	1·7 (5·8)
France	27·0	42·8	28·3	8·3	19·5	19·1	–5·8%	–1·6 (11·6)
Germany	63·3	43·9	60·9	86·7	119·5	156·3	29·4%	18·6 (42·3)
Greece	3·4	1·1	3·7	0·8	0·9	0·8	–15·3%	–0·5 (1·4)
Ireland	23·5	30·1	30·6	27·8	44·8	42·9	16·6%	3·9 (8·6)
Italy	24·5	20·0	0·0	18·7	34·1	30·6	5·0%	1·2 (12·0)
Japan	79·0	46·5	53·7	128·7	174·8	105·7	6·8%	5·4 (48·7)
Luxembourg	0·0	7·6	5·1	7·6	16·3	15·0	NA	3·0 (6·1)
Netherlands	57·4	49·8	53·3	64·7	84·2	71·6	5·0%	2·8 (12·9)
New Zealand	1·5	3·6	1·4	4·3	1·5	5·9	57·2%	0·9 (1·9)
Norway	33·2	34·5	29·0	39·0	50·5	58·8	15·5%	5·1 (11·5)
Portugal	0·9	1·3	1·6	1·8	0·7	0·7	–5·7%	–0·1 (0·5)
South Korea	NR	NR	NR	5·5	7·0	12·2	NA	NA (3·5)
Spain	30·2	33·4	40·6	48·5	65·8	102·2	47·6%	14·4 (27·0)
Sweden	26·9	31·8	22·3	59·3	60·0	54·0	20·2%	5·4 (17·2)
Switzerland	16·4	11·9	9·5	17·5	14·2	14·5	–2·3%	–0·4 (2·9)
UK	206·4	161·5	295·9	257·7	260·2	418·5	20·6%	42·4 (88·0)
USA	259·8	307·4	553·1	391·7	578·5	912·5	50·2%	130·5 (239·0)
Multilateral donors	693·8	793·7	855·2	915·8	887·9	866·2	5·0%	34·5 (80·5)
EU institutions	48·9	70·8	107·8	233·7	166·7	263·2	87·6%	42·8 (87·6)
IDA	413·3	597·5	510·4	458·2	336·9	299·4	–5·5%	–22·8 (110·5)
UNAIDS	1·6	0·3	1·5	0·0	3·0	1·8	2·1%	0·0 (1·1)
UNDP	NR	0·5	0·2	0·3	1·1	1·3	NA	0·3 (0·5)
UNFPA	145·0	45·8	140·1	137·2	113·4	111·1	–4·7%	–6·8 (36·9)
UNICEF	85·0	78·7	95·3	86·5	266·8	189·4	24·6%	20·9 (77·4)
Global health initiatives	193·1	337·8	549·4	551·8	695·4	944·0	77·8%	150·2 (264·1)
GAVI Alliance	140·9	210·1	231·3	205·8	338·1	502·3	51·3%	72·3 (130·0)
Global Fund	52·2	127·7	318·1	346·0	357·3	441·7	149·2%	77·9 (150·2)
Total	1849·5	2077·8	2750·9	2873·9	3365·6	4077·5	24·1%	445·6 (822·0)

Disbursements are in constant 2008 US$ (millions). NA=not applicable. NR=not reported. EU=European Union. IDA=International Development Association. UNDP=United Nations Development Programme. UNFPA=UN Population Fund.

Table 3: **Official development assistance to maternal, newborn, and child health by donor for the 68 Countdown priority countries, 2003–08**

	2003	2004	2005	2006	2007	2008	Mean annual change (%)	Mean annual change, US$ (millions; SD)
General budget support	74·3 (4·0%)	106·1 (5·1%)	90·7 (3·3%)	100·1 (3·5%)	141·7 (4·2%)	91·3 (2·2%)	4·6%	3·4 (22·8)
Health sector support	56·3 (3·0%)	83·4 (4·0%)	108·4 (3·9%)	95·1 (3·3%)	189·3 (5·6%)	292·6 (7·2%)	83·9%	47·3 (88·2)
Projects	1718·9 (92·9%)	1888·2 (90·9%)	2551·9 (92·8%)	2678·6 (93·2%)	3034·5 (90·2%)	3693·6 (90·6%)	23·0%	394·9 (731·6)
Integrated health care	618·2 (36·0%)	597·4 (31·6%)	695·1 (27·2%)	883·5 (33·0%)	813·1 (26·8%)	1129·2 (30·6%)	16·5%	102·2 (200·0)
Malaria (generic*)	72·8 (4·2%)	114·9 (6·1%)	168·9 (6·6%)	323·4 (12·1%)	263·1 (8·7%)	410·4 (11·1%)	92·8%	67·5 (129·6)
Malaria (specific to MNCH)	7·9 (0·5%)	8·6 (0·5%)	90·2 (3·5%)	42·0 (1·6%)	55·8 (1·8%)	89·9 (2·4%)	208·5%	16·4 (36·9)
HIV (generic*)	71·7 (4·2%)	120·9 (6·4%)	131·8 (5·2%)	147·6 (5·5%)	232·5 (7·7%)	209·8 (5·7%)	38·5%	27·6 (59·4)
HIV (specific to MNCH)	3·0 (0·2%)	3·7 (0·2%)	82·9 (3·2%)	25·7 (1·0%)	82·3 (2·7%)	43·8 (1·2%)	271·1%	8·2 (36·2)
Other generic disease programmes*	24·9 (1·4%)	38·7 (2·1%)	45·2 (1·8%)	49·4 (1·8%)	66·7 (2·2%)	72·2 (2·0%)	38·0%	9·5 (17·6)
Nutrition	69·7 (4·1%)	84·7 (4·5%)	121·8 (4·8%)	184·0 (6·9%)	165·5 (5·5%)	162·2 (4·4%)	26·5%	18·5 (46·8)
Immunisation	437·0 (25·4%)	553·6 (29·3%)	453·0 (17·8%)	492·4 (18·4%)	605·2 (19·9%)	728·2 (19·7%)	13·3%	58·2 (109·7)
IMCI	8·5 (0·5%)	8·4 (0·4%)	8·3 (0·3%)	1·6 (0·1%)	0·8 (0·0%)	0 (0·0%)	–20·0%	–1·7 (4·2)
Other child health activities	50·1 (2·9%)	33·9 (1·8%)	88·3 (3·5%)	92·3 (3·4%)	150·5 (5·0%)	87·9 (2·4%)	15·1%	7·6 (40·5)
Maternal and newborn health	278·2 (16·2%)	187·0 (9·9%)	383·6 (15·0%)	304·3 (11·4%)	418·9 (13·8%)	384·6 (10·4%)	7·6%	21·3 (86·5)
Maternal, newborn, and child health	76·9 (4·5%)	136·3 (7·2%)	282·8 (11·1%)	132·3 (4·9%)	180·0 (5·9%)	375·4 (10·2%)	77·6%	59·7 (111·2)

Disbursements are in constant 2008 US$ (millions). *Generic projects do not target a specific population group; a proportion of total funds are judged to benefit children, as detailed in Powell-Jackson et al.[14] Percentage values for the 68 Countdown priority countries represent the proportion of the total official development assistance to maternal, newborn, and child health (MNCH) for those items (see table 1). IMCI=Integrated Management of Childhood Illness.

Table 4: **Official development assistance to maternal, newborn, and child health by aid modality and project purpose for the 68 Countdown priority countries, 2003–08**

	Total MNCH		ODA to child health per child					ODA to maternal and newborn health per livebirth				
	2007	2008	2003	2008	Mean, 2003–08	Mean annual change (%)	Mean annual change, US$ (millions; SD)	2003	2008	Mean, 2003–08	Mean annual change (%)	Mean annual change, US$ (millions; SD)
Afghanistan	115·1	183·0	6·9	26·1	13·8	55·9%	3·84 (7·01)	14·0	43·3	22·2	41·9%	5·9 (12·2)
Angola	47·5	62·8	4·5	15·5	9·3	49·1%	2·20 (5·12)	8·6	17·9	12·3	21·6%	1·9 (5·9)
Azerbaijan	3·4	5·1	1·1	2·6	2·5	25·8%	0·29 (1·14)	5·1	19·1	8·7	54·4%	2·8 (5·3)
Bangladesh	78·5	135·4	2·3	4·9	3·6	23·0%	0·53 (1·46)	10·4	15·2	16·0	9·4%	1·0 (6·4)
Benin	30·4	36·8	7·4	19·5	13·8	32·5%	2·41 (4·89)	11·8	25·0	18·7	22·5%	2·6 (8·0)
Bolivia	31·3	25·7	13·1	14·5	16·5	2·2%	0·28 (7·51)	46·1	29·0	44·7	–7·4%	–3·4 (24·7)
Botswana	1·5	53·8	1·2	151·5	26·6	2520·4%	30·07 (61·19)	53·7	427·8	88·4	139·3%	74·8 (167·2)
Brazil	3·1	5·7	0·4	0·3	0·2	–6·2%	–0·03 (0·12)	0·9	0·4	0·8	–10·9%	–0·1 (0·5)
Burkina Faso	45·7	54·4	4·8	13·0	11·5	34·5%	1·64 (5·49)	10·2	23·1	18·1	25·3%	2·6 (10·2)
Burma	16·7	36·7	1·7	5·5	3·0	46·2%	0·76 (1·32)	5·1	11·1	5·6	23·3%	1·2 (3·2)
Burundi	27·7	36·3	8·0	24·0	15·2	40·3%	3·21 (5·85)	13·3	30·3	18·3	25·6%	3·4 (7·6)
Cambodia	29·9	38·3	7·2	13·7	8·8	18·3%	1·31 (3·32)	17·2	44·0	27·2	31·1%	5·4 (12·6)
Cameroon	19·8	22·2	2·5	6·2	5·4	29·6%	0·74 (1·76)	4·8	5·0	7·2	0·7%	0·0 (3·9)
Central African Republic	11·4	13·2	2·8	15·9	9·5	91·9%	2·62 (4·30)	10·3	17·9	18·4	14·8%	1·5 (6·9)
Chad	19·3	24·3	3·3	9·3	6·2	36·5%	1·20 (2·41)	11·6	11·8	12·3	0·2%	0·0 (2·3)
China	82·8	55·0	0·5	0·4	0·5	–4·2%	–0·02 (0·08)	0·9	1·2	1·1	4·6%	0·0 (0·2)
Côte d'Ivoire	24·1	35·7	2·9	8·2	4·6	35·8%	1·05 (2·17)	5·3	13·8	6·6	32·5%	1·7 (3·9)
Democratic Republic of the Congo	110·0	193·5	2·6	12·7	6·1	77·3%	2·03 (3·61)	3·0	14·8	7·8	79·8%	2·4 (4·3)
Djibouti	13·6	6·4	6·2	40·5	35·8	110·6%	6·86 (26·87)	27·5	82·4	98·6	39·9%	11·0 (51·1)
Egypt	27·3	28·3	0·8	2·0	1·9	31·5%	0·24 (0·94)	1·7	4·7	4·4	34·9%	0·6 (2·4)
Equatorial Guinea	4·0	7·7	1·6	51·4	24·6	603·7%	9·94 (18·59)	38·5	96·1	54·8	30·0%	11·5 (28·2)
Eritrea	15·8	12·4	19·8	11·5	14·6	–8·4%	–1·67 (3·59)	43·3	17·6	31·9	–11·9%	–5·1 (9·0)
Ethiopia	227·0	198·4	6·2	11·0	8·9	15·8%	0·97 (4·46)	9·6	16·5	16·4	14·3%	1·4 (8·2)
Gabon	4·0	2·3	2·5	9·1	13·0	53·2%	1·32 (6·70)	9·0	15·6	24·0	14·7%	1·3 (11·7)
Ghana	73·1	79·2	13·6	16·8	18·2	4·7%	0·64 (3·26)	22·3	31·0	28·2	7·8%	1·7 (7·1)

(Continues on next page)

	Total MNCH		ODA to child health per child					ODA to maternal and newborn health per livebirth				
	2007	2008	2003	2008	Mean, 2003–08	Mean annual change (%)	Mean annual change, US$ (millions; SD)	2003	2008	Mean, 2003–08	Mean annual change (%)	Mean annual change, US$ (millions; SD)
(Continued from previous page)												
Guatemala	23·6	31·8	4·2	10·3	5·8	29·3%	1·23 (2·91)	18·4	22·0	18·9	3·9%	0·7 (4·1)
Guinea	12·0	13·4	3·9	5·3	5·1	7·0%	0·27 (1·01)	7·7	12·1	9·9	11·6%	0·9 (4·1)
Guinea-Bissau	5·8	6·7	5·7	17·8	10·9	42·3%	2·42 (5·03)	31·1	31·2	26·9	0·1%	0·0 (4·6)
Haiti	34·5	39·7	3·7	19·9	10·8	88·4%	3·25 (6·36)	5·7	53·4	28·8	166·5%	9·5 (21·4)
India	345·2	372·8	1·7	1·8	1·7	0·5%	0·01 (0·32)	1·6	5·4	4·3	47·9%	0·8 (2·3)
Indonesia	79·1	88·9	1·8	2·7	2·2	9·6%	0·17 (0·58)	6·7	7·9	7·0	3·5%	0·2 (1·8)
Iraq	93·8	24·1	9·9	3·6	10·3	–12·7%	–1·26 (5·66)	8·9	8·4	21·5	–1·1%	–0·1 (16·2)
Kenya	94·3	137·5	7·7	14·9	11·1	18·6%	1·44 (2·89)	14·6	26·9	18·3	17·0%	2·5 (6·1)
Laos	16·1	16·5	9·0	14·3	10·6	11·8%	1·06 (2·90)	20·8	30·7	26·2	9·6%	2·0 (7·5)
Lesotho	4·8	7·3	6·7	19·2	9·6	37·7%	2·51 (5·31)	21·5	34·6	21·6	12·2%	2·6 (8·8)
Liberia	23·5	36·2	13·5	43·5	21·0	44·5%	6·01 (11·90)	12·3	64·1	36·1	84·4%	10·4 (25·2)
Madagascar	50·5	58·9	6·0	12·9	12·3	23·1%	1·38 (6·78)	22·7	28·1	31·2	4·7%	1·1 (20·7)
Malawi	95·2	100·4	13·8	29·2	19·9	22·2%	3·07 (7·43)	29·5	41·2	36·9	8·0%	2·3 (20·0)
Mali	51·1	55·8	5·2	17·1	13·6	46·1%	2·38 (6·70)	18·7	33·5	29·2	15·9%	3·0 (10·2)
Mauritania	9·4	9·3	8·7	13·9	12·6	12·1%	1·05 (7·23)	35·0	24·8	38·0	–5·9%	–2·1 (20·5)
Mexico	4·2	2·2	0·2	0·1	0·2	–8·4%	–0·02 (0·06)	1·7	0·5	1·1	–14·3%	–0·2 (0·6)
Morocco	20·8	12·5	0·6	1·7	2·1	35·3%	0·22 (1·12)	21·6	11·4	13·5	–9·5%	–2·0 (6·2)
Mozambique	111·0	139·9	11·2	26·6	17·5	27·7%	3·09 (5·98)	26·9	44·1	35·6	12·8%	3·4 (9·6)
Nepal	37·3	54·4	3·8	7·2	4·4	17·7%	0·68 (1·71)	10·7	39·0	19·5	53·2%	5·7 (12·5)
Niger	43·9	64·1	2·7	15·5	9·3	96·2%	2·57 (5·34)	6·5	20·1	13·7	41·9%	2·7 (8·5)
Nigeria	183·6	255·7	2·1	8·3	4·6	59·1%	1·23 (2·30)	2·8	8·3	5·5	38·5%	1·1 (2·5)
North Korea	9·5	7·0	2·2	3·0	2·5	7·5%	0·16 (0·76)	0·1	6·9	4·4	1276·8%	1·4 (4·1)
Pakistan	179·3	185·9	2·9	5·4	4·2	17·3%	0·50 (1·52)	3·0	10·7	6·0	52·5%	1·6 (3·6)
Papua New Guinea	16·4	23·2	13·1	17·2	11·6	6·2%	0·81 (4·59)	21·0	33·2	28·2	11·6%	2·4 (12·2)
Peru	19·8	19·8	2·0	4·3	3·9	23·6%	0·47 (1·16)	14·1	11·4	12·2	–3·8%	–0·5 (3·3)
Philippines	30·5	23·5	1·2	1·0	1·1	–2·9%	–0·04 (0·40)	4·2	5·5	4·1	6·1%	0·3 (1·5)
Republic of the Congo	6·4	9·1	6·1	12·6	7·4	21·4%	1·31 (3·25)	9·6	17·5	11·1	16·5%	1·6 (3·1)
Rwanda	42·8	80·0	9·6	35·1	21·2	52·8%	5·09 (9·24)	10·2	55·6	33·7	89·3%	9·1 (22·2)
Senegal	35·3	50·6	11·6	17·6	16·6	10·3%	1·20 (4·88)	16·6	31·4	27·1	17·8%	3·0 (14·1)
Sierra Leone	32·7	26·3	7·2	15·4	12·9	23·0%	1·65 (5·82)	12·0	53·0	29·2	68·1%	8·2 (20·0)
Somalia	26·2	33·4	3·7	13·5	7·6	53·4%	1·97 (3·89)	5·6	29·3	13·6	85·5%	4·8 (10·1)
South Africa	28·0	72·6	2·1	9·6	4·4	69·9%	1·49 (2·74)	4·6	20·9	8·2	70·1%	3·3 (6·4)
Sudan	91·6	118·7	1·7	15·6	8·7	160·7%	2·77 (4·98)	2·7	21·3	13·8	136·9%	3·7 (7·3)
Swaziland	3·9	4·1	9·7	18·9	12·9	19·2%	1·85 (6·32)	5·5	29·4	15·8	86·7%	4·8 (10·4)
Tajikistan	9·2	14·6	7·4	13·9	8·5	17·6%	1·30 (2·81)	8·2	12·5	10·3	10·4%	0·9 (2·2)
Tanzania	145·1	193·9	7·0	18·8	14·0	33·5%	2·36 (4·60)	16·2	29·3	22·0	16·1%	2·6 (7·0)
The Gambia	7·8	6·6	13·0	18·6	18·6	8·6%	1·12 (6·17)	37·3	27·5	33·9	–5·3%	–2·0 (8·8)
Togo	11·2	16·9	3·1	14·7	7·4	76·1%	2·33 (4·18)	7·3	14·0	10·1	18·3%	1·3 (2·7)
Turkmenistan	2·5	1·3	1·2	1·3	2·0	1·2%	0·01 (0·81)	5·6	5·4	6·1	–0·5%	0·0 (1·0)
Uganda	114·1	124·9	9·4	15·2	15·6	12·2%	1·15 (6·06)	13·8	21·5	16·8	11·2%	1·5 (6·6)
Yemen	37·7	40·1	2·6	5·4	5·4	22·1%	0·57 (2·14)	7·2	23·4	18·3	45·1%	3·2 (7·1)
Zambia	94·5	104·1	21·7	34·7	29·0	12·0%	2·61 (4·94)	24·7	46·1	37·4	17·4%	4·3 (10·2)
Zimbabwe	45·9	40·5	6·9	15·4	10·5	24·5%	1·70 (5·92)	10·8	37·0	25·4	48·4%	5·2 (12·1)
Total	3393·2	4077·7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Population-weighted mean	88·4	107·0	2·7	5·8	4·2	23·3%	0·62 (1·18)	5·0	11·4	8·5	25·9%	1·3 (3·0)
Unweighted mean	49·9	60·0	5·8	15·9	10·2	35·2%	2·02 (3·66)	14·0	31·0	20·9	24·3%	3·4 (7·3)

Total disbursements are in constant 2008 US$ (millions). Disbursements per child and per livebirth are in constant 2008 US$. MNCH=maternal, newborn, and child health. NA=not applicable.

Table 5: **Official development assistance to child health per child and to maternal and neonatal health per livebirth, total to maternal, newborn, and child health in 2007 and 2008, and trends statistics, 2003–08**

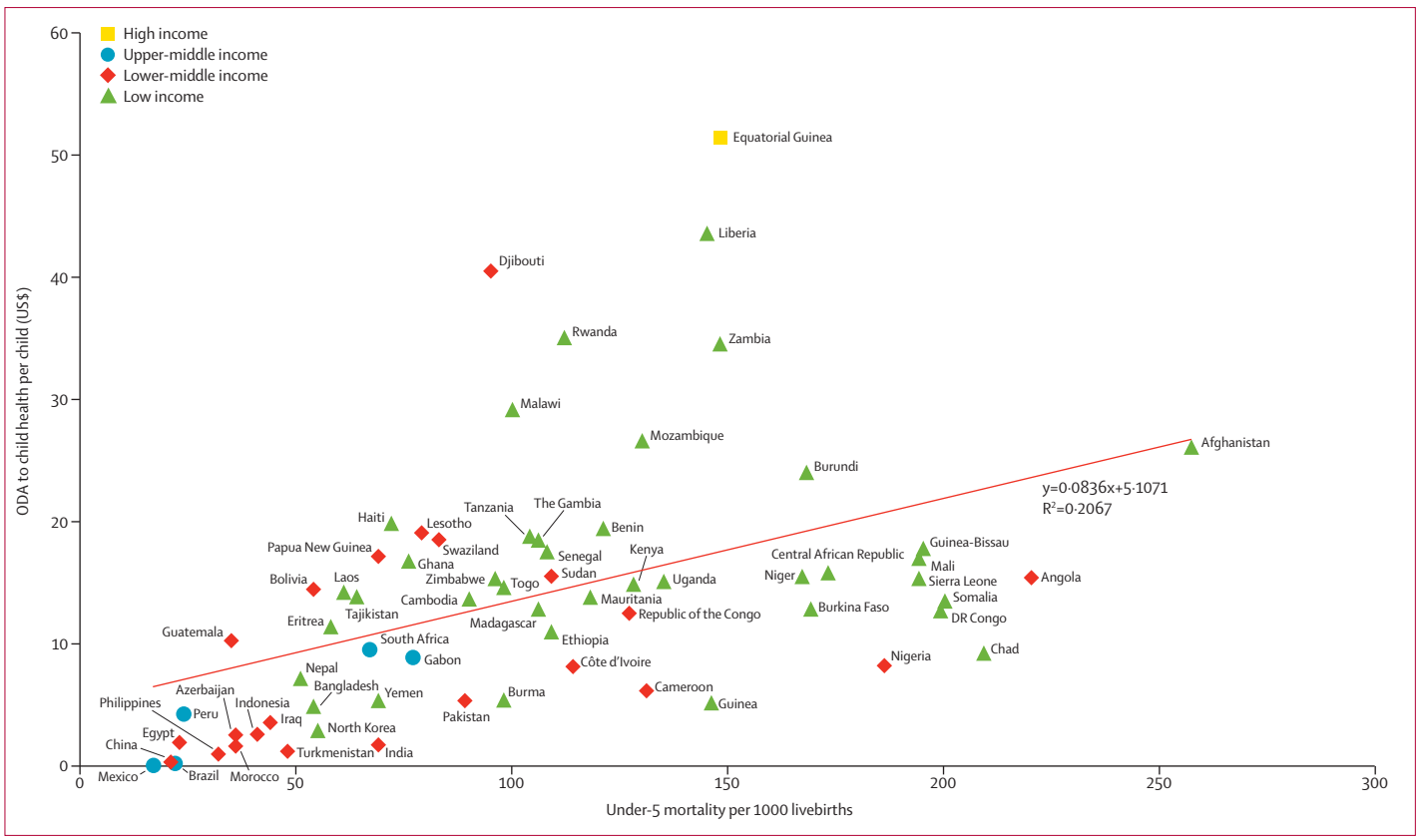

Figure 2: **Official development assistance to child health per child versus under-5 mortality[21] for 68 Countdown priority countries, 2008**
Linear trend line shows the degree of correlation between mortality and official development assistance (ODA). World Bank income group classifications[22] are colour-coded.

ODA to child health per child and to maternal and newborn health per livebirth increased in most but not all of the 68 priority countries during the 6-year period. Zambia and the Democratic Republic of the Congo, for example, both saw consistent increases each year in both ODA per child and ODA per livebirth. Four countries saw declines in both ODA per child and ODA per livebirth, two countries showed declines only in ODA per child, and eight countries showed declines only in ODA for maternal and newborn health.

Some countries had highly variable disbursements, as indicated by the standard deviation of ODA across the 6 years. Papua New Guinea, for example, received an above-average amount of $17·2 for child health per child in 2008; however, the country had large fluctuations in its aid to children, since aid fell by 20% between 2003 and 2004, dropped by 68% between 2004 and 2005, quadrupled in 2006, fell again by 13% in 2007, and finally increased by 46% in 2008.

The degree to which ODA per head targeted countries with the greatest need in 2008 is shown in figure 2 and figure 3. Botswana has been excluded from the 2008 plots because its ODA values were several times higher than the next highest recipient owing to what appears to be a one-off event. In both figures, the five upper-middle-income countries (apart from Botswana) are clustered at fairly low levels of mortality and ODA, while the lower-middle-income countries tend to have lower levels of both ODA and mortality than do the low-income countries. For both child health and maternal and newborn health, trend lines show a clear correlation between mortality and ODA, although several countries received substantially more or less ODA than did other countries with similar mortality. If Botswana is included in the linear trend, the correlation coefficient drops from 0·083 (R^2=0·21) to 0·037 (R^2=0·011) for child health, and from 0·016 (R^2=0·15) to 0·006 (R^2=0·003) for maternal and newborn health. The inclusion of the Botswana data point thus produces a reduced, but still positive correlation between mortality and ODA. In general, this suggests that in 2008, countries with greater need for ODA (ie, higher maternal and child mortality and lower income levels) were somewhat more likely to receive more ODA per head than were countries with a lower need; however, ODA for child health was better targeted to need than was ODA for maternal and newborn health.

The degree to which ODA per head targeted countries with high mortality increased over the 6-year period (webappendix pp 13–24). From 2003 to 2007, the slope of the linear trend lines grew steeper every year, suggesting that countries with the highest maternal and child

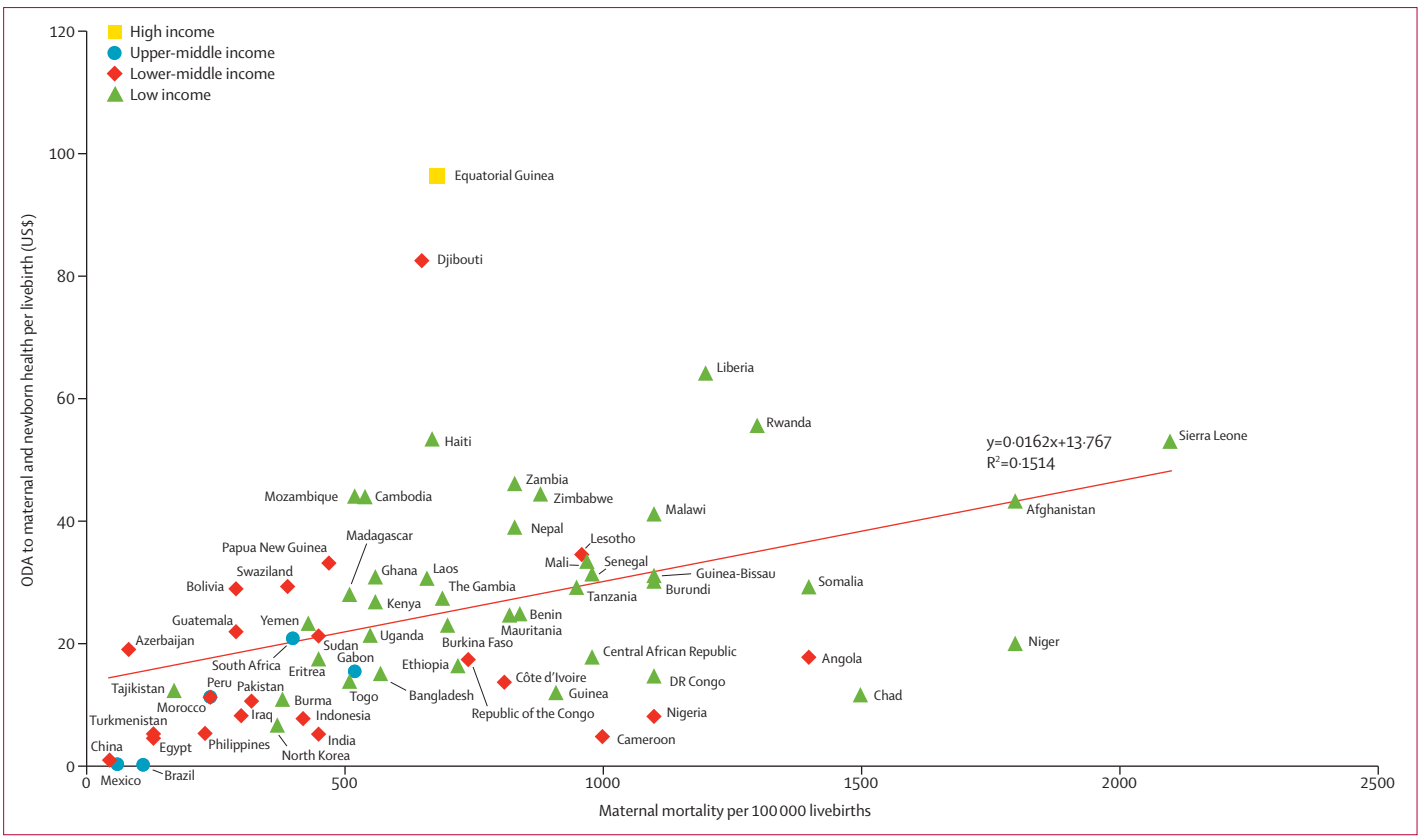

Figure 3: **Official development assistance to maternal and newborn health per livebirth versus maternal mortality[21] for 68 Countdown priority countries, 2008**
Linear trend line shows the degree of correlation between mortality and official development assistance (ODA). World Bank income group classifications[22] are colour-coded.

mortality were increasingly likely to receive more ODA for maternal and newborn health and for child health, respectively, than were countries with lower mortality. In 2008, the pattern becomes less clear: inclusion of data for Botswana produces flatter trend lines than in 2007, suggesting poorer targeting of ODA, whereas exclusion of Botswana as an anomalous data point produces a steeper slope, showing continuing year-on-year improvements in targeting of ODA to countries with the greatest need.

Throughout the period, there were several notable outliers. Niger and Chad are low-income countries affected by some of the highest rates of maternal mortality, yet they consistently received far less ODA for maternal and newborn health per livebirth than did many countries with lower mortality and greater resources. After the discovery of oil in the 1990s, Equatorial Guinea joined the ranks of high-income countries and has lower maternal mortality than do Niger, Chad, and most other low-income countries, yet received far more aid per livebirth than all recipients apart from Botswana in 2008. Djibouti has a fairly small population, holds a politically strategic position,[23] and as a lower-middle-income country received more aid per livebirth than all the low-income countries in 2008 (figure 3).

Discussion

New data for 2007 and 2008 and updated data for 2003–06 show that ODA for maternal, newborn, and child health more than doubled for developing countries in general and for the 68 priority countries in the Countdown to 2015 Initiative during this 6-year period. In 2008, donors disbursed $5·4 billion for maternal, newborn, and child health to all developing countries, of which at least $4·1 billion targeted the 68 priority countries.

In 2009, the High-Level Taskforce on International Innovative Financing for Health Systems estimated the mean additional annual funding needs for maternal, newborn, and child health in 49 low-income countries to be between $2·0 billion (World Bank marginal budgeting for bottlenecks methodology, medium scenario) and $3·0 billion (WHO normative approach methodology) above 2006 levels from 2009 to 2015.[3] An additional $9·9–26·5 billion would be required on average per year to strengthen health systems. In view of these estimated requirements, ODA for maternal, newborn, and child health in 2008, which constitutes a $1·5 billion increase from 2006, shows both substantial progress and persisting unmet needs.

The inclusion of several additional donors (notably UNFPA), for which data were previously unavailable

and revised data based on disbursements (rather than commitments) from the World Bank mean that the annual estimates for ODA for all developing countries were between 22·9% and 11·4% higher than those reported by Greco and others[15] for 2003–06 and show a smoother, increasing trend. Additionally, by providing estimates of disbursements from each donor to the 68 Countdown priority countries rather than to all developing countries, this report describes the contributions of donors to those countries most in need. For some donors, such as Norway, this more focused reporting resulted in little change from previously published figures, since most of Norway's ODA went to the 68 priority countries. For other donors, such as Japan, a substantial proportion of their aid goes to non-priority countries, whose maternal, newborn, and child health needs are not as great. For recipient countries, inclusion of both the additional donor data and the revised population estimates has led in many cases to upward revisions of the ODA per head estimates for 2003–06.

Although the increasing trend of maternal, newborn, and child health funding might be in some part because of successful advocacy efforts, the increases only keep pace with and do not exceed the increases in ODA to the health sector in general. Despite signs that targeting might be improving, ODA was still not found to be highly targeted to countries with the highest rates of maternal and child mortality, which is consistent with findings from previous studies.[24] Some countries persistently received far less ODA per head than did countries with much lower maternal and child mortality, and small, politically strategic countries received ODA that was disproportionate to their relative needs. As reported in previous analyses,[14,15] ODA for child health was consistently better targeted to need than was ODA for maternal and newborn health. Although corruption and lack of absorption capacity might in some cases explain the lack of ODA for countries with high needs, other investigators have noted that aid can be used as a political tool.[25]

Despite Paris Declaration commitments,[7] more than 90% of funding for maternal, newborn, and child health continued to be disbursed through project-based modalities and funding levels were highly volatile for many countries, including the poorest. The effectiveness and potential returns of these project-type investments depend on functioning health systems, and so might be constrained by funding shortfalls for human resources, infrastructure, and other crucial building blocks.[3,9,10,26] The only project type within our framework for which funding seemed to decrease was Integrated Management of Childhood Illness; however, this decline might be attributable to how donors describe their projects.

This analysis confirms widely noted shifts in the global aid architecture,[10,27] whose implications for maternal, newborn, and child health remain unclear. Funding from the GAVI Alliance and the Global Fund has exceeded core funding from all major multilateral institutions for maternal, newborn, and child health; bilateral funding has also increased substantially, especially from the USA and the UK. One analysis of adherence to best aid practices ranked the World Bank and UK best, UN agencies (apart from UNICEF) worst, and other bilateral donors and UNICEF "in between"; however, neither this nor any other analysis has effectively assessed the health impact of aid.[28] Although some evidence suggests that the often narrow focus of global health initiatives might weaken the broader health system or lead to the emergence of a new class of health service inequity, with some diseases and conditions receiving more attention and investment than others,[27] the establishment of the Health Systems Funding Platform advocated by the High-Level Taskforce[29] engenders hope of a greater emphasis on broader health systems support in the future. The two leading bilateral donors consistently increased their aid between 2003 and 2008; however, reliance on just two bilateral donors for such a large proportion of funding risks exposing recipient countries to future volatility.

Other analyses of ODA to the health sector and various sub-sectors have been undertaken based on the sector and purpose codes reported in the CRS database.[9,10,13] At the Muskoka Summit in June, 2010, the Canadian presidency announced that maternal, newborn, and child health would be their flagship issue and G8 leaders agreed to use an approach based on OECD classification of the purpose of aid to hold their members accountable for committed increases. Although this approach responded to G8 needs for maximum transparency and ease of implementation, it was based on a much broader definition of maternal, newborn, and child health, and used less specific means to allocate disbursements than in this study. Our analysis used a detailed, but labour-intensive approach by examining the totality of data that donors provide. We looked at all records within the OECD's CRS database irrespective of the sector under which they were coded. This manual coding was more specific than was classification of projects based on either CRS purpose codes or automated keyword searches. It distinguished between different types of projects falling within the same purpose code and captured those projects with descriptions containing typographical errors or non-standard abbreviations. Additionally, the manual coding excluded projects for which the description contained keywords as part of a situation analysis rather than a description of project activities. In recognition of the importance of a well functioning health system for mothers and children, proportions of integrated health systems projects, general budget support, and health sector support disbursements were included. Activities outside of the health sector, such as promotion of sanitation, female education, or women's

rights, were excluded, although they can create an enabling environment for the health of mothers and children.

Our definition of maternal health activities excluded pre-pregnancy activities such as family planning. In part, this choice was motivated by a desire not to duplicate resource tracking undertaken by the Netherlands Interdisciplinary Demographic Institute in collaboration with UNFPA. A reduction in the number of pregnancies per woman decreases the lifetime risk of maternal morbidity and mortality as well as the probability of complications and death in each pregnancy. Several countries with the highest birth rates are also among the outliers showing very high levels of maternal mortality and low levels of ODA per livebirth. Given a fixed budget for maternal and child health, reductions in the birth rate would make more resources available for each birth and for each child.

Studies such as the one reported here are attracting increasing donor interest and stimulating improved reporting; however, further improvements are still needed. Donors should continue to improve the timeliness and completeness of their reporting. They should also adhere better to the reporting guidelines to which they unanimously agreed,[30] by, for example, reporting only in English or French. Although the use of keywords such as child health has been proposed,[31] such changes are only likely to aid analysis if donors first improve the specificity and relevance of their project descriptions, removing situation analyses and other extraneous information that would confound keyword searches. Perhaps more importantly, additional funders, such as the Bill & Melinda Gates Foundation and emerging donor states, should be encouraged to report directly to or in formats comparable to the CRS so as to create a more complete, standardised, international database.

The exclusion of these non-traditional donors is one of the key limitations of this analysis and has been noted both in previous reports[14,15] and in a critique of them.[31] Although one study showed that more than 60% of the Gates Foundation's global health funding in 2005 supported research,[11] which would be excluded from our definition of maternal, newborn, and child health activities, the remaining funding nonetheless constitutes a substantial contribution. Other investigators successfully included non-ODA aid flows from foundations and non-governmental organisations reporting in the USA, but were similarly unable to include ODA from emerging donors in their analyses.[10]

This analysis has several other limitations. Although we distinguished clearly between bilateral and multilateral aid and avoided double-counting, it has been argued that the data underestimate the contributions of some bilateral donors, which channel a greater share of their health aid through core funding of multilateral organisations, and the influence of some UN agencies, which receive substantial bilateral funding for specific projects rather than for their core budgets. Coding disbursements for some donors was especially challenging. For example, contrary to agreed guidelines,[30] the World Bank separated each of its projects into many separate records with inconsistent descriptions. Furthermore, time trends are restricted to a 6-year period. Although other investigators have undertaken analyses of data from before 2003, these have been based on commitments data[9] or imputations,[10] because actual disbursement data are incomplete. Perhaps more importantly, this type of analysis is concerned only with ODA flows and not with domestic financing or the fungibility of aid.[12,32] Additionally, this study does not go beyond the country level, even though important inequities exist within countries. Finally, the analysis of the degree to which ODA is targeted towards countries with the greatest maternal and child health needs is based on mortality estimates that are imperfect and currently under review.

Future analyses will explore funding to family planning, and will revise some of the distinctions made between maternal, newborn, and child health activities. The inclusion of additional donors will need to be explored and new data incorporated as it becomes available. Our analysis did not seek to assess the effect of donor funding on health outcomes, which is a potential direction for future research. Analyses will also need to examine humanitarian funding in particular, taking into account the innovative funding mechanisms, such as multi-donor trust funds, that have had an important role in Afghanistan, Southern Sudan, and other regions with some of the highest rates of mortality.[33] As 2015 approaches, independent analyses will continue to be important to hold donors accountable for their commitments and obligations in reducing maternal, newborn, and child mortality.

Contributors

CP analysed the data and wrote the first draft of the report. TP-J and AM developed the methodology, and GG contributed to resolving analytical issues. All authors reviewed and revised successive drafts of the report.

Conflicts of interest

We declare that we have no conflicts of interest.

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