Misfinancing global health: a case for transparency in disbursements and decision making

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To address the gap between health investments and financial flows worldwide, we identified the patterns in allocation of funds by the four largest donors—ie, the World Bank, Bill & Melinda Gates Foundation (BMGF), the US Government, and the Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria—in 2005. We created a disbursement database with information gathered from the annual reports and budgets. Funding per death varied widely according to type of disease—eg, US$1029·10 for HIV/AIDS to $3·21 for non-communicable diseases. The World Bank, US Government, and Global Fund provided more than 98% of their funds to service delivery, whereas BMGF gave most of its funds to research. BMGF grants in 2005 were given largely to private research organisations, universities, and civil societies in rich countries, whereas the US Government and Global Fund primarily disbursed grants to sub-Saharan Africa. Publicly available data for global health disbursements is incomplete and not standardised. Continued attention is needed to develop country ownership, particularly in planning and priority setting.

Introduction

An unprecedented amount of money is being pledged and used to fund health research and services throughout the world. Although estimates are difficult to obtain, the 2004 estimate for international health funding was about US$14 billion, and is rapidly increasing, largely because of the emergence and growth of the Bill & Melinda Gates Foundation (BMGF) and the US Government's AIDS initiative.[1] In parallel with increased financial commitment, the consensus for technical strategies for global health is increasing,[2] an emerging though controversial, epidemiological evidence-base might provide information about the disbursement of the health funds.[3] Clarification of technical and social strategies for disease prevention and treatment, though perhaps flawed, can facilitate cooperation and political commitment.

The absence of knowledge about the present investments by the major donors to global health might hinder cooperation among developing countries and international donors. The focus of previous efforts has been on tracking funding according to disease (eg, HIV/AIDS), strategic approach (eg, eradication *vs* control), country (eg, Organisation for Economic Cooperation and Development [OECD] and Development Assistance Committee), and within country (eg, national health accounts).[4-11] The OECD creditor reporting system provides information about the individual aid activities of 23 member countries and several UN and multilateral agencies.[4,8] However, this database does not contain information about the activities of the BMGF or detailed information about grants disbursed (eg, primary recipient of funds).[12] As noted in the reports by the Center for Global Development and Research and Development (RAND), no information source exists to provide an overall idea of health resource flows, leading to an absence of credible estimates of donor commitments and actual funds.[13,14] No systematic effort has been made to track all disbursements from the major global health donors because of the difficulties.[14] In this paper we use the few available sources to analyse health disbursements with the aim of prompting further disclosure of resource flows from major global institutions. We assess the discrepancy between what needs to be done, according to public-health evidence, and the financial commitments by considering all disbursements made in 2005 by the major donors relative to the burden of disease. We create a baseline from which we can assess deviations in priority that might be due to other influences on the major donors by relating disbursements to mortality and burden of disease.

Global health donors

Although some consensus has been reached about what needs to be done for health, questions that remain are who is going to do what and how. Of the many different possible candidates (eg, governments, non-governmental organisations, and WHO), four institutions have come to the fore as donors—ie, the World Bank, US Government, BMGF, and Global Fund for HIV/AIDS, Tuberculosis and Malaria (panel). These donors play the largest part in terms of financial contributions but they are estimated to contribute only about a third of all donor funding for global health.[4]

All donors are estimated to account for about 0·3% of total expenditures on global health, 1·3% in non-OECD countries, and 6·5% in sub-Saharan Africa.[14] Data for national health financing in developing countries is inadequate; individuals in the poorest countries often pay about 50% of health-care costs, and sometimes up to 80%, with private funds.[14,15] The four donors account for about 0·1% of all health expenditures worldwide. Why is their effect so important? Many health ministries have become donor dependent, with ministers from Tanzania, Kenya, and Uganda reporting that 40–60% of their budgets come from donors.[16] Because of this dependence, the priorities and services established by national governments, even those working with private funds, could be affected by the donor's priorities.

The specific mandate, capacity, and decision-making mechanisms of each donor can affect the funding priorities; thus of importance is to understand the structures of each institution (webappendix). The World

Panel: Stated priorities of worldwide health donors

World Bank
- Childhood mortality reduced (MDG 4, target 5, and MDG 7, target 10)
- Childhood malnutrition improved (MDG 1, target 2)
- Avoidable mortality and morbidity from chronic diseases and injuries reduced
- Improved maternal, reproductive, and sexual health (MDG 5, target 6)
- Reduced morbidity and mortality from HIV/AIDS, tuberculosis, malaria, and other priority pandemics (MDG 6, targets 7 and 8)
- Improve financial protection (reduce the impoverishing effects of illness for the poor or near poor)
- Improve funding sustainability in the public sector from both domestic and external sources
- Improved governance and transparency in the health sector (MDG 8, target 12)

US Government
- PEPFAR: HIV/AIDS
- President's Malaria Initiative
- USAID: environment, health, family planning, health systems, HIV/AIDS, infectious disease, maternal and child health, nutrition

Gates Foundation
- Acute diarrhoeal disease
- Acute lower respiratory infections
- Child health
- HIV/AIDS
- Malaria
- Poor nutrition
- Reproductive and maternal health
- Tuberculosis
- Vaccine-preventable diseases
- Other infectious diseases

Global Fund
- HIV/AIDS
- Tuberculosis
- Malaria

MDG=millennium development goal. PEPFAR=President's Emergency Plan for AIDS Relief. USAID=United States Agency for International Development.

Bank is governed by an executive board in which all member states are formally but not equally represented—ie, large donor countries have more voting power.[17] Similarly, an independent board is responsible for the overall governance of the Global Fund, including the approval of disbursements. The Global Fund is unique because it has a board that includes substantial developing-country and private-sector representation.[18] The US Government undertakes initiatives that are supervised by the state department, which is ultimately responsible to the President of the USA and US Congress. The BMGF, a private initiative, has four co-chairs who oversee operations. Although the co-chairs do not authorise every grant (delegation of authority depends on the size of the grant), they do approve grant-making strategies in advance. Governance structures might explain the decision-making and priority-setting processes.

With information gathered from the annual reports and budgets, we created a database of disbursements classified by donor, type of disease, regional focus, type of investment, and type of receiving agency for 2005. The main health-financing goal of the four donors is the improvement of public health worldwide. Thus, we include funding for vaccines, clinical treatments, improvements in water and sanitation, improved quality and quantity of roads, emergency relief, and public health advocacy in this paper. Although this method provides a valuable idea of global health financing, we recognise that assessment of 1 year, which offers standardisation, does impose a constraint. The database is available on request from the corresponding author.

We considered a total of 1006 grants or loans made by the World Bank (n=65), US Government (n=115), Global Fund (n=543), and BMGF (n=283). We independently classified these grants or loans according to type of disease based on key words used in their descriptions, and then conferred with each other to reach a consensus. For multipriority grants, we divided funding equally across the categories. To differentiate research from services, we grouped all funds specified for exploratory purposes as research (including large-scale trials), and all those for the provision of health services as service. All donors had classified funding according to type of disease, with inconsistency between the donors. Thus, we established categories to show the primary targets of donor funding and placed each grant or loan in a category based on project descriptions and existing categories.

For the US Government, we assessed commitments because of the absence of accessible data for disbursements. For the other three institutions, we assessed the disbursements

Comparison of the 2005 disbursements from the World Bank, BMGF, and Global Fund with commitments from the US Government in this analysis is problematic because of the time delay between commitments and disbursements.[10] The commitments reported are for funding during 1 year, which is the same as for the disbursements. In a study of 2005 US disbursements for HIV, tuberculosis, and malaria—based on the creditor reporting system database, legislation records, and interviews with US staff—the total foreign payouts (excluding the Global Fund contributions of $348·0 million) were reported to be $1·942 billion.[19] This amount is similar to the $2·0 billion estimated for commitments to HIV, tuberculosis, and malaria, and provides some validation for the comparison of the US data with that of other donors.

For each disease group, we included morbidity and mortality estimates in low-income and middle-income countries according to the global burden of disease project.[3] This project, led by WHO, compiles estimates of incidence, prevalence, severity, and mortality for more than 100 causes, making use of a wide range of sources.[20] Of note, mortality data from the global burden of disease study are for 2001, whereas disbursements are for 2005. To estimate child mortality, we used all-cause mortality for age less than 5 years, including deaths due to vaccine-preventable causes, and combined data for vaccine funding and child health. The justification for this grouping is that funding agencies specify child health as a target, rather than the treatment of specific diseases. Further, age-specific data are not fully available for individual diseases. Maternal morbidity and mortality include the burden of disability-adjusted life years and death related to conditions associated with poor maternal health and cervical cancer. The justification for this grouping of conditions associated with poor maternal health and cervical cancer is that they are combined for disbursements from donors.

The categories presented here are not mutually exclusive—eg, a child death due to measles would be counted as child health (all-cause) and might be associated with undernutrition. Further, interactions between categories exist because many health interventions are mutually reinforcing. Improvement of the child's nutritional status would reduce the risk of death from measles and so would a vaccination campaign. The mutually reinforcing nature of health interventions has been widely recognised, and has led many public-health experts to call for health-systems support and for packages of interventions, as in the disease control priorities project. We controlled for double counting of financial commitments by excluding disbursements made by one donor to another. Thus, US contributions to the Global Fund were excluded from the US Government data.

Global health disbursements and donor priorities in financing

Surprisingly, little attention has been given to analysis of global health disbursements. Advocates for particular disease types or interventions often cite the abysmal funding for their disease, without the context of the overall global health funding allocations.

In 2005, the World Bank disbursed $3·8 billion through both the International Bank for Reconstruction and Development, and the International Development Association for health (table 1; table 2). The main areas of investment—health systems, non-communicable disease and injury prevention, water and sanitation—are integrated into general support loans to low-income and middle-income countries. The focus of the World Bank's funding is on services for disease prevention, rather than research or treatment of disease (table 2). Loans for injury prevention are specifically to improve road quality and quantity in countries. In 2005, 93·4% of the World Bank's

	Disbursements (US$×10⁶)				Deaths*×10⁶	DALYs*×10⁶	Total funding per death ($)
	World Bank	US Government	Gates Foundation	Global Fund			
Child health (excluding vaccines)	140·4 (4%)	466·0 (13%)	14·4 (2%)	0	10·25 (21%)	132·2	60·5
General infectious diseases	159·9 (4%)	230 (7%)	76·9 (9%)	0	..	..	..
Worldwide health strategy, partnerships, and general budget	0	96·1 (3%)	62·5 (8%)	0	..	..	..
Health systems	1287·0 (34%)	0	0	8·2 (<1%)	..	..	..
HIV/AIDS	202·8 (5%)	1719·0 (49%)	119·3 (14%)	593·4 (56%)	2·56 (5%)	70·8	1029·1
Injury	705·1 (18%)	0	0	0	4·71 (10%)	155·9	149·7
Malaria	78·0 (2%)	156·6 (4%)	239·7 (29%)	308·2 (29%)	1·21 (3%)	39·9	646·7
Maternal health (including family planning)	187·2 (5%)	406·1†(12%)	29·6 (4%)	0	0·73 (2%)	26·4	853·28/295·9 excluding family planning
Non-communicable diseases	83·5 (2%)	0	0	0	26·03‡ (54%)	678·8	3·2
Nutrition	74·1 (2%)	29·7 (<1%)	15·7 (2%)	0	5·89 (12%)	29·6	20·3
Polio	51·7 (1%)	127·3 (4%)	35·1 (4%)	0	0§	0	>1×10⁶
Tuberculosis	3·9 (<1%)	124·0 (4%)	41·9 (5%)	146·1 (14%)	1·60 (3%)	35·9	197·8
Vaccines (excluding specific disease areas above)	0	104·8 (3%)	191·4 (23%)	0	1·48 (3%)	43·2	200·1
Water and Sanitation	854·1 (22%)	0	0	0	1·78 (4)	58·7	479·8
Total	3827·7	3459·6	826·5	1055·9	n/a	n/a	n/a

Data are number (%), unless otherwise indicated. n/a=not applicable. *Data are for low-income and middle-income countries, and are taken from reference 3. †Entire amount for family planning. ‡Data are for all deaths due to child and maternal undernutrition as a risk factor, and are taken from reference 3. §No reported deaths due to polio in low-income and middle-income countries, and one death in high-income countries in 2001, according to reference 3.

Table 1: Disbursements, deaths, disability-adjusted life-years (DALYs) according to type of disease

	World Bank	US Government	BMGF	Global Fund
Funding source	IDA: members capital subscriptions; IBRD: private capital markets, members capital	US taxpayers	Bill and Melinda Gates (private assets)	Donations from governments and private actors
Accountable to	Executive board	Congress	Co-chairs (Bill, Melinda, and William Gates)	Board
Leadership structure	President, managing director, vice-president of human development	Executive branch (White House, State Department, USAID)	Co-chairs, CEO, CFO, CCO, COO, CAO, managing director of public policy, general counsel, secretary, presidents for each Initiative (Global Health)	Executive Director, small Secretariat in Geneva
Funding type	Loans (IBRD, IDA)	Grants	Grants	Grants
Proportion of funding given to service and research	Research: 0·26%; service: 99·5%; both: 0·21%	Research: ~5·0%, service: ~95·0%	Research: 60·6%; service: 33·5%; both: 3·5%; n/a: 2·3%	Research: 0·0; service: 100·0%
Proportion of funding given to prevention and treatment	Prevention: 77·0%; treatment: 0·1%; both: 22·9%	Not specified, but for PEPFAR ~30·0% for prevention and ~70·0% for treatment	Prevention: 75·5%; treatment: 5·9%; both: 16·2%; n/a: 21·3%	Funding integrated; not specified
Region of recipient agency	Sub-Saharan Africa, South Asia, Southeast Asia, Latin America, Caribbean, central Asia, Middle East, north Africa	Sub-Saharan Africa	North America and western Europe	Sub-Saharan Africa
Primary recipients of funds	Government	Civil-society organisations, government	Private research, universities, civil society, public-private partnerships	Government/CCM
Financier has major field staff presence	Yes	Yes	No	No, in-country CCMs
2005 disbursement	$3·8 billion	$3·5 billion (commitment)	$826·5 million	$1·05 billion
Total endowment/commitment	n/a	$46·2 billion	$67·0 billion*	$10·4 billion

n/a=not applicable. BMGF=Bill & Melinda Gates Foundation. IDA=International Development Association. IBRD=International Bank for Reconstruction and Development. USAID=United States Agency for International Development. CEO=chief executive officer. CFO=chief financial officer. CAO=chief administrative officer. CCO=chief communications officer. COO=chief operating officer. CCM=country coordinating mechanism. *Pending transfer of Warren Buffet's pledge to BMGF.

Table 2: **Key dimensions of the major worldwide health donors in 2005**

total funding was disbursed directly through finance or health ministries. The remaining 6·6% was given to state-owned enterprises (eg, Manila Water Company).

The US Government gave $3·5 billion through the United States Agency for International Development (USAID) bureau for worldwide health, President's Emergency Plan for AIDS Relief (PEPFAR), and the President's Malaria Initiative in 2005. It favoured vertical programmes to address HIV/AIDS and malaria (table 1). 8% of all funding was for abstinence-only programmes.[21] Although complete information about the recipients of funding in developing countries is not available, the funds are shared with several partner organisations, which are a combination of civil-society organisations (eg, faith-based non-government organisations), the private sector, and government ministries.[21] Although these organisations are publicly listed, a breakdown of how much funding reaches each organisation is not publicly available.

In 2005, the BMGF disbursed about $826·5 million through 283 grants (table 1; table 2), mainly for vaccines and research done by organisations based in North America and western Europe. The foundation's focus was on basic and clinical science research in infectious diseases. No grants were disbursed for non-communicable diseases and injuries, and one grant was for health-systems research. 76% of the BMGF's disbursements were for prevention programmes and research.

In 2005, the Global Fund disbursed $1·05 billion in 543 payments (table 1; table 2). The investments in HIV/AIDS and malaria accounted for 56% and 29% of disbursements, whereas the investment in tuberculosis was 14%. The Global Fund does not directly fund research initiatives and 100% of disbursements were for services, though many grants included provisions for monitoring and assessing programmes.

Comparisons of aggregate spending with mortality (figure 1) and disability (figure 2) data show the discrepancy between burden of disease in low-income and middle-income countries, and the focus of disease-specific funding. When we assessed total disbursements from all four donors (figure 2), three deviations in funding trends were noted: HIV/AIDS received more funding per death and disability-adjusted life years, whereas child health, and non-communicable disease and injury received less, than did other diseases.

## Assessment of global health financing

Our approach has several limitations. Although data for disbursements are available from the major health donors, they are of poor quality and are not standardised. Of equal importance, mortality data are incomplete for many of the funded specialties, leading to potentially imprecise assessments of disease burden. We do not suggest that mortality and disbursements should be perfectly correlated because the cost per year of life saved

is not equal for all causes of mortality, with differences in cost-effectiveness of essential interventions.[22] Additionally, other dimensions to resource allocation are equally, if not more, important, than disease burden, and thus decisions should not solely focus on this measure. Justifiable, politically-guided deviations from even the best technical evidence in global health finance might exist. Our assessment of institutional mandates, process of priority setting, and governance of the global health donors suggests that each has selected priorities based on perceived comparative advantage. In the World Bank's new health, nutrition, and population strategy, the comparative advantage is in infrastructure (which explains the renewed focus on health systems);[23] for the Global Fund, the comparative advantage is rapid delivery of funds (however, PEPFAR has done better according to this measure);[24,25] and for BMGF, the comparative advantage is technology and innovation.[26] Comparative disadvantages might affect funding too. Multilateral institutions, because of their inclusion of low-income and middle-income countries in their governance structures and their interaction with government, might be better placed than bilateral donors to lead efforts to support a country in developing a health system. Delivery and development of drugs and health technology, which have been the focus of the bilateral (eg, US Government) and private (eg, BMGF) institutions, are less likely and less politically complex than is long-term investment in infrastructure. In our analysis, a perfect match of disbursements to mortality was considered the baseline, rather than the ideal, from which deviations should be explained. We did not do a political economic analysis, which would be an important step to understanding the decision-making processes of the major global health donors, and would most likely reinforce our recommendation of continued attention to the development of country ownership, particularly planning and priority setting.

## Inadequate data for disbursements and disease burden

The task of tracking, then standardising, global health disbursements from the major donors is difficult. A 2 year project to track resources in global health, done by the Center for Global Development, showed substantial information gaps, including absence of credible data for commitments and funds available to global health, and a gap between the rhetoric of transparency and accountability, and the data systems to provide this information.[14] The report, like a previous report by the RAND corporation,[13] makes recommendations to improve standardisation and access to data for global health funding. Three inter-related problems exist.

First, data for the global burden of disease are imperfect and incomplete. In our analysis, we used disability-adjusted life years and mortality to consider the match between technical evidence and allocations. As noted for
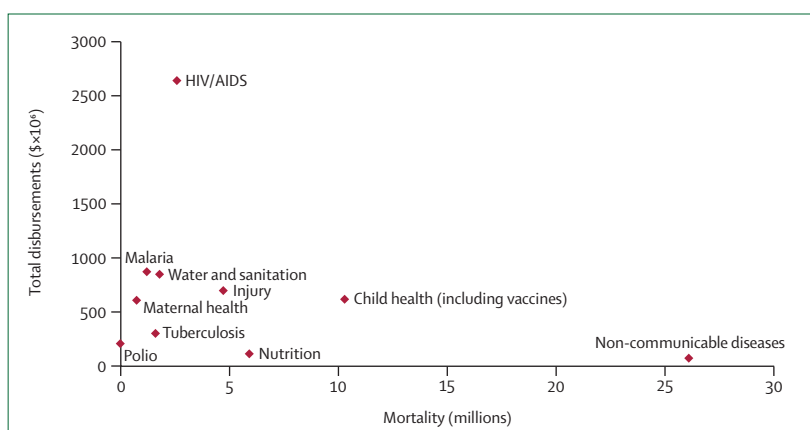
Figure 1: **2001 worldwide mortality versus 2005 disbursements of World Bank, US Government, Bill & Melinda Gates Foundation, Global Fund to fight HIV/AIDS, Tuberculosis and Malaria**
Health-systems funding cannot be represented as a graph because no reliable measure of mortality and disability due to the absence of a good health system exists. The omission of health-systems funding excludes about a third of all World Bank disbursements from this figure.
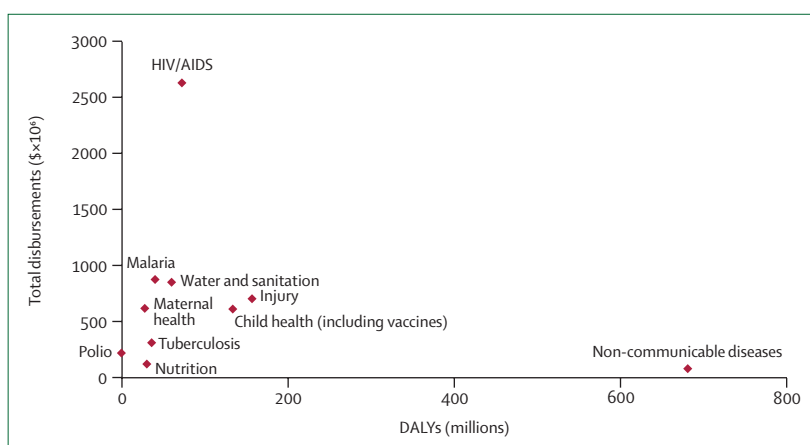
Figure 2: **2001 disability-adjusted life years (DALYs) versus 2005 disbursements of World Bank, US Government, Bill & Melinda Gates Foundation, Global Fund to fight HIV/AIDS, Tuberculosis and Malaria**
Health-systems funding cannot be represented as a graph because no reliable measure of mortality and disability due to the absence of a good health system exists. The omission of health-systems funding excludes about a third of all World Bank disbursements from this figure.

the burden of disease estimates, roughly two-thirds of deaths are not recorded.[27] Thus estimates rely not only on death registration systems, but also on epidemiological estimates, cause of death models, and expert opinion, thus leading to margins of error in calculations of mortality.

The second problem is that the global health community does not have good estimates for non-disease-specific deaths. For example, information is not available for mortality caused directly or indirectly by absence of access to health systems, and thus we are unable to consider health-system allocations on the same basis in which we consider those for HIV/AIDS. The insufficiency of current health measures, particularly in determination of community (and national and regional) needs has been widely recognised. The launch of the BMGF-funded Institute for Health Metrics and Evaluation at the University of Washington holds promise for further

progress on the assessment of health investments.[28] Of note, the absence of methods for assessment not only affects the financing of health-systems but also the financing of preventive public-health measures.[29] This absence of a universally accepted measurement method leads to considerable uncertainty for researchers and donors making decisions about investment of their funds. With the present measurement system driven by disease-specific causes of death, investment in health systems is seen as a bottomless pit because we do not have a universally accepted proxy for the effect of health-systems investment on mortality. Once funds are labelled as health systems, tracking and measurement of their effects become difficult.

Third, public access to data for the disbursements made by the major global health donors varies—eg, the Global Fund and the World Bank have made all their data publicly available, whereas the US Government and the BMGF have not. The Center for Public Integrity has documented the difficulty in accessing information about US Government disbursements for PEPFAR. It gained access to two grant databases by suing the US State Department, and reported many inconsistencies in reporting of disbursements. For example, the "Center found more than 100 instances in which the total amount awarded to sub-partners was listed as being greater than the total amount received by their prime partners".[30] Across the donors, the absence of standardisation in the organisation of funding data makes any analysis of global health funding difficult.

On the basis of this research, we suggest that all health donors provide data in a standardised format, which should include the date and amount (in US$) of the financial commitments and disbursements, the organisation to receive the funding, the purpose and function of the funding, and a notice of any irregularities, including withdrawal or reduction in the funding. These data could be similar to those provided by the OECD creditor reporting system but would need to build on this system to include the BMGF, provide further information about grants (such as what exactly the funds were given for within health and to whom), and to ensure that the information provided is consistent across the donors.[12] The data could be managed through the OECD system or perhaps overseen by the new Institute for Health Metrics and Evaluation. Such standardisation and transparency could help facilitate the development of country input into health financing by reduction of the uncertainties and confusion about financing that have often stifled this input.

Development of country ownership in health

All four donors do not explicitly incorporate the demands of the governments or citizens of the developing country, or articulate the concept of ownership in setting the priorities but instead choose their priorities on the basis of what each organisation defines as important. Even those who point to the inclusive board of the Global Fund or its country-coordinating mechanism must acknowledge that the priorities of the Global Fund, namely HIV/AIDS, tuberculosis, and malaria, were included in the organisation's mandate.

In non-health sector aid, after many years of debate, the importance of ownership has been recognised, as shown by the endorsement of the 2005 Paris Declaration. Ownership was defined in the declaration as developing countries exercising "effective leadership over their development policies, and strategies" and coordinating development actions.[31] Small steps are being taken in this direction in global health but they should be examined critically. For example, the International Health Partnership launched in 2007 by eight donor countries and 11 donor agencies aims to provide better coordination among donors; focus on improvement of health systems as a whole; and develop and support countries' own health plans.[32] Yet, the concerns are that coordination will reduce the participation of developing countries in policy making by shifting the balance of power towards the "consortium of donors acting in unison" and thus could result in an inherent contradiction in the partnership.[33] The International Health Partnership might be seen to create new strings without providing additional sources of funds to developing countries. Although the rhetoric is in place and the principles are outlined in the Paris Declaration, action lags far behind. Rather than countries taking ownership so that investment can be made in long-term priority setting and planning, donors focus on quick results and measurable returns through vertical programming. The focus on these quick results discourages investment in health systems and indicates the need for a country-led process of priority setting.

A high-level working group for setting a developing country agenda for global health reported widespread views that the inclination of donors to repeatedly create new initiatives, like the parallel priorities and delivery of care by donors, weakens national strategies.[16] This difficulty was exacerbated by the absence of transparency among donors, and restricted awareness by health ministries about what donors were directing funds to. As one minister said about donors, "they like to monitor activities, but they do not like to be monitored and evaluated".[16]

The global health community should now move towards incorporating the concept of ownership into health assistance and realising the principles of the Paris Declaration. Without systematic attention to the articulated needs of developing countries through consultation and real partnership, donors for global health will not achieve informed and inclusive decision making.

Toward more equitable global health financing

The billion-dollar health institutions vary in their distribution of funding by geographic focus, investment in service or research, and support of government or civil society and private groups. Global health governance can

be viewed as a patchwork of donors, UN agencies, governments, civil-society organisations, and the private sector.[34] In this paper, we have analysed the investments of the major global health donors—ie, the World Bank, US Government, BMGF, and Global Fund. The pluralism of global health institutions and the informal alliances on which power in global health rests make a unified and fully coordinated health system highly unlikely.[34,35] Our analysis shows first, a clear part to be played by donors in improvement of the information gap through reporting of their funding in a complete, standardised manner, fully accessible to the public, and adequately communicated to the governments of developing countries; and second, the need to move towards decision making based on the articulated needs of the developing countries in a manner consistent with the Paris Declaration.

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