

An assessment of interactions between global health initiatives and country health systems

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Since 2000, the emergence of several large disease-specific global health initiatives (GHIs) has changed the way in which international donors provide assistance for public health. Some critics have claimed that these initiatives burden health systems that are already fragile in countries with few resources, whereas others have asserted that weak health systems prevent progress in meeting disease-specific targets. So far, most of the evidence for this debate has been provided by speculation and anecdotes. We use a review and analysis of existing data, and 15 new studies that were submitted to WHO for the purpose of writing this Report to describe the complex nature of the interplay between country health systems and GHIs. We suggest that this Report provides the most detailed compilation of published and emerging evidence so far, and provides a basis for identification of the ways in which GHIs and health systems can interact to mutually reinforce their effects. On the basis of the findings, we make some general recommendations and identify a series of action points for international partners, governments, and other stakeholders that will help ensure that investments in GHIs and country health systems can fulfil their potential to produce comprehensive and lasting results in disease-specific work, and advance the general public health agenda. The target date for achievement of the health-related Millennium Development Goals is drawing close, and the economic downturn threatens to undermine the improvements in health outcomes that have been achieved in the past few years. If adjustments to the interactions between GHIs and country health systems will improve efficiency, equity, value for money, and outcomes in global public health, then these opportunities should not be missed.

Introduction

In the past decades, a small number of fatal diseases disproportionately burdened the health systems in low-income and middle-income countries, and, in combination with other health challenges, has slowed progress towards the achievement of the Millennium Development Goals. For example, half the world's population is at risk of contracting malaria, and about 1 million of an estimated 250 million people with malaria died in 2006.¹ 25 million people have died from HIV/AIDS-related causes since the beginning of the epidemic;² about 1·3 million people who are HIV-negative die every year from tuberculosis;³ and an estimated 9·2 million children younger than 5 years died in 2007, mostly from preventable conditions.⁴ Since 2000, several large global health initiatives (GHIs) have resulted in a concerted response to these diseases with effective health interventions and technologies (eg, vaccines, antiretroviral drugs for HIV/AIDS, short-course chemotherapy for tuberculosis, and insecticide-treated bednets and artemisinin in combination with other treatments for the prevention and treatment of malaria). GHIs have capitalised on the urgency that has been generated by the adoption of the Millennium Development Goals. The GHIs indicate the increased involvement of the private sector, philanthropic trusts, and civil society in health care. About 100 GHIs (previously known as Global Public-Private Partnerships or Global Health Partnerships; panel 1) now exist. A few of these initiatives—including, the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund); the Global Alliance for Vaccines and Immunization (GAVI); the US President's Emergency Plan for AIDS Relief (PEPFAR); and the World Bank Multi-Country AIDS

Program (MAP)—contribute substantially to the funding for health provided by international donors.

The GHIs have rapidly become an established part of the international aid framework, and have been used to leverage substantial additional financial and technical resources for targeted health interventions. In 2007, the Global Fund and GAVI donated US\$2·16 billion in funding, and PEPFAR donated \$5·4 billion. GHIs

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Search strategy and selection criteria

Our aim was to gather data from studies in which clear and reproducible methods were used to examine the interaction between global health initiatives (GHIs) and health systems. We searched Cochrane Library, OneSource, and PubMed for English language reports, published from January, 1990, to May, 2009, with the keywords “global health initiatives”, “health systems”, “The Global Fund to fight AIDS, Tuberculosis and Malaria” (“Global Fund”), “Global Alliance for Vaccines and Immunization” (“GAVI”), “US President's Emergency Plan for AIDS Relief” (“PEPFAR”), “World Bank” (“Multi-Country AIDS Program”, “MAP”). We also used search keywords (“finance”, “governance”, “health workforce”, “health information”, and “supply management”) for the identified points of interaction between GHIs and country health systems, and for key factors that affect the expected performance of health systems within each point of interaction. We did internet searches for non-peer-reviewed reports by reviewing the websites of ten selected institutions (Centre for Global Development, Global Health Library, GAVI, Global Fund, London School of Hygiene and Tropical Medicine, UK Department for International Development Health, Partnerships for Health Reform, PEPFAR, WHO, and the World Bank). We obtained additional reports by searching reference lists of identified reports and through experts who attended at least one series of consultations that were organised by WHO. We also used information from a review (in press) of the evidence for the interactions between GHIs and health systems to control HIV/AIDS. As a result of our call for original data and for new analysis of existing data, 15 of 24 submitted studies were accepted after peer-review by 30 experts as sources of data for this report. We used 99 peer-reviewed reports, 122 non-peer-reviewed reports, and 15 original studies to gather data for this report.

Panel 1: Global health initiatives with involvement of several stakeholders

HIV/AIDS

- Accelerating Access Initiative to HIV Care; African Comprehensive HIV/AIDS Partnerships; Global Business Coalition on HIV and AIDS; Global Coalition on Women and AIDS; Global Fund to Fight AIDS, Tuberculosis and Malaria; Global Media AIDS Initiative; Global Reporting Initiative; HIV Vaccine Trials Network; HIV/AIDS Treatment Consortium (Clinton Foundation HIV/AIDS Initiative); Hope for African Children Initiative; Inter-Company for AIDS Drug Development; International Partnership Against AIDS in Africa; International pharmaceutical company initiative to support AIDS orphans (Step Forward); Maternal to Child Transmission; Multi-Country HIV/AIDS Program; President's Emergency Plan for AIDS Relief; Safe Injection Global Network; The Corporate Council of Africa; Viramune Donation Program

Malaria

- African Malaria Partnership; Antimalarial Product Development; Artesunate Suppository for Emergency Treatment of Severe Malaria; European Malaria Vaccine Initiative; Japanese Pharmaceutical, Ministry of Health, WHO Malaria Drug Partnership; Malarone Donation Program; Medicines for Malaria Venture; Multilateral Initiative on Malaria; NetMark, a Regional Partnership for malaria Prevention; Roll Back Malaria; WHO Novartis Coartem

Tuberculosis

- Action TB Program; Eli Lilly Multi-Drug Resistance Tuberculosis Partnership; Partnership Against Resistant Tuberculosis; Sequela Global Tuberculosis Foundation; Stop TB partnership (Stop TB); The Global Alliance for TB Drug Development; Tuberculosis Diagnosis Initiative

Onchocerciasis

- African Program for Onchocerciasis Control; Mectizan Donation Program

Dengue

- Dengue Vaccine Project; Pediatric Dengue Vaccine Initiative

Trachoma

- WHO Alliance for the Global Elimination of Trachoma (GET 2020); Lassa Fever Initiative

Tetanus

- Campaign to Eliminate Maternal and Neo-natal Tetanus

Schistosomiasis

- Praziquantel manufacturing project; Schistosomiasis Control Initiative

Sexually transmitted infections

- Global Microbicide Project; International Partnership for Microbicides

Blindness

- Global initiative to eliminate unnecessary blindness (Vision 2020); International Trachoma Initiative

Hookworm

- Human Hookworm Vaccine Initiative

Trypanosomiasis and leishmaniasis

- Gates Foundation/University of North Carolina Partnership for the Development of New Drugs; Sleeping Sickness Initiative; WHO Programme to Eliminate Sleeping Sickness

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specifically for HIV/AIDS and malaria have been effective in generating rapid responses to these epidemics. By 2007, the Global Fund, PEPFAR, and the World Bank MAP were contributing more than two-thirds of all external funding to control HIV/AIDS and malaria in countries with few resources.^{5,6}

Additional resources on a large scale might have important effects on public health and health systems in countries with insufficient resources. GHIs have also involved new groups of people (notably civil society organisations, leading to an increased focus on social justice); garnered the political will of donors; pioneered new performance-based approaches; provided support for interventions that had been thought to be unsustainable (such as antiretroviral drugs and treatment for multidrug-resistant tuberculosis); and shown the capacity to adapt to an operating environment that is changing. But despite this shift in the ways in which aid is provided, knowledge of the broad effects of GHIs on country health systems is inadequate.

Decades of neglect and insufficient investment have weakened health systems in most developing countries.⁷ In the 1980s, economic crises, debt repayment, civil and political unrest, poor governance, and environmental pressures exacerbated poverty and inequality, particularly in Africa. Structural adjustment policies that were designed to improve the stability of fragile economies led, in many cases, to cuts in public health spending. Moreover, the globalisation of labour markets, gathering pace during the 1990s, increased emigration of health workers from the countries that had invested in their training. The worldwide HIV/AIDS epidemic damaged health systems that were already overstretched; therefore, when the worldwide community made a commitment to the health-related Millennium Development Goals in September, 2000,^{8,9} the health systems in low-income and middle-income countries were already weak. The GHIs emerged in the context of weakened health systems.¹⁰

Although new resources, partners, technical capacity, and political commitment were generally welcomed, critics soon began to argue that increased efforts to meet disease-specific targets with selective interventions were exacerbating the burden on health systems that were already fragile.^{11,12} At the same time, the delivery capacity of GHIs was limited by the weaknesses that were present in country systems, such as inadequate infrastructure for service delivery, shortages of trained health workers, interruptions in the procurement and supply of health products, insufficient health information, and poor governance.^{1-3,13,14} The tensions that have been caused have contributed to a longstanding debate about the interplay of disease-specific programmes or selected health interventions with integrated health systems.

The difficulties that might be inherent in targeted approaches to improvement of health were recognised as early as 1951.¹⁵ Since then, much has been written about

the vertical and horizontal divide in global public health.^{16–22} Despite this legacy, our understanding of the interactions between health systems and the large GHIs that are emerging is incomplete. No robust prospective studies of the effects of GHIs on country health systems have been done. Targeted programmes were compared with interventions that were integrated into mainstream health systems in a systematic review²³ but conclusions about the different ways in which disease-specific initiatives can affect health systems could not be drawn because of insufficient robust data. Biesma and colleagues²⁴ have assessed the evidence of the effects of GHIs on health systems in relation to HIV/AIDS. National-level processes have been investigated in a few studies, and the effects of GHIs on health systems with time have been tracked in only a few studies.^{25,26} The effects of GHIs with time have been tracked in only a few studies.^{12,27–29} Determination of the extent of the potential for synergism between health systems and GHIs at the subnational and service delivery levels, and the means by which to mutually benefit from such a beneficial interaction have not been attempted in any systematic manner.

The evidence to help understand the interactions between GHIs and health systems is insufficient for several reasons. First, the largest GHIs were launched less than 10 years ago and need some time to show effects on the health systems within countries. Second, when GHIs began, arrangements for prospective assessment of their effect on country health systems were not established. Third, the scientific community has been slow to develop research methods that help in the elucidation of the complex nature of the interactions between GHIs and health systems. Nevertheless, considerable insights have been gained about the opportunities and challenges associated with implementation of GHIs for nearly a decade. This knowledge should now be harnessed and complemented with evidence from rigorously designed studies to take us from a situation in which the broad positive effects of disease-specific work are largely serendipitous to a new framework for global public health that is characterised by a proactive and systematic approach to obtain the maximum synergies.

Definitions

What are GHIs?

GHIs, Global Public-Private Partnerships, and Global Health Partnerships have not been clearly defined.²⁴ We focus mainly on the four large GHIs (Global Fund, GAVI, PEPFAR, and World Bank MAP) that have invested substantial resources for health since 2000; other disease-specific programmes, such as the African Programme for Onchocerciasis Control, and campaigns for the treatment of neglected tropical diseases are also referred to. The four large GHIs (and many others) are characterised by a set of common features, including

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Dracunculiasis

- Guinea Worm Eradication Program; Global Alliance to Eliminate Leprosy

Lymphatic filariasis

- Global Alliance to Eliminate Lymphatic Filariasis

Poliomyelitis

- Global Polio Eradication Initiative

Lassa fever

- Lassa Fever Initiative

Meningitis

- Meningitis Vaccine Project at WHO/PATH

Nutrition

- Global Alliance for Improved Nutrition

Vaccines

- Children's Vaccine Program at PATH; European Malaria Vaccine Initiative; Global Alliance for Vaccine Initiative; International AIDS Vaccine Initiative; International Vaccine Institute; Malaria Vaccine Initiative; Meningitis Vaccine Programme; Pneumococcal Vaccines Accelerated Development and Introduction Plan; Pediatric Dengue Vaccine Initiative; South African AIDS Vaccine Initiative; Vaccine Fund; Vaccine Vial Monitors

Health policy and systems

- Alliance for Health Policy and Systems Research; Global Outbreak Alert and Response Network; Health InterNetwork; International Health Partnership

Drugs for neglected tropical diseases

- African Network for Drugs and Diagnostics Innovation; Alliance for Microbicide Development; Diflucan Partnership Program; Drugs for Neglected Diseases Initiative; Foundation for Innovative New Diagnostics; TROPICAL (French-based research and development partnership for neglected diseases); Global Campaign for Microbicides; Médecins Sans Frontières, Drugs Initiative for Neglected Diseases; Microbicides Development Programme 2; Strategies for Enhancing Access to Medicines; The Institute for OneWorld Health

Diarrhoea control and hand washing

- Global Public-Private Partnership for Hand Washing with Soap; Partners in Global Health Through Hand Washing

Nutrition

- Global Alliance for Improved Nutrition; Vitamin A Global Initiative; Micronutrient Initiative

Chemical safety

- International Program on Chemical Safety

Counterfeit

- Pharmaceutical Security Initiative; WHO Pharmaceutical Associations Anti Counterfeit Drug Initiative

Reproductive health

- Consortium for Industrial Collaboration in Contraceptive Research; Concept Foundation; UNFPA contraceptives access project

Pharmaceutical regulation

- International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use



their focus on specific diseases or on selected interventions, commodities, or services; relevance to several countries; ability to generate substantial funding; inputs linked to performance; and their direct investment in countries, including partnerships with non-governmental organisations and civil society (table 1). Variations also exist within this subset, particularly in the area of governance structures (table 1). Nevertheless, since these GHIs have important features in common they can be discussed as one group for the purpose of this analysis.

What are health systems?

WHO defines health systems as “all organizations, people and actions whose primary intent is to promote, restore or maintain health”.^{30,31} This definition includes efforts to address the determinants of health, besides direct activities to improve health. A health system is therefore “more than the pyramid of publicly owned facilities that deliver personal health services”,³⁰ and includes non-state sectors such as non-governmental organisations, civil society organisations, and the private sector. For example, 40–70% of health care in sub-Saharan Africa is provided by faith-based organisations, indicating the importance of inclusion of all health delivery providers in a country’s health system.³² The purpose of the WHO health-systems framework (consisting of service delivery; health workforce; information; medical products; vaccines and technologies; financing; and leadership and governance) is to “promote common understanding of what a health system is and what constitutes health systems strengthening”.³⁰ Although these building blocks help to clarify the essential functions of health systems, efforts to address health systems should recognise the interdependence of each part of the health system.³⁰

Framework and methods

A preliminary assessment to understand the interactions between GHIs and country health systems is difficult because of the absence of a commonly used or agreed conceptual or analytic framework, and the absence of rigorous empirical evidence. Nevertheless, we have endeavoured to assess the interactions through a review of the available evidence using a conceptual framework that we have adapted specifically for the purpose of this analysis. Essentially, GHIs represent a concerted effort by several countries to finance the delivery of specific types of services for priority health problems that arise in many low-income countries. This effort interacts with country health systems in several ways. We have developed a conceptual framework by using information from two existing models—one that identifies distinct functions or building blocks of health systems³⁰ and the other that describes the interactions between GHIs and these functions.³³ In our conceptual framework, we identified five points of interaction between GHIs and country health systems (ie, governance, finance, health workforce, health information systems, and supply management systems), and each of these is interlinked and contributes towards a sixth point of interaction that is the delivery of health services (figure 1). The central role of the community is recognised in our model. Also, all aspects of the six points of interaction take place within a general context that includes many economic, social, political, environmental, and other factors that are not included in our analysis.

The conceptual framework is not optimum, and these data and analysis have limitations that arise because health systems are complex, context-specific, and changing. Any attempt to better understand the interactions requires assessment of more than the routinely gathered data, which are usually about the effectiveness and cost efficiency of isolated biomedical interventions. Such data have little capacity to indicate how complex systems function to give results.

Findings

Health service delivery

Delivery of health services that are accessible, equitable, safe, and responsive to the needs of the users represents the main output of any health system (panel 2). Indeed, a characteristic of GHIs is their focus on scaling up selected services that have proven to be effective. Therefore, an analysis of the association of GHIs and health systems should start by examination of the evidence related to service delivery performance. Importantly, however, delivery of services depends on the availability of health workers, health facilities, diagnostics, drugs, and other supplies, and also provisions for financing, and policies or programmes that make particular services a priority for delivery. Although these dimensions of health systems all affect service delivery, we focus on three key factors that represent aggregate issues in the assessment of

	Global Alliance for Vaccines and Immunization (GAVI)	Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund)	US President's Emergency Plan For AIDS Relief (PEPFAR)	World Bank Multi-Country AIDS Program (MAP)-International Development Association
Type	Public-private partnership	Public-private partnership	Bilateral donor	Multilateral agency
Start	2000	2002	2003 (fiscal year 2004)	2000 (fiscal year 2001)
Focus disease	Vaccine-preventable diseases	HIV/AIDS, tuberculosis, and malaria	HIV/AIDS	HIV/AIDS
Priority	Strengthening service delivery; access to vaccine and related products; secure long-term financing; and strategic planning	Flexible funding for priorities set by country stakeholders	Achieving programmatic targets set by US Congress	To scale up prevention, care, support, and treatment programmes; prepare countries to cope with the burden of people developing HIV/AIDS over the next decade
Management system	GAVI secretariat and board	Global Fund secretariat and board, Country Coordinating Mechanism and Local Fund Agents	US Global AIDS Coordinator; country teams coordinated through US embassy	Coordinated by the Global HIV/AIDS Program and regional teams such as AIDS Campaign Team for Africa and South Asia Regional AIDS Team; World Bank country director; national government
Major funders	International Finance Facility for Immunisation, Advanced Market Commitment, bilateral donors, private philanthropy, private sector	Bilateral donors, private philanthropy donations, private sector	US Government, with funding to be approved yearly by US Congress	International Bank for Reconstruction and Development, member countries
Funding allocation	Assessment of country proposal, and performance-based assessment of country reports	Assessment of country proposal by Technical Review Panel and performance-based assessment of country reports	Predetermined earmarked funding	Funding earmarked on basis of negotiations with Government and National AIDS Commission
Types of interventions funded	Supply of vaccines and immunisation services; health systems strengthening	HIV, tuberculosis, and malaria services; health systems strengthening	Prevention, treatment, care and support; health systems strengthening; education and other development interventions	HIV/AIDS-related activities in the health portfolio and in social and economic sector
Principal recipients	Governments and civil society	Government, civil society	Mainly non-governmental organisations; governments	National AIDS councils, ministries, civil society organisations, private sector organisations
Stated objectives	Expedite uptake and use of underused and new vaccines and associated technologies, and improve vaccine supply security; contribute to strengthening capacity of health system to deliver immunisation and other health services in a sustainable way; increase the predictability and sustainability of long-term financing for national immunisation programmes; increase and assess the added value of GAVI as a public-private global health partnership through improved efficiency, increased advocacy, and continued innovation	Finance a dramatic turnaround in the fight against HIV/AIDS, tuberculosis, and malaria; attract, manage, and disburse additional funds with less bureaucracy for recipient countries, allowing effective use of donor resources, and few transaction costs for all; direct financial resources where they are needed most and ensure that they are used effectively	Support in partnership with host nations to support treatment for at least 3 million people; prevention of 12 million new infections; care for 12 million people, including 5 million orphans and vulnerable children; support training of at least 140 000 new health-care workers in HIV/AIDS prevention, treatment, and care.	Strengthen public sector response to HIV/AIDS crisis, by supporting selected activities; increase civil society response; support the placement of orphans with their extended families or with unrelated families; strengthen the capacity of public and private agencies involved in the design and implementation of control programme; increase project coordination by supporting operational costs, technical assistance, and supplies and equipment as required

Table 1: Information about global health initiatives selected for analysis

services—ie, service access or coverage, equity in services, and service quality.

Access

Access and uptake of some services that are the focus of investments by GHIs have increased. The number of people given antiretroviral drugs in low-income and middle-income countries has increased ten-fold in 6 years, and was 3 million by the end of 2007.² Coverage of antiretroviral drugs for the prevention of mother-to-child transmission in HIV-positive pregnant women in low-income and middle-income countries increased from 9% in 2004 to 33% in 2007.² The rate of detection of new cases of tuberculosis (all forms) rose to 56% in 2006, continuing an upward trend that began in 2002 after several years at 40–50%.³⁴ Household surveys and data from national malaria control programmes show that the coverage of the four leading interventions for malaria has risen. Supplies to national malaria

control programmes of longlasting insecticidal bednets were sufficient to protect an estimated 26% of people in 37 African countries in 2006.¹ Results of surveys done in 18 African countries showed that 34% of households owned an insecticide-treated bednet, and the number of children sleeping under such a net increased by almost eight-fold from 3% in 2001 to 23% in 2006.¹ Global immunisation coverage has increased from 2000 to 2006, and has nearly doubled for hepatitis B (from 32% to 60%), *Haemophilus influenzae* type b (from 14% to 22%), and yellow fever (from 26% to 48%).³⁵ The distribution of ivermectin for the treatment of onchocerciasis increased from 14 million people in 1997 to more than 40 million people in 2006.³⁶ Although there is strong evidence to show an increase in coverage of several health services, the extent to which these increases can be attributed to specific GHIs is not clear. Furthermore, the overall increases in coverage do not offer insights into whether the patterns by which GHIs

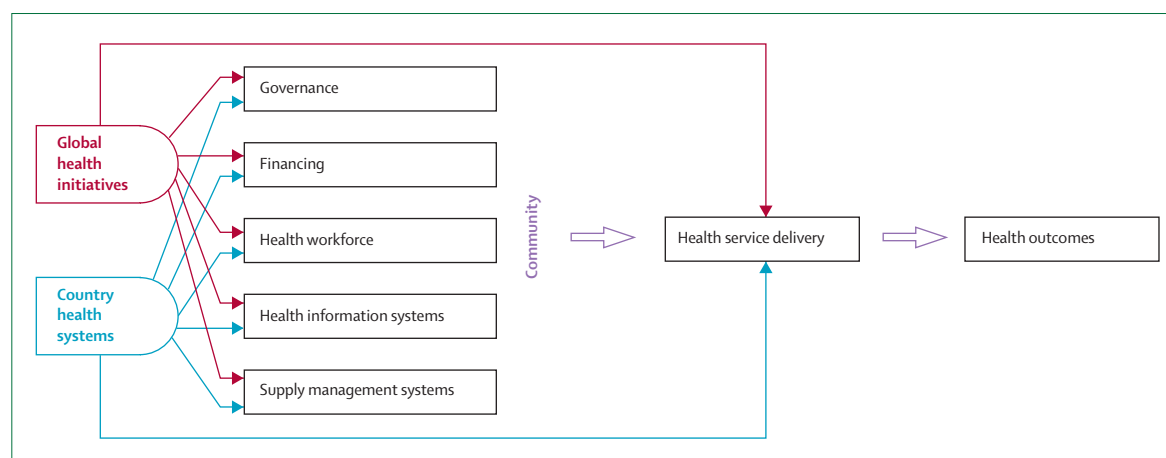


Figure 1: Conceptual framework of the interaction between global health initiatives and country health systems

Panel 2: Summary of key findings

Service delivery

- Access and uptake of the health services targeted by global health initiatives (GHIs) has increased in many cases
- Evidence of the effects of GHIs on access and uptake of non-targeted health services shows positive and negative effects
- Positive effects (and mitigation of potential negative effects) of GHIs on non-targeted health services are likely when they have been explicitly planned or when the health system is robust, or both
- GHIs have contributed to improvements in some aspects of health equity.
- GHIs have not directly addressed the causes of health inequity or the social determinants of health
- Increase in access to some targeted health services has been faster than that to services not targeted by the GHIs, showing a new dimension of health service inequity
- Through the promotion of standardised guidelines, GHIs have contributed to improving quality of treatment and services for targeted interventions
- The promotion of performance-based assessment has been associated with improved quality of services in some cases but, in others, pressures to meet targets has produced distortions and led to compromises in quality

Financing

- Resources administered through GHIs have contributed to an aggregate increase in overall health financing
- Evidence for the association between GHI funding and changes in overall domestic public sector health spending, or reallocation within national health budgets, is inconclusive
- GHIs have promoted the principle of free services at the point of delivery of targeted interventions but have not invested systematically in the development or extension of prepayment health financing mechanisms
- The GHIs are associated with several innovative financing mechanisms and have contributed to some improvements in health aid effectiveness, particularly in the area of predictable financing
- Disease-specific funding might not be sufficiently aligned with country priorities or the national burden of disease

Governance

- GHIs have exposed weaknesses in the overall arrangements for good governance of health systems in many countries

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and countries interact are strongly or weakly associated with increases in coverage.

Evidence for the effect of GHIs on access and uptake of other health services that are not the specific target of their investments is weak and inconclusive. Most of the studies in which this effect was assessed are association studies and therefore do not indicate what are the causes and effects. Positive association hypotheses are that GHI services revitalise health facilities, increase reliability of essential supplies, ensure availability of qualified health personnel, and encourage community demand for health and other development services. Although a causal association cannot be definitively established, Botswana had the first decline in infant mortality and increase in life expectancy in decades as the country focused on funding HIV/AIDS programmes from domestic and international resources.^{37,38} In eastern Uganda, increase in services for HIV/AIDS was accompanied by a reduction in non-HIV infant mortality by 83%, possibly attributed to the 90% reduction in children being orphaned.³⁹ In ten countries with HIV/AIDS prevalences equal or higher than 10%, a population-adjusted average of 15% of orphans are living in households that are provided with some kind of assistance, such as medical care, school assistance, financial support, or psychosocial services.² In Kenya, the distribution of free insecticide-treated bednets to pregnant women through antenatal clinics was shown to increase the use of the regular services at antenatal clinics.⁴⁰

Another hypothesis for the positive effect of GHIs on service delivery is that resources that were used to deal with extremely high burdens of disease are now available for the provision of other services. Facility-based evidence for reductions in cases, admissions, and deaths from malaria that are associated with widespread distribution of artemisinin combination treatments and longlasting insecticide-treated bednets in Rwanda and Ethiopia, and evidence for the reduction in hospitalisations associated with the initiation of antiretroviral drugs in HIV-infected

children in Thailand, strengthen the plausibility of the hypothesis that resources are available for other health services.^{41,42} However, evidence is needed for related increases in other services to further substantiate this hypothesis.

An alternative is that the priorities of GHI service delivery might result in a negative association with other services. For example, results of a qualitative study by Cavalli and colleagues (study 10, table 2) in which the effects of a campaign to treat neglected tropical diseases on local health services in Mali were assessed, showed that basic health services at health centres were disrupted because of staff absences; and in 14 of 16 health centres, staff were overburdened by the additional requirements of the campaign. Similar results have been reported in other countries.¹⁴

The existence of both positive and negative associations suggests that the way in which GHIs interact with non-targeted health services is important. Data from Rwanda show a significant correlation between HIV interventions and improved antenatal care services and family planning.⁴³ This correlation might be explained by the fact that HIV-specific resources were also used to invest in, for example, construction of health facilities, and improved laboratories and training programmes for health workers. In Haiti, integrated prevention and care of HIV/AIDS had a positive association with several primary care goals such as vaccination, family planning, case detection and cure of tuberculosis, and health promotion. In this case, the HIV/AIDS programme was designed, from the outset, to generate simultaneous improvements in a range of health outcomes and not just HIV services.⁴⁴

In Africa, several different health interventions (vitamin A supplementation; distribution and retreatment of insecticide-treated nets; tuberculosis case detection and referral, directly observed short-course treatment; and home management of malaria) were added to a service delivery framework that had been established through the African Programme for Onchocerciasis Control.⁴⁵ The established framework had decentralised the delivery of services and organised delivery so that the services were directed by community members using participatory processes (community-directed interventions). At sites, where two to four other interventions were added, overall treatment coverage with ivermectin in the second and third years was 72% and 74%, respectively.⁴⁵ In the comparison sites, where community-directed interventions continued for treatment with ivermectin alone, coverage was 63% and 64%, respectively.⁴⁵ Good results were also obtained for coverage of the additional interventions. More than twice as many children with fever were given appropriate antimalarial treatment, and vitamin A coverage was much higher in the districts where these interventions had been integrated than in the comparison sites.⁴⁵ Similar findings have been reported in other studies of community-directed interventions.^{46–48}

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- The plans developed in funding applications to GHIs and the priorities articulated in strategies for the country health sector are not always well aligned
- Some GHIs have shown their capacity as institutions for learning by deploying corrective measures in response to concerns about the absence of alignment between their approaches and processes for country planning
- The performance-based approach implemented by GHIs is an incentive for increased accountability at the country level, and for improved productivity in service delivery, but might result in distortions if the focus on a few disease-specific indicators is excessive
- GHIs have contributed towards building capacity outside the state sector and have improved community participation in the governance of public health

Health workforce

- Scale-up of disease-specific efforts has increased the burden on the existing health workforce
- GHIs have strengthened the existing workforce through in-service training and task shifting
- GHIs have not invested substantially in preservice education for the production of new health workers, other than for community health workers, and have invested little in ways to enrol health workers
- GHIs are associated with some attrition of the health workforce from the public sector to specific non-state sector projects funded by them
- In some instances, GHIs have contributed to improving the retention of health workers through various incentives, including support for additions to salary, housing, and other allowances

Health information systems

- GHIs have improved the availability and accuracy of good quality health information related to the coverage of specific services and surveillance of specific diseases
- Availability and accuracy of good-quality health information related to interventions or specific diseases that are not targeted by GHIs have not been improved by GHIs
- Demand from GHIs has led to the establishment of some parallel information systems
- GHIs have contributed to substantial innovation in the domain of health information and technology

Supply management systems

- GHIs have been associated with improvements in the availability and affordability of several commodities
- GHIs have duplicated and displaced country supply chains in some cases
- Poor coordination and planning between GHIs and countries result in under and over stocking of some categories of products
- GHIs have contributed to improvements in the quality of specific commodities

Efforts to integrate interventions for tuberculosis and HIV/AIDS also show some evidence of positive effects on service coverage. Boillot and colleagues (study 4, table 2) reported that the extension of services for tuberculosis to scale up access to HIV/AIDS care in the Democratic Republic of Congo was positively associated with the service coverage for HIV/AIDS without any adverse effects on pre-existing services for tuberculosis. Similarly, integration of services for the treatment of these two diseases in primary care in Zambia resulted in a 38% increase in the proportion of individuals enrolled in the antiretroviral treatment programme who were co-infected with HIV and *Mycobacterium tuberculosis*.^{49,50} However,

	Authors	Study	Methods	Results	Major weakness
1	Galichet B et al	Building bridges between programmes and systems: lessons from the GAVI health systems strengthening window	Qualitative survey—analysis of the content of 49 funding applications from 40 countries and their supporting documents submitted to GAVI's health systems strengthening window during October, 2006, to October, 2007	A diverse range of health-system constraints identified by countries; strong alignment with government policy and planning processes, and good level of sectoral inclusion and coordination	Reliance on information submitted by countries rather than gathered by a research process, resulting in a possible reporting bias. Authors have attempted to keep bias to a minimum through triangulation
2	Atun R et al	Country demand for strengthening health systems: analysis of proposals to the Global Fund	Qualitative survey—analysis of the content of 24 proposals submitted to the Global Fund for round eight of grant allocations	Imbalanced country demand in relation to strengthening functions of specific health systems; disproportionately high demand for service delivery as opposed to other strategic functions	Reliance on information submitted by countries rather than gathered by a research process, resulting in a possible reporting bias
3	Spicer N et al	National and subnational HIV/AIDS coordination: are global health initiatives closing the gap between intent and practice?	Qualitative survey—in-depth interviews in seven countries in four continents to investigate the effect of GHIs on national and subnational coordination structures	Creation of opportunities for participation by many sectors is indicative of positive effect; bypassing of district coordination and resulting weakening of their effectiveness indicate negative effects	Little capacity of the study, and inability to assess the effect of coordination structures on programme delivery; findings cannot be generalised
4	Boillot F et al	Contribution of tuberculosis control programmes to scaling up HIV/AIDS care in low-income countries: preliminary results of IUATLD project for integrated HIV/AIDS care in Democratic Republic of Congo	Analysis of monitoring data to assess feasibility of integration of HIV/AIDS care in delivery model for tuberculosis in Democratic Republic of Congo	Knowledge and strategies developed and used for tuberculosis programmes can be successfully applied to HIV/AIDS care in rural Democratic Republic of Congo with insufficient infrastructure	Data from routine monitoring rather than drawn from a quasiexperimental design; limited generalisability because the study was done in one country
5	Ooms G et al	Have fiscal space constraints contributed to exclusion of domestic general health funding by international disease-specific health funding?	Analysis of WHO data for national health accounts; policy Delphi inquiry aimed at obtaining informed opinion of knowledgeable people regarding findings	International aid can lead to exclusion of domestic health funding, but not as a matter of simple causality	Reliance on secondary data; findings are inconclusive
6	Brenzel L et al	Support for strengthening health systems from GAVI: early experience and lessons	Analysis of the financial aspects of 44 proposals for health systems submitted to GAVI; in-depth analysis of the 12 largest proposals in relation to WHO's health systems building blocks	A predominance of activities planned for service delivery, and most of the budget solicited for capital costs	Selective in-depth review of proposals on the basis of amount of funding; purposive sample to capture innovations in proposals that receive little funding
7	Boyer S et al	Scaling up access to antiretroviral drugs for HIV infection and decentralisation of health-care delivery in Cameroon: from international initiatives to national policy	Mixed methods study; data from surveys of patients and physicians to assess the mutual effects of HIV-targeted programmes and decentralisation in Cameroon	Success in scaling up treatment with antiretroviral drugs in Cameroon has been helped by previous decentralisation of the health-care systems; clinical outcomes are similar at decentralised district level to central level; HIV programme might have encouraged some trends toward recentralisation (drug procurement supply chain at the subnational level)	Little generalisability of the study; intrinsic limitations of observational data to measure the effect of a counterfactual scenario
8	Brugha R et al	Are GHIs and countries putting sufficient numbers of motivated health workers in place to deliver services?	Mixed methods study; structured surveys, topic-guided interviews, and review of records in Malawi and Zambia to assess the effect of GHIs on workforce in respective countries	Evidence of positive effects and also gaps in GHI approaches to strengthening workforces in countries	Little generalisability because the study was done in two countries
9	Jerome JG et al	Community health workers in strengthening health systems: a qualitative assessment in rural Haiti	Qualitative survey; focus group discussions and group interviews of community health workers in Haiti	Community health workers hired to assist with HIV/AIDS scale up represent an important part of health system in rural Haiti in HIV/AIDS-related and primary health-care services	Little generalisability
10	Cavalli A et al	Effects of a campaign for neglected tropical diseases on local health services: a case study in Mali	Qualitative survey; participant observation and key informant interviews to assess the effect of a mass campaign for neglected tropical disease on health systems	Campaign perceived as relevant by most stakeholders, but interfered with local planning; time implications for staff had negative effect on usual service delivery in fragile health centres; stronger health centres were better able to cope and turn campaign into opportunity for service strengthening	Little generalisability
11	Nishtar S et al	Aid effectiveness and global health programmes: analysis of progress	A three-stage analysis of aid effectiveness data, using datasets from OECD and the Global Fund	Overall, results showed progress in aid effectiveness but not at the rate needed to achieve the 2010 targets; improvements were evident in quality of country systems, management of public funds and technical cooperation but not in terms of ownership, management, results, and accountability	Self selection of countries for participation in OECD measurement; data were not verified; sector-level health information was not always fully incorporated in the overall aid flows

(Continues on next page)

Authors	Study	Methods	Results	Major weakness
(Continued from previous page)				
12 De S et al	How have GHIs affected domestic investments in the response to HIV/AIDS?	A cross-country comparison of data for national health accounts in five countries in Africa to assess the domestic effects of the surge in GHI funding for HIV/AIDS on health systems domains	Decrease in government HIV/AIDS contributions in absolute terms represents a negative effect on increases in external health aid through GHIs; study provides national representation of health workers' access to services for HIV/AIDS and tuberculosis	Little generalisability because the study was done in five countries; reliance on self reporting of data by countries; in the process of developing national health account estimates, teams of countries attempt to validate each expenditure transaction between GHIs and HIV/AIDS funding on the basis of reviews of audited reports, self-reported surveys and other studies from the perspective of the originator and recipient of funds
13 Pearson M et al	Cambodia: does disease-targeted funding help or hinder development of systems?	Qualitative survey methods with informant interviews	Positive effect in terms of additional support to implement existing programmes; misalignment between donor support and stated government priorities	Little generalisability because the study was done in one country only; use of qualitative survey methods
14 Cohn J et al	Use of GHIs to leverage health systems synergies: a civil society perspective	Mixed methods including a review of academic and non-peer-reviewed reports and semistructured qualitative survey	Positive effect of GHIs on health systems shown; specific areas or programme integration and expansion suggested; need for maximum civil society engagement with GHIs emphasised	Little generalisability because the study was done in two countries only; use of qualitative survey methods
15 Corbett L et al	Health workers access to services for HIV/AIDS and tuberculosis in Africa: situational analysis and mapping of routine and current best practices	Facility-based survey in randomly selected sites and those with best practices in five countries, and semistructured qualitative survey: the study provides a national representation of health workers' access to HIV/AIDS and tuberculosis services	Access to HIV and tuberculosis testing and care services for health-care workers; however, considerable strengthening is needed for prevention of HIV/AIDS (both sexual and occupational); access to HIV testing and care for family members; <i>Mycobacterium tuberculosis</i> infection control and prevention of tuberculosis in HIV-positive health workers	Few countries, all in sub-Saharan Africa
Global Fund=Global Fund to Fight AIDS, Tuberculosis and Malaria. IUTLD=International Union Against Tuberculosis and Lung Disease. GAVI=Global Alliance for Vaccines and Immunization. OECD=Organisation for Economic Co-operation and Development.				
Table 2: Description of 15 original studies submitted and retained after peer review following a WHO call for original data or new analysis of existing data on the interface between health systems and global health initiatives (GHIs)				

other evidence shows that all important players, such as policy makers, programme managers, trainers, and health workers, need to have maximum and equal involvement to successfully integrate the services.²¹

Equity

Equity in access to health services for those in need, whether they live in rural or urban areas without discrimination against sex, or social or economic status is consistently cited as one of the key objectives of the GHIs.^{35,51–54} Data show an overall trend of improved equity in access and outcomes for GHI-targeted interventions, such as treatment for HIV/AIDS and tuberculosis.^{55–57} Nevertheless, inequity in access and coverage continues to be a concern in some countries.⁵⁸ Inequity in access to immunisation and health services in general might be the result of several factors, including rural or urban location, and sex.^{59–63} Use of targets by some GHIs for the assessment of their activities and distribution of funds might encourage a concentration of resources for urban clinics and easily accessible populations, and so contribute to an imbalance in the provision of services.⁵⁸ GHIs have, however, sought to respond to some issues of inequity over time. Some GHIs are actively seeking to reach vulnerable, marginalised groups such as injecting drug users, sex workers, and men

who have sex with men.^{64–66} For example, the Global Fund has provided funding to increase access to HIV prevention services for 110 000 injecting drug users, 15 000 women involved in sex work, 7000 men who have sex with men, and 29 000 prisoners in Ukraine.⁶⁷

GHIs have had some positive effects on health equity, and also sex equity, through their processes of programme formulation and implementation, and through the activities they fund and implement.⁵⁸ However, further efforts are needed to directly address the factors that promote health inequity or the social determinants of health.⁵⁸

We extended the equity analysis to identify factors that might explain the positive effects. An important factor in the equitable provision of HIV services is the common policy of GHIs to ensure that these services are free at the point of delivery,^{68,69} which in many countries deviates from the existing practices of user fees for health services. Another equity-enhancing feature of GHIs is their tendency to engage civil society organisations in service planning and delivery, especially for HIV/AIDS, which has had a positive effect on the generation of increased demand for services in vulnerable and socioeconomically disadvantaged communities (Cohn and colleagues, study 14, table 2).^{70–72} The level of decentralisation of services seems to be a



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determining factor in the assessment of the Global Fund-supported scale up of antiretroviral drug treatment in Cameroon (Boyer and colleagues, study 7, table 2). This assessment showed that HIV services were delivered by district facilities in rural areas with equal efficiency and effectiveness as those provided by provincial or central facilities, and that treatment in the district facilities was reaching service users with low socioeconomic status and in difficult-to-reach rural areas.

A further dimension of the effect on equity relates to an emerging divide in which GHI-targeted services increase in coverage more quickly than do non-GHI targeted services. For example, whereas access to HIV services increased from 5% to 31% over 4 years (2003–07), access to maternal health services, as indicated by the number of births attended by skilled health personnel, increased only slightly from 61% to 65% during 16 years from 1990 to 2006,^{2,73} which raises the question of whether the services offered by GHIs correspond with country-specific priorities. Although the global epidemiology of the specific diseases targeted by GHIs is generally agreed, a precise assessment of the need is not available for most low-income countries because of few comprehensive epidemiological and demographic data. Analysis of the disbursements of GHIs, however, seems to correlate reasonably well with the geographic distribution of need. Countries with a high burden of HIV/AIDS, tuberculosis, malaria, vaccine preventable diseases, and neglected tropical diseases (such as trachoma or onchocerciasis) are well covered by GHIs. However, some GHI disbursements in countries with low disease burden indicate a tendency towards supply-induced demand. For example, in Burkina Faso, diagnostic tests for HIV were more frequently available in rural clinics than was a basic test for blood haemoglobin.⁷⁴

Quality

Through their focus on a few interventions for specific diseases, GHIs promote standardised guidelines for prevention, treatment, and care.^{69,75} These are intended to improve the quality of care. Adoption of, and adherence to, these guidelines is necessary for the assessment of criteria for proposals for funding. GHIs, through reports, monitoring, and assessment, encourage vigilance of issues that have an important bearing on quality, such as patient adherence to treatment or availability of health-service providers. Because of the transnational nature of GHIs, communities of practice have emerged that bring individuals on the front lines of national service delivery to share problems and good practices at the international level—eg, at the PEPFAR implementers conferences. Furthermore, scale efficiencies related to prequalification of drugs, standardised packaging of commodities (eg, blister packs for directly observed short-course treatment of tuberculosis), and global procurement are important factors in attaining universal standards of care.

However, in Nicaragua, the Global Fund's performance-based assessment risked the quality of services because of pressure to meet numerical targets.⁷⁶ Anecdotal evidence suggests that a rush to secure resources from GHIs can lead to the submissions of proposals that do not take into consideration whether the countries can effectively implement the proposals. Receipt of funds without credible implementation capacity, and tight timelines for production and reporting of results lead to services of substandard quality that are not adequately indicated in the reports.

Although the weight of reason and activity suggests a net positive effect of GHIs on quality of services, the dearth of systematic evidence restricts this assessment.

Indirect evidence for quality, however, might be inferred from results that are contingent on quality services. A 35% reduction in adult mortality linked to the scale up of services for HIV/AIDS in Malawi,⁷⁷ or decreases in child mortality linked to expanded coverage of vaccines and insecticide-treated bednets imply that services are good quality and have increased access.⁷⁸ Conversely, the emergence of drug resistance for HIV/AIDS, tuberculosis, or malaria, or recrudescence of acute flaccid paralysis in the context of polio eradication suggests compromises in quality.

Emerging issues

GHIs address issues of global importance, but whether they serve the specific needs of the countries in the best way possible is not known. The absence of strong country-specific data severely restricts the assessment of whether GHI disbursements are commensurate with the needs of a country. Therefore, national planning processes should include improved compliance with the Paris Declaration;⁷⁹ focus on primary information generation; and strong normative assessments of the best range of expenditure for specific disease conditions within the context of national health budgets. Despite evidence of expansion in coverage of the services being promoted by GHIs, what determines the rate of expansion of the services is not well understood. Rigorous research focusing on how GHIs work and the specific contextual factors of country health systems does not yet exist in the public domain but will be essential if we are to better understand the determinants of high and low performance. The need for a greater understanding of the interaction of GHI-targeted services with those that are not targeted by GHIs is crucial, not only to strengthen the positive effects and minimise the negative effects in the medium term, but also to understand the long-term co-existence of essential services. The evidence for integration of GHIs with service delivery at the level of community, facility, or district deserves further attention because of the need for a coherent and efficient interface for users with services, and the need to sustain services in countries beyond the lifespan of GHIs.

The GHIs might provide an important point of entry to a range of equity considerations to the mainstream of health services. Equity in service delivery could be improved by the introduction of systematic criteria that are integrated into regular reporting systems. Furthermore, GHIs should advocate the development and assessment of interventions that respond effectively to the causes of inequity—ie, the social determinants of health—because these will become increasingly important in securing equitable outcomes with time.

Financing

How external funding is provided to countries, domestic and external funds are deployed, and health financing arrangements affect service users at the point of delivery

are all important considerations to ensure improved health outcomes. We focus on the intersection between GHIs and four key factors that affect the expected performance of health systems financing—ie, the amount of funding, domestic budget allocations for health, out-of-pocket payments by service users, and aid effectiveness (panel 2).

Amount of funding

The amount of funding related to GHIs and health systems can be analysed from both global and national perspectives. Globally, the long-term growth trend in overseas development assistance for health has risen steeply. Between 2001 and 2006, official development assistance for health more than doubled, from \$5.6 billion to \$13.8 billion per year.⁸⁰ Moreover, the sources of non-official development assistance have increased for global health, most notably with the emergence of the Bill & Melinda Gates Foundation that has committed more than \$1 billion per year since 2000 to address the health needs of populations living in countries with inadequate resources (including making substantial contributions to GAVI and the Global Fund).⁸¹

Resources to deal with HIV/AIDS, tuberculosis, and malaria account for much of the recent increase in overseas development assistance. Between 2002, and 2006, almost a third (32%) of official development assistance for health was for HIV/AIDS,⁸² mostly through the main GHIs for HIV/AIDS, tuberculosis, malaria, and childhood immunisation, including polio (figure 2).^{82–84} In 2007, investment through these GHIs accounted for two-thirds of all external funding for HIV/AIDS,^{83,84} 57% for tuberculosis,^{3,85} and 60% for malaria.^{1,82}

Importantly, analyses suggest that the allocation of these resources through GHIs has contributed to an increase in overall funding for health at the global level, implying that these funds have not been reallocated from other health needs but represent additional funding.^{86,87} Even so, the amount of funding available is still inadequate to meet the costs of strengthening services for specific diseases, essential interventions, and health systems.^{88–91}

Domestic budget allocations

The increase in financing for GHIs raises questions about the effect on national expenditures in the domains targeted by them and, generally, on levels of national financing for health. The evidence to assess this interaction is weak, indicating the absence of comprehensive national health accounts in most countries. Evidence for the association between the movement of official development assistance and changes in overall domestic public sector spending is equivocal. Two recent analyses that focus on official development assistance for health and domestic health spending show no robust associations: in some countries domestic spending increases with an influx of assistance



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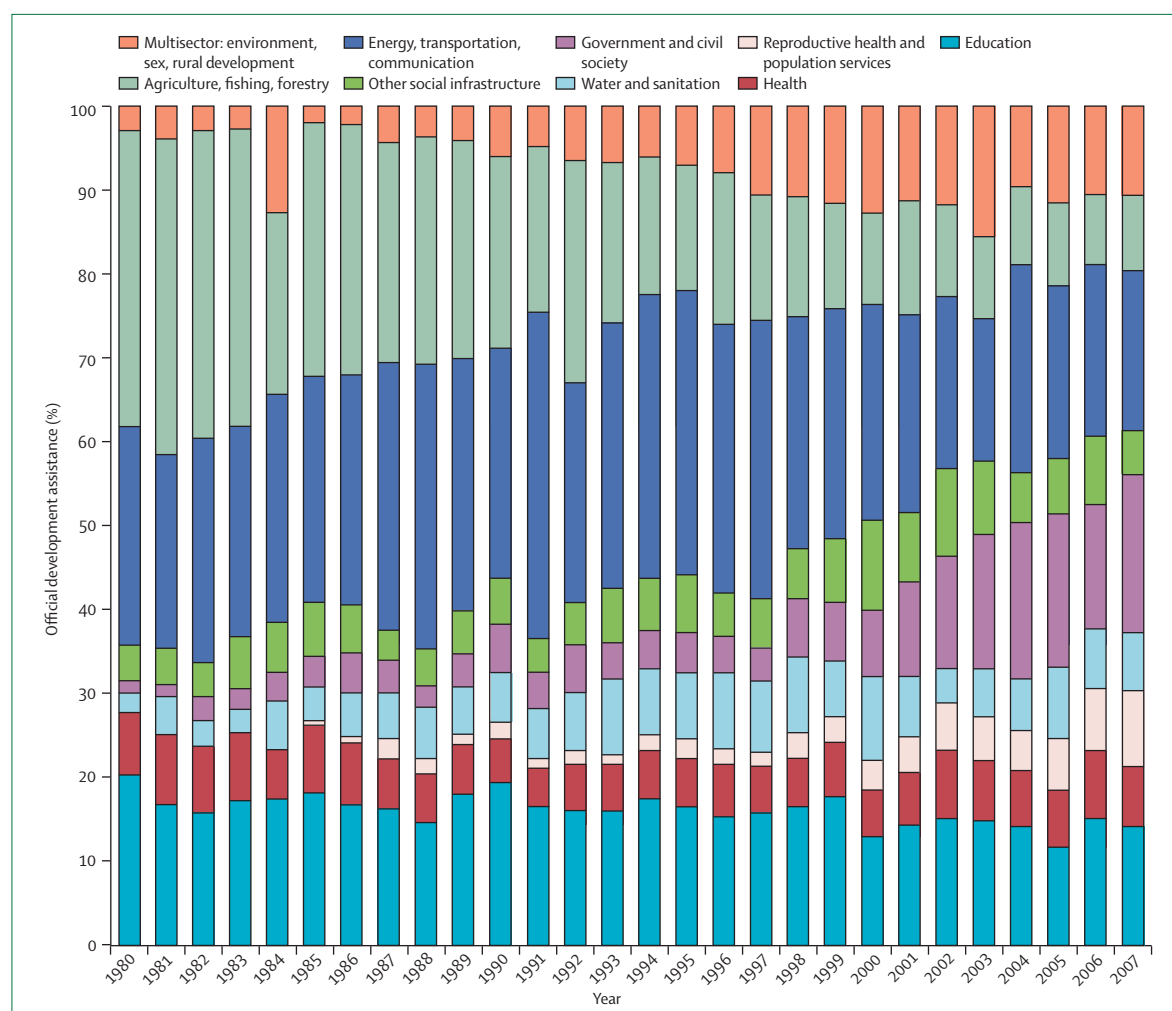


Figure 2: Trends in committed overseas development assistance during 1980–2007

Data from Organisation for Economic Co-operation and Development.⁸⁰ Official bilateral commitments (or gross disbursements) are shown by sector. Aggregates are shown by donor, sector, and type of movement to developing countries. The data included funds from all bilateral and multilateral donors.

whereas in others it decreases or stays the same (Ooms and colleagues, study 5, and De and colleagues, study 12, table 2). Stabilisation or reduction in domestic spending on health indicates that factors such as reduction targets for inflation and fiscal deficit might have been adopted by low-income countries, creating pressures that restrict the additionality of donor and domestic investments in health.^{87,92,93}

Evidence for the association between official development assistance and reallocation within national health budgets is also inconclusive. An analysis of data derived from national health accounts and HIV/AIDS subaccounts in Kenya, Malawi, Rwanda, Tanzania, and Zambia between 2002 and 2006 shows that funding from donors accounted for an increased share in financing of HIV/AIDS, reaching 75% of total HIV-targeted expenditures (study 12, table 2; figure 3). The share of government spending that was allocated to HIV/AIDS decreased in three of these countries (Kenya, Rwanda,

and Zambia) perhaps as a result of donor funding, although in other studies an increase in external funding in some countries was accompanied by steady growth in national budget commitments to HIV/AIDS.⁹⁴ Evidence of decreasing expenditure on HIV/AIDS in the private sector is widespread in settings where donor expenditure is rapidly increasing (study 12, table 2).

Out-of-pocket expenditures

Good health financing systems should raise adequate funds for health in ways that ensure people can use the needed services and are protected from financial catastrophe or impoverishment associated with having to pay for them. However, regressive models in which poor households contribute proportionally more to health expenditure, such as out-of-pocket payments at the point of delivery for treatment and services, still represent the most widespread means of financing health care in countries with inadequate resources.^{95–97} Out-of-pocket

spending in low-income countries accounts for 60% of total health spending versus 20% in high-income countries.⁹⁸

GHIs have provided support to increase public subsidies for care of targeted diseases, and in some cases governments have been able to reintroduce free access to drugs or other services.⁹⁹ For example, people living with HIV/AIDS, on average have more episodes of illness than do those in the general population, and hence are likely to spend more on health care. Evidence from Zambia, Rwanda, and Tanzania indicates that differences in per person spending between people living with HIV/AIDS and those without have declined since the influx of support from GHIs, largely because of increased access to subsidised treatment in the formal sector and a reduction in spending in the informal health sector (ie, traditional healers and private pharmacies; study 12, table 2). In Zambia, people living with HIV/AIDS spent 485% more out of pocket than did those in the general population in 2002, but only 23% more in 2006 (study 12, table 2; table 3). Similarly, in Rwanda and Tanzania, the decreases were from 257% to 28% and from 136% to 75%, respectively (study 12, table 2). Despite a generally progressive approach adopted by the GHIs to the financing of health services, no cross-country evidence of aggregate decreases in out-of-pocket expenditures exists. GHIs have not invested systematically in the development or extension of prepayment health financing mechanisms. An exception is the support provided by the Global Fund to Rwanda to accelerate progress towards universal coverage by building on community health insurance schemes.¹⁰⁰

Aid effectiveness

The consensus is that the Millennium Development Goals for health will not be achieved without a streamlined approach to implementation of health programmes. By comparison with other sectors, donor assistance for health has tended to be highly volatile (with important fluctuations from one year to another), and poorly coordinated between donors (increasing transaction costs for governments).¹⁰¹ These concerns have given rise to concerted efforts towards improvement of aid effectiveness and have generated a series of formal commitments for coordination and alignment, and to ensure that development assistance is predictable and sustainable, including financing for health.^{79,93,102} As part of a wide effort to improve the predictability and sustainability of health financing, GHIs have been associated with the introduction of several innovative financing mechanisms. Examples of initiatives that are in progress include the airline tax introduced by 27 countries to finance UNITAID; the International Finance Facility for Immunisation, which leverages pledges of future donations by governments for cash on the financial market bonds to support GAVI's immunisation programmes; and the Debt2Health initiative in which a creditor (a donor government or a private company) relinquishes the right

to partial repayment of previous loans on the condition that the beneficiary recipient country invests the cash in approved Global Fund programmes. Other ideas for identification and operational placement of additional sources of funding are being investigated by the high-level Taskforce on Innovative International Financing for Health Systems established in the context of the international health partnership.⁹³ 100% of Global Fund disbursements were not conditional and were largely predictable with actual disbursements at 95% of expected levels in 2007 according to Nishtar and colleagues (study 11, table 2).

With respect to alignment of donor assistance with country needs, the performance of the GHIs seems to be mixed. Overall country health needs and GHI allocation seem to be misaligned in some cases.^{93,103,104} For example, Pearson and colleagues (study 13, table 2) assessed the extent to which disease-specific funding has been aligned to Cambodian national health priorities or the national burden of disease (figure 4). They reported that the National Strategic Development Plan sets out the intention of spending most of the health resources on primary health care, including the expansion of the Minimum Package of Activities and Complementary Package of Activities during 2003–05 (study 13, table 2). In practice, about 60% of donor funding has been allocated to HIV/AIDS and other infectious diseases.

Emerging issues

Evidence of aggregate increases in health financing at the global level implies that the targeted contributions of GHIs represent additional resources for health. Importantly, the resources dedicated by some of the GHIs to strengthen health systems should also represent additional funding and should not displace financing for disease-specific efforts. In view of the fact that a large proportion of the new resources for health have been directed towards a small number of priorities, the emphasis that the Task Force on Innovative Financing for Health Systems has placed on resources for health systems is noteworthy, generating new and robust estimates of the costs of scaling up health systems in low-income and middle-income countries.^{93,106}

High levels of country dependence on external resources, particularly from GHIs for the support of disease-specific work, are a cause for concern, especially in the context of the current global financial crisis. Long-term commitments are needed if health benefits are to be sustained and further improved, particularly for health interventions in those areas that are the target of the major GHIs because these programmes are more dependent on external assistance than are the other programmes. In principle, the intent of GHI financing is to provide access to resources in the short-to-medium term that will allow provision of services until such time as these services can be paid for from domestic resources. Support of countries is imperative to develop and implement long-term

For **UNITAID** see <http://www.unitaid.eu/>

For **International Finance Facility for Immunisation** see <http://www.iff-immunisation.org>

For **GAVI Alliance** see <http://www.gavialliance.org/>

For **Debt2Health initiative** see <http://www.theglobalfund.org/en/innovative-financing/debt2health/>

For **Global Fund** see <http://www.theglobalfund.org>

financing strategies that will decrease dependence on GHI financing. A clear correlation between increases in external resources for health and changes in the total domestic health budgets of countries or reallocation of resources within domestic health budgets cannot be established on the basis of available evidence. Nonetheless, reductions reported in domestic health funding in some countries (Ethiopia, Mozambique, Uganda, and Zambia) are a cause for concern, suggesting that the increase in external resources for health in these cases might have actually substituted for national efforts, with the additional risk that earmarked funds channelled through GHIs could have excluded government allocations for other health priorities. Although Ooms and colleagues (study 5, table 2) investigated whether GHIs might reduce “the available fiscal space for spending on other preventive and basic curative services”, further data are needed, including econometric evidence to control for factors (such as the global economic context and state of public finance, and the effect of the HIV/AIDS, tuberculosis, and malaria epidemics) that also affect the dynamics of government

expenditures. Further research is needed to investigate the extent to which potential limitations in the addition of foreign aid to global health financing are the result of opportunistic behaviours of some of the providers (eg, donors reducing their support or finance ministries managing their foreign exchange monetary reserves) or to legitimate risk aversion (cautionary anticipation of the risk of volatility of aid and uncertainty about the long-term sustainability of funding) than to the role of GHIs.

The GHIs have contributed to some improvements in health aid effectiveness, particularly in providing funding that is predictable. However, the results of a few country studies also suggest that disease-specific funding might not be sufficiently aligned with country priorities or the national burden of disease. More systematic and rigorous studies are needed to show the extent of alignment between disease burden, the demand expressed by countries, and financing. The efforts of the International Health Partnership to broker commitments from development partners to provide predictable funding in support of results-oriented national plans, and strategies that also deal with health systems constraints—help to improve alignment. However, attention and further assessment are needed.

Governance

Governance is arguably the most complex but crucial function of any health system. It is also one of the most difficult functions to measure because of inherent difficulties in definition and measurement. Without appropriate investment in the governance of health systems, any gains that are realised from investment in health service delivery are unlikely to be sustained over the long term.¹⁰⁷ We focus on the intersection between GHIs and two key factors that have effects on the expected performance of health systems governance—ie, planning and coordination at the national and subnational levels (especially with regard to external partners); and community involvement in planning, implementation, improvement of health system responsiveness, oversight of programme performance, implementation and service delivery, and advocacy for policy reform (panel 2).

Planning and coordination

GHIs aim to ensure that their programmes are well matched to the circumstances of each country through

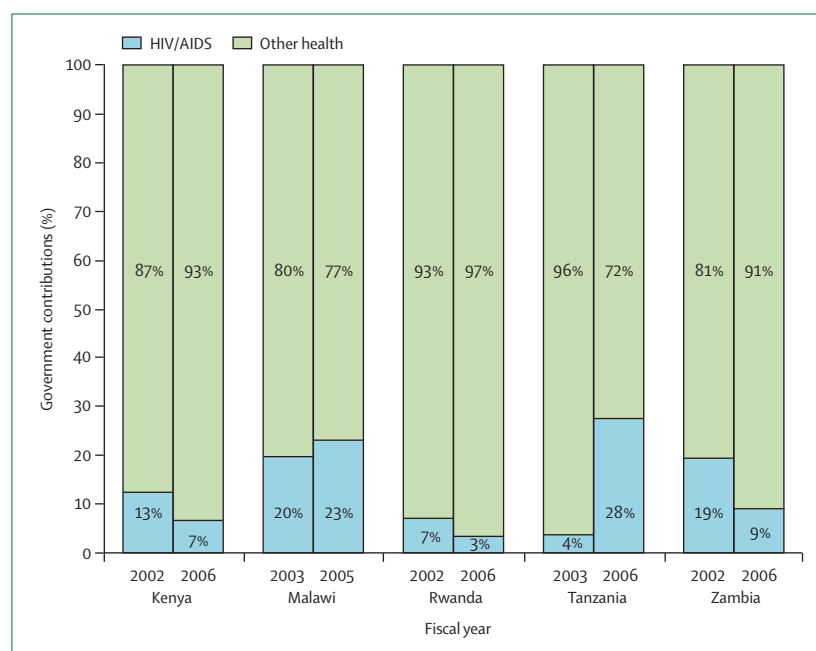


Figure 3: Government contributions to HIV/AIDS health care as a percentage of government spending on general health care

	Malawi		Rwanda		Tanzania		Zambia	
	FY 2003	FY 2005	FY 2002	FY 2006	FY 2003	FY 2006	FY 2002	FY 2006
Spending (US\$)								
General population	1.82	1.81	2.85	7.66	5.05	5.57	9.19	16.74
PLWHIV	2.14	3.42	10.16	9.78	11.92	9.75	53.78	20.67
Difference	18%	89%	257%	28%	136%	75%	485%	23%
FY=fiscal year.								
Table 3: Per person out-of-pocket spending for the general population and for people living with HIV/AIDS (PLWHIV)								

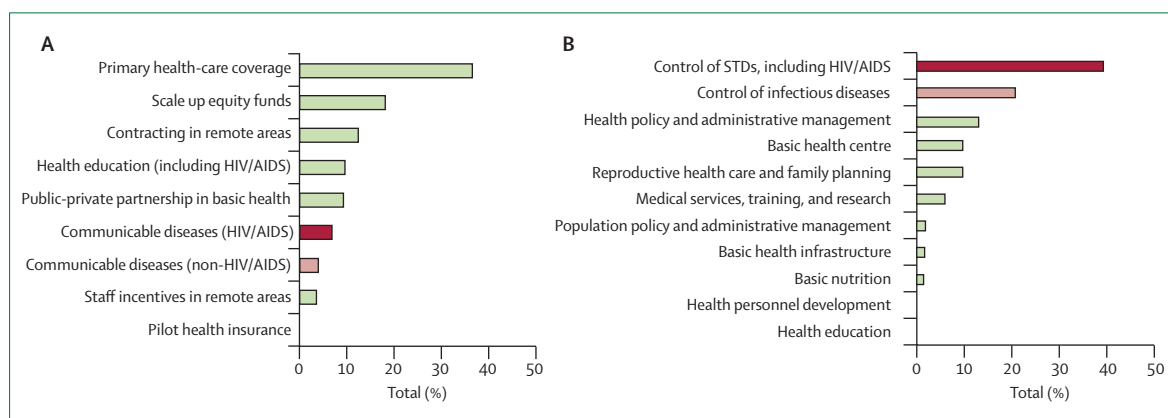


Figure 4: Cambodia—alignment of donor assistance to country needs during 2003–05

(A) What Cambodia wanted. (B) What Cambodia was given. Reproduced from WHO and Ministry of Health of Cambodia with permission.¹⁰⁵ STDs=sexually transmitted diseases.

the process of country-based applications. However, each GHI has a specific mechanism by which it engages with countries—eg, the Global Fund's country coordinating mechanisms, GAVI's interagency coordinating committee, or the World Bank MAP.^{108–112} Results from early studies indicated poor alignment between the plans developed in funding applications made to GHIs and the priorities articulated in country health-sector strategies. GHIs, through their focused intensive planning processes with tight application deadlines and heavy implementation conditionalities, distracted government leaders and planners from their general responsibilities for the sector. Particular difficulties were associated with conflicting time frames in the grant-making cycles of GHIs and the fiscal planning cycles of recipient countries that led to the establishment of parallel bureaucracies for budgeting and auditing expenditure with their incumbent heavy transaction costs.^{12,14,109,113,114} The tendency of GHIs to exert excessive effects was indicative of weaknesses in country health systems. The approach used by the World Bank MAP was undermined by the absence of strong national plans, developed at the country level, for HIV/AIDS programmes.¹¹⁵ In this respect, the demands of GHIs have helped to indicate the need to strengthen governance processes and structures in countries.

The association of the mechanisms of GHIs with national planning processes, and the other existing external mechanisms such as Poverty Reduction Strategy Papers, Sector-Wide Approaches, and the UN Development Assistance Framework has been mostly independence rather than alignment. The result has been duplication in planning, suboptimum communication, and absence of trust between government and non-government sectors, suggesting that the disease-specific focus of the main GHIs continues to put pressure on governments to meet the demands of donors and a health-services system for HIV/AIDS that is increasing.^{12,14,24,108,115–118} However, some GHIs have started to coordinate and align their approaches with recipient governments and other sectors at the

country level.¹¹⁹ In some countries, GHIs have had some positive effects on country planning and coordination processes.²⁴ For example, in Angola, support from GHIs was crucial in identification of appropriate measures for control of the HIV/AIDS epidemic and for development of a medium-term to long-term plan.¹⁴ In Rwanda, GHI-supported activities have been integrated into the national strategic objectives and are contributing to the support of long-term sustainable interventions such as community health-insurance schemes.¹²⁰ GHIs have had positive effects on national and sub-national planning processes for HIV/AIDS in Ukraine, Kyrgyzstan, Zambia, Peru, China, Mozambique, and Georgia (Spicer and colleagues, study 3, table 2). In particular, the key informants indicate participation by a wide range of stakeholders and strengthened leadership. For many of these national coordination structures, however, functioning is undermined by the low capacity of secretariats, little control over the allocation of resources, and an absence of clearly defined roles and responsibilities of stakeholders. These issues also exist for subnational coordination structures, which are particularly weak and restrict the potential for coordinated service delivery at the community level (study 3, table 3).

The increasing use by GHIs of service delivery channels outside the state system and their promotion of innovative responses to slowed systems, particularly in the area of human resources for health, has in some cases drawn attention to the need for appropriate institutional regulatory capacity in countries, or for changes in national regulatory frameworks. For example, the use of task shifting, supported by GHIs as a rapid response to acute health workforce shortages in Ethiopia, Malawi, and Zambia has brought about regulatory changes to allow the prescription of antiretroviral drugs by nurses as well as by doctors.¹²¹ Efforts towards increased alignment with recipient governments and other sectors at the country level are increasingly indicated in the mechanisms for country



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proposals to GAVI and the Global Fund (table 4). The health systems component of GAVI includes requirements for sectoral oversight and coordination, and for the management of the application process through the ministry of health's planning department. In an analysis of proposals by Galichet and colleagues (study 1, table 2), 73% of 48 applications that were reviewed included a national health plan for the period of proposed funding, or its equivalent. Two countries used the proposal process to finalise work on their national health plans, and as a stimulus for planning at low levels. The nine applications that were submitted without any planning or strategic documentation were referred for resubmission. The degree of alignment with planning processes in a country was good. 68% of disbursements by the Global Fund in 2007 were for programme-based approaches, whereas in 62% of countries Global Fund-supported grants were aligned with country cycles (study 11, table 2).

However, the country proposals show an uneven demand for the operational aspects of direct provision of services rather than for addressing some of the systemic constraints related to sustainable health service provision. For example, of the \$450 million requested for health services from the Global Fund, \$118 million was for the support of direct provision of services (treatment, prevention, and care; study 11, table 2). By contrast, funding requested for technical capacity building for service provision amounted to only \$50 million (study 11, table 2). Whether the nature of the demand for health systems is determined by a country capacity that is inadequate for identifying and addressing the long-term systemic needs, or whether it is also determined by real

or perceived constraints about what activities are likely to be approved through the health systems strengthening component of GHI funding is not clear and merits further attention.

Community involvement

GHIs have improved community participation in the governance of public health. Non-governmental organisations, faith-based organisations, and other civil society organisations are directly funded by GHIs and participate in the planning and provision of health activities targeted by these initiatives.^{14,108,122,123} Nearly 20% of the grant money from the Global Fund for the seventh round of funding was channelled through non-governmental organisations,¹²⁴ and non-state organisations account for 50% of principal recipients or subrecipients.¹²⁵ Non-governmental organisations and other community-based organisations play a large implementation part for PEPFAR. In 2005, more than 40% of funding for prime partners and almost 70% of funding for subpartners was granted to non-governmental or faith-based organisations.¹²⁶ Non-state, not-for-profit organisations have been effective recipients of GHI funds and have done better than government recipients.^{126–130}

The contribution of GHIs to building capacity outside the state sector has promoted the decentralisation of health management but has also raised issues about subnational coordination. For example, in several African countries the rapid growth of the non-governmental-organisation sector when many of these organisations had little capacity and were weakly accountable has caused concern.^{109,119,131} Generally, community engagement

and the increased involvement of civil society organisations, including service users, in partnership with government can generate a range of benefits for priority disease programmes and other health services.^{72,132} Civil society has played a substantial part in monitoring for good governance and increasing responsiveness to community health priorities;¹³³ delivery of care to marginalised groups;¹³⁴ advocacy of evidence-based health policy reforms;¹³⁵ and expertise in the provision of patient follow-up and outreach services for scaling up quality antiretroviral drug treatment programmes.^{136,137} In Uganda and South Africa, for example, civil society organisations have been active, since the beginning of the epidemics, in expanding service delivery.^{137–139} Moreover, community members, including people living with HIV/AIDS, have played an essential part in the expansion of human resources for health through task shifting for the delivery of HIV and other services.^{140–143}

Although civil society organisations have made a positive contribution to health service planning and delivery, some have been criticised for insufficient accountability, legitimacy, and transparency.^{132,144} GHIs have widened stakeholder participation and created opportunities for civil society organisations to be involved in HIV/AIDS programmes (study 3, table 2). GHIs have achieved these effects through funding the activities of civil society organisations or by insisting on their inclusion in coordination processes. In Mozambique, the integration of the Country Coordination Mechanism of the Global Fund with Sector-Wide Approaches has increased engagement of civil society organisations at the national level.

Barriers to civil society engagement in coordination frameworks exist when GHI-supported programmes remain outside subnational frameworks, as was reported for some PEPFAR-recipient organisations in Zambia (study 3, table 2). These findings concur with those of a qualitative study of civil society perspectives done in Kenya, Uganda, Malawi, and Zambia (study 14, table 2). The investigators interviewed nearly 1000 key informants from civil society organisations, advocacy groups, and the health workforce to record civil society perspectives on GHIs. Analysis of the responses showed that GHIs have increased opportunities for civil society engagement in planning and coordination processes, and also showed the existence of barriers at the level of country and GHI processes that prevent civil society from acting as equal partners in the planning, implementation, oversight, and assessment of GHI-funded programmes. These barriers include marginalisation of civil society participants in national decision-making organisations; weak accountability of civil society representatives in capitals to their constituencies at community level; absence of transparent mechanisms to participate in some GHI priority-setting efforts; and absence of resources to help participation in relevant preparatory

and planning meetings that are organised by government and donor partners.^{109,132}

Emerging issues

In the past few years, suggestions have been made that the failures of economic growth and human development in developing countries should be ascribed to weak or missing institutions and governance.¹⁴⁵ However, how to create effective institutions is not a matter on which there is agreement.¹⁴⁶ The rapid emergence of the GHIs has exposed important weaknesses in the overall arrangements for good governance of health systems and health-related policies in many countries. At the same time, GHIs have provoked a constructive discussion of governance and the role of the state in the provision of health services, and have challenged traditional models of the state as a fully integrated policy maker, regulator, and provider of health services. However, there is not much evidence for how new approaches to governance of health systems and different coordination and planning processes are linked to improved outcomes.

The generally accepted view is that GHIs should be aligned with national plans and policies, and there is evidence of progress in this respect. Nevertheless, a pronounced imbalance exists between the country need for strengthened capacity and the level of demand for support in governance. Only 6% of activities proposed by the eighth round of the Global Fund were for strengthening governance, and they represented only 1% of total funds requested (Galichet and colleagues [study 1], Atun and colleagues [study 2], and Brenzel and colleagues [study 6], table 2). The reasons for this imbalance might be related to the intrinsic difficulties in promotion of effective and equitable reforms for both financing and delivery of health care in resource-poor settings.¹⁴⁷ The results suggest a need for improved technical depth and knowledge of health systems governance at country level, or improved country confidence in interpretation of the guidelines for funding proposals to adequately suit the reality of country needs.

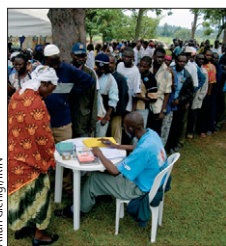
The evidence indicates a need for a frugal set of mechanisms for planning that would allow for a point of engagement for GHIs, and fiscal inflows from other development channels, in country planning processes.



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	Total amount requested	
	GAVI (2005–08)	Global Fund (2008)
Health services	91.1%	76.0%
Monitoring and assessment	5.4%	20.0%
Governance	3.5%	1.0%
Planning	..	1.0%
Financing	..	1.0%
Demand generation	..	1.0%

Table 4: Country demand for strengthening health systems—analysis of applications to Global Alliance for Vaccines and Immunization (GAVI), and Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund)



Allan Gichigi/IRIN

Although the performance-based approach implemented by GHIs is an incentive for increased accountability at country level and for improved productivity in service delivery, it might not be exempt from distortions if the focus on a few disease-specific indicators is excessive. A useful way to ensure that this risk is minimum would be for GHIs to achieve a consensus about indicators for dealing with the effect on health systems, and including them in the management of grants and programmes.

Health workforce

The global deficit of trained health workers is estimated by WHO to be more than 4 million,¹⁴⁸ and the Global Health Workforce Alliance estimates that 1.5 million new workers should be trained to address the current shortfall in African health systems.¹⁴⁹ Overall, a strong positive correlation exists between health workforce density and service coverage and health outcomes, indicating the importance of the health workforce for the health of populations.^{150–152} We focus on the intersection between GHIs and three key factors that indicate the expected performance of the health workforce function of health systems—ie, production and strengthening, distribution, and retention of health workers (panel 2).

Production and strengthening

Shortages in human resources for health have been widely reported as the main barrier to the scale up of disease-specific interventions and also other health needs.^{1,2,85,153–155} WHO, UNAIDS, and GAVI have all been consistent in identifying the health workforce as an important constraint in the delivery of services.^{1–3,85,110,156} Reductions in the overall burden of diseases, such as HIV, tuberculosis, and malaria, which are often a major cause of hospital bed occupancy in affected countries, has had positive implications for the health workforce. For example, in Botswana, 93% of beds in a primary hospital were occupied by patients with HIV/AIDS in 2004, but, after the introduction of antiretroviral drugs, this proportion fell to 52% by 2006.³⁸ GHI efforts to scale up disease-specific interventions have increased the burden on an already overstretched human resource capacity by generating additional demand for health care by service users (Corbett and colleagues, study 15, table 2).^{157–160}

Country demand for support for health workforce strengthening activities in funding proposals to GAVI and the Global Fund is high. The health workforce was mentioned in 100% of proposals to GAVI health systems strengthening that were reviewed (studies 1, 2, and 6, table 2). However, the activities identified in country proposals show an imbalance towards strengthening the existing workforce through in-service training and additional salary allowances with little demand for long-term interventions to build and sustain the health workforce, such as human resources needs

assessments, planning, production, protection, career path, and retention plans.

GHIs have contributed to providing health-care workers with in-service, disease-specific training, and have invested in other measures to strengthen the existing health workforce.^{6,24,61–64,113,122,158–162} In Malawi, the Global Fund, with the government and bilateral partners, was important in implementing an emergency human resources plan.^{163,164} This plan addressed issues concerning the health workforce that were impeding scale up of HIV/AIDS services, including negotiation with the International Monetary Fund to address fiscal constraints for the recruitment of health workers, changing regulations to allow nurses to prescribe antiretroviral drugs, creation of a mid-level cadre, and workforce retention measures. These interventions have been linked to the rapid scale up of treatment with antiretroviral drugs, but their responsibility remains to be clarified. Although in Malawi, the rates of individuals lost to follow-up are still not optimum,^{165,166} results from the Democratic Republic of Congo suggest that inadequate human resources cannot be the main explanation for inadequate patient retention (study 4, table 2). PEPFAR is notable for the amounts it has invested in human resources for health, particularly for disease-specific training interventions, and through the promotion of innovative approaches such as task shifting to make more efficient use of existing human resources and to rapidly increase the number of health workers through the creation of mid-level cadres. PEPFAR, UNAIDS, and WHO have together developed global recommendations and guidelines for task shifting.¹⁶⁷ Task shifting of various services from doctors to mid-level practitioners, and from health professionals to a wide range of lay providers with targeted training has been effective in many countries.^{140,167} GHIs have contributed to encouraging and training informal cadres—eg, community health workers, including support through remuneration such as allowances and salaries that are often outside the national payroll.^{2,140,168–173} In Haiti, GHIs have leveraged the opportunity to scale up existing cadres of community health workers (Jerome and colleagues, study 9, table 2); in Kenya and Uganda, GHIs have contributed to improving integration between community health workers and the formal health sector (study 14, table 2).

Evidence for investments by GHIs in preservice education and training for the production of new health workers, who are integrated into national plans for human resources for health and included in the payroll, is scarce.¹⁷⁴ In Ethiopia, Zambia, Mozambique, and Uganda, GHIs are investing in preservice training and other programmes that contribute to overall numbers of workers in high-level cadres.^{175,176} In Ethiopia, GHI funding has contributed to the production of a new mid-level cadre of health workers that provides not only HIV/AIDS services but also services such as maternal and child health, and has been integrated into the civil



Ray Wilkins/World Bank



Tugeta Redey/IRIN

service, with associated opportunities for employment and career progression.¹⁷⁷ The PEPFAR reauthorisation in July, 2008, details a new plan to support the training of 140 000 new health workers in 15 target countries by 2014.¹⁷⁸ Overall, however, few GHI investments have been made in preservice training and other measures to increase the production of new health workers.^{174–176}

Distribution

Investment in training health workers for the delivery of disease-specific services as part of the efforts by GHIs to scale up interventions might have implications for the equitable distribution of the health workforce in terms of skills, targeted diseases, and geographical distribution. Health workers who have been recruited and trained to provide HIV/AIDS care also provide other non-HIV/AIDS services. 94% of health workers surveyed in Cameroon were providing HIV/AIDS care as part of a GHI-supported scale up, and were also contributing to general health-care provision (study 7, table 2). In Haiti, community health workers who were initially recruited as part of a GHI-supported effort to scale up HIV/AIDS services have broadened their role to include a range of primary health-care services. Use of primary care services increased as a result of the part played by community health workers in building bridges to the community (study 9, table 2). GHIs, such as PEPFAR, have used financial and other incentives like allowances for housing, transportation, hardship, and education to promote improved distribution of health workers in rural and remote areas.^{179–181} Nevertheless, in Zambia, despite support from GHIs to increase the overall numbers of health workers, the increases have been confined mostly to urban areas (Brugha and colleagues, study 8, table 2).

Retention

The main causes of health workforce attrition are death and illness (largely as a result of the diseases that are targeted by the large GHIs, such as HIV/AIDS and tuberculosis), and staff leaving to work elsewhere in the health sector or in other sectors.

The incidence of HIV/AIDS in the health workforce in Kenya is twice the national average, and death is the main cause of attrition.¹⁸² Between 3–4% of all nurses in Swaziland are lost as a result of HIV infection every year.^{182,183} Recent data from Ethiopia, Kenya, Malawi, Mozambique, and Zimbabwe show that 43% of deaths or medical retirement of health workers were known or suspected to be caused by HIV/AIDS, and 37% were known or suspected to be due to tuberculosis (study 15, table 2). GHIs have supported targeted efforts to extend the provision of disease-specific services to the health workforce. Progress has been noted in the provision of effective access to tests for HIV and tuberculosis, and to care services for health workers; 70% of health workers had taken at least one HIV test (study 15, table 2). Progress in other domains of HIV/AIDS prevention, such as access to HIV testing and care for family members, control and prevention of infection with *Mycobacterium tuberculosis* in HIV-positive health workers (study 15, table 2), and occupational prevention of HIV/AIDS and control of tuberculosis are inadequate. 50% of sites dedicated to the provision of antiretroviral treatment do not have basic infrastructure and supplies, such as soap, running water, gloves, and postexposure prophylaxis for HIV prevention (study 15, table 2). Data from Malawi show that access to antiretroviral drugs saved the lives of many health workers.¹⁷⁶ However, there are few data to support whether



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or not treatment of HIV-infected health workers and declining HIV prevalence are having a positive effect on the retention of human resources for health.

GHI-supported activities have increased the rate of health workers from the public sector leaving to take advantage of the improved working conditions offered by non-state service providers who are receiving GHI funding (studies 5, 10, and 14, table 2).^{61,159,162,176,184,185} In Zambia in 2004, private health facilities paid much higher salaries than did those run by government or non-governmental organisations.¹⁸⁶ For doctors, salaries in the private sector were more than double those in the public sector.¹⁸⁶ Midwives were paid almost a third more and laboratory technicians were paid at least three times more in private facilities than were those in government facilities.¹⁸⁶ Non-governmental organisations paid between 23% and 46% more than did the government.¹⁸⁶ However, GHI-supported additions to salary, that were included as part of the national human resources for health plans in Malawi and Zambia, have contributed to improving retention of health workers.^{163,164,184,187–189} Moreover, recognition of the importance of additions to salaries has led the Global Fund to allow funding for these additions for which country requests had previously been rejected.^{108,163,164}

Emerging issues

GHI-supported activities can have some potentially negative effects on human resources for health that are already overstretched. Some GHIs take measures to strengthen the health workforce so as to ensure the sustainability and quality of the programmes they

support, and to mitigate against any adverse effects on the overall provision of health-care services. These efforts are most evident in the area of in-service training for the delivery of disease-specific services, and through efforts to increase numbers of health workers in the cadres with short training and few qualifications, including community health workers. Support from the GHIs for community health workers has encouraged changes in both policy and regulatory frameworks that have enabled the expansion and strengthening of decentralised community-based care. However, the increase in the community movement also raises issues about long-term planning, sustainability, and quality assurance that merit increased attention.

Health workers lured away from service provision in the state sector by private sector or non-governmental and faith-based service providers is a recurring cause for concern in anecdotal and non-anecdotal reports, and shows the potential distortions that can arise as a result of parallel systems for service delivery (studies 5, 10, and 14, table 2).^{61,162,176,185} Important for progress is the development of quality assurance for expanding health-care cadres, and the assessment of the effect of additional health-care workers on the coverage and outcomes of health services. For example, prevention of mother-to-child transmission of HIV/AIDS in Ethiopia is only 10% despite an expansion of the health workforce.¹⁸¹ Inclusion of quality assurance mechanisms and integration of human resources for health in national frameworks for monitoring and evaluation will be important in this respect.

Overall, new strategies are needed to improve staff retention that integrate in-service training of existing staff members with long-term investment in development. The production of new health workers through preservice education needs greater attention and resources, including efforts to increase the overall numbers of highly qualified cadres such as doctors, physician assistants, and nurses.

The reasons for the absence of country demand for long-term sustainable interventions for human resources for health (study 2, table 2), and the tendency of some GHIs to invest in short-term, in-service training of health workers, rather than producing new health workers, merit further investigation. One possible explanation for the absence of demand is that funds from GHIs are usually distributed through a national unit for HIV/AIDS or tuberculosis in the ministry of health, or through non-governmental service providers. These organisations have mandates that are restricted to health alone and do not extend to education, recruitment, and regulatory frameworks, all of which are essential for sustainable interventions. If GHI funds are to be used to address overall production of health workers, then they need to be distributed to a wide range of recipients, and joint planning with other units in the ministry of health (such as planning and human resources for health) and with other sectors of the government (such as education, finance, and labour) needs to be examined.

Health information systems

One of the defining characteristics of the GHIs is their insistence on linking inputs to quantifiable results. Such links depend on functioning health information systems. An understanding of the intersections between GHIs and country health systems depends on good quality information. We focus on the intersection between GHIs and three key factors that affect the expected performance of health information systems—ie, the availability and accuracy of good-quality information needed to assess trends in health and the performance of health systems; demand and use of information by various users; and innovation in health information systems (panel 2).

Availability and accuracy

As the framework for monitoring performance and assessment of the scale up for improved health shows, comprehension of the linear logic from inputs to outputs, outcomes, and effect depends on the availability of accurate information at each stage. Although some of this information is directly related to a disease-specific or intervention-specific focus (eg, immunisation coverage), and other information is not (eg, child mortality), any systematic assessment of progress and its determinants is contingent on the full range of health information.¹⁹⁰

In our analysis, we noted that the main problems were related to both the availability and accuracy of health

information. GHIs tend to focus disproportionately on two dimensions of information—namely, the coverage of specific services and surveillance for specific diseases. Generally, the trend is towards improvement in the availability and accuracy of these data. For example, concerns about biases arising from assessment of the prevalence of HIV/AIDS on the basis of surveillance at antenatal clinics led PEPFAR to sponsor household surveys of seroprevalence that were done using nationally representative sampling frames. The results have led to a downward adjustment in the total number of HIV/AIDS infections globally.² Shortfalls include poor coverage of surveillance systems for primary preventive services at community levels, biases in facility-based assessments of coverage, and the continued longstanding difficulty in disease surveillance related to the absence of rapid and reliable diagnostic tests (eg, tuberculosis). This bias towards gathering data for coverage of services and surveillance tends to ignore other important dimensions of health information related to the state of services and health in general. The main reason for this bias relates to the fact that information systems in these areas are not specific to GHIs and do not lend themselves to focused intervention or disease-specific investments.

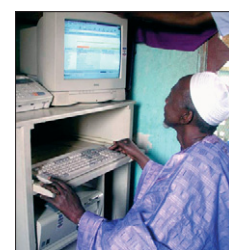
Use and demand

GHIs have increased the demand for the provision of improved quality information in countries. This demand has various implications that can be characterised as positive or negative. On the positive side, GHIs have drawn attention to the shortcomings of health information systems, resulting in concerted efforts in many countries to strengthen information for national disease programmes, especially those related to HIV/AIDS.^{12,14,108,191} Encouragement of partners in 2003–04 to strengthen country health information systems through the health metrics network was related to the increasing demand stimulated by GHIs for improved comprehensive data related to outcomes.¹⁹² The country proposals in the eighth round of funding by the Global Fund shows country demand for increases in system-wide investment in information. 20% of funds that were requested by countries from the health systems strengthening component of the Global Fund in the eighth round were for improving monitoring and evaluation, and represented a total of \$120 million (study 11, table 2).

On the negative side, demand from GHIs for improved health information from countries has remained unacceptably divided.^{14,193} Despite efforts towards harmonisation and alignment among development partners,^{18,28,194} GHIs continue to pursue the development of stand-alone information systems that are largely independent of country health information systems.^{14,109} PEPFAR uses national health information systems but maintains separate health information management systems.²⁷ The Global Fund also uses national health information systems but



USAID/Oumar Doucoure



USAID/David Snider



Dominic Sansoni/World Bank

demands special reporting of existing information.²⁷ MAP relies on national health information systems for its specific reporting procedures but also asks for additional information.¹⁴ These practices result in enormous systems-wide inefficiencies, substantial reporting burdens, and a failure to invest in a rational, robust, efficient, and independent framework for common data.^{14,27} In Mali, a campaign-specific health information monitoring system established as part of a campaign for neglected tropical diseases had adverse effects on the existing system as a result of additional reporting requirements. At district level, the campaign for neglected tropical diseases introduced 12 new forms for drug supply management, and 15 new forms for the follow-up and assessment of the distribution process. For each drug distributed, one report per village, one per health centre, and one per district was required every week (study 10, table 2).

The demands to know how much money is being spent on specific diseases in countries can put pressure on fragile health accounting systems to make impossible, and possibly inaccurate, attributions of common expenditure—eg, to infrastructure or health workforce.¹⁹⁵ The widespread culture of performance-based funding by GHIs might also have a perverse incentive effect, leading to selective reporting of information that is directly relevant to the expected results.^{193,196} However, increasingly, GHIs are working with countries on developing and strengthening systems for monitoring and evaluation, and improvements have been reported as a result, including efforts to match GHI indicators with national programme indicators and national activities for monitoring and evaluation.^{14,28,197–199} For example, Burkina Faso, Malawi, and Nigeria are in the process of updating their plans for monitoring and evaluation to indicate new national HIV/AIDS strategies.^{12,200,201} Eritrea, Indonesia, Jamaica, and Kenya have developed frameworks for monitoring and evaluation through a highly consultative process with the stakeholders.¹⁹¹ Some service users, such as individuals being treated for HIV/AIDS, have improved access to information about their condition and are empowered through information to better understand and manage their situation.^{202,203}

Programmers and implementers are also benefiting from improved information arising from routine management information systems. Whether or not national planners and policy makers are using information effectively to inform their decisions is not clear because of a widespread bias of health information systems towards the generation of information rather than towards the analysis of information to inform policy making.

Innovation

Efforts that are in progress across many sites to scale up services associated with GHIs have led to substantial innovations in the generation and use of information

that draws, in many cases, on new information and communication technologies. Although systematic review and evidence are not available, the anecdotal reports indicate several benefits for health systems. New electronic patient records are improving the provider–patient interaction. In Malawi, an electronic system for monitoring patients has been established to replace the manual paper-based system, improving the information management capacity of staff.²⁰⁴ TRACNet, an electronic system for keeping medical records, introduced in Rwanda for the purpose of tracking patients given antiretroviral drugs has been enlarged to include data for tuberculosis and malaria.²⁰⁵ Smart cards, introduced in Zambia in 2005, allow health workers access to up-to-date medical information for over 60 000 patients and enable them to compile end-of-month reports faster than do paper records. The system has also been instrumental in keeping more people from having to switch from first-line to second-line drugs, thus reducing costs associated with second-line drugs.²⁰⁶ Similarly, the ability to track pharmaceutical and other essential supplies on a daily basis has led to a reduction in supplies being out of stock. Further benefits are increased information sharing between different stakeholders, including government and civil society organisations, and the increased availability of health information in the public domain (study 14, table 2).

Emerging issues

Shortfalls in health information systems are inhibiting the demand for health services and are reducing the potential for production of accurate assessments of health outcomes and the effects of GHIs. GHIs have invested in the development of reliable management information systems for tracking basic supplies, managing drug and vaccine inventories, and updating patient records with laboratory information. Besides delivery of specific programmes, GHIs have also helped to promote an awareness of the absence of information about the state of health systems (eg, in relation to the numbers and types of health workers). Since the causes of deaths across all age groups are not comprehensively registered, the effects of different health services cannot be reliably reported, thereby restricting measurement of progress and preventing accurate attribution of progress to particular interventions. With evidence from demographic health surveys suggesting declines in all-cause child mortality, attribution of the specific contribution of GHIs, such as insecticide-treated bednets for malaria, childhood immunisation, or the prevention of maternal-to-child transmission of HIV, is difficult.²⁰⁷

Countries and GHIs are trying to work out strategies for improved coordination of monitoring and information; however, further progress is needed.^{14,192} Moreover, the tendency to concentrate on data gathering rather than



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data analysis severely restricts use of information for systems planning and indicates the need to invest in health information workers.

The rate at which the use of electronic information technologies for health is increasing in low-income countries has defied the sceptics and, according to many observers, seems to be progressing faster than in high-income countries.^{208–210} This rapid scale up seems to be helped by an open approach to the development of these diverse systems that allows for local adaptation and hence increased ownership. Furthermore, the approach to design is to plan for interoperability between different electronic systems, helping the efficient compilation of information about essential issues. Electronic records started at birth and linked to childhood immunisation might provide a lifelong continuous health record that could be useful to track population health in addition to an individual's health over time.

Supply management systems

Uninterrupted supplies of essential health commodities and technologies are necessary for effective service delivery, and thereby need efficient supply management systems. We focus on the intersection between GHIs and two key factors for the management of the supply chain—ie, procurement and distribution; and quality (panel 2).

Procurement and distribution

GHIs have led to large increases in the demand for drugs, vaccines, bednets, and diagnostic and laboratory materials, and have been associated with improvements in the availability and affordability of many of these commodities.^{1–3} The GHIs have also contributed to increases in funding for the procurement of specific categories of commodities,^{1–3} and, in some cases, to the strengthening of national capacities in procurement.^{27,211} These contributions have led to reductions in the price of some drugs, in particular those that are used to treat HIV/AIDS, tuberculosis, malaria, and onchocerciasis.^{27,212–216} Exploitation of efficiencies on a global scale through bulk or pooled procurement mechanisms has contributed to an increase in the affordability of commodities such as vaccines.²¹⁷ A similar trend has not been noted for antiretroviral drugs.²¹⁸ The increase in the amounts of commodities being supplied to countries has not been matched by improvements in the distribution of supplies.¹² Distribution of specific categories of commodities, such as vaccines, to various levels of the health-care system has improved in some countries as a result of investment by GHIs.²¹⁹ In some instances, countries and GHIs have worked together to strengthen national procurement and distribution networks.^{12,62} However, in other instances, GHIs have duplicated and displaced country supply chains, and poor coordination between countries and GHIs has resulted in elevated operational costs.^{61,220}



Mamoocher Daghatu/IFIN

An analysis of the financial flows from different partners for procurement and distribution of drugs in selected African countries shows considerable challenges in the coordination and efficiency of the various systems for supplying commodities.¹² Poor coordination in planning between health ministries (or national medical stores), GHIs, and other partners has resulted in some categories of products being out of stock whereas other categories are overstocked, leading to wastage through expiry. Many partners use the national medical stores as storage facilities but rarely involve them in the plans for procurement, which can result in poor storage planning. At the district level, parallel procurement systems that were designed to improve the efficiency of disease-specific campaigns have been shown to require additional labour on the part of health workers, and to incur opportunity costs (time devoted to management and administration) and real costs (eg, additional transportation) for the health system (study 10, table 2). In an effort to scale up access to antiretroviral treatment in a decentralised health-care system in Cameroon, a separate supply chain for antiretroviral drug procurement was spontaneously established (study 7, table 2). As a result, the establishment of an effective system for procurement and distribution that could assure continuous availability of all essential medicines and technologies might have been delayed (study 7, table 2).

However, countries and GHIs are working together to address the difficulties associated with parallel systems. The national drug procurement and distribution system used in Malawi is adapted from a previous parallel procurement programme for a disease-specific initiative.⁶² In Tanzania, the support provided by the Global Fund for the procurement of commodities has been aligned with the government system.²²⁰ Nevertheless, although the availability of specific medicines such as antiretroviral



For more about WHO/UN
Prequalification Programme see
<http://healthtech.who.int/pq/>

drugs and vaccines has improved, other essential medicines that are still imported through the public system, such as those for obstetric care, contraceptives, drugs for opportunistic infections, and other commodities needed for general population health, are frequently out of stock.²²⁰

Quality

GHI has placed great emphasis on increased access to good quality drugs, vaccines, and health technologies and commodities that are proven to be efficient and effective. Substantial improvements have been noted in several countries in the quality of the essential commodities that are available, particularly in relation to antiretroviral drugs for HIV/AIDS, and these improvements are attributed largely to the efforts of the main GHIs, the drug facilities they have established, and the WHO/UN Prequalification Programme.²²¹ Stop TB's global drug facility was established to enable health ministries in developing countries to procure quality drugs at competitive prices.²²² Similarly, the Roll Back Malaria partnership has a facility to ensure a reliable supply of quality drugs and bednets. The quality of selected antiretroviral drugs in circulation in seven African countries was good.²²³

Emerging issues

GHI has resulted in an unprecedented focus on maintenance of steady supply chains that can ensure the efficient distribution of specific commodities to health facilities or consumers. The frequency with which GHIs have needed to invest in new and additional supply management systems to reach their disease-specific objectives indicates the underlying weaknesses encountered in the existing country systems. However, the establishment of disease-specific or intervention-specific systems that bypass government organisations is likely to produce a range of negative effects. The creation of parallel systems by GHIs also means opportunities to help build the country's capacity for procurement and supply management systems are missed. Building capacity and empowerment of partners to enhance and develop appropriate responses for their own communities within a country are essential for sustainability of health services. Ensurance of improved alignment with national procurement systems is included as one of the indicators of aid effectiveness in the Paris Declaration on Aid Effectiveness and the Accra Agenda for Action but progress has been slow (study 11, table 2). Improved coordination between commodity supply management systems is urgently needed. Further analysis is needed to identify the best ways to build on the achievements so far to enhance country supply systems through coordinated, coherent, and efficient strategies for the supply of national commodities that are supported by adequate logistic information systems.

For more about WHO's
disease-specific effort see
<http://www.rollbackmalaria.org/rbmorganigram.html>

What we know and what we do not know

Despite the amounts invested and the important part played by health systems and GHIs, investigators do not have appropriate methods, or sufficient incentives (largely as a result of insufficient investment and political will), to assess the quality and effectiveness of the complex and context-specific interactions between health systems and GHIs. The paucity of robust evidence is testament to these methodological and other shortcomings.

The most robust data relate to indicators for the measurement of inputs, outputs, and outcomes associated with the distribution and uptake of specific health interventions and technologies, particularly those related to the treatment or control of specific diseases. For example, population-based and epidemiological data have been used to estimate the proportion of averted deaths, averted disability-adjusted life years, and incremental cost-effectiveness ratios associated with immunisation against human papillomaviruses. These data have also been used to show trends in the numbers of individuals given antiretroviral drugs. Household surveys and data from national control programmes can show both coverage and usage of interventions for the treatment and control of malaria. However, there are few robust quantitative indicators to inform an assessment of trends in the effect and outcomes of investments in health systems. Some work has been undertaken to increase the evidence base in the specialty of human resources for health through an analysis of the association between investments and the effects and outcomes in relation to immunisation coverage.¹⁵⁰

Because of the limitations, we have largely focused on the effect of GHIs on health systems—ie, a one-directional approach that is insufficient for a complete assessment of potential synergies. Importantly, data for the effect of efforts to strengthen health systems on the improvement of health outcomes, including the goals of the GHIs, should be gathered and assessed in the future. The health outcomes identified in this analysis are not associated with interventions in health alone. Association with other sectors, such as education, nutrition, housing, and labour, will also have an effect on the health of populations. Moreover, the ability of countries to invest in health is constrained by a combination of factors such as national wealth, economic performance, fiscal policy, and governance.

Consideration of the fact that each of the four GHIs that are the main focus of this assessment have distinct structures, different policies, and varied operational guidelines, we can expect that they will interact with and affect the health systems of eligible and recipient countries in different ways. However, with the way in which prevention, treatment, and support at the district and facility levels involves a complex interaction of several factors, clear and valid attribution of the effects of each GHI is complex and difficult to assess and report. Efforts are needed to untangle and explore the differences between the different GHIs,

donors, and factors to understand the comparative advantage of each GHI and the distinct synergies each can bring to bear on health systems. A further constraint is that the evidence reported does not readily allow for extensive cross-country comparisons of GHIs and their effects on health systems, despite the advantages of such an approach to research. Much of the evidence is from one-off cross sectional studies and therefore cannot support any assessment of changes over time.

No rigorous studies exist in which the effect of GHIs on health systems has been prospectively examined. In view of the amounts of resources that are being invested in health systems, new efforts are needed to improve data gathering, and new methods should be designed to specifically measure and investigate health systems.

Synthesis and recommendations

The goal of the GHIs is to improve health outcomes through targeted interventions for specific diseases or through use of specific technologies. The goal of country health systems is also to improve health outcomes. Our understanding of the interactions between GHIs and country health systems could lead to improved returns on investments. Two points have become clear from our assessment. First, GHIs and country health systems are not independent but are inextricably linked. Second, the two are dynamic, complex entities such that examination of their interaction cannot be a simplistic, single variable, linear analysis, therefore raising caution about generalisations. Moreover, although the GHIs that we have focused on share key features, the many variations that exist between them contribute to the determination of their different effects on country health systems (table 1). Some of our findings are therefore specific to a particular GHI, whereas other findings might be generally applicable to GHIs. Despite the difficulty in identification of trends that can be easily generalised, several recurring themes have become apparent in this Report, including the fact that GHIs and country health systems have positive and negative effects on each other.

Overall, our Report has shown a general absence of systematic, evidence-based or consensus-based policies that might accelerate the joint effectiveness of GHIs and country health systems with respect to improvement in health. The need to move from the present situation, in which the broad ramifications of the interactions are largely unplanned, is urgent. Efforts to generate productive interactions between GHIs and country health systems are increasing. The decision by some of the main GHIs to allocate discrete resources specifically for the purpose of funding country proposals for strengthening health systems is testimony to this new direction. Our contribution, although limited by the evidence, is therefore timely.

On the basis of our findings, we make five general recommendations that potentially represent a cooperative

and constructive approach to expedite the joint effectiveness of GHIs and country health systems with the aim of improving health. We acknowledge our reliance on an evidence base that is still in the early stages of development. We also acknowledge that our methodological approach for exploring the interactions between health systems and GHIs is not perfect. The purpose of these recommendations is to increase and expedite efforts to address the gaps in knowledge, and to encourage the creation of a new framework in which the disease-specific and health-systems approaches are mutually interdependent and have a common goal to improve the health of all people.

Recommendation 1: Infuse the health systems strengthening agenda with the sense of ambition and speed that has characterised the GHIs

Our findings show that the GHIs have been characterised by an invigorating sense of ambition and purpose. Use of many resources by GHIs, the speed and versatility of their approach to implementation, and their emphasis on quality have raised the benchmarks for global public health. GHIs have also shown the potential benefits that can be derived from the encouragement and inclusion of new partners such as civil society (including affected populations) and the private sector.

By contrast with the disease-specific agenda, that for strengthening country health systems lacks dynamism, partly because of the perception that health systems are complex. The absence of a consensus for the best way to address the systemic fundamentals of health systems, such as governance and strategic planning that form the basis of their performance, means that both countries and GHIs tend to focus on investment in health systems to achieve results quickly at the operational level.

Countries and GHIs should be empowered through increased capacity to identify and address complex systemic needs. To resolve this issue, enhanced training and increased in-depth technical and strategic knowledge that can help to demystify health systems is needed for ministries of health, ministries of finance, and GHIs. The types of inclusive and participatory models of governance that have been used by the GHIs should also be used to strengthen health systems because the inclusion of a wide range of stakeholders and other sectors can exert a positive influence.

Recommendation 2: Extend the targets of GHIs and agree indicators for health systems strengthening

Target and results-based programming are among the defining characteristics of the GHIs. However, although targets exist to link inputs to results in disease-specific work (including the measurement of grant performance in relation to GHI disbursements), no equivalent targets exist for GHIs to monitor their contribution to success in strengthening health systems. Identification



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Panel 3: Action points

International partners

- Generate consensus on the order and urgency of shared funding priorities for strengthening health systems
- Identify and agree on resource requirements for global costs related to building and sustaining well functioning health systems
- Cooperate in channelling funding from diverse sources through the most efficient mechanisms
- Agree on where each partner can demonstrate comparative advantage to achieve synergies between different international partners, and between international partners and countries
- Ensure alignment with national policies and systems
- Commit to increasing the levels and proportion of predictable funding for short-term, medium-term, and long-term investment so as to help with improved planning for strengthening health systems
- Assess whether existing technical support is producing the maximum return on investment in country health systems, and identify new ways of providing technical support (as appropriate), including strengthening local capacity and joint planning for technical support

Policy makers

- Promote inclusive governance for health, including progression in the meaningful involvement of a wide range of stakeholders from within and outside the health sector
- Create a supportive policy environment that can improve alignment between global health initiatives (GHIs), national policies, and systems by developing, adopting, modifying, and strengthening relevant policies
- Advocate increased domestic funding and increases in external funding for health while supporting measures to ensure that new resources are additional
- Act on commitments made through inclusive governance processes
- Enhance joint learning and information sharing

Programme managers

- Strengthen linkages between GHIs and country health systems to generate a coordinated and unified response to address the existing limitations in improving health outcomes
- Identify the distinct parts and comparative advantages of different players in the specialty of health-care delivery and expedite joint planning
- Devise and implement agreed metrics for tracking the performance of health systems
- Devise and implement agreed metrics for tracking synergistic implementation of the programmes and policies of both GHIs and country health systems
- Invest in and expedite operations research
- Build capacity in knowledge, structures, and policies from community to national level
- Strengthen the health workforce and facilities, including through preservice education and training of new and additional health workers

Researchers

- Build strong collaboration between disease-specific researchers and health-systems researchers, through a joint research agenda
- Design and agree rigorous methods by which to assess the interactions between GHIs and country health systems
- Clarify and agree on what is meant by health systems
- Develop and reach agreement on a robust series of metrics by which to assess complex and context-specific health systems
- Assess the cost of short-term, medium-term, and long-term research needs
- Undertake continuous assessment of the important outcomes related to synergistic implementation of GHIs
- Encourage community participation in research

and agreement on a series of targets that include each of the points of interaction (service delivery; financing; governance; health workforce; health information; supply management systems; figure 1) will help to redress the imbalance and expedite action by the GHIs on health systems to match that of disease-specific work.

The absence of targets to measure the performance of investments in health systems is, to some extent, a result of the shortage in the research methods used to assess the performance of health systems. If targets are to be useful they must be accompanied by appropriate indicators by which progress can be measured. These indicators need to be identified, agreed, and coordinated at the outset, and investment in information systems is also needed. In view of the amount of the resources that are being invested in health systems, a robust set of indicators by which the effect and outcomes of efforts to strengthen health systems can be measured against agreed benchmarks are urgently needed.

The International Health Partnership has developed a series of indicators for health systems as part of a common monitoring and evaluation framework. A detailed set of indicators have also been proposed for monitoring a rights-based approach to health.²¹⁸ These indicators and the work that is in progress to monitor the strengthening of health systems could be used or adapted. We have used a selection of key factors within each point of interaction as a basis for assessing the interactions between health systems and GHIs. These factors could be further refined to represent useful indicators for the measurement of synergies between GHIs and health systems.

Recommendation 3: Improve alignment of planning processes and resource allocations among GHIs, and between GHIs and country health systems

The disease-specific investments by GHIs have produced fortuitous or planned benefits for the general strengthening of systems. However, the priority that GHIs place on achieving their own specific targets has been seen, in some cases, to result in varying degrees of duplication and displacement. This outcome is evident in the domains of health information, and in procurement and management of the supply chain in which different donors, including GHIs, have contributed to a proliferation of parallel systems.

Current efforts should be expedited to improve coordination between donors, including those to improve accountability and transparency, and to reach agreement on systems for shared accountability between donors and implementers in public health. GHI disbursements for strengthening health systems have a common purpose, at least in principle. This common purpose should be recognised through shared performance indicators and other strategies that can improve coordination of their various efforts.

In some instances, resources provided by GHIs are not closely matched to the country's priorities that are expressed in national health plans. GHIs and other stakeholders have made efforts to work towards improved alignment between their investments and national health plans. However, if interactions between disease-specific work and country health systems are to produce the best health outcomes, efforts should be redoubled to promote joint planning for achieving shared objectives that will generate mutual added value. Agreement on a few planning mechanisms would allow for a point of engagement through which resources from GHIs and fiscal inflows from other development channels can be provided to countries.

Recommendation 4: Generate more reliable data for the costs and benefits of strengthening health systems, and evidence to inform additional and complimentary investments to those of GHIs

GHIs have been strongly linked to an increase in resources from official development assistance for health in recent years and have been associated with innovative mechanisms to encourage new funding. A key factor in encouraging funding for disease-specific programmes has been the dissemination of reliable data for resource needs and potential returns on investment. If health systems are to generate a complementary funding surge, then they need to build on this experience.

New estimates of the costs of strengthening health systems in low-income and middle-income countries are available but the evidence for the potential for robust health systems to support rapid and sustainable scale up of a range of health interventions is insufficient. A complementary effort is needed to systematically assess the effectiveness of investments in health systems to help guide the best allocation of resources for strengthening these systems.

Recommendation 5: Ensure a rise in national and global health financing, and in more predictable financing to support the sustainable and equitable growth of health systems

Although the increase in official development assistance for health in recent years, with increases in domestic spending on health in most countries, is encouraging, achievement of agreed health targets will require continued growth in international and national sources of funding for many years. At a national level, in addition to defined targets for health spending, such as those agreed in Abuja, Nigeria, long-term financing strategies for health are needed. These strategies should emphasise methods for prepayment and be responsive to the comprehensive needs and expectations of populations. The emerging gap in the availability and quality of services for different health needs should also be addressed. Within these national financing strategies,

the part GHIs will play over time in supporting the equitable and sustainable growth of the health sector needs to be clarified. Such strategies should be developed in a way in which there is no risk of external investments preventing or being substituted for the increase in domestic resources. With the extent of the shortfalls in essential investments in health in many low-income countries, the global public health community needs to recognise that contribution of more resources is imperative, despite the present economic situation.

Proposal for an action plan

On the basis of our findings, we urge that these recommendations should be swiftly converted into policy and put into action, necessitating concomitant implementation of actions and country-specific adaptation of actions at different levels—ie, international partners; policy makers; programme managers; and researchers (panel 3).

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Conflicts of interest

We declare that we have no conflicts of interest.

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